POLARBEAR 8.2.1 Comb A Detectors

This document reports noise results. There is one page per detector that describes the parameters used, the noise calculation and a plot of the timestream used and its power spectrum. Also, one plot per comb is shown showing measured and predicted noise as a function of bias frequency.

The demodulator gain and frequency, the carrier gain and amplitude, the nuller gain and amplitude and the SQUID feedback loop, flux bias and current bias are parameters read from the DfMUX and SQUID controller boards. Values of -1 indicates that the value was not known at the time and other values can be wrong (do not trust calculated numbers if a -1 is present).

The voltage bias is calculated using the transfer function (refer to the DfMUXTransferFunctionsMemo memo). R normal is obtained from the width of the peaks in the network analysis. R is assumed to be x$\times R_n$ for a bolometer in transition where x is the position in the transition (0.8 for 80% in transition for example). The leadlag resistance is assumed to be 20Ω. The optical loading is approximated by subtracting the power at turnaround when bolometers were tuned from the power at turnaround when bolometers were tuned dark. T_c is a measured value and the bath temperature is simply the temperature the detectors are heatsunk to. The average thermal conductance is obtained from the bolometer tuning dark and the dynamical G is calculated from it (refer to the BoloNoiseMemo memo).

The list of operations done to the data is also listed. Each of the components of the calculated noise are listed. The predicted noise as well as the measured average noise between two given frequencies with its variance and the ratio of measured over predicted noise are finally listed. The frequencies between which the PSD is averaged are quoted as well.

b153-w0-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

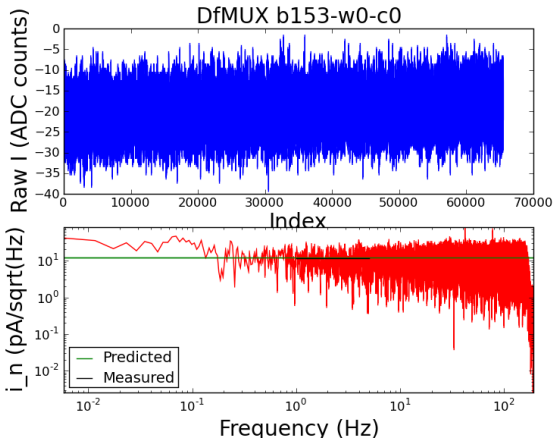
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 522177 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.494
Voltage bias is : 7.986 uV_RMS
R normal is : 1.62 ohm
R is : 1.62 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.159606933594 V
SQUID current bias : 5.84661865234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.00537585205 pA/sqrt(Hz)
20 ohms noise : 1.72809111493 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.42942507411 pA/sqrt(Hz)
Current bias shot noise : 4.10945080417 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.30202540986 pA/sqrt(Hz)
Carrier shot noise : 2.51180042161 pA/sqrt(Hz)
Carrier digitization noise : 0.271872372701 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.64441928294 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.38366565593 pA/sqrt(Hz)

Predicted noise : 12.1984571623 pA/sqrt(Hz)
Measured noise : 11.7887496475 pA/sqrt(Hz)
Standard deviation : 6.16630984317 pA/sqrt(Hz)
Measured/predicted : 0.966413169355



b153-w0-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

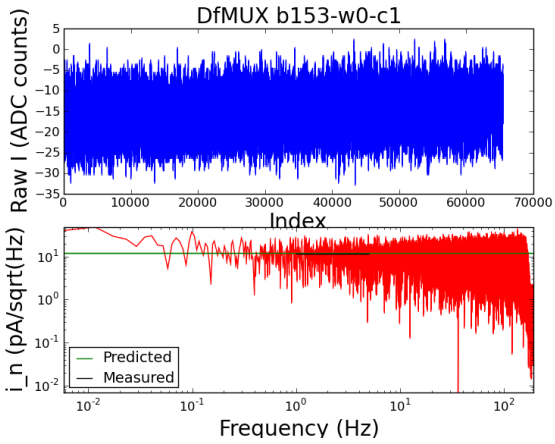
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 616488 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.442
Voltage bias is : 7.986 uV_RMS
R normal is : 1.69 ohm
R is : 1.69 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.159606933594 V
SQUID current bias : 5.84661865234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.07217064754 pA/sqrt(Hz)
20 ohms noise : 1.76649812234 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.42942507411 pA/sqrt(Hz)
Current bias shot noise : 4.200783782 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.20667524496 pA/sqrt(Hz)
Carrier shot noise : 2.45923076923 pA/sqrt(Hz)
Carrier digitization noise : 0.260611386849 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.5013702229 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.22913238429 pA/sqrt(Hz)

Predicted noise : 12.1000012371 pA/sqrt(Hz)
Measured noise : 11.7665498578 pA/sqrt(Hz)
Standard deviation : 6.21047658861 pA/sqrt(Hz)
Measured/predicted : 0.972442037594



b153-w0-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

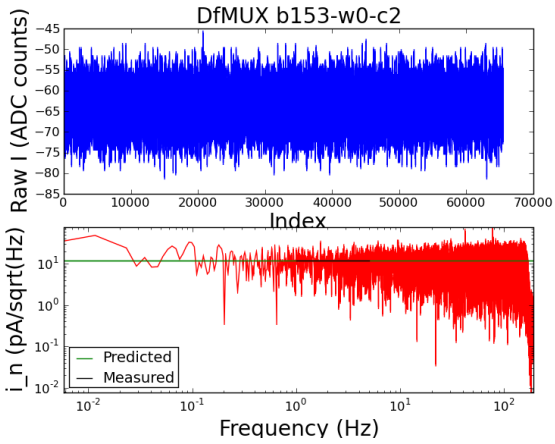
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 707700 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.417
Voltage bias is : 7.986 uV_RMS
R normal is : 1.75 ohm
R is : 1.75 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.159606933594 V
SQUID current bias : 5.84661865234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.14553639666 pA/sqrt(Hz)
20 ohms noise : 1.80868342808 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.42942507411 pA/sqrt(Hz)
Current bias shot noise : 4.30110166287 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.13101780799 pA/sqrt(Hz)
Carrier shot noise : 2.41670484042 pA/sqrt(Hz)
Carrier digitization noise : 0.2516761393 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.42960050049 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.10412355105 pA/sqrt(Hz)

Predicted noise : 12.0492373237 pA/sqrt(Hz)
Measured noise : 11.7346921488 pA/sqrt(Hz)
Standard deviation : 5.96691416358 pA/sqrt(Hz)
Measured/predicted : 0.97389501373



b153-w0-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

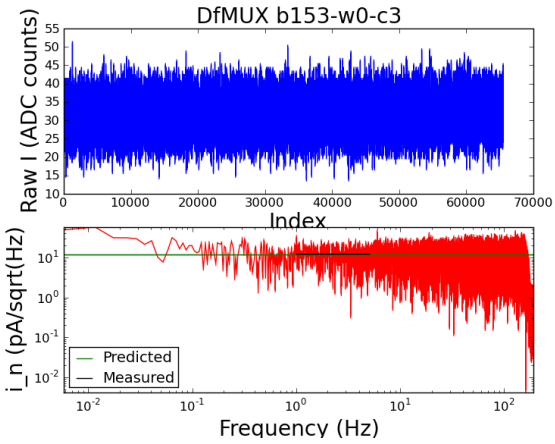
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 787827 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.473
Voltage bias is : 7.986 uV_RMS
R normal is : 1.72 ohm
R is : 1.72 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.159606933594 V
SQUID current bias : 5.84661865234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.21660537278 pA/sqrt(Hz)
20 ohms noise : 1.84954808935 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.42942507411 pA/sqrt(Hz)
Current bias shot noise : 4.39827901287 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.16818672324 pA/sqrt(Hz)
Carrier shot noise : 2.43768964677 pA/sqrt(Hz)
Carrier digitization noise : 0.256065839404 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.58760160148 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.16581029677 pA/sqrt(Hz)

Predicted noise : 12.1888485718 pA/sqrt(Hz)
Measured noise : 12.4025837259 pA/sqrt(Hz)
Standard deviation : 6.00194522789 pA/sqrt(Hz)
Measured/predicted : 1.01753530309



b153-w0-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

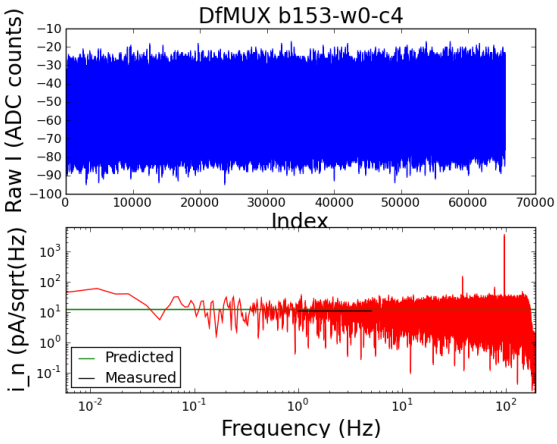
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 847089 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.465
Voltage bias is : 7.986 uV_RMS
R normal is : 1.59 ohm
R is : 1.59 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.159606933594 V
SQUID current bias : 5.84661865234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.2728913627 pA/sqrt(Hz)
20 ohms noise : 1.88191253355 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.42942507411 pA/sqrt(Hz)
Current bias shot noise : 4.4752426001 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.34545985156 pA/sqrt(Hz)
Carrier shot noise : 2.53538591954 pA/sqrt(Hz)
Carrier digitization noise : 0.27700204011 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.56562581839 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.45299737095 pA/sqrt(Hz)

Predicted noise : 12.4546877907 pA/sqrt(Hz)
Measured noise : 11.4497219498 pA/sqrt(Hz)
Standard deviation : 5.90912900031 pA/sqrt(Hz)
Measured/predicted : 0.919310234208



b153-w0-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

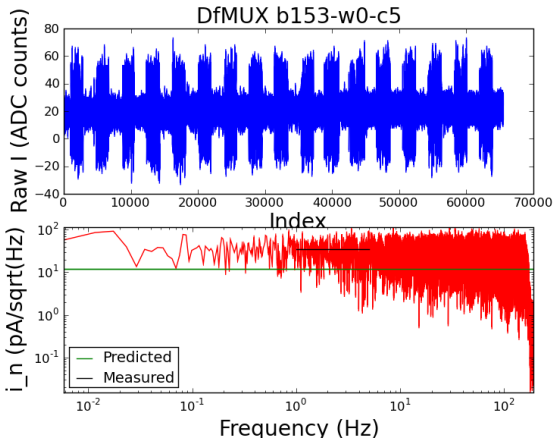
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 958239 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.403
Voltage bias is : 7.986 uV_RMS
R normal is : 1.79 ohm
R is : 1.79 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.159606933594 V
SQUID current bias : 5.84661865234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.38635879336 pA/sqrt(Hz)
20 ohms noise : 1.94715630618 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.42942507411 pA/sqrt(Hz)
Current bias shot noise : 4.63039418417 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.08339729831 pA/sqrt(Hz)
Carrier shot noise : 2.38954999153 pA/sqrt(Hz)
Carrier digitization noise : 0.246052091494 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.3884676527 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.02429940442 pA/sqrt(Hz)

Predicted noise : 12.1884506122 pA/sqrt(Hz)
Measured noise : 35.2939090489 pA/sqrt(Hz)
Standard deviation : 18.6104099927 pA/sqrt(Hz)
Measured/predicted : 2.8956846257



b153-w0-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

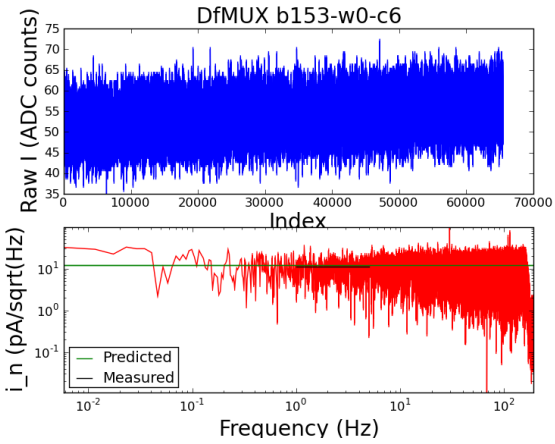
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

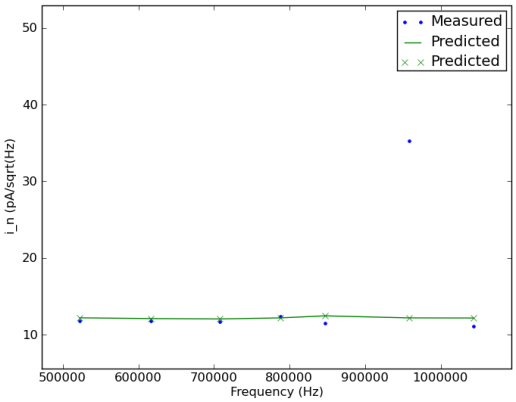
Demod gain is : 2
Demod frequency is : 1043505 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.33
Voltage bias is : 7.986 uV_RMS
R normal is : 1.83 ohm
R is : 1.83 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.159606933594 V
SQUID current bias : 5.84661865234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.47982732164 pA/sqrt(Hz)
20 ohms noise : 2.00090070994 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.42942507411 pA/sqrt(Hz)
Current bias shot noise : 4.75819993547 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.03785855955 pA/sqrt(Hz)
Carrier shot noise : 2.36329040324 pA/sqrt(Hz)
Carrier digitization noise : 0.240673903702 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.16134358213 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.94710695772 pA/sqrt(Hz)

Predicted noise : 12.1731360838 pA/sqrt(Hz)
Measured noise : 11.149136151 pA/sqrt(Hz)
Standard deviation : 5.95815744355 pA/sqrt(Hz)
Measured/predicted : 0.915880351147



b153-w0


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
50
40
30
20
10
500000
600000
700000
800000
900000
1000000

b153-w1-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

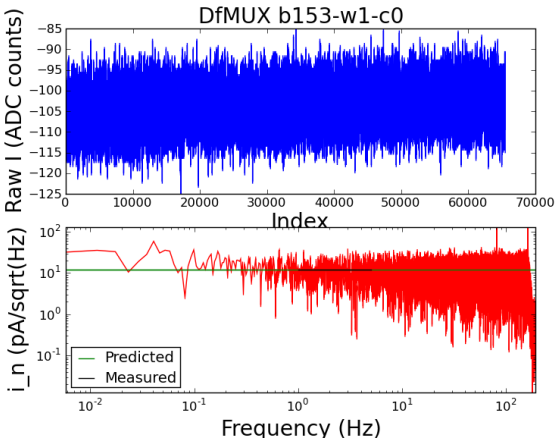
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 385119 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.524
Voltage bias is : 7.986 uV_RMS
R normal is : 1.53 ohm
R is : 1.53 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.174987792969 V
SQUID current bias : 5.64666748047 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.92605202897 pA/sqrt(Hz)
20 ohms noise : 1.68247991666 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.49671598108 pA/sqrt(Hz)
Current bias shot noise : 3.93197511315 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.43743866927 pA/sqrt(Hz)
Carrier shot noise : 2.5846213108 pA/sqrt(Hz)
Carrier digitization noise : 0.287864865212 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.72353201266 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.59772927894 pA/sqrt(Hz)

Predicted noise : 12.3125767908 pA/sqrt(Hz)
Measured noise : 12.2926795944 pA/sqrt(Hz)
Standard deviation : 6.59884991905 pA/sqrt(Hz)
Measured/predicted : 0.998383994129



b153-w1-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

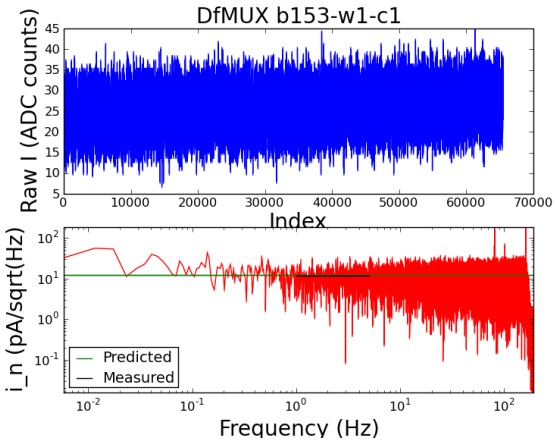
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 465744 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.469
Voltage bias is : 7.986 uV_RMS
R normal is : 1.58 ohm
R is : 1.58 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.174987792969 V
SQUID current bias : 5.64666748047 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.97008387373 pA/sqrt(Hz)
20 ohms noise : 1.70779822739 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.49671598108 pA/sqrt(Hz)
Current bias shot noise : 3.99114429951 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.36030453416 pA/sqrt(Hz)
Carrier shot noise : 2.54339663751 pA/sqrt(Hz)
Carrier digitization noise : 0.278755217579 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.5766371386 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.47654560457 pA/sqrt(Hz)

Predicted noise : 12.2156395481 pA/sqrt(Hz)
Measured noise : 11.7019374975 pA/sqrt(Hz)
Standard deviation : 5.86258891038 pA/sqrt(Hz)
Measured/predicted : 0.957947183315



b153-w1-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

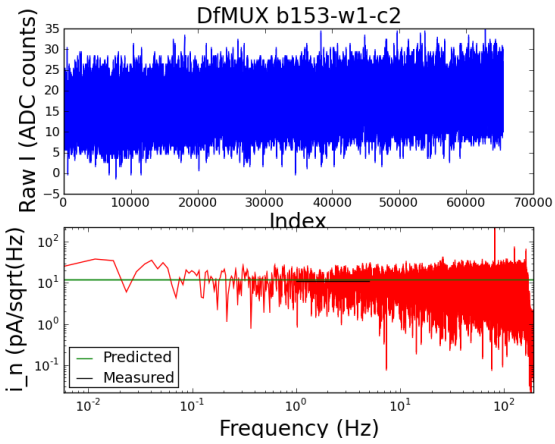
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 555522 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.419
Voltage bias is : 7.986 uV_RMS
R normal is : 1.6 ohm
R is : 1.6 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.174987792969 V
SQUID current bias : 5.64666748047 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.02789801502 pA/sqrt(Hz)
20 ohms noise : 1.74104135864 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.49671598108 pA/sqrt(Hz)
Current bias shot noise : 4.06883388346 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.33080072749 pA/sqrt(Hz)
Carrier shot noise : 2.52745041989 pA/sqrt(Hz)
Carrier digitization noise : 0.275270777359 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.43541991123 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.4296702484 pA/sqrt(Hz)

Predicted noise : 12.1935115771 pA/sqrt(Hz)
Measured noise : 10.9339269065 pA/sqrt(Hz)
Standard deviation : 5.57474525042 pA/sqrt(Hz)
Measured/predicted : 0.896700416235



b153-w1-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

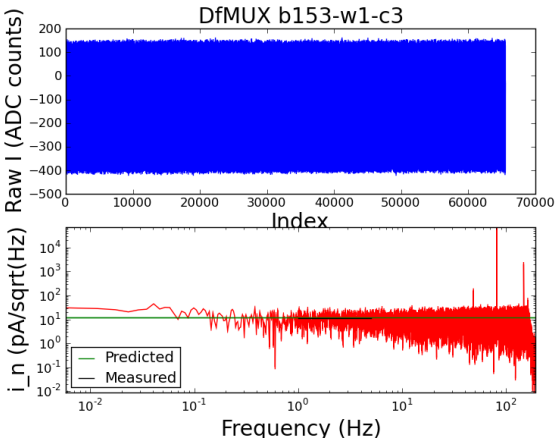
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 630972 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.391
Voltage bias is : 7.986 uV_RMS
R normal is : 1.54 ohm
R is : 1.54 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.174987792969 V
SQUID current bias : 5.64666748047 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.08326123101 pA/sqrt(Hz)
20 ohms noise : 1.77287520783 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.49671598108 pA/sqrt(Hz)
Current bias shot noise : 4.14322995888 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.42161114544 pA/sqrt(Hz)
Carrier shot noise : 2.57621601599 pA/sqrt(Hz)
Carrier digitization noise : 0.285995612841 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.35263860718 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.57302115081 pA/sqrt(Hz)

Predicted noise : 12.3362726857 pA/sqrt(Hz)
Measured noise : 11.4169031715 pA/sqrt(Hz)
Standard deviation : 5.54346873083 pA/sqrt(Hz)
Measured/predicted : 0.925474287275



b153-w1-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

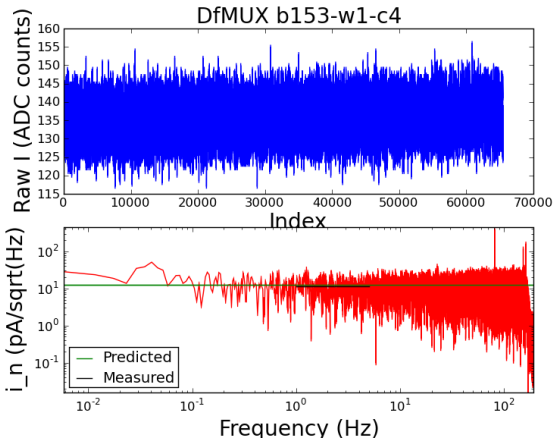
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 807411 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.483
Voltage bias is : 7.986 uV_RMS
R normal is : 1.62 ohm
R is : 1.62 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.174987792969 V
SQUID current bias : 5.64666748047 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.23486617823 pA/sqrt(Hz)
20 ohms noise : 1.86004805248 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.49671598108 pA/sqrt(Hz)
Current bias shot noise : 4.34695390965 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.30202540986 pA/sqrt(Hz)
Carrier shot noise : 2.51180042161 pA/sqrt(Hz)
Carrier digitization noise : 0.271872372701 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.61481161998 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.38366565593 pA/sqrt(Hz)

Predicted noise : 12.3595114671 pA/sqrt(Hz)
Measured noise : 11.6289010349 pA/sqrt(Hz)
Standard deviation : 6.13500094188 pA/sqrt(Hz)
Measured/predicted : 0.940886787134



b153-w1-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

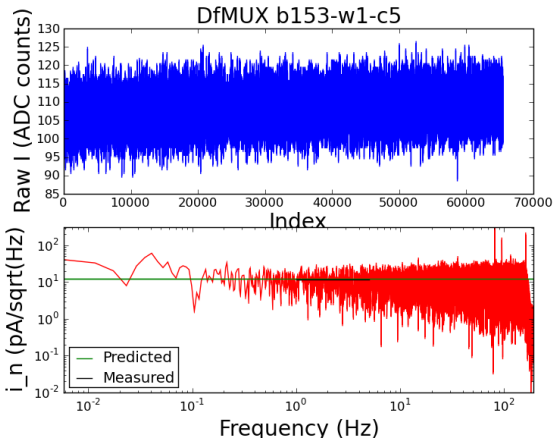
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 894153 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.413
Voltage bias is : 7.986 uV_RMS
R normal is : 1.73 ohm
R is : 1.73 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.174987792969 V
SQUID current bias : 5.64666748047 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.31972136917 pA/sqrt(Hz)
20 ohms noise : 1.90883978727 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.49671598108 pA/sqrt(Hz)
Current bias shot noise : 4.46098076075 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.15565385201 pA/sqrt(Hz)
Carrier shot noise : 2.4306340903 pA/sqrt(Hz)
Carrier digitization noise : 0.254585690043 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.4179196612 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.1450698472 pA/sqrt(Hz)

Predicted noise : 12.2058104585 pA/sqrt(Hz)
Measured noise : 11.6178932806 pA/sqrt(Hz)
Standard deviation : 5.82371927684 pA/sqrt(Hz)
Measured/predicted : 0.951833007736



b153-w1-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

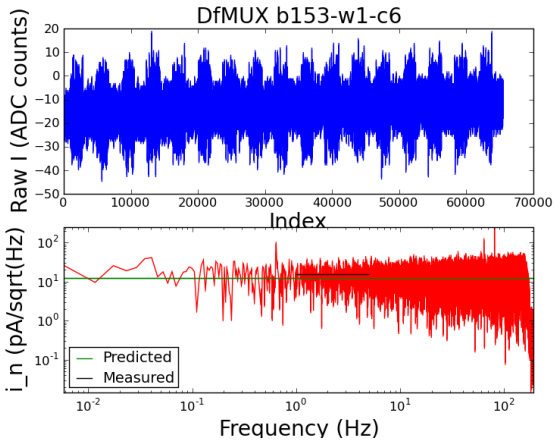
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

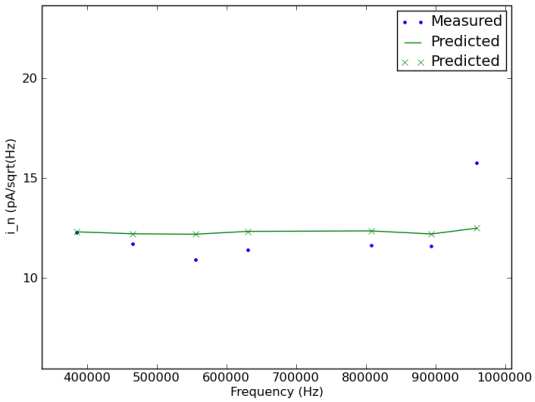
Demod gain is : 2
Demod frequency is : 958884 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.367
Voltage bias is : 7.986 uV_RMS
R normal is : 1.58 ohm
R is : 1.58 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.174987792969 V
SQUID current bias : 5.64666748047 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.38704568559 pA/sqrt(Hz)
20 ohms noise : 1.94755126921 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.49671598108 pA/sqrt(Hz)
Current bias shot noise : 4.55144994381 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.36030453416 pA/sqrt(Hz)
Carrier shot noise : 2.54339663751 pA/sqrt(Hz)
Carrier digitization noise : 0.278755217579 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.27929151097 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.47654560457 pA/sqrt(Hz)

Predicted noise : 12.4936578154 pA/sqrt(Hz)
Measured noise : 15.7642164979 pA/sqrt(Hz)
Standard deviation : 8.0492056261 pA/sqrt(Hz)
Measured/predicted : 1.2617775139



b153-w1


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
20
15
10
400000
500000
600000
700000
800000
900000
1000000

b153-w2-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

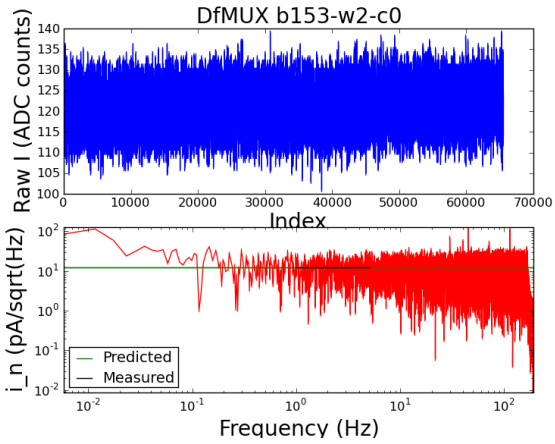
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 429708 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.506
Voltage bias is : 7.986 uV_RMS
R normal is : 1.57 ohm
R is : 1.57 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.232666015625 V
SQUID current bias : 5.71716308594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.9494569903 pA/sqrt(Hz)
20 ohms noise : 1.69593776942 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.72584582128 pA/sqrt(Hz)
Current bias shot noise : 3.98809015367 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.37533832101 pA/sqrt(Hz)
Carrier shot noise : 2.55148376964 pA/sqrt(Hz)
Carrier digitization noise : 0.280530728519 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.67634501812 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.50031846458 pA/sqrt(Hz)

Predicted noise : 12.2787047602 pA/sqrt(Hz)
Measured noise : 12.2032639491 pA/sqrt(Hz)
Standard deviation : 6.38629278343 pA/sqrt(Hz)
Measured/predicted : 0.993855963428



b153-w2-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

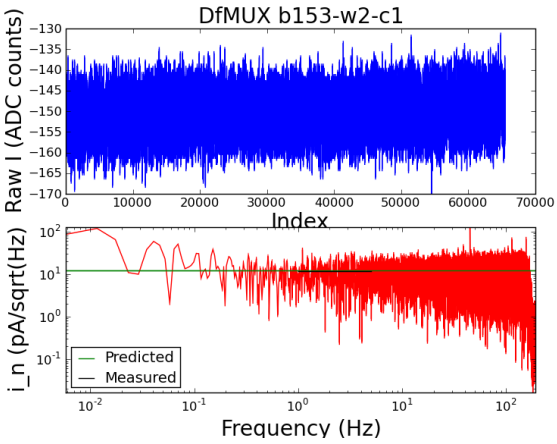
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 521151 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.463
Voltage bias is : 7.986 uV_RMS
R normal is : 1.59 ohm
R is : 1.59 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.232666015625 V
SQUID current bias : 5.71716308594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.00470227634 pA/sqrt(Hz)
20 ohms noise : 1.72770380889 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.72584582128 pA/sqrt(Hz)
Current bias shot noise : 4.06278972786 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.34545985156 pA/sqrt(Hz)
Carrier shot noise : 2.53538591954 pA/sqrt(Hz)
Carrier digitization noise : 0.27700204011 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.56010239795 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.45299737095 pA/sqrt(Hz)

Predicted noise : 12.258240974 pA/sqrt(Hz)
Measured noise : 11.6375472283 pA/sqrt(Hz)
Standard deviation : 6.33669594087 pA/sqrt(Hz)
Measured/predicted : 0.94936518649



b153-w2-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

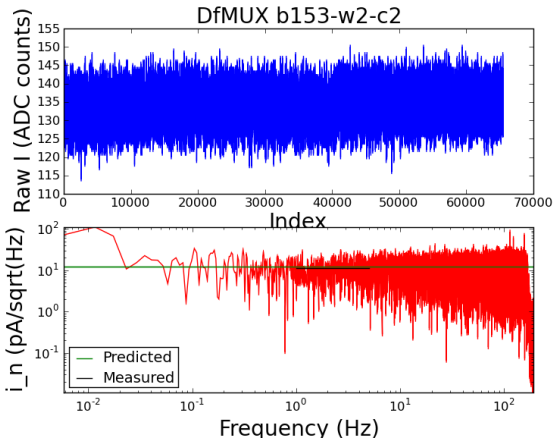
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 590148 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.421
Voltage bias is : 7.986 uV_RMS
R normal is : 1.59 ohm
R is : 1.59 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.232666015625 V
SQUID current bias : 5.71716308594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.05256017012 pA/sqrt(Hz)
20 ohms noise : 1.75522209782 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.72584582128 pA/sqrt(Hz)
Current bias shot noise : 4.127500485 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.34545985156 pA/sqrt(Hz)
Carrier shot noise : 2.53538591954 pA/sqrt(Hz)
Carrier digitization noise : 0.27700204011 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.44122544965 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.45299737095 pA/sqrt(Hz)

Predicted noise : 12.2713349334 pA/sqrt(Hz)
Measured noise : 11.2938936596 pA/sqrt(Hz)
Standard deviation : 5.82570303865 pA/sqrt(Hz)
Measured/predicted : 0.920347600392



b153-w2-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

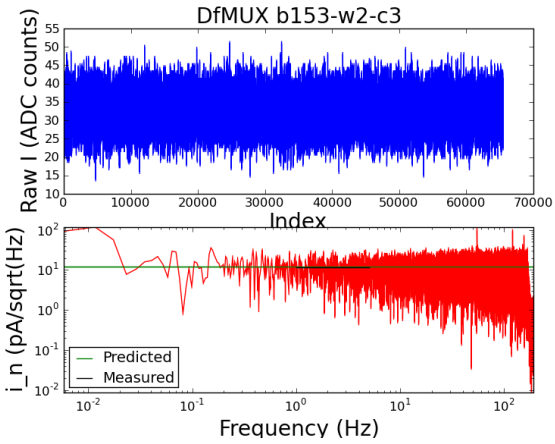
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 695118 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.411
Voltage bias is : 7.986 uV_RMS
R normal is : 1.68 ohm
R is : 1.68 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.232666015625 V
SQUID current bias : 5.71716308594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.13492665497 pA/sqrt(Hz)
20 ohms noise : 1.80258282661 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.72584582128 pA/sqrt(Hz)
Current bias shot noise : 4.23887182159 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.21981021665 pA/sqrt(Hz)
Carrier shot noise : 2.46653904914 pA/sqrt(Hz)
Carrier digitization noise : 0.262162645104 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.41205802915 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.2506157374 pA/sqrt(Hz)

Predicted noise : 12.1717823516 pA/sqrt(Hz)
Measured noise : 11.5450421391 pA/sqrt(Hz)
Standard deviation : 6.21830677817 pA/sqrt(Hz)
Measured/predicted : 0.948508756202



b153-w2-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

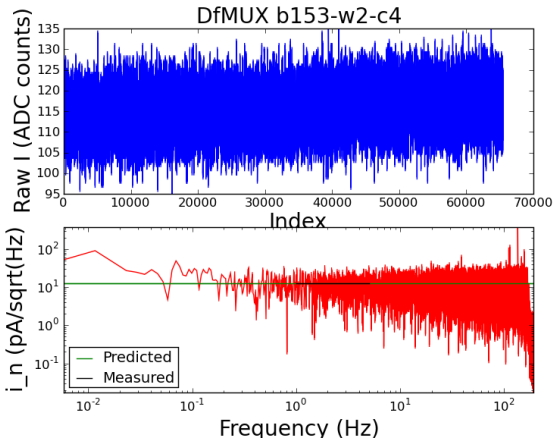
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 761721 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.504
Voltage bias is : 7.986 uV_RMS
R normal is : 1.51 ohm
R is : 1.51 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.232666015625 V
SQUID current bias : 5.71716308594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.19279850938 pA/sqrt(Hz)
20 ohms noise : 1.83585914289 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.72584582128 pA/sqrt(Hz)
Current bias shot noise : 4.31712289407 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.46972262515 pA/sqrt(Hz)
Carrier shot noise : 2.60168170269 pA/sqrt(Hz)
Carrier digitization noise : 0.291677644884 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.67105056186 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.64787985164 pA/sqrt(Hz)

Predicted noise : 12.5863993731 pA/sqrt(Hz)
Measured noise : 12.4043186523 pA/sqrt(Hz)
Standard deviation : 6.38852172302 pA/sqrt(Hz)
Measured/predicted : 0.985533533829



b153-w2-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

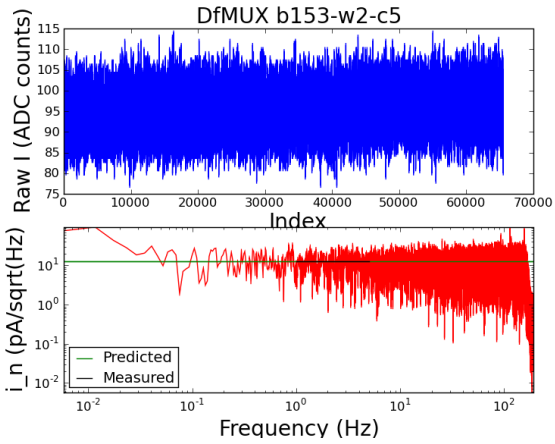
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 830241 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.459
Voltage bias is : 7.986 uV_RMS
R normal is : 1.51 ohm
R is : 1.51 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.232666015625 V
SQUID current bias : 5.71716308594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.25657921611 pA/sqrt(Hz)
20 ohms noise : 1.87253304926 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.72584582128 pA/sqrt(Hz)
Current bias shot noise : 4.40336358493 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.46972262515 pA/sqrt(Hz)
Carrier shot noise : 2.60168170269 pA/sqrt(Hz)
Carrier digitization noise : 0.291677644884 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.54901965155 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.64787985164 pA/sqrt(Hz)

Predicted noise : 12.6126859603 pA/sqrt(Hz)
Measured noise : 12.8433172881 pA/sqrt(Hz)
Standard deviation : 6.60013601787 pA/sqrt(Hz)
Measured/predicted : 1.01828566322



b153-w2-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

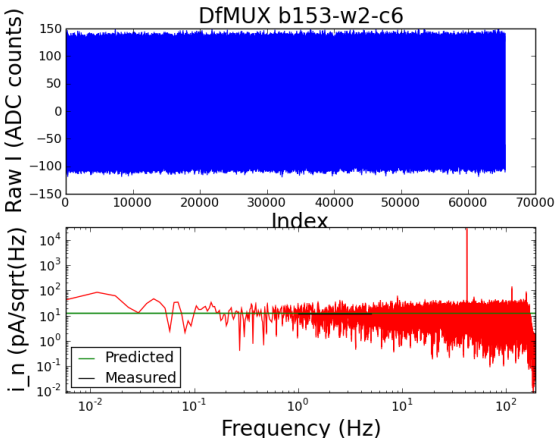
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 944970 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.406
Voltage bias is : 7.986 uV_RMS
R normal is : 1.66 ohm
R is : 1.66 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.232666015625 V
SQUID current bias : 5.71716308594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.37229846609 pA/sqrt(Hz)
20 ohms noise : 1.939071618 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.72584582128 pA/sqrt(Hz)
Current bias shot noise : 4.55983265804 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.24655491806 pA/sqrt(Hz)
Carrier shot noise : 2.48135323068 pA/sqrt(Hz)
Carrier digitization noise : 0.26532123119 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.3973412473 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.29416337061 pA/sqrt(Hz)

Predicted noise : 12.4011563725 pA/sqrt(Hz)
Measured noise : 11.7779265395 pA/sqrt(Hz)
Standard deviation : 6.35119339623 pA/sqrt(Hz)
Measured/predicted : 0.949744216247



b153-w2-c7

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

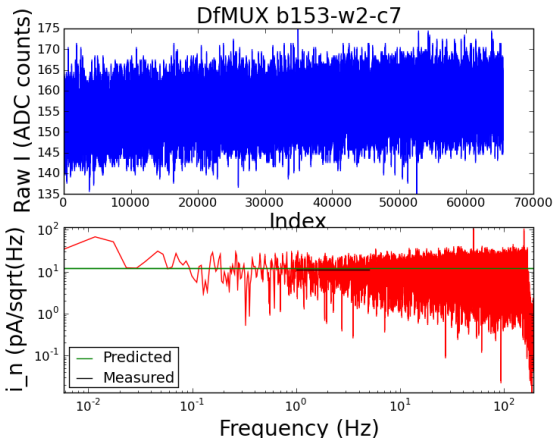
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

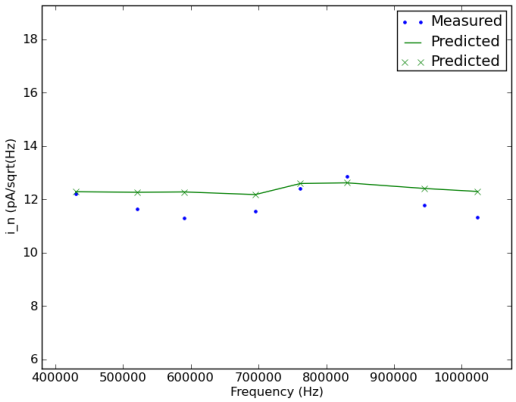
Demod gain is : 2
Demod frequency is : 1023519 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.332
Voltage bias is : 7.986 uV_RMS
R normal is : 1.75 ohm
R is : 1.75 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.232666015625 V
SQUID current bias : 5.71716308594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.45744742334 pA/sqrt(Hz)
20 ohms noise : 1.98803226842 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.72584582128 pA/sqrt(Hz)
Current bias shot noise : 4.67496629759 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.13101780799 pA/sqrt(Hz)
Carrier shot noise : 2.41670484042 pA/sqrt(Hz)
Carrier digitization noise : 0.2516761393 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.16788321457 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.10412355105 pA/sqrt(Hz)

Predicted noise : 12.2887135726 pA/sqrt(Hz)
Measured noise : 11.3192994432 pA/sqrt(Hz)
Standard deviation : 5.92990597703 pA/sqrt(Hz)
Measured/predicted : 0.921113457187



b153-w2


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
18
16
14
12
10
8
6
400000
500000
600000
700000
800000
900000
1000000

b153-w3-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

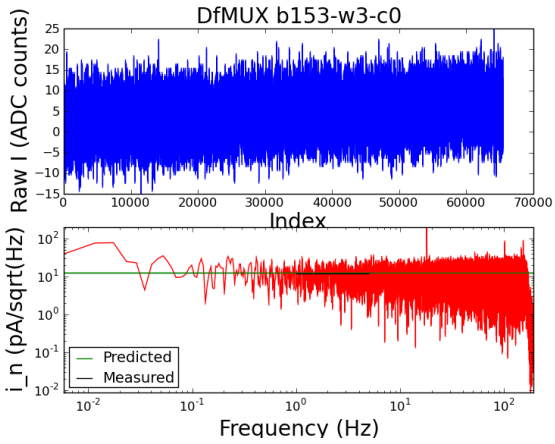
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 380394 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.501
Voltage bias is : 7.986 uV_RMS
R normal is : 1.55 ohm
R is : 1.55 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.92371133403 pA/sqrt(Hz)
20 ohms noise : 1.68113401707 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.67763471219 pA/sqrt(Hz)
Current bias shot noise : 3.99076791511 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.40598784773 pA/sqrt(Hz)
Carrier shot noise : 2.5678921945 pA/sqrt(Hz)
Carrier digitization noise : 0.284150479855 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.66308914158 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.54855252093 pA/sqrt(Hz)

Predicted noise : 12.3008271301 pA/sqrt(Hz)
Measured noise : 11.6649116894 pA/sqrt(Hz)
Standard deviation : 6.30464823379 pA/sqrt(Hz)
Measured/predicted : 0.948303034099



b153-w3-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

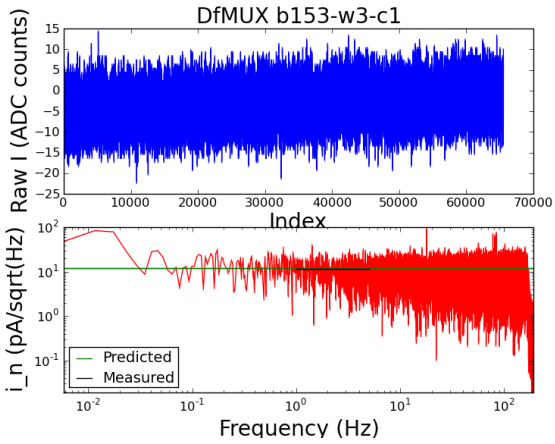
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 469851 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.431
Voltage bias is : 7.986 uV_RMS
R normal is : 1.62 ohm
R is : 1.62 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.97253020886 pA/sqrt(Hz)
20 ohms noise : 1.70920487009 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.67763471219 pA/sqrt(Hz)
Current bias shot noise : 4.05740404196 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.30202540986 pA/sqrt(Hz)
Carrier shot noise : 2.51180042161 pA/sqrt(Hz)
Carrier digitization noise : 0.271872372701 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.4700484724 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.38366565593 pA/sqrt(Hz)

Predicted noise : 12.1653368758 pA/sqrt(Hz)
Measured noise : 11.402643963 pA/sqrt(Hz)
Standard deviation : 5.98997066814 pA/sqrt(Hz)
Measured/predicted : 0.93730605896



b153-w3-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

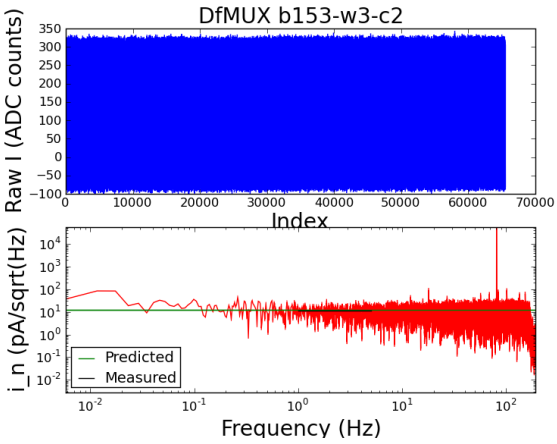
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 631053 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.457
Voltage bias is : 7.986 uV_RMS
R normal is : 1.59 ohm
R is : 1.59 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.08332385993 pA/sqrt(Hz)
20 ohms noise : 1.77291121946 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.67763471219 pA/sqrt(Hz)
Current bias shot noise : 4.20863365985 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.34545985156 pA/sqrt(Hz)
Carrier shot noise : 2.53538591954 pA/sqrt(Hz)
Carrier digitization noise : 0.27700204011 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.54346016914 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.45299737095 pA/sqrt(Hz)

Predicted noise : 12.3230958957 pA/sqrt(Hz)
Measured noise : 11.0418908619 pA/sqrt(Hz)
Standard deviation : 5.47782931644 pA/sqrt(Hz)
Measured/predicted : 0.896032211009



b153-w3-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

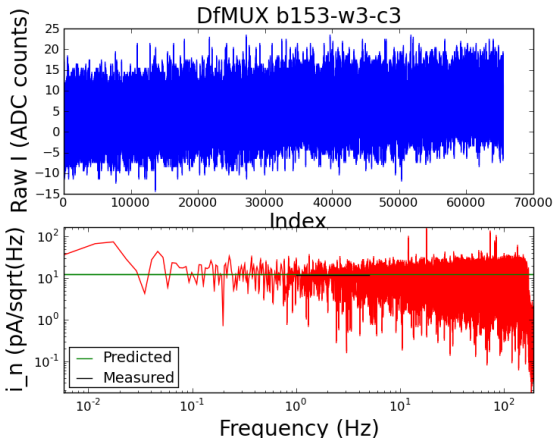
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 710043 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.502
Voltage bias is : 7.986 uV_RMS
R normal is : 1.56 ohm
R is : 1.56 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.14752898293 pA/sqrt(Hz)
20 ohms noise : 1.80982916519 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.67763471219 pA/sqrt(Hz)
Current bias shot noise : 4.29627149943 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.3905648487 pA/sqrt(Hz)
Carrier shot noise : 2.55964853857 pA/sqrt(Hz)
Carrier digitization noise : 0.28232900242 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.66574559026 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.52431954501 pA/sqrt(Hz)

Predicted noise : 12.4571989459 pA/sqrt(Hz)
Measured noise : 12.0332321575 pA/sqrt(Hz)
Standard deviation : 6.07923799409 pA/sqrt(Hz)
Measured/predicted : 0.965966122059



b153-w3-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

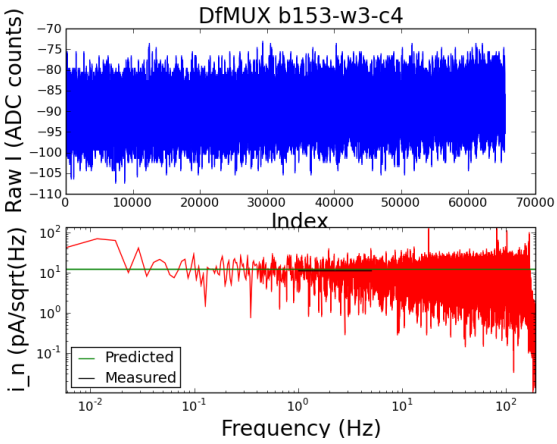
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 811617 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.416
Voltage bias is : 7.986 uV_RMS
R normal is : 1.76 ohm
R is : 1.76 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.2388322258 pA/sqrt(Hz)
20 ohms noise : 1.86232852984 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.67763471219 pA/sqrt(Hz)
Current bias shot noise : 4.42089736381 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.11890975226 pA/sqrt(Hz)
Carrier shot noise : 2.40982942154 pA/sqrt(Hz)
Carrier digitization noise : 0.250246161236 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.42668556183 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.08391263228 pA/sqrt(Hz)

Predicted noise : 12.1411069291 pA/sqrt(Hz)
Measured noise : 11.4321879971 pA/sqrt(Hz)
Standard deviation : 5.91622345868 pA/sqrt(Hz)
Measured/predicted : 0.94161002484



b153-w3-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

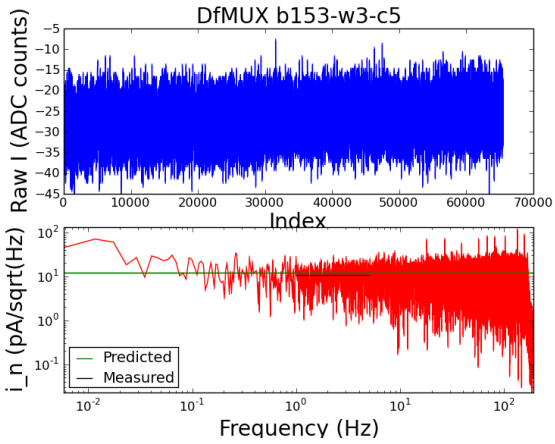
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 874749 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.382
Voltage bias is : 7.986 uV_RMS
R normal is : 1.66 ohm
R is : 1.66 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.30019168821 pA/sqrt(Hz)
20 ohms noise : 1.89761022072 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.67763471219 pA/sqrt(Hz)
Current bias shot noise : 4.50465097212 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.24655491806 pA/sqrt(Hz)
Carrier shot noise : 2.48135323068 pA/sqrt(Hz)
Carrier digitization noise : 0.26532123119 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.32540457383 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.29416337061 pA/sqrt(Hz)

Predicted noise : 12.3346850683 pA/sqrt(Hz)
Measured noise : 10.9846995943 pA/sqrt(Hz)
Standard deviation : 5.74891248071 pA/sqrt(Hz)
Measured/predicted : 0.890553713648



b153-w3-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

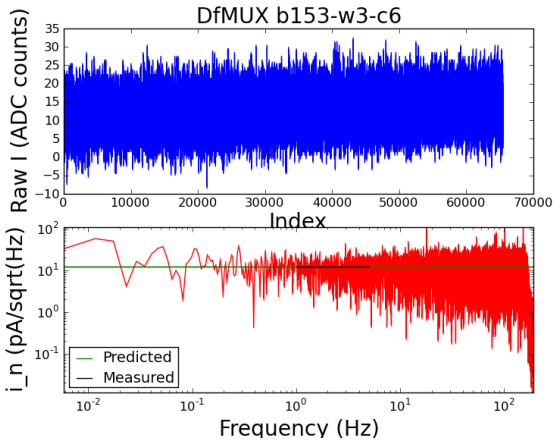
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

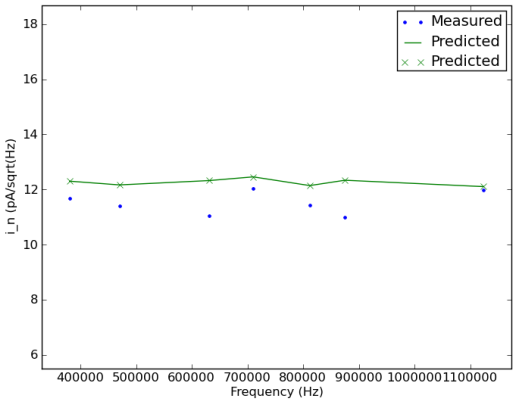
Demod gain is : 2
Demod frequency is : 1123656 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.366
Voltage bias is : 7.986 uV_RMS
R normal is : 1.99 ohm
R is : 1.99 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.57231580024 pA/sqrt(Hz)
20 ohms noise : 2.05408158514 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.67763471219 pA/sqrt(Hz)
Current bias shot noise : 4.8760912585 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 1.87401063516 pA/sqrt(Hz)
Carrier shot noise : 2.26629321241 pA/sqrt(Hz)
Carrier digitization noise : 0.221323238078 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.27618409097 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.66197489846 pA/sqrt(Hz)

Predicted noise : 12.1033221607 pA/sqrt(Hz)
Measured noise : 11.9711963628 pA/sqrt(Hz)
Standard deviation : 6.22828096331 pA/sqrt(Hz)
Measured/predicted : 0.989083509786



b153-w3


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
18
16
14
12
10
8
6
400000
500000
600000
700000
800000
900000
1000000
1100000

b154-w0-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

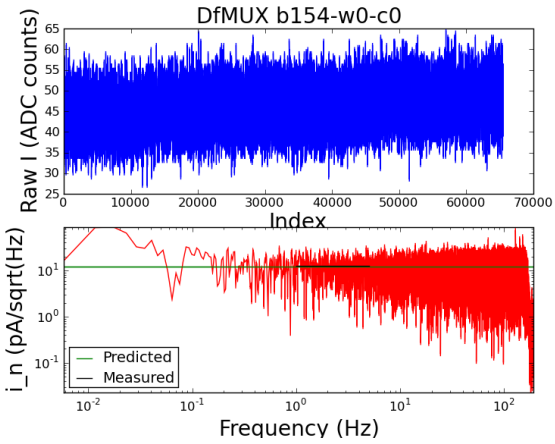
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 427917 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.509
Voltage bias is : 7.986 uV_RMS
R normal is : 1.59 ohm
R is : 1.59 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.249328613281 V
SQUID current bias : 5.52874755859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.94847140507 pA/sqrt(Hz)
20 ohms noise : 1.69537105792 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.7865763464 pA/sqrt(Hz)
Current bias shot noise : 3.92051310421 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.34545985156 pA/sqrt(Hz)
Carrier shot noise : 2.53538591954 pA/sqrt(Hz)
Carrier digitization noise : 0.27700204011 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.68426712233 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.45299737095 pA/sqrt(Hz)

Predicted noise : 12.2289689578 pA/sqrt(Hz)
Measured noise : 12.3740963961 pA/sqrt(Hz)
Standard deviation : 6.40489703871 pA/sqrt(Hz)
Measured/predicted : 1.0118675122



b154-w0-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

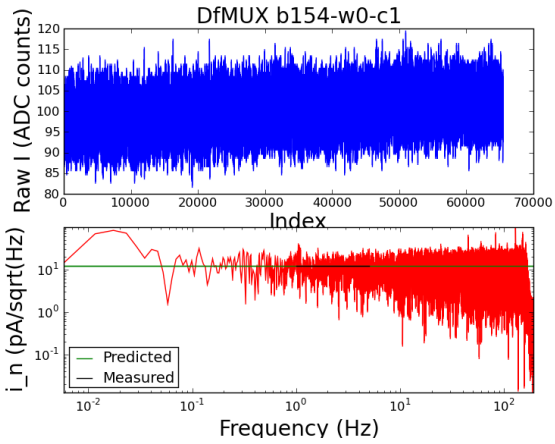
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 512388 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.453
Voltage bias is : 7.986 uV_RMS
R normal is : 1.64 ohm
R is : 1.64 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.249328613281 V
SQUID current bias : 5.52874755859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.99899700366 pA/sqrt(Hz)
20 ohms noise : 1.7244232771 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.7865763464 pA/sqrt(Hz)
Current bias shot noise : 3.98769580471 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.27395192925 pA/sqrt(Hz)
Carrier shot noise : 2.49643758379 pA/sqrt(Hz)
Carrier digitization noise : 0.26855685596 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.53230458831 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.33850519769 pA/sqrt(Hz)

Predicted noise : 12.1433801247 pA/sqrt(Hz)
Measured noise : 12.1204863855 pA/sqrt(Hz)
Standard deviation : 6.18712491498 pA/sqrt(Hz)
Measured/predicted : 0.998114714439



b154-w0-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

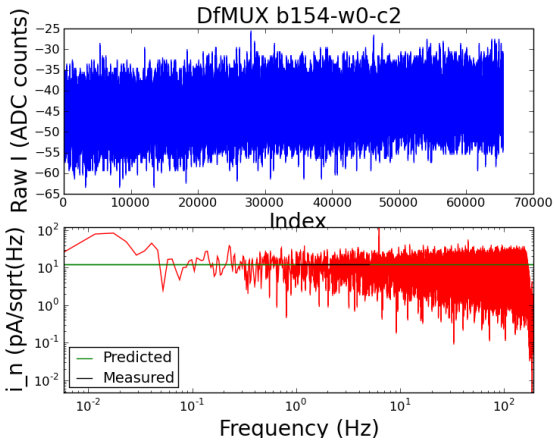
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 588882 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.43
Voltage bias is : 7.986 uV_RMS
R normal is : 1.63 ohm
R is : 1.63 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.249328613281 V
SQUID current bias : 5.52874755859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.05163596116 pA/sqrt(Hz)
20 ohms noise : 1.75469067767 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.7865763464 pA/sqrt(Hz)
Current bias shot noise : 4.05768858888 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.28790255459 pA/sqrt(Hz)
Carrier shot noise : 2.50408365861 pA/sqrt(Hz)
Carrier digitization noise : 0.270204444034 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.46718132289 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.36098152964 pA/sqrt(Hz)

Predicted noise : 12.1883621905 pA/sqrt(Hz)
Measured noise : 12.3282244613 pA/sqrt(Hz)
Standard deviation : 6.3996535103 pA/sqrt(Hz)
Measured/predicted : 1.01147506684



b154-w0-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

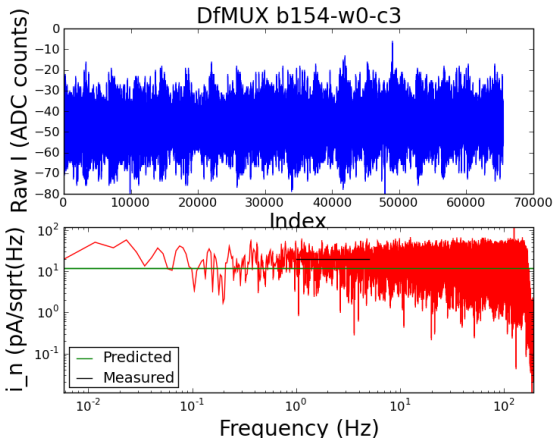
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 679236 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.408
Voltage bias is : 7.986 uV_RMS
R normal is : 1.68 ohm
R is : 1.68 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.249328613281 V
SQUID current bias : 5.52874755859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.12175401462 pA/sqrt(Hz)
20 ohms noise : 1.79500855841 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.7865763464 pA/sqrt(Hz)
Current bias shot noise : 4.15092291598 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.21981021665 pA/sqrt(Hz)
Carrier shot noise : 2.46653904914 pA/sqrt(Hz)
Carrier digitization noise : 0.262162645104 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.40323877465 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.2506157374 pA/sqrt(Hz)

Predicted noise : 12.1439528218 pA/sqrt(Hz)
Measured noise : 20.177855026 pA/sqrt(Hz)
Standard deviation : 10.7005555675 pA/sqrt(Hz)
Measured/predicted : 1.66155578189



b154-w0-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

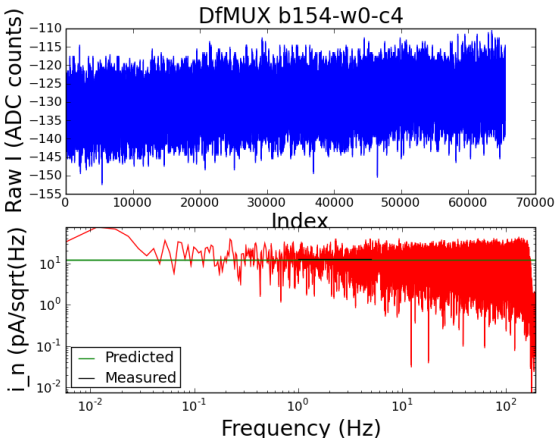
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 758955 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.476
Voltage bias is : 7.986 uV_RMS
R normal is : 1.57 ohm
R is : 1.57 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.249328613281 V
SQUID current bias : 5.52874755859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.19031247396 pA/sqrt(Hz)
20 ohms noise : 1.83442967253 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.7865763464 pA/sqrt(Hz)
Current bias shot noise : 4.24208348745 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.37533832101 pA/sqrt(Hz)
Carrier shot noise : 2.55148376964 pA/sqrt(Hz)
Carrier digitization noise : 0.280530728519 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.59579455582 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.50031846458 pA/sqrt(Hz)

Predicted noise : 12.4343621566 pA/sqrt(Hz)
Measured noise : 12.885474309 pA/sqrt(Hz)
Standard deviation : 6.56837664932 pA/sqrt(Hz)
Measured/predicted : 1.03627947673



b154-w0-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

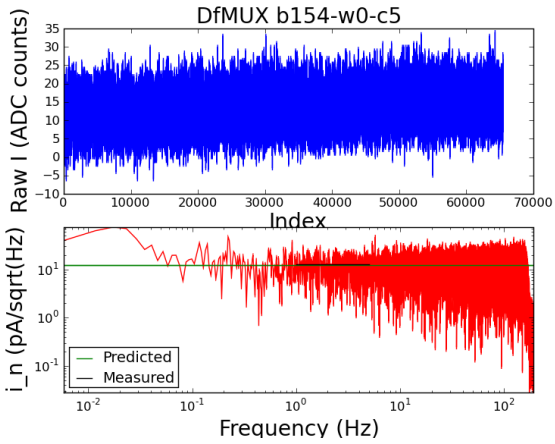
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 859341 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.428
Voltage bias is : 7.986 uV_RMS
R normal is : 1.72 ohm
R is : 1.72 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.249328613281 V
SQUID current bias : 5.52874755859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.28490503255 pA/sqrt(Hz)
20 ohms noise : 1.88882039371 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.7865763464 pA/sqrt(Hz)
Current bias shot noise : 4.36786098858 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.16818672324 pA/sqrt(Hz)
Carrier shot noise : 2.43768964677 pA/sqrt(Hz)
Carrier digitization noise : 0.256065839404 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.46143700468 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.16581029677 pA/sqrt(Hz)

Predicted noise : 12.2230861577 pA/sqrt(Hz)
Measured noise : 12.8756624518 pA/sqrt(Hz)
Standard deviation : 6.68676551066 pA/sqrt(Hz)
Measured/predicted : 1.05338883205



b154-w0-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

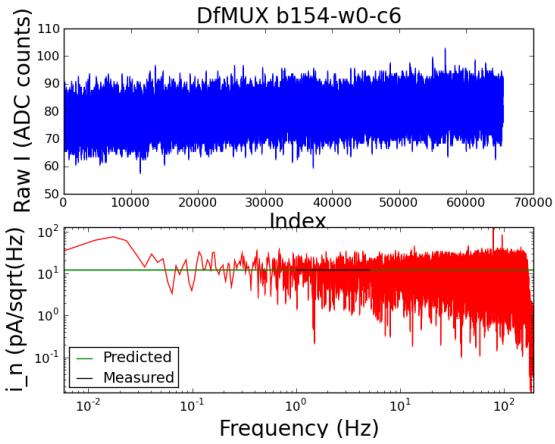
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 946806 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.39
Voltage bias is : 7.986 uV_RMS
R normal is : 1.74 ohm
R is : 1.74 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.249328613281 V
SQUID current bias : 5.52874755859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.37423591401 pA/sqrt(Hz)
20 ohms noise : 1.94018565055 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.7865763464 pA/sqrt(Hz)
Current bias shot noise : 4.48664216135 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.14326503677 pA/sqrt(Hz)
Carrier shot noise : 2.42363944532 pA/sqrt(Hz)
Carrier digitization noise : 0.253122553894 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.34962819186 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.12450845249 pA/sqrt(Hz)

Predicted noise : 12.2450701223 pA/sqrt(Hz)
Measured noise : 12.1427512896 pA/sqrt(Hz)
Standard deviation : 6.50074648792 pA/sqrt(Hz)
Measured/predicted : 0.991644079476



b154-w0-c7

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

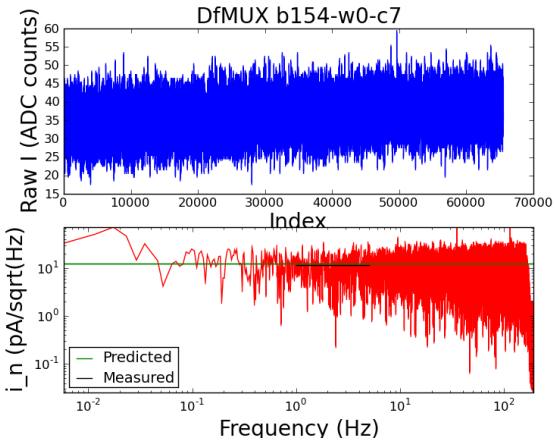
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

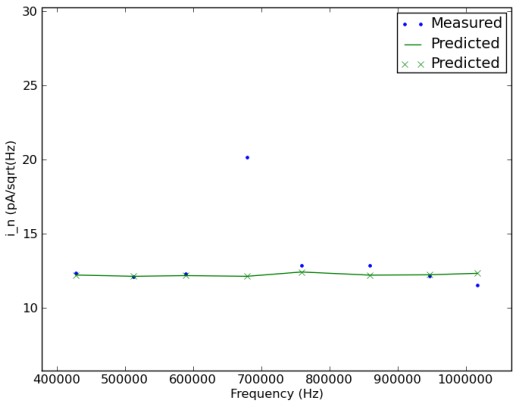
Demod gain is : 2
Demod frequency is : 1016985 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.342
Voltage bias is : 7.986 uV_RMS
R normal is : 1.7 ohm
R is : 1.7 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.249328613281 V
SQUID current bias : 5.52874755859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.45019211602 pA/sqrt(Hz)
20 ohms noise : 1.98386046671 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.7865763464 pA/sqrt(Hz)
Current bias shot noise : 4.58763933733 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.19369480234 pA/sqrt(Hz)
Carrier shot noise : 2.45198706935 pA/sqrt(Hz)
Carrier digitization noise : 0.259078378691 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.20028984273 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.20783887004 pA/sqrt(Hz)

Predicted noise : 12.3459619652 pA/sqrt(Hz)
Measured noise : 11.5751120945 pA/sqrt(Hz)
Standard deviation : 6.09977038248 pA/sqrt(Hz)
Measured/predicted : 0.937562591491



b154-w0


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz))
Frequency (Hz)
30
25
20
15
10
400000
500000
600000
700000
800000
900000
1000000

b154-w1-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

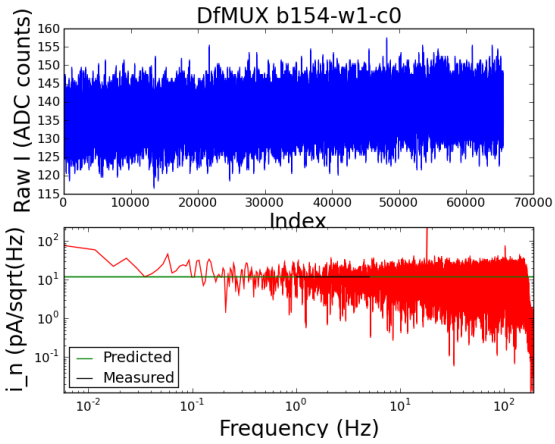
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 371430 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.504
Voltage bias is : 7.986 uV_RMS
R normal is : 1.6 ohm
R is : 1.6 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.210876464844 V
SQUID current bias : 5.36468505859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.91934492474 pA/sqrt(Hz)
20 ohms noise : 1.67862333172 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.64304544296 pA/sqrt(Hz)
Current bias shot noise : 3.82375568232 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.33080072749 pA/sqrt(Hz)
Carrier shot noise : 2.52745041989 pA/sqrt(Hz)
Carrier digitization noise : 0.275270777359 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.67105056186 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.4296702484 pA/sqrt(Hz)

Predicted noise : 12.1470598568 pA/sqrt(Hz)
Measured noise : 11.9137131972 pA/sqrt(Hz)
Standard deviation : 6.2257330464 pA/sqrt(Hz)
Measured/predicted : 0.98078986501



b154-w1-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

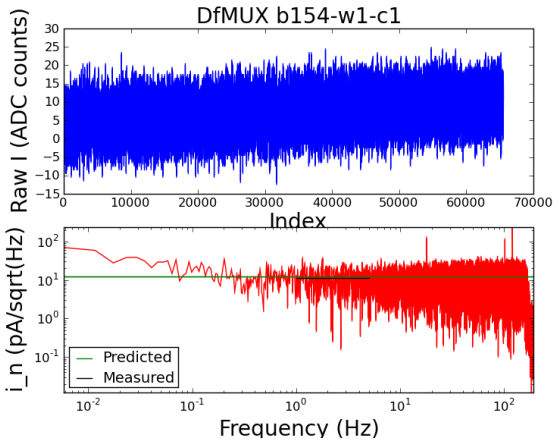
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 455712 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.47
Voltage bias is : 7.986 uV_RMS
R normal is : 1.61 ohm
R is : 1.61 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.210876464844 V
SQUID current bias : 5.36468505859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.96419004054 pA/sqrt(Hz)
20 ohms noise : 1.70440927331 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.64304544296 pA/sqrt(Hz)
Current bias shot noise : 3.88249377967 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.31632370433 pA/sqrt(Hz)
Carrier shot noise : 2.51958896875 pA/sqrt(Hz)
Carrier digitization noise : 0.273561020978 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.57938262381 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.40656079818 pA/sqrt(Hz)

Predicted noise : 12.1417770778 pA/sqrt(Hz)
Measured noise : 11.4094582431 pA/sqrt(Hz)
Standard deviation : 6.14615465083 pA/sqrt(Hz)
Measured/predicted : 0.939686025367



b154-w1-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

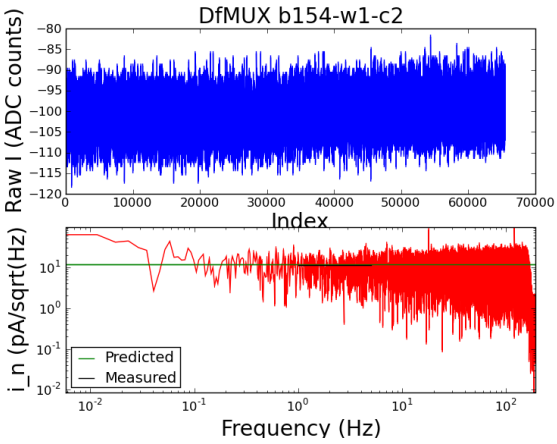
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 552291 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.423
Voltage bias is : 7.986 uV_RMS
R normal is : 1.69 ohm
R is : 1.69 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.210876464844 V
SQUID current bias : 5.36468505859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.02566252855 pA/sqrt(Hz)
20 ohms noise : 1.73975595391 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.64304544296 pA/sqrt(Hz)
Current bias shot noise : 3.96301039602 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.20667524496 pA/sqrt(Hz)
Carrier shot noise : 2.45923076923 pA/sqrt(Hz)
Carrier digitization noise : 0.260611386849 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.44701721449 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.22913238429 pA/sqrt(Hz)

Predicted noise : 12.0199382655 pA/sqrt(Hz)
Measured noise : 11.236587593 pA/sqrt(Hz)
Standard deviation : 5.91722284155 pA/sqrt(Hz)
Measured/predicted : 0.934829060256



b154-w1-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

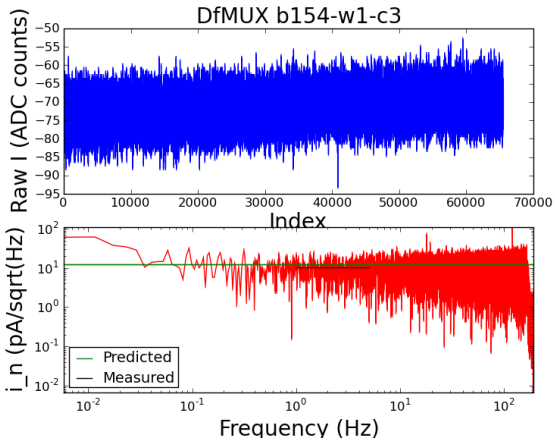
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 624378 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.405
Voltage bias is : 7.986 uV_RMS
R normal is : 1.6 ohm
R is : 1.6 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.210876464844 V
SQUID current bias : 5.36468505859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.07818534218 pA/sqrt(Hz)
20 ohms noise : 1.76995657176 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.64304544296 pA/sqrt(Hz)
Current bias shot noise : 4.03180473594 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.33080072749 pA/sqrt(Hz)
Carrier shot noise : 2.52745041989 pA/sqrt(Hz)
Carrier digitization noise : 0.275270777359 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.39438703638 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.4296702484 pA/sqrt(Hz)

Predicted noise : 12.2086691919 pA/sqrt(Hz)
Measured noise : 10.2642498857 pA/sqrt(Hz)
Standard deviation : 5.26657575532 pA/sqrt(Hz)
Measured/predicted : 0.840734540704



b154-w1-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

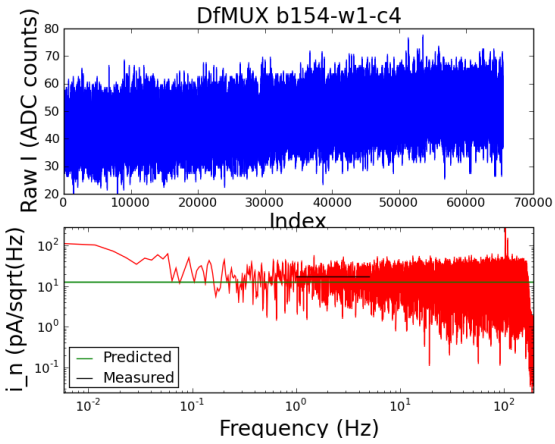
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 793674 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.916
Voltage bias is : 7.986 uV_RMS
R normal is : 1.56 ohm
R is : 1.56 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.210876464844 V
SQUID current bias : 5.36468505859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.22202162327 pA/sqrt(Hz)
20 ohms noise : 1.85266243338 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.64304544296 pA/sqrt(Hz)
Current bias shot noise : 4.22020138358 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.3905648487 pA/sqrt(Hz)
Carrier shot noise : 2.55964853857 pA/sqrt(Hz)
Carrier digitization noise : 0.28232900242 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 3.60092916009 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.52431954501 pA/sqrt(Hz)

Predicted noise : 12.6850679537 pA/sqrt(Hz)
Measured noise : 17.5050356246 pA/sqrt(Hz)
Standard deviation : 9.11417226484 pA/sqrt(Hz)
Measured/predicted : 1.37997176589



b154-w1-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

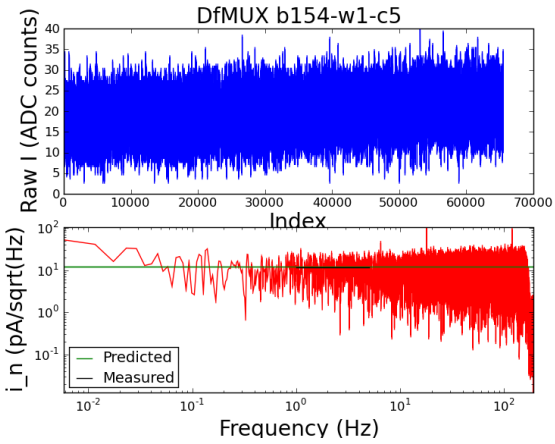
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 867507 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.413
Voltage bias is : 7.986 uV_RMS
R normal is : 1.64 ohm
R is : 1.64 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.210876464844 V
SQUID current bias : 5.36468505859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.29298213095 pA/sqrt(Hz)
20 ohms noise : 1.8934647253 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.64304544296 pA/sqrt(Hz)
Current bias shot noise : 4.31314540063 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.27395192925 pA/sqrt(Hz)
Carrier shot noise : 2.49643758379 pA/sqrt(Hz)
Carrier digitization noise : 0.26855685596 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.4179196612 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.33850519769 pA/sqrt(Hz)

Predicted noise : 12.3112152052 pA/sqrt(Hz)
Measured noise : 11.4649095275 pA/sqrt(Hz)
Standard deviation : 5.98886821237 pA/sqrt(Hz)
Measured/predicted : 0.93125734027



b154-w1-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

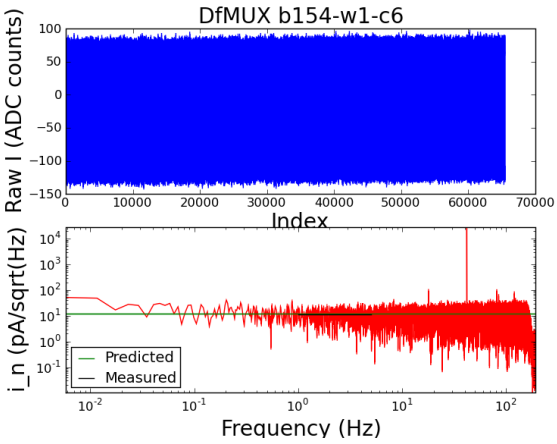
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

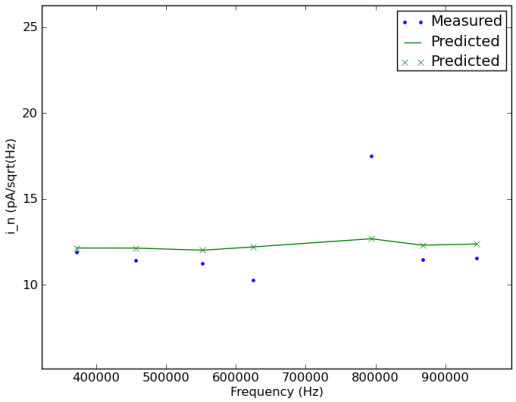
Demod gain is : 2
Demod frequency is : 945012 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.357
Voltage bias is : 7.986 uV_RMS
R normal is : 1.62 ohm
R is : 1.62 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.210876464844 V
SQUID current bias : 5.36468505859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.37234275778 pA/sqrt(Hz)
20 ohms noise : 1.93909708573 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.64304544296 pA/sqrt(Hz)
Current bias shot noise : 4.41709188713 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.30202540986 pA/sqrt(Hz)
Carrier shot noise : 2.51180042161 pA/sqrt(Hz)
Carrier digitization noise : 0.271872372701 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.24802402834 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.38366565593 pA/sqrt(Hz)

Predicted noise : 12.3796883326 pA/sqrt(Hz)
Measured noise : 11.5372955017 pA/sqrt(Hz)
Standard deviation : 5.88461931473 pA/sqrt(Hz)
Measured/predicted : 0.931953631772



b154-w1


Measured
Predicted
Predicted
25
20
15
10
i_n (pA/sqrt(Hz)
400000
500000
600000
700000
800000
900000
Frequency (Hz)

b154-w2-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

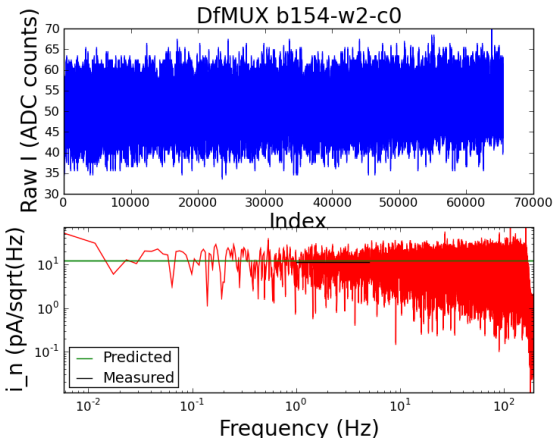
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 421176 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.504
Voltage bias is : 7.986 uV_RMS
R normal is : 1.56 ohm
R is : 1.56 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.199340820312 V
SQUID current bias : 7.00915527344 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.94479573469 pA/sqrt(Hz)
20 ohms noise : 1.69325754745 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.59747341558 pA/sqrt(Hz)
Current bias shot noise : 4.40880230582 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.3905648487 pA/sqrt(Hz)
Carrier shot noise : 2.55964853857 pA/sqrt(Hz)
Carrier digitization noise : 0.28232900242 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.67105056186 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.52431954501 pA/sqrt(Hz)

Predicted noise : 12.4210986602 pA/sqrt(Hz)
Measured noise : 11.2554580031 pA/sqrt(Hz)
Standard deviation : 5.84927572793 pA/sqrt(Hz)
Measured/predicted : 0.906156396551



b154-w2-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

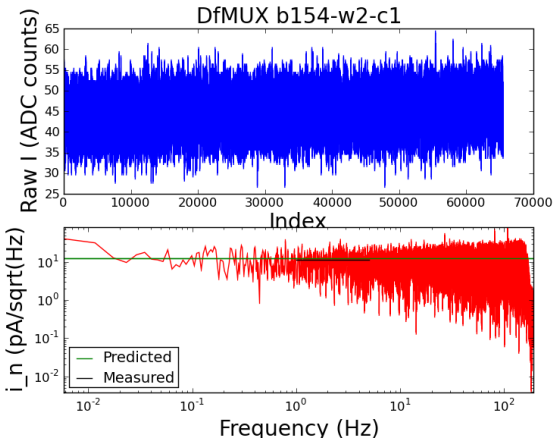
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 509052 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.441
Voltage bias is : 7.986 uV_RMS
R normal is : 1.63 ohm
R is : 1.63 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.199340820312 V
SQUID current bias : 7.00915527344 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.9968475626 pA/sqrt(Hz)
20 ohms noise : 1.72318734849 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.59747341558 pA/sqrt(Hz)
Current bias shot noise : 4.48673172421 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.28790255459 pA/sqrt(Hz)
Carrier shot noise : 2.50408365861 pA/sqrt(Hz)
Carrier digitization noise : 0.270204444034 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.49853901631 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.36098152964 pA/sqrt(Hz)

Predicted noise : 12.3002815461 pA/sqrt(Hz)
Measured noise : 11.1608961611 pA/sqrt(Hz)
Standard deviation : 6.08642083726 pA/sqrt(Hz)
Measured/predicted : 0.90736916218



b154-w2-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

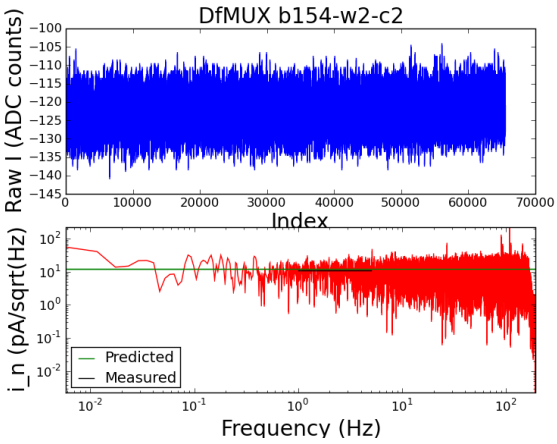
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 598479 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.419
Voltage bias is : 7.986 uV_RMS
R normal is : 1.73 ohm
R is : 1.73 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.199340820312 V
SQUID current bias : 7.00915527344 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.0586841487 pA/sqrt(Hz)
20 ohms noise : 1.7587433855 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.59747341558 pA/sqrt(Hz)
Current bias shot noise : 4.5793103979 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.15565385201 pA/sqrt(Hz)
Carrier shot noise : 2.4306340903 pA/sqrt(Hz)
Carrier digitization noise : 0.254585690043 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.43541991123 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.1450698472 pA/sqrt(Hz)

Predicted noise : 12.175087198 pA/sqrt(Hz)
Measured noise : 10.9833767556 pA/sqrt(Hz)
Standard deviation : 5.73887935092 pA/sqrt(Hz)
Measured/predicted : 0.902118939847



b154-w2-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

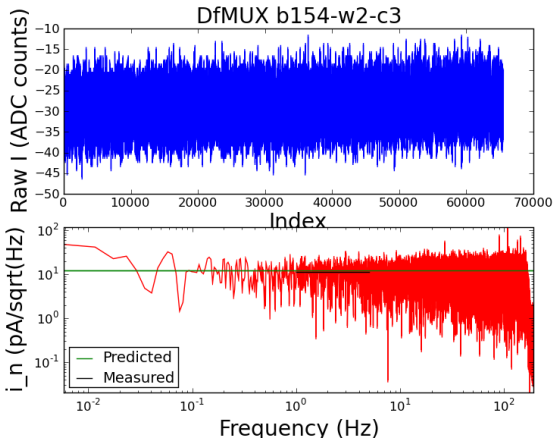
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 668166 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.406
Voltage bias is : 7.986 uV_RMS
R normal is : 1.67 ohm
R is : 1.67 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.199340820312 V
SQUID current bias : 7.00915527344 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.11271916452 pA/sqrt(Hz)
20 ohms noise : 1.7898135196 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.59747341558 pA/sqrt(Hz)
Current bias shot noise : 4.660208947 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.2331024934 pA/sqrt(Hz)
Carrier shot noise : 2.47391287441 pA/sqrt(Hz)
Carrier digitization noise : 0.263732481302 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.3973412473 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.27229176704 pA/sqrt(Hz)

Predicted noise : 12.3138549744 pA/sqrt(Hz)
Measured noise : 11.2740665021 pA/sqrt(Hz)
Standard deviation : 5.67365948132 pA/sqrt(Hz)
Measured/predicted : 0.915559467405



b154-w2-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

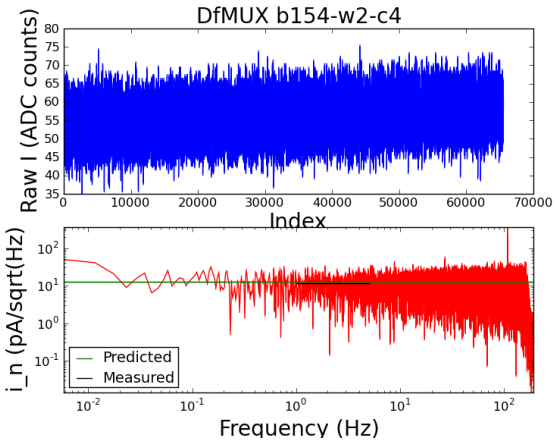
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 748797 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.476
Voltage bias is : 7.986 uV_RMS
R normal is : 1.5 ohm
R is : 1.5 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.199340820312 V
SQUID current bias : 7.00915527344 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.18124310896 pA/sqrt(Hz)
20 ohms noise : 1.82921478765 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.59747341558 pA/sqrt(Hz)
Current bias shot noise : 4.76279960233 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.48618744265 pA/sqrt(Hz)
Carrier shot noise : 2.61033956923 pA/sqrt(Hz)
Carrier digitization noise : 0.293622162517 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.59579455582 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.6733304373 pA/sqrt(Hz)

Predicted noise : 12.7303167014 pA/sqrt(Hz)
Measured noise : 11.6629611552 pA/sqrt(Hz)
Standard deviation : 6.04995701502 pA/sqrt(Hz)
Measured/predicted : 0.916156402767



b154-w2-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

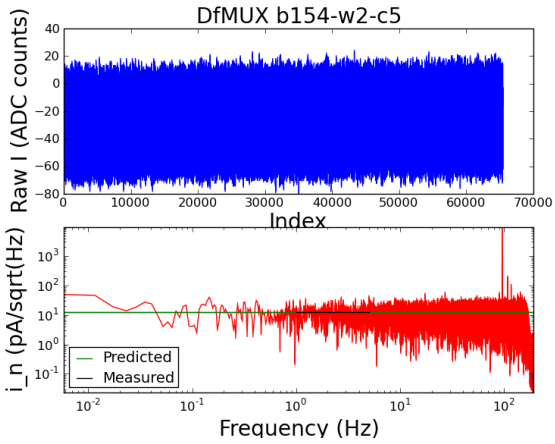
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 846993 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.404
Voltage bias is : 7.986 uV_RMS
R normal is : 1.69 ohm
R is : 1.69 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.199340820312 V
SQUID current bias : 7.00915527344 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.27279773067 pA/sqrt(Hz)
20 ohms noise : 1.88185869513 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.59747341558 pA/sqrt(Hz)
Current bias shot noise : 4.89987064687 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.20667524496 pA/sqrt(Hz)
Carrier shot noise : 2.45923076923 pA/sqrt(Hz)
Carrier digitization noise : 0.260611386849 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.39142917604 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.22913238429 pA/sqrt(Hz)

Predicted noise : 12.4272592603 pA/sqrt(Hz)
Measured noise : 12.1726050104 pA/sqrt(Hz)
Standard deviation : 6.52382781905 pA/sqrt(Hz)
Measured/predicted : 0.979508414156



b154-w2-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

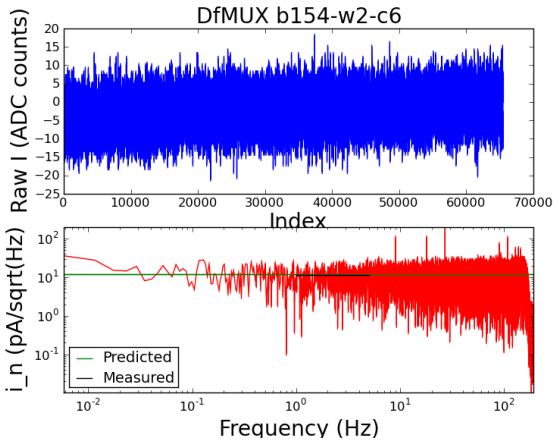
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

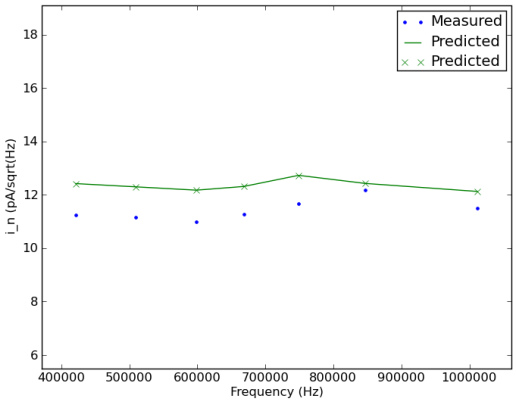
Demod gain is : 2
Demod frequency is : 1011693 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.331
Voltage bias is : 7.986 uV_RMS
R normal is : 2.0 ohm
R is : 2.0 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.199340820312 V
SQUID current bias : 7.00915527344 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.44433831092 pA/sqrt(Hz)
20 ohms noise : 1.98049452878 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.59747341558 pA/sqrt(Hz)
Current bias shot noise : 5.15669270649 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 1.86464058199 pA/sqrt(Hz)
Carrier shot noise : 2.26062037945 pA/sqrt(Hz)
Carrier digitization noise : 0.220216621888 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.164615868 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.64529909033 pA/sqrt(Hz)

Predicted noise : 12.1272278636 pA/sqrt(Hz)
Measured noise : 11.4911717279 pA/sqrt(Hz)
Standard deviation : 5.97535458699 pA/sqrt(Hz)
Measured/predicted : 0.947551398985



b154-w2


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
18
16
14
12
10
8
6
400000
500000
600000
700000
800000
900000
1000000

b154-w3-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

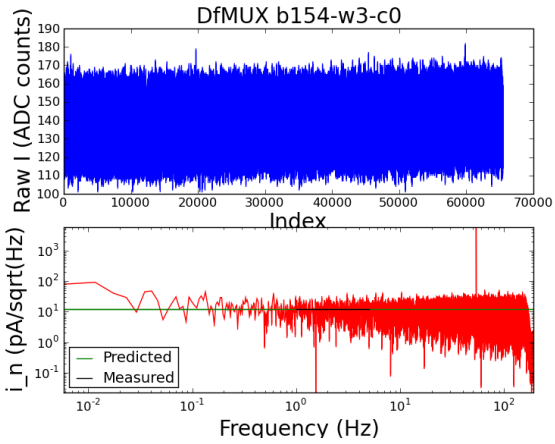
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 367212 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.516
Voltage bias is : 7.986 uV_RMS
R normal is : 1.58 ohm
R is : 1.58 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.246765136719 V
SQUID current bias : 6.57080078125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.91732405242 pA/sqrt(Hz)
20 ohms noise : 1.67746133014 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77736825876 pA/sqrt(Hz)
Current bias shot noise : 4.22889042203 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.36030453416 pA/sqrt(Hz)
Carrier shot noise : 2.54339663751 pA/sqrt(Hz)
Carrier digitization noise : 0.278755217579 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.702661728 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.47654560457 pA/sqrt(Hz)

Predicted noise : 12.3428932897 pA/sqrt(Hz)
Measured noise : 12.0815675988 pA/sqrt(Hz)
Standard deviation : 6.48346813316 pA/sqrt(Hz)
Measured/predicted : 0.978827841677



b154-w3-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

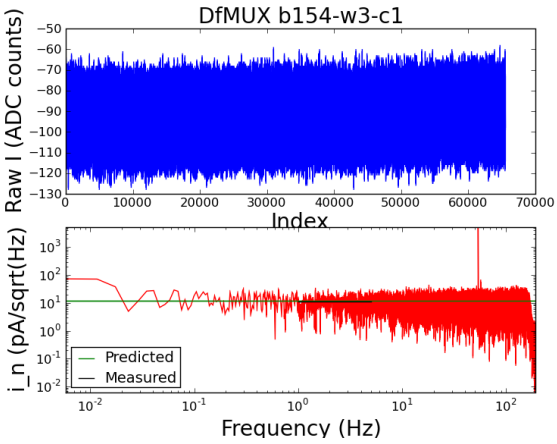
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 450729 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.464
Voltage bias is : 7.986 uV_RMS
R normal is : 1.62 ohm
R is : 1.62 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.246765136719 V
SQUID current bias : 6.57080078125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.96130579249 pA/sqrt(Hz)
20 ohms noise : 1.70275083068 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77736825876 pA/sqrt(Hz)
Current bias shot noise : 4.29264540982 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.30202540986 pA/sqrt(Hz)
Carrier shot noise : 2.51180042161 pA/sqrt(Hz)
Carrier digitization noise : 0.271872372701 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.56286559616 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.38366565593 pA/sqrt(Hz)

Predicted noise : 12.2752920097 pA/sqrt(Hz)
Measured noise : 11.0725987112 pA/sqrt(Hz)
Standard deviation : 5.90829863837 pA/sqrt(Hz)
Measured/predicted : 0.902023243314



b154-w3-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

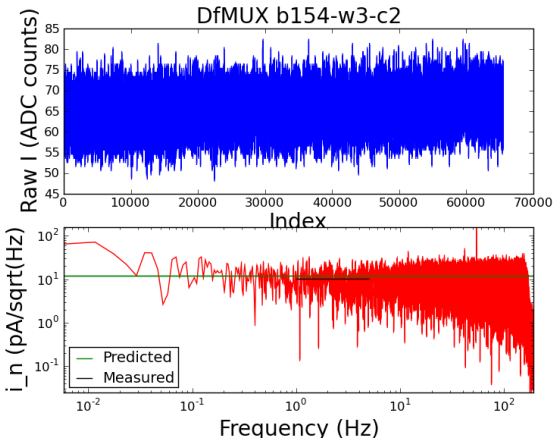
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 529710 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.423
Voltage bias is : 7.986 uV_RMS
R normal is : 1.64 ohm
R is : 1.64 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.246765136719 V
SQUID current bias : 6.57080078125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.01035702267 pA/sqrt(Hz)
20 ohms noise : 1.73095528803 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77736825876 pA/sqrt(Hz)
Current bias shot noise : 4.36374902181 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.27395192925 pA/sqrt(Hz)
Carrier shot noise : 2.49643758379 pA/sqrt(Hz)
Carrier digitization noise : 0.26855685596 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.44701721449 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.33850519769 pA/sqrt(Hz)

Predicted noise : 12.2570638857 pA/sqrt(Hz)
Measured noise : 10.2894749196 pA/sqrt(Hz)
Standard deviation : 5.68736082113 pA/sqrt(Hz)
Measured/predicted : 0.839473059416



b154-w3-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

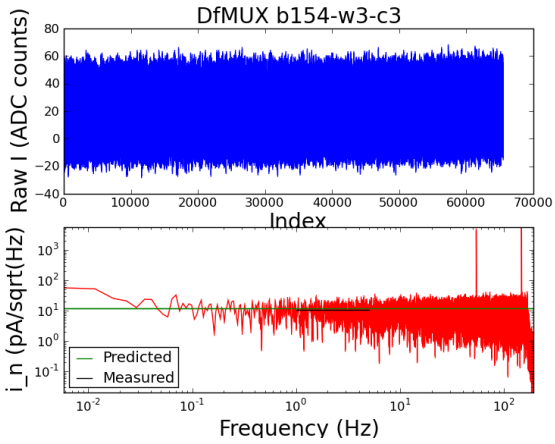
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 630825 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.385
Voltage bias is : 7.986 uV_RMS
R normal is : 1.8 ohm
R is : 1.8 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.246765136719 V
SQUID current bias : 6.57080078125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.08314758827 pA/sqrt(Hz)
20 ohms noise : 1.77280986326 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77736825876 pA/sqrt(Hz)
Current bias shot noise : 4.46926466565 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.07182286888 pA/sqrt(Hz)
Carrier shot noise : 2.38290310802 pA/sqrt(Hz)
Carrier digitization noise : 0.244685135431 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.33451788599 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.00476028617 pA/sqrt(Hz)

Predicted noise : 12.0411083536 pA/sqrt(Hz)
Measured noise : 10.5746803077 pA/sqrt(Hz)
Standard deviation : 5.40873713192 pA/sqrt(Hz)
Measured/predicted : 0.878214861721



b154-w3-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

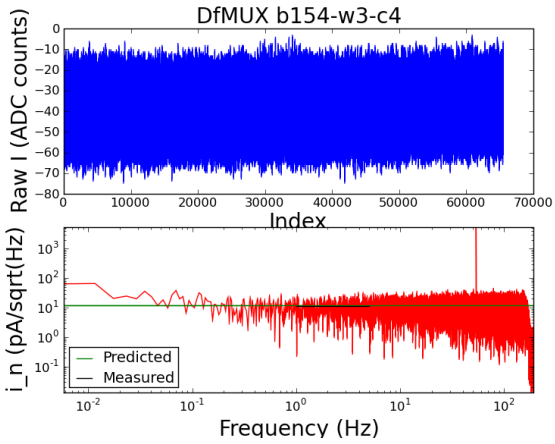
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 714396 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.457
Voltage bias is : 7.986 uV_RMS
R normal is : 1.72 ohm
R is : 1.72 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.246765136719 V
SQUID current bias : 6.57080078125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.15124493229 pA/sqrt(Hz)
20 ohms noise : 1.81196583606 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77736825876 pA/sqrt(Hz)
Current bias shot noise : 4.56797711607 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.16818672324 pA/sqrt(Hz)
Carrier shot noise : 2.43768964677 pA/sqrt(Hz)
Carrier digitization noise : 0.256065839404 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.54346016914 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.16581029677 pA/sqrt(Hz)

Predicted noise : 12.2647895289 pA/sqrt(Hz)
Measured noise : 11.0536646156 pA/sqrt(Hz)
Standard deviation : 6.07636599346 pA/sqrt(Hz)
Measured/predicted : 0.90125187958



b154-w3-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

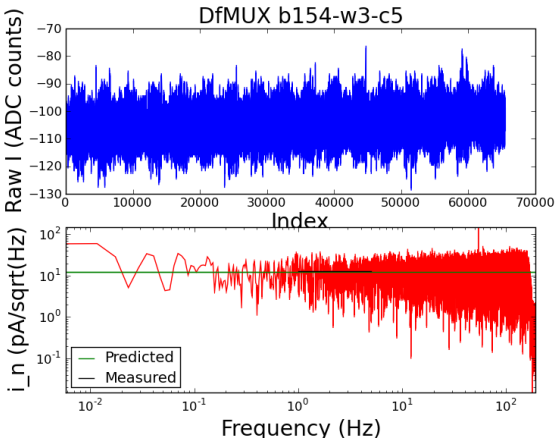
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 799047 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.414
Voltage bias is : 7.986 uV_RMS
R normal is : 1.82 ohm
R is : 1.82 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.246765136719 V
SQUID current bias : 6.57080078125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.22702565413 pA/sqrt(Hz)
20 ohms noise : 1.85553975112 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77736825876 pA/sqrt(Hz)
Current bias shot noise : 4.67782722631 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.0490555846 pA/sqrt(Hz)
Carrier shot noise : 2.36977406537 pA/sqrt(Hz)
Carrier digitization noise : 0.241996287788 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.4208451549 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.96616627188 pA/sqrt(Hz)

Predicted noise : 12.1580382961 pA/sqrt(Hz)
Measured noise : 13.1212779553 pA/sqrt(Hz)
Standard deviation : 7.00098901801 pA/sqrt(Hz)
Measured/predicted : 1.07922656894



b154-w3-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

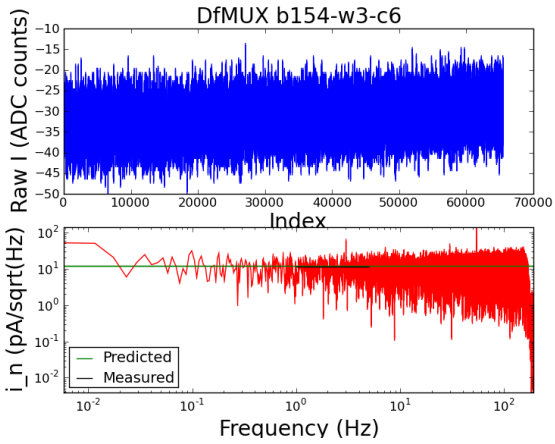
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 879132 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.391
Voltage bias is : 7.986 uV_RMS
R normal is : 1.83 ohm
R is : 1.83 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.246765136719 V
SQUID current bias : 6.57080078125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.30457610633 pA/sqrt(Hz)
20 ohms noise : 1.90013126114 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77736825876 pA/sqrt(Hz)
Current bias shot noise : 4.79024269975 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.03785855955 pA/sqrt(Hz)
Carrier shot noise : 2.36329040324 pA/sqrt(Hz)
Carrier digitization noise : 0.240673903702 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.35263860718 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.94710695772 pA/sqrt(Hz)

Predicted noise : 12.201983652 pA/sqrt(Hz)
Measured noise : 11.2140162931 pA/sqrt(Hz)
Standard deviation : 5.90635515527 pA/sqrt(Hz)
Measured/predicted : 0.919032233846



b154-w3-c7

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

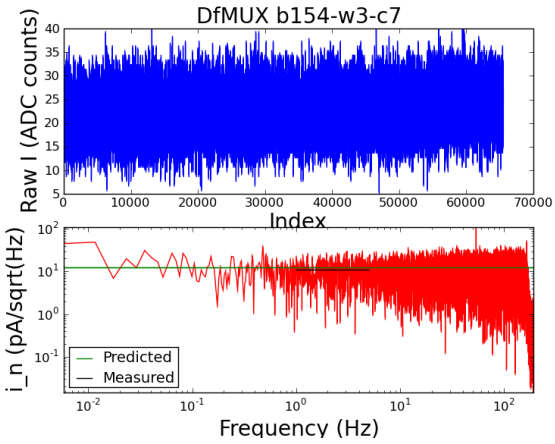
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

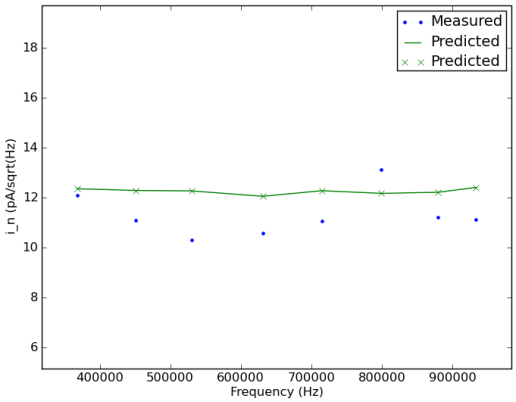
Demod gain is : 2
Demod frequency is : 933324 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.355
Voltage bias is : 7.986 uV_RMS
R normal is : 1.72 ohm
R is : 1.72 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.246765136719 V
SQUID current bias : 6.57080078125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.36006965612 pA/sqrt(Hz)
20 ohms noise : 1.93204005227 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77736825876 pA/sqrt(Hz)
Current bias shot noise : 4.87068496019 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.16818672324 pA/sqrt(Hz)
Carrier shot noise : 2.43768964677 pA/sqrt(Hz)
Carrier digitization noise : 0.256065839404 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.24171819817 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.16581029677 pA/sqrt(Hz)

Predicted noise : 12.3954674026 pA/sqrt(Hz)
Measured noise : 11.1093215135 pA/sqrt(Hz)
Standard deviation : 5.69436467702 pA/sqrt(Hz)
Measured/predicted : 0.896240629956



b154-w3


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
18
16
14
12
10
8
6
400000
500000
600000
700000
800000
900000

b155-w1-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

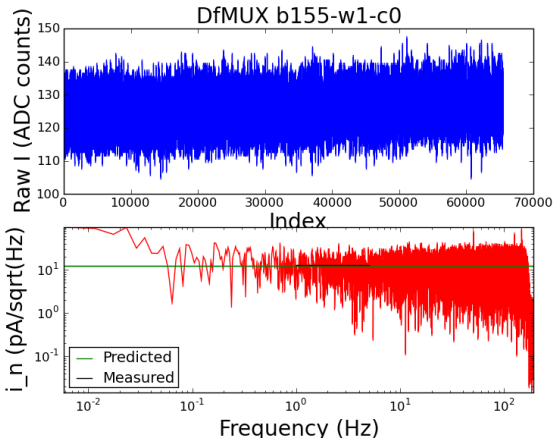
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 387135 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.506
Voltage bias is : 7.986 uV_RMS
R normal is : 1.58 ohm
R is : 1.58 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.341613769531 V
SQUID current bias : 6.31317138672 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.92705892309 pA/sqrt(Hz)
20 ohms noise : 1.68305888077 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.09123675245 pA/sqrt(Hz)
Current bias shot noise : 4.15898988457 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.36030453416 pA/sqrt(Hz)
Carrier shot noise : 2.54339663751 pA/sqrt(Hz)
Carrier digitization noise : 0.278755217579 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.67634501812 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.47654560457 pA/sqrt(Hz)

Predicted noise : 12.3656410219 pA/sqrt(Hz)
Measured noise : 12.7472002107 pA/sqrt(Hz)
Standard deviation : 7.03213705445 pA/sqrt(Hz)
Measured/predicted : 1.03085640187



b155-w1-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

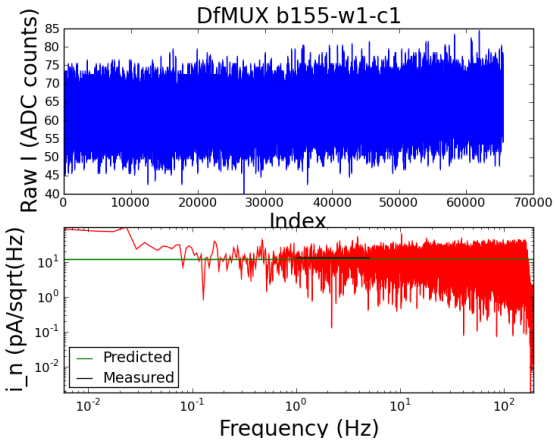
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 467883 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.438
Voltage bias is : 7.986 uV_RMS
R normal is : 1.67 ohm
R is : 1.67 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.341613769531 V
SQUID current bias : 6.31317138672 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.97135554998 pA/sqrt(Hz)
20 ohms noise : 1.70852944124 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.09123675245 pA/sqrt(Hz)
Current bias shot noise : 4.22192993054 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.2331024934 pA/sqrt(Hz)
Carrier shot noise : 2.47391287441 pA/sqrt(Hz)
Carrier digitization noise : 0.263732481302 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.49002608179 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.27229176704 pA/sqrt(Hz)

Predicted noise : 12.2011506645 pA/sqrt(Hz)
Measured noise : 13.1001694688 pA/sqrt(Hz)
Standard deviation : 7.0904009552 pA/sqrt(Hz)
Measured/predicted : 1.07368311638



b155-w1-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

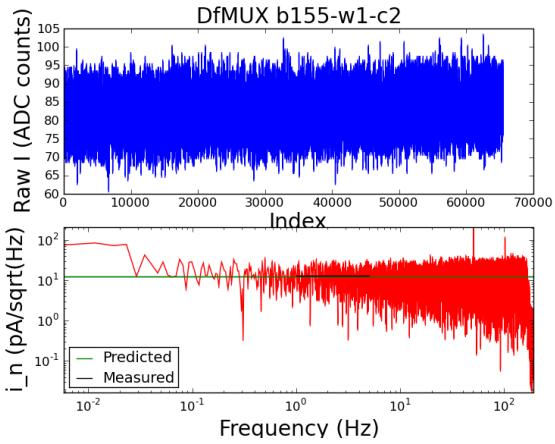
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 559284 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.428
Voltage bias is : 7.986 uV_RMS
R normal is : 1.65 ohm
R is : 1.65 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.341613769531 V
SQUID current bias : 6.31317138672 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.03051514572 pA/sqrt(Hz)
20 ohms noise : 1.74254620879 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.09123675245 pA/sqrt(Hz)
Current bias shot noise : 4.30598842295 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.26017040241 pA/sqrt(Hz)
Carrier shot noise : 2.48886112448 pA/sqrt(Hz)
Carrier digitization noise : 0.266929238652 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.46143700468 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.31623350689 pA/sqrt(Hz)

Predicted noise : 12.2782073727 pA/sqrt(Hz)
Measured noise : 13.1727565383 pA/sqrt(Hz)
Standard deviation : 6.78509092047 pA/sqrt(Hz)
Measured/predicted : 1.07285665883



b155-w1-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

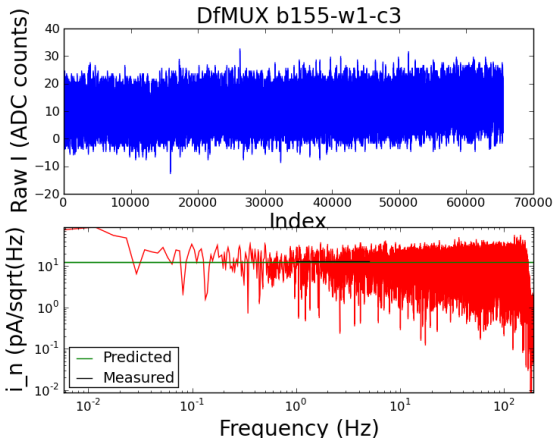
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 635034 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.415
Voltage bias is : 7.986 uV_RMS
R normal is : 1.59 ohm
R is : 1.59 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.341613769531 V
SQUID current bias : 6.31317138672 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.08641022397 pA/sqrt(Hz)
20 ohms noise : 1.77468587878 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.09123675245 pA/sqrt(Hz)
Current bias shot noise : 4.38540843845 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.34545985156 pA/sqrt(Hz)
Carrier shot noise : 2.53538591954 pA/sqrt(Hz)
Carrier digitization noise : 0.27700204011 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.42376711753 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.45299737095 pA/sqrt(Hz)

Predicted noise : 12.4244722424 pA/sqrt(Hz)
Measured noise : 13.0086232242 pA/sqrt(Hz)
Standard deviation : 7.16358053847 pA/sqrt(Hz)
Measured/predicted : 1.04701616056



b155-w1-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

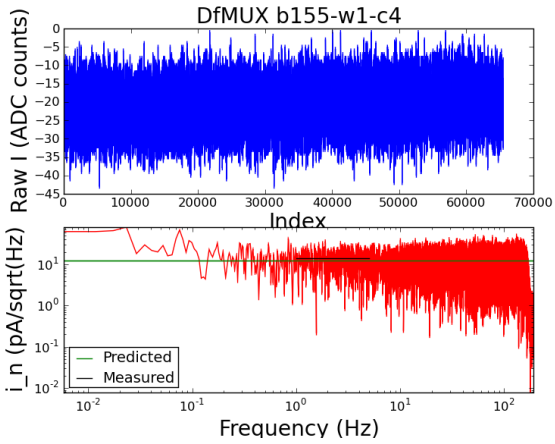
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 732033 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.464
Voltage bias is : 7.986 uV_RMS
R normal is : 1.68 ohm
R is : 1.68 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.341613769531 V
SQUID current bias : 6.31317138672 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.16648545185 pA/sqrt(Hz)
20 ohms noise : 1.82072913482 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.09123675245 pA/sqrt(Hz)
Current bias shot noise : 4.49918546567 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.21981021665 pA/sqrt(Hz)
Carrier shot noise : 2.46653904914 pA/sqrt(Hz)
Carrier digitization noise : 0.262162645104 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.56286559616 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.2506157374 pA/sqrt(Hz)

Predicted noise : 12.3627067972 pA/sqrt(Hz)
Measured noise : 14.0176957609 pA/sqrt(Hz)
Standard deviation : 7.25440067971 pA/sqrt(Hz)
Measured/predicted : 1.13386946652



b155-w1-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

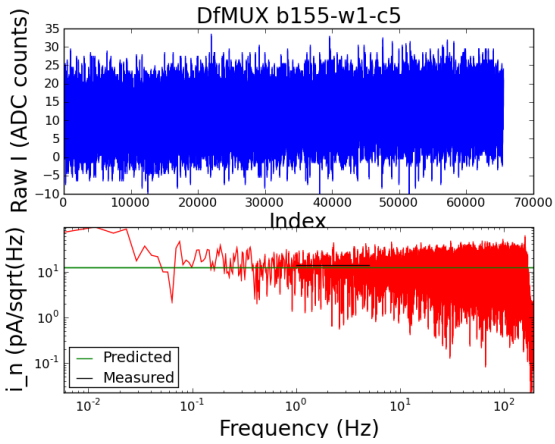
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

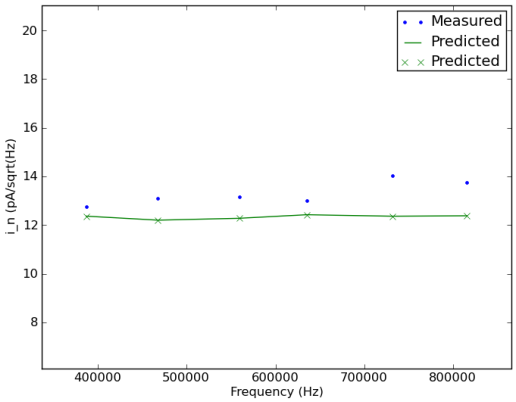
Demod gain is : 2
Demod frequency is : 815388 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.437
Voltage bias is : 7.986 uV_RMS
R normal is : 1.7 ohm
R is : 1.7 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.341613769531 V
SQUID current bias : 6.31317138672 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.24240127364 pA/sqrt(Hz)
20 ohms noise : 1.86438073234 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.09123675245 pA/sqrt(Hz)
Current bias shot noise : 4.6070524896 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.19369480234 pA/sqrt(Hz)
Carrier shot noise : 2.45198706935 pA/sqrt(Hz)
Carrier digitization noise : 0.259078378691 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.48718196198 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.20783887004 pA/sqrt(Hz)

Predicted noise : 12.3805106186 pA/sqrt(Hz)
Measured noise : 13.7600894772 pA/sqrt(Hz)
Standard deviation : 7.21285099868 pA/sqrt(Hz)
Measured/predicted : 1.11143149916



b155-w1


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
20
18
16
14
12
10
8
400000
500000
600000
700000
800000

b155-w2-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

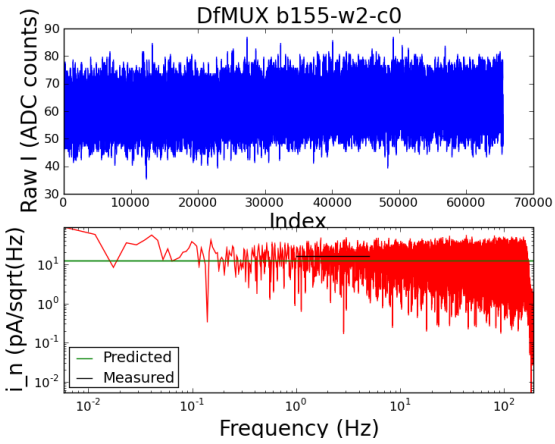
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 433224 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.52
Voltage bias is : 7.986 uV_RMS
R normal is : 1.56 ohm
R is : 1.56 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.301879882812 V
SQUID current bias : 7.052734375 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.9514028117 pA/sqrt(Hz)
20 ohms noise : 1.69705661673 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.96586008754 pA/sqrt(Hz)
Current bias shot noise : 4.43240932279 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.3905648487 pA/sqrt(Hz)
Carrier shot noise : 2.55964853857 pA/sqrt(Hz)
Carrier digitization noise : 0.28232900242 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.71311693814 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.52431954501 pA/sqrt(Hz)

Predicted noise : 12.493335032 pA/sqrt(Hz)
Measured noise : 16.0318680851 pA/sqrt(Hz)
Standard deviation : 8.23612132322 pA/sqrt(Hz)
Measured/predicted : 1.28323366371



b155-w2-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

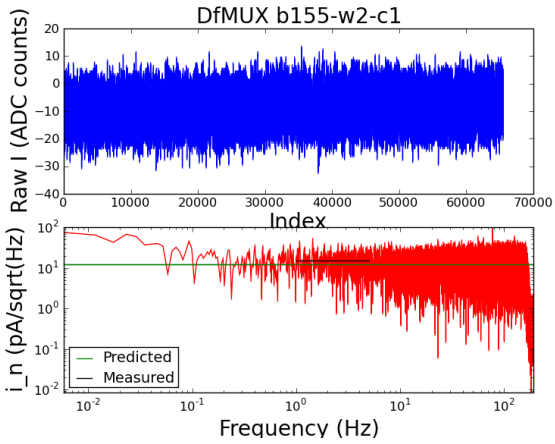
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 517335 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.46
Voltage bias is : 7.986 uV_RMS
R normal is : 1.64 ohm
R is : 1.64 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.301879882812 V
SQUID current bias : 7.052734375 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.00220730909 pA/sqrt(Hz)
20 ohms noise : 1.72626920273 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.96586008754 pA/sqrt(Hz)
Current bias shot noise : 4.50870738926 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.27395192925 pA/sqrt(Hz)
Carrier shot noise : 2.49643758379 pA/sqrt(Hz)
Carrier digitization noise : 0.26855685596 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.55179485069 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.33850519769 pA/sqrt(Hz)

Predicted noise : 12.356612887 pA/sqrt(Hz)
Measured noise : 15.1088014463 pA/sqrt(Hz)
Standard deviation : 8.21009497612 pA/sqrt(Hz)
Measured/predicted : 1.22273001384



b155-w2-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

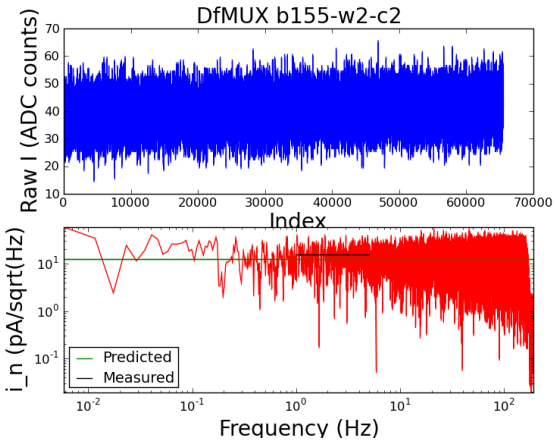
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 597627 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.427
Voltage bias is : 7.986 uV_RMS
R normal is : 1.61 ohm
R is : 1.61 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.301879882812 V
SQUID current bias : 7.052734375 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.05805450522 pA/sqrt(Hz)
20 ohms noise : 1.7583813405 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.96586008754 pA/sqrt(Hz)
Current bias shot noise : 4.592578568 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.31632370433 pA/sqrt(Hz)
Carrier shot noise : 2.51958896875 pA/sqrt(Hz)
Carrier digitization noise : 0.273561020978 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.45855981257 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.40656079818 pA/sqrt(Hz)

Predicted noise : 12.4398250983 pA/sqrt(Hz)
Measured noise : 15.4334722908 pA/sqrt(Hz)
Standard deviation : 8.02481791128 pA/sqrt(Hz)
Measured/predicted : 1.24065026388



b155-w2-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

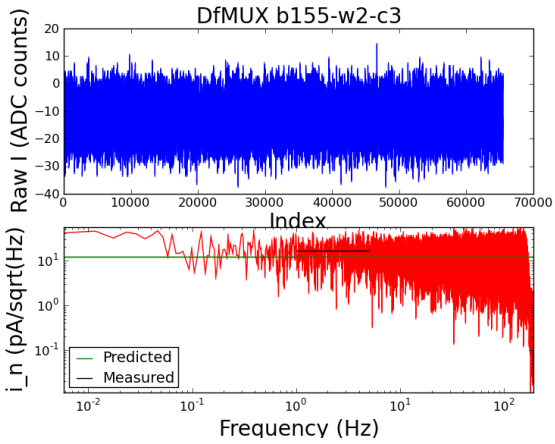
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 703497 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.411
Voltage bias is : 7.986 uV_RMS
R normal is : 1.73 ohm
R is : 1.73 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.301879882812 V
SQUID current bias : 7.052734375 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.14197521896 pA/sqrt(Hz)
20 ohms noise : 1.8066357509 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.96586008754 pA/sqrt(Hz)
Current bias shot noise : 4.71861048492 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.15565385201 pA/sqrt(Hz)
Carrier shot noise : 2.4306340903 pA/sqrt(Hz)
Carrier digitization noise : 0.254585690043 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.41205802915 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.1450698472 pA/sqrt(Hz)

Predicted noise : 12.3050640723 pA/sqrt(Hz)
Measured noise : 16.4934493944 pA/sqrt(Hz)
Standard deviation : 8.51397794828 pA/sqrt(Hz)
Measured/predicted : 1.34037899335



b155-w2-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

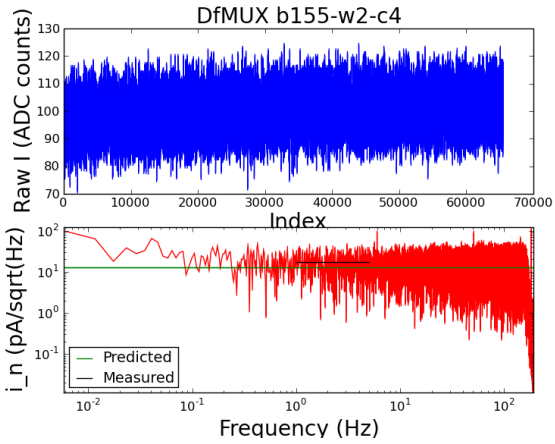
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 769008 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.504
Voltage bias is : 7.986 uV_RMS
R normal is : 1.52 ohm
R is : 1.52 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.301879882812 V
SQUID current bias : 7.052734375 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.19938149108 pA/sqrt(Hz)
20 ohms noise : 1.83964435737 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.96586008754 pA/sqrt(Hz)
Current bias shot noise : 4.80482308006 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.45347444999 pA/sqrt(Hz)
Carrier shot noise : 2.59310941678 pA/sqrt(Hz)
Carrier digitization noise : 0.28975871301 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.67105056186 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.62268083799 pA/sqrt(Hz)

Predicted noise : 12.7788041372 pA/sqrt(Hz)
Measured noise : 17.2674632806 pA/sqrt(Hz)
Standard deviation : 9.05297990452 pA/sqrt(Hz)
Measured/predicted : 1.35125815337



b155-w2-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

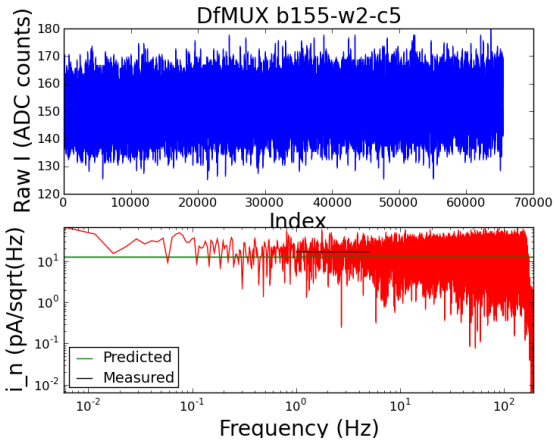
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 841278 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.45
Voltage bias is : 7.986 uV_RMS
R normal is : 1.55 ohm
R is : 1.55 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.301879882812 V
SQUID current bias : 7.052734375 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.26723780176 pA/sqrt(Hz)
20 ohms noise : 1.87866173601 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.96586008754 pA/sqrt(Hz)
Current bias shot noise : 4.90672951686 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.40598784773 pA/sqrt(Hz)
Carrier shot noise : 2.5678921945 pA/sqrt(Hz)
Carrier digitization noise : 0.284150479855 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.52390554498 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.54855252093 pA/sqrt(Hz)

Predicted noise : 12.7521853181 pA/sqrt(Hz)
Measured noise : 17.3627889122 pA/sqrt(Hz)
Standard deviation : 8.88230208622 pA/sqrt(Hz)
Measured/predicted : 1.36155399871



b155-w2-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

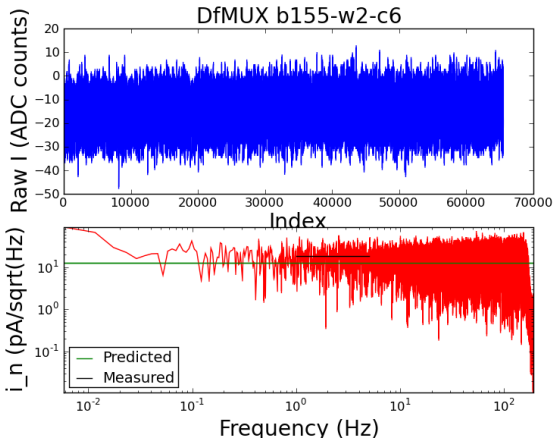
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 953538 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.414
Voltage bias is : 7.986 uV_RMS
R normal is : 1.68 ohm
R is : 1.68 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.301879882812 V
SQUID current bias : 7.052734375 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.38136203401 pA/sqrt(Hz)
20 ohms noise : 1.94428316956 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.96586008754 pA/sqrt(Hz)
Current bias shot noise : 5.07812100194 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.21981021665 pA/sqrt(Hz)
Carrier shot noise : 2.46653904914 pA/sqrt(Hz)
Carrier digitization noise : 0.262162645104 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.4208451549 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.2506157374 pA/sqrt(Hz)

Predicted noise : 12.6109821143 pA/sqrt(Hz)
Measured noise : 18.1669292553 pA/sqrt(Hz)
Standard deviation : 9.69342822585 pA/sqrt(Hz)
Measured/predicted : 1.44056419164



b155-w2-c7

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

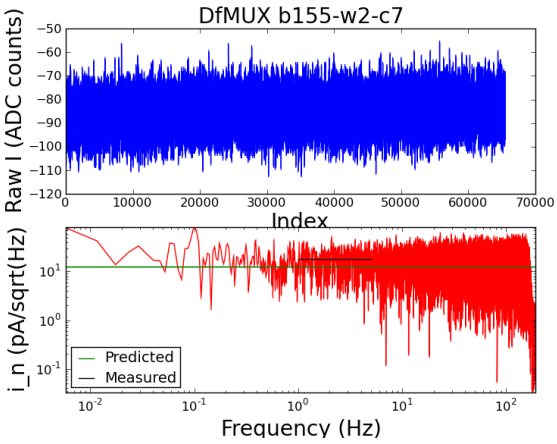
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

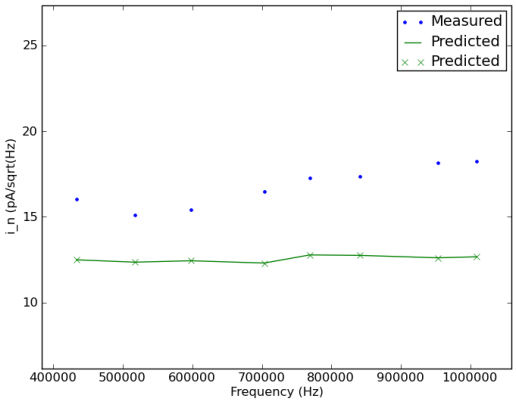
Demod gain is : 2
Demod frequency is : 1009275 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.357
Voltage bias is : 7.986 uV_RMS
R normal is : 1.66 ohm
R is : 1.66 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.301879882812 V
SQUID current bias : 7.052734375 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.44167031694 pA/sqrt(Hz)
20 ohms noise : 1.97896043224 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.96586008754 pA/sqrt(Hz)
Current bias shot noise : 5.16869182963 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.24655491806 pA/sqrt(Hz)
Carrier shot noise : 2.48135323068 pA/sqrt(Hz)
Carrier digitization noise : 0.26532123119 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.24802402834 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.29416337061 pA/sqrt(Hz)

Predicted noise : 12.6701773103 pA/sqrt(Hz)
Measured noise : 18.2161456614 pA/sqrt(Hz)
Standard deviation : 9.10456621441 pA/sqrt(Hz)
Measured/predicted : 1.43771829038



b155-w2


Measured
Predicted
Predicted
25
20
15
10
i_n (pA/sqrt(Hz)
400000
500000
600000
700000
800000
900000
1000000
Frequency (Hz)

b155-w3-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

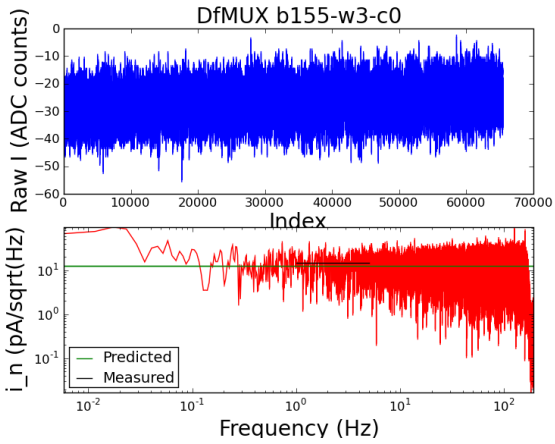
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 383193 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.493
Voltage bias is : 7.986 uV_RMS
R normal is : 1.6 ohm
R is : 1.6 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.203186035156 V
SQUID current bias : 7.0322265625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.92509466301 pA/sqrt(Hz)
20 ohms noise : 1.68192943123 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.61280717535 pA/sqrt(Hz)
Current bias shot noise : 4.3865083646 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.33080072749 pA/sqrt(Hz)
Carrier shot noise : 2.52745041989 pA/sqrt(Hz)
Carrier digitization noise : 0.275270777359 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.64174138931 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.4296702484 pA/sqrt(Hz)

Predicted noise : 12.3272852129 pA/sqrt(Hz)
Measured noise : 14.6199425985 pA/sqrt(Hz)
Standard deviation : 7.54197523163 pA/sqrt(Hz)
Measured/predicted : 1.18598234291



b155-w3-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

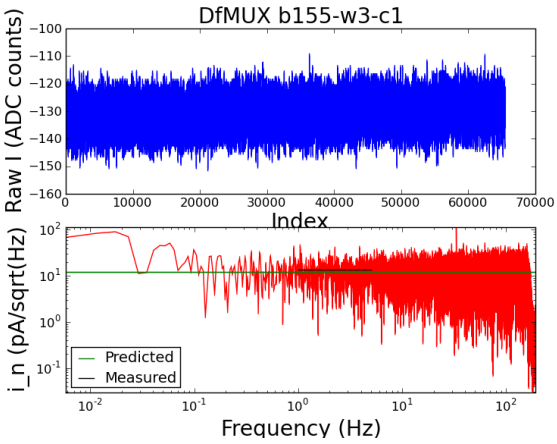
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 474282 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.442
Voltage bias is : 7.986 uV_RMS
R normal is : 1.65 ohm
R is : 1.65 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.203186035156 V
SQUID current bias : 7.0322265625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.9751912491 pA/sqrt(Hz)
20 ohms noise : 1.71073496823 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.61280717535 pA/sqrt(Hz)
Current bias shot noise : 4.46163382864 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.26017040241 pA/sqrt(Hz)
Carrier shot noise : 2.48886112448 pA/sqrt(Hz)
Carrier digitization noise : 0.266929238652 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.5013702229 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.31623350689 pA/sqrt(Hz)

Predicted noise : 12.2516513526 pA/sqrt(Hz)
Measured noise : 13.4914591787 pA/sqrt(Hz)
Standard deviation : 6.86862072395 pA/sqrt(Hz)
Measured/predicted : 1.10119516058



b155-w3-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

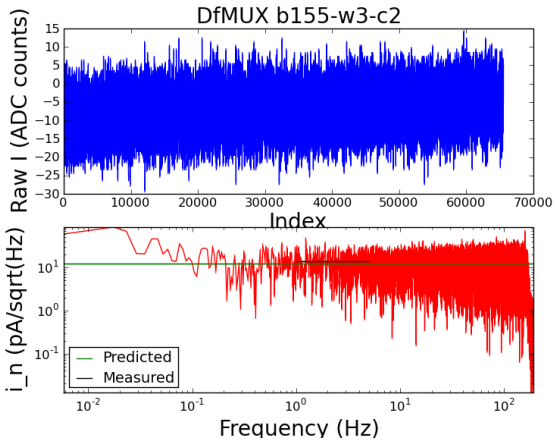
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 554574 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.408
Voltage bias is : 7.986 uV_RMS
R normal is : 1.62 ohm
R is : 1.62 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.203186035156 V
SQUID current bias : 7.0322265625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.02724093244 pA/sqrt(Hz)
20 ohms noise : 1.74066353615 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.61280717535 pA/sqrt(Hz)
Current bias shot noise : 4.53968818163 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.30202540986 pA/sqrt(Hz)
Carrier shot noise : 2.51180042161 pA/sqrt(Hz)
Carrier digitization noise : 0.271872372701 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.40323877465 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.38366565593 pA/sqrt(Hz)

Predicted noise : 12.3304318058 pA/sqrt(Hz)
Measured noise : 13.6918952564 pA/sqrt(Hz)
Standard deviation : 7.11618936914 pA/sqrt(Hz)
Measured/predicted : 1.11041490453



b155-w3-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

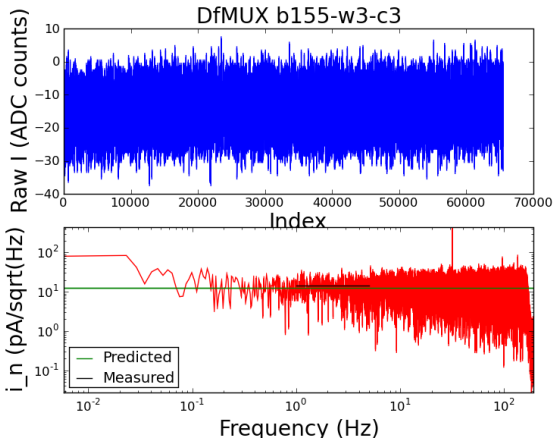
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 726759 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.504
Voltage bias is : 7.986 uV_RMS
R normal is : 1.71 ohm
R is : 1.71 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.203186035156 V
SQUID current bias : 7.0322265625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.16189717824 pA/sqrt(Hz)
20 ohms noise : 1.81809087749 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.61280717535 pA/sqrt(Hz)
Current bias shot noise : 4.74162036386 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.18086617776 pA/sqrt(Hz)
Carrier shot noise : 2.44480700395 pA/sqrt(Hz)
Carrier digitization noise : 0.257563300453 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.67105056186 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.18673241515 pA/sqrt(Hz)

Predicted noise : 12.354330159 pA/sqrt(Hz)
Measured noise : 14.2552904831 pA/sqrt(Hz)
Standard deviation : 6.95708512794 pA/sqrt(Hz)
Measured/predicted : 1.15386996297



b155-w3-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

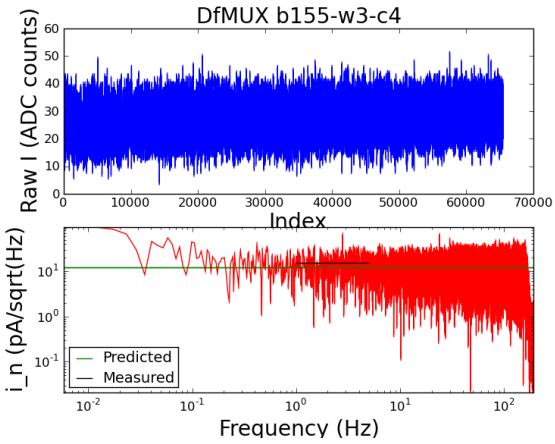
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 802038 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.442
Voltage bias is : 7.986 uV_RMS
R normal is : 1.69 ohm
R is : 1.69 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.203186035156 V
SQUID current bias : 7.0322265625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.22982235749 pA/sqrt(Hz)
20 ohms noise : 1.85714785556 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.61280717535 pA/sqrt(Hz)
Current bias shot noise : 4.84348180812 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.20667524496 pA/sqrt(Hz)
Carrier shot noise : 2.45923076923 pA/sqrt(Hz)
Carrier digitization noise : 0.260611386849 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.5013702229 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.22913238429 pA/sqrt(Hz)

Predicted noise : 12.4138090462 pA/sqrt(Hz)
Measured noise : 15.2848993397 pA/sqrt(Hz)
Standard deviation : 8.06750755882 pA/sqrt(Hz)
Measured/predicted : 1.23128197661



b155-w3-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

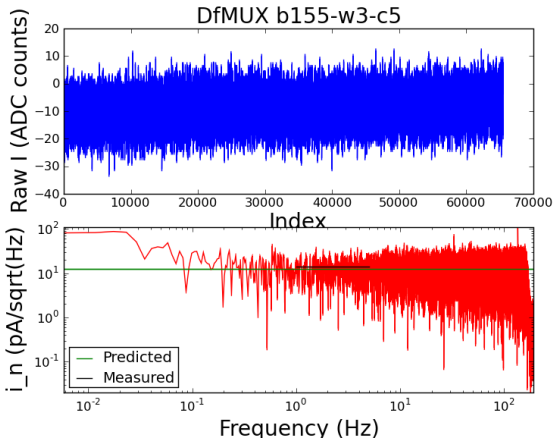
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 893481 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.374
Voltage bias is : 7.986 uV_RMS
R normal is : 1.75 ohm
R is : 1.75 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.203186035156 V
SQUID current bias : 7.0322265625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.31903988369 pA/sqrt(Hz)
20 ohms noise : 1.90844793312 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.61280717535 pA/sqrt(Hz)
Current bias shot noise : 4.97727352087 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.13101780799 pA/sqrt(Hz)
Carrier shot noise : 2.41670484042 pA/sqrt(Hz)
Carrier digitization noise : 0.2516761393 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.30092594926 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.10412355105 pA/sqrt(Hz)

Predicted noise : 12.3652558866 pA/sqrt(Hz)
Measured noise : 14.0110788015 pA/sqrt(Hz)
Standard deviation : 6.70920407569 pA/sqrt(Hz)
Measured/predicted : 1.13310059492



b155-w3-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

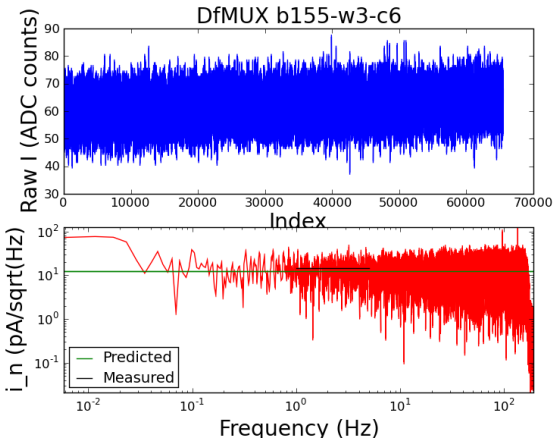
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

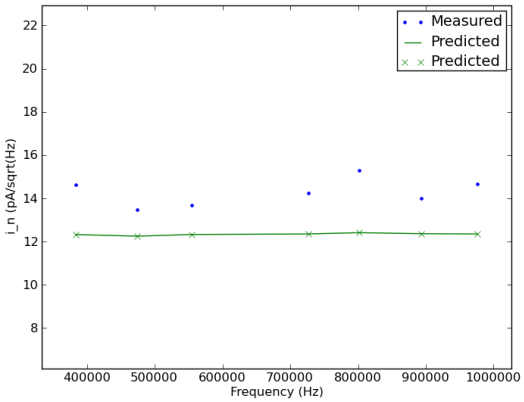
Demod gain is : 2
Demod frequency is : 976395 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.31
Voltage bias is : 7.986 uV_RMS
R normal is : 1.79 ohm
R is : 1.79 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.203186035156 V
SQUID current bias : 7.0322265625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.4058141093 pA/sqrt(Hz)
20 ohms noise : 1.95834311285 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.61280717535 pA/sqrt(Hz)
Current bias shot noise : 5.10740122967 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.08339729831 pA/sqrt(Hz)
Carrier shot noise : 2.38954999153 pA/sqrt(Hz)
Carrier digitization noise : 0.246052091494 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.09482470866 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.02429940442 pA/sqrt(Hz)

Predicted noise : 12.3539695263 pA/sqrt(Hz)
Measured noise : 14.6624728916 pA/sqrt(Hz)
Standard deviation : 7.78576391889 pA/sqrt(Hz)
Measured/predicted : 1.18686328798



b155-w3


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
22
20
18
16
14
12
10
8
400000
500000
600000
700000
800000
900000
1000000

b156-w0-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

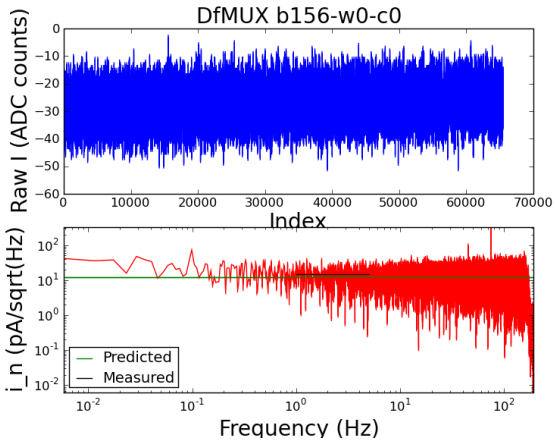
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 428289 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.511
Voltage bias is : 7.986 uV_RMS
R normal is : 1.62 ohm
R is : 1.62 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.0903930664062 V
SQUID current bias : 6.70153808594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.94867580559 pA/sqrt(Hz)
20 ohms noise : 1.69548858821 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.07572950016 pA/sqrt(Hz)
Current bias shot noise : 4.31665043503 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.30202540986 pA/sqrt(Hz)
Carrier shot noise : 2.51180042161 pA/sqrt(Hz)
Carrier digitization noise : 0.271872372701 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.68953556139 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.38366565593 pA/sqrt(Hz)

Predicted noise : 12.225122329 pA/sqrt(Hz)
Measured noise : 14.6996626241 pA/sqrt(Hz)
Standard deviation : 7.55660501973 pA/sqrt(Hz)
Measured/predicted : 1.20241435861



b156-w0-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

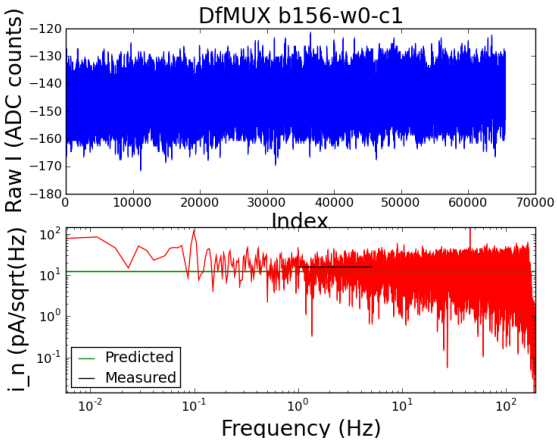
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 516456 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.46
Voltage bias is : 7.986 uV_RMS
R normal is : 1.64 ohm
R is : 1.64 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.0903930664062 V
SQUID current bias : 6.70153808594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.00163489855 pA/sqrt(Hz)
20 ohms noise : 1.72594006667 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.07572950016 pA/sqrt(Hz)
Current bias shot noise : 4.3941787585 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.27395192925 pA/sqrt(Hz)
Carrier shot noise : 2.49643758379 pA/sqrt(Hz)
Carrier digitization noise : 0.26855685596 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.55179485069 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.33850519769 pA/sqrt(Hz)

Predicted noise : 12.204681964 pA/sqrt(Hz)
Measured noise : 15.7637089091 pA/sqrt(Hz)
Standard deviation : 7.93732626825 pA/sqrt(Hz)
Measured/predicted : 1.29161160902



b156-w0-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

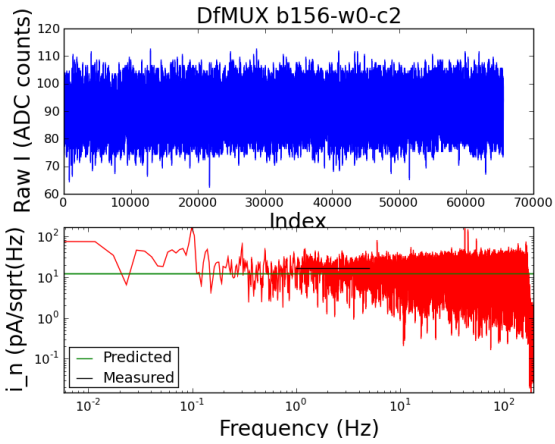
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 600951 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.413
Voltage bias is : 7.986 uV_RMS
R normal is : 1.72 ohm
R is : 1.72 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.0903930664062 V
SQUID current bias : 6.70153808594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.06051531302 pA/sqrt(Hz)
20 ohms noise : 1.75979630499 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.07572950016 pA/sqrt(Hz)
Current bias shot noise : 4.48037547306 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.16818672324 pA/sqrt(Hz)
Carrier shot noise : 2.43768964677 pA/sqrt(Hz)
Carrier digitization noise : 0.256065839404 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.4179196612 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.16581029677 pA/sqrt(Hz)

Predicted noise : 12.0937085182 pA/sqrt(Hz)
Measured noise : 16.4437700734 pA/sqrt(Hz)
Standard deviation : 8.2491322092 pA/sqrt(Hz)
Measured/predicted : 1.35969624608



b156-w0-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

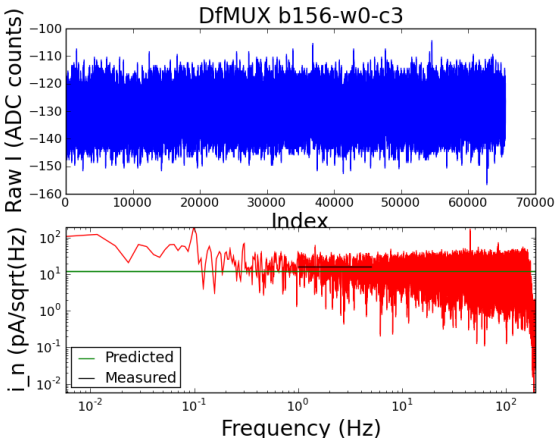
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 680790 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.391
Voltage bias is : 7.986 uV_RMS
R normal is : 1.71 ohm
R is : 1.71 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.0903930664062 V
SQUID current bias : 6.70153808594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.12303200452 pA/sqrt(Hz)
20 ohms noise : 1.7957434026 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.07572950016 pA/sqrt(Hz)
Current bias shot noise : 4.57189543706 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.18086617776 pA/sqrt(Hz)
Carrier shot noise : 2.44480700395 pA/sqrt(Hz)
Carrier digitization noise : 0.257563300453 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.35263860718 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.18673241515 pA/sqrt(Hz)

Predicted noise : 12.1523724943 pA/sqrt(Hz)
Measured noise : 16.4177868939 pA/sqrt(Hz)
Standard deviation : 8.99409586874 pA/sqrt(Hz)
Measured/predicted : 1.35099437592



b156-w0-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

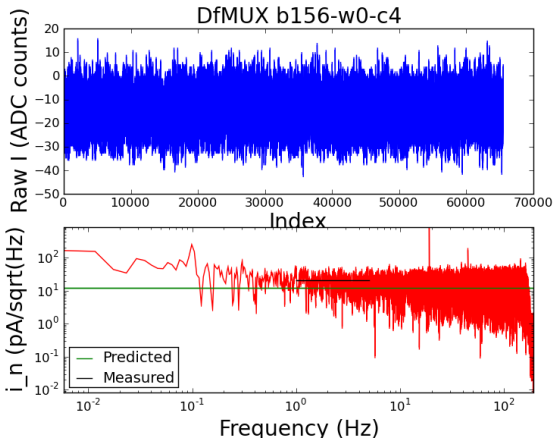
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 779313 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.458
Voltage bias is : 7.986 uV_RMS
R normal is : 1.77 ohm
R is : 1.77 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.0903930664062 V
SQUID current bias : 6.70153808594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.2087734069 pA/sqrt(Hz)
20 ohms noise : 1.84504470897 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.07572950016 pA/sqrt(Hz)
Current bias shot noise : 4.69741471631 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.10693851072 pA/sqrt(Hz)
Carrier shot noise : 2.40301235153 pA/sqrt(Hz)
Carrier digitization noise : 0.248832341116 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.54624142767 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.06387323533 pA/sqrt(Hz)

Predicted noise : 12.1753696241 pA/sqrt(Hz)
Measured noise : 20.417749851 pA/sqrt(Hz)
Standard deviation : 10.6467859152 pA/sqrt(Hz)
Measured/predicted : 1.6769716634



b156-w0-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

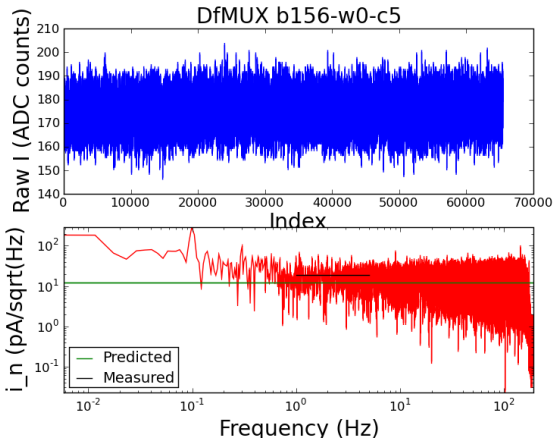
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 861942 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.423
Voltage bias is : 7.986 uV_RMS
R normal is : 1.76 ohm
R is : 1.76 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.0903930664062 V
SQUID current bias : 6.70153808594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.28747167245 pA/sqrt(Hz)
20 ohms noise : 1.89029621166 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.07572950016 pA/sqrt(Hz)
Current bias shot noise : 4.81262334711 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.11890975226 pA/sqrt(Hz)
Carrier shot noise : 2.40982942154 pA/sqrt(Hz)
Carrier digitization noise : 0.250246161236 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.44701721449 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.08391263228 pA/sqrt(Hz)

Predicted noise : 12.2428632938 pA/sqrt(Hz)
Measured noise : 18.7287795152 pA/sqrt(Hz)
Standard deviation : 10.3821927945 pA/sqrt(Hz)
Measured/predicted : 1.52977118716



b156-w0-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

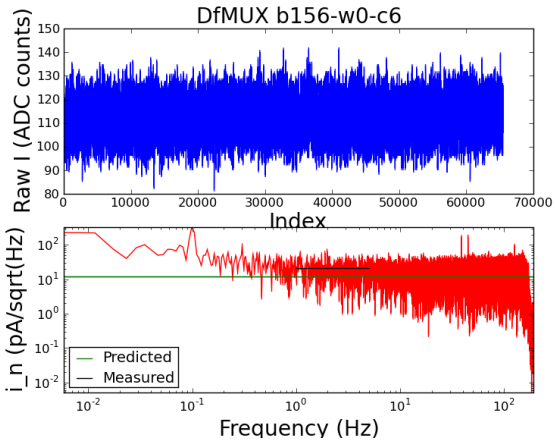
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 947364 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.377
Voltage bias is : 7.986 uV_RMS
R normal is : 1.86 ohm
R is : 1.86 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.0903930664062 V
SQUID current bias : 6.70153808594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.37482526013 pA/sqrt(Hz)
20 ohms noise : 1.94052452458 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.07572950016 pA/sqrt(Hz)
Current bias shot noise : 4.94050275032 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.00498987311 pA/sqrt(Hz)
Carrier shot noise : 2.34415413362 pA/sqrt(Hz)
Carrier digitization noise : 0.236792066546 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.31013582977 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.89085415371 pA/sqrt(Hz)

Predicted noise : 12.1561358097 pA/sqrt(Hz)
Measured noise : 20.6807949182 pA/sqrt(Hz)
Standard deviation : 11.2072624177 pA/sqrt(Hz)
Measured/predicted : 1.70126389191



b156-w0-c7

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

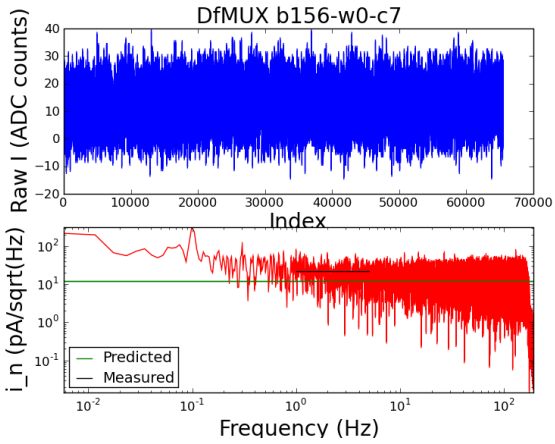
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

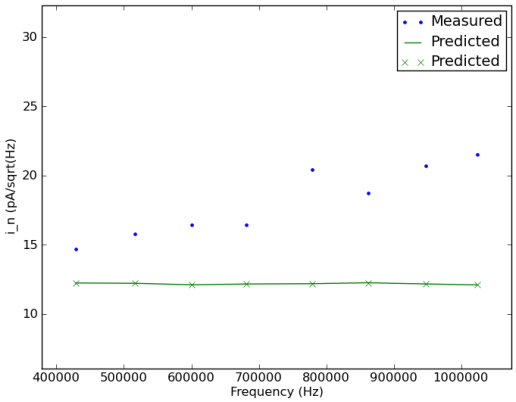
Demod gain is : 2
Demod frequency is : 1024209 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.315
Voltage bias is : 7.986 uV_RMS
R normal is : 1.95 ohm
R is : 1.95 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.0903930664062 V
SQUID current bias : 6.70153808594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.45821537038 pA/sqrt(Hz)
20 ohms noise : 1.98847383797 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.07572950016 pA/sqrt(Hz)
Current bias shot noise : 5.0625799061 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 1.91245187896 pA/sqrt(Hz)
Carrier shot noise : 2.2894192523 pA/sqrt(Hz)
Carrier digitization noise : 0.225863201936 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.11165088024 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.72995599483 pA/sqrt(Hz)

Predicted noise : 12.0855524703 pA/sqrt(Hz)
Measured noise : 21.5134457342 pA/sqrt(Hz)
Standard deviation : 12.0077055149 pA/sqrt(Hz)
Measured/predicted : 1.78009617574



b156-w0


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
30
25
20
15
10
400000
500000
600000
700000
800000
900000
1000000

b157-w0-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

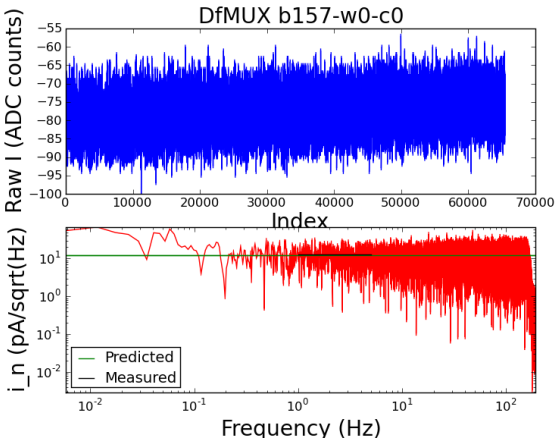
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 448653 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.585
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.6 ohm
R is : 1.6 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.245483398438 V
SQUID current bias : 4.32391357422 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.96011267394 pA/sqrt(Hz)
20 ohms noise : 1.70206478751 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77274627912 pA/sqrt(Hz)
Current bias shot noise : 3.48080227414 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.33080072749 pA/sqrt(Hz)
Carrier shot noise : 2.69067644066 pA/sqrt(Hz)
Carrier digitization noise : 0.275270777359 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.87769507766 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.4296702484 pA/sqrt(Hz)

Predicted noise : 12.1575599362 pA/sqrt(Hz)
Measured noise : 12.709078196 pA/sqrt(Hz)
Standard deviation : 6.86858549716 pA/sqrt(Hz)
Measured/predicted : 1.04536422297



b157-w0-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

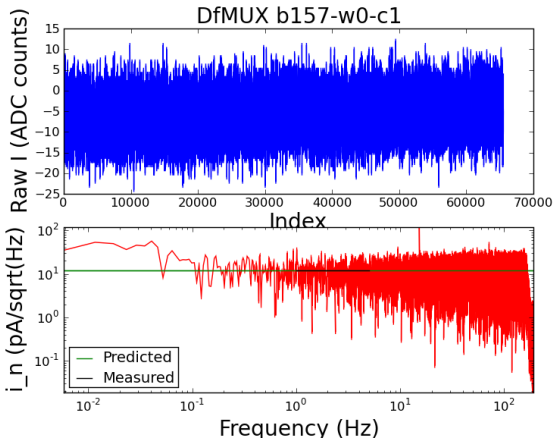
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 524631 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.501
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.65 ohm
R is : 1.65 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.245483398438 V
SQUID current bias : 4.32391357422 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.00699165408 pA/sqrt(Hz)
20 ohms noise : 1.72902020109 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77274627912 pA/sqrt(Hz)
Current bias shot noise : 3.53592735844 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.26017040241 pA/sqrt(Hz)
Carrier shot noise : 2.64959499859 pA/sqrt(Hz)
Carrier digitization noise : 0.266929238652 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.66308914158 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.31623350689 pA/sqrt(Hz)

Predicted noise : 12.0480411861 pA/sqrt(Hz)
Measured noise : 11.9878416739 pA/sqrt(Hz)
Standard deviation : 6.0447327879 pA/sqrt(Hz)
Measured/predicted : 0.995003377623



b157-w0-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

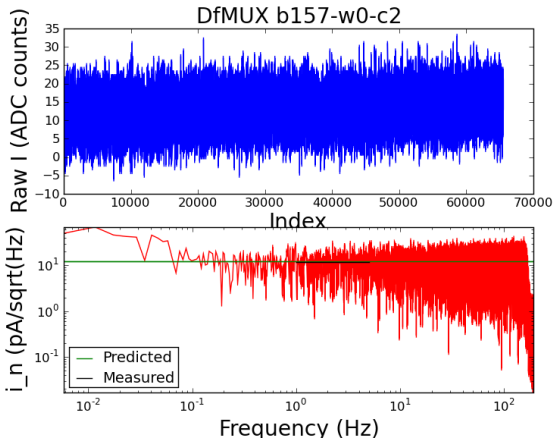
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 618480 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.485
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.66 ohm
R is : 1.66 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.245483398438 V
SQUID current bias : 4.32391357422 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.07368311944 pA/sqrt(Hz)
20 ohms noise : 1.76736779368 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77274627912 pA/sqrt(Hz)
Current bias shot noise : 3.61434998281 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.24655491806 pA/sqrt(Hz)
Carrier shot noise : 2.64160223529 pA/sqrt(Hz)
Carrier digitization noise : 0.26532123119 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.62021971598 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.29416337061 pA/sqrt(Hz)

Predicted noise : 12.066573368 pA/sqrt(Hz)
Measured noise : 11.5872453163 pA/sqrt(Hz)
Standard deviation : 6.06414279436 pA/sqrt(Hz)
Measured/predicted : 0.960276373658



b157-w0-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

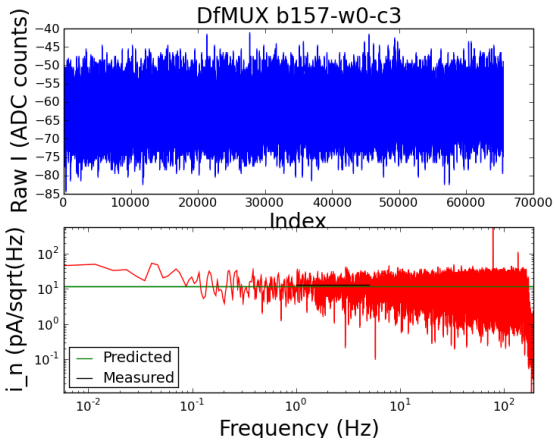
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 709173 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.451
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.77 ohm
R is : 1.77 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.245483398438 V
SQUID current bias : 4.32391357422 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.14678848284 pA/sqrt(Hz)
20 ohms noise : 1.80940337764 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77274627912 pA/sqrt(Hz)
Current bias shot noise : 3.7003147224 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.10693851072 pA/sqrt(Hz)
Carrier shot noise : 2.55820200071 pA/sqrt(Hz)
Carrier digitization noise : 0.248832341116 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.52670832824 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.06387323533 pA/sqrt(Hz)

Predicted noise : 11.9163050142 pA/sqrt(Hz)
Measured noise : 13.4097351293 pA/sqrt(Hz)
Standard deviation : 6.99755655558 pA/sqrt(Hz)
Measured/predicted : 1.12532661033



b157-w0-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

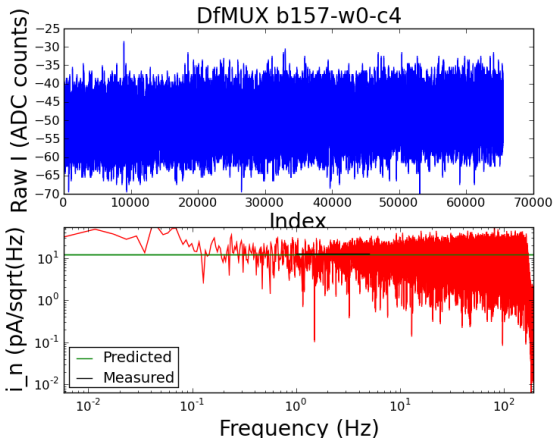
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 784005 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.484
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.71 ohm
R is : 1.71 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.245483398438 V
SQUID current bias : 4.32391357422 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.21308148134 pA/sqrt(Hz)
20 ohms noise : 1.84752185177 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77274627912 pA/sqrt(Hz)
Current bias shot noise : 3.77826878879 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.18086617776 pA/sqrt(Hz)
Carrier shot noise : 2.60269580591 pA/sqrt(Hz)
Carrier digitization noise : 0.257563300453 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.6175170647 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.18673241515 pA/sqrt(Hz)

Predicted noise : 12.0793757072 pA/sqrt(Hz)
Measured noise : 12.7734074235 pA/sqrt(Hz)
Standard deviation : 6.19824949931 pA/sqrt(Hz)
Measured/predicted : 1.05745592596



b157-w0-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

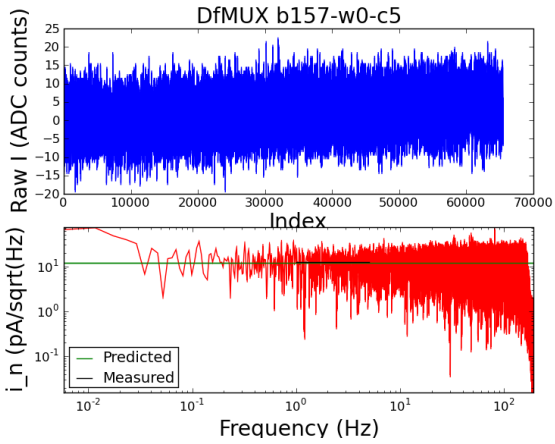
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 869358 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.437
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.71 ohm
R is : 1.71 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.245483398438 V
SQUID current bias : 4.32391357422 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.29482070275 pA/sqrt(Hz)
20 ohms noise : 1.89452190408 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77274627912 pA/sqrt(Hz)
Current bias shot noise : 3.87438609888 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.18086617776 pA/sqrt(Hz)
Carrier shot noise : 2.60269580591 pA/sqrt(Hz)
Carrier digitization noise : 0.257563300453 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.48718196198 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.18673241515 pA/sqrt(Hz)

Predicted noise : 12.1115389491 pA/sqrt(Hz)
Measured noise : 12.4064692418 pA/sqrt(Hz)
Standard deviation : 6.40332461679 pA/sqrt(Hz)
Measured/predicted : 1.02435118229



b157-w0-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

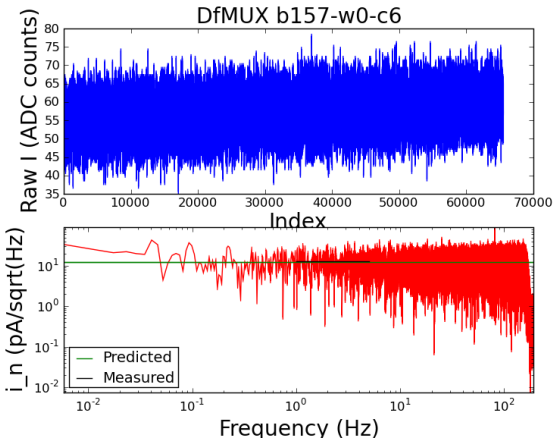
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

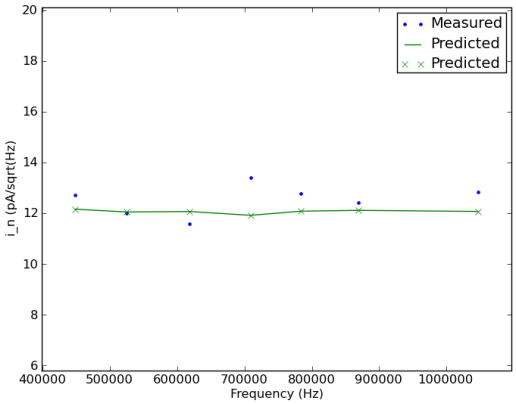
Demod gain is : 2
Demod frequency is : 1046583 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.361
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.8 ohm
R is : 1.8 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.245483398438 V
SQUID current bias : 4.32391357422 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.48329886831 pA/sqrt(Hz)
20 ohms noise : 2.00289684928 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.77274627912 pA/sqrt(Hz)
Current bias shot noise : 4.09601794184 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.07182286888 pA/sqrt(Hz)
Carrier shot noise : 2.53679407623 pA/sqrt(Hz)
Carrier digitization noise : 0.244685135431 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.26058291951 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.00476028617 pA/sqrt(Hz)

Predicted noise : 12.0701528336 pA/sqrt(Hz)
Measured noise : 12.8210443107 pA/sqrt(Hz)
Standard deviation : 6.96155060496 pA/sqrt(Hz)
Measured/predicted : 1.06221060226



b157-w0


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz))
Frequency (Hz)
20
18
16
14
12
10
8
6
400000
500000
600000
700000
800000
900000
1000000

b157-w1-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

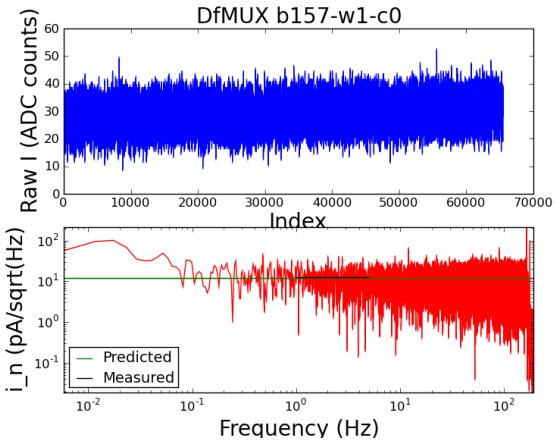
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 389214 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.566
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.59 ohm
R is : 1.59 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.216003417969 V
SQUID current bias : 4.15087890625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.92810241011 pA/sqrt(Hz)
20 ohms noise : 1.68365888581 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.66289884123 pA/sqrt(Hz)
Current bias shot noise : 3.37356360908 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.34545985156 pA/sqrt(Hz)
Carrier shot noise : 2.69912442516 pA/sqrt(Hz)
Carrier digitization noise : 0.27700204011 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.83057754107 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.45299737095 pA/sqrt(Hz)

Predicted noise : 12.1093460666 pA/sqrt(Hz)
Measured noise : 12.3486792384 pA/sqrt(Hz)
Standard deviation : 6.896092382 pA/sqrt(Hz)
Measured/predicted : 1.01976433496



b157-w1-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

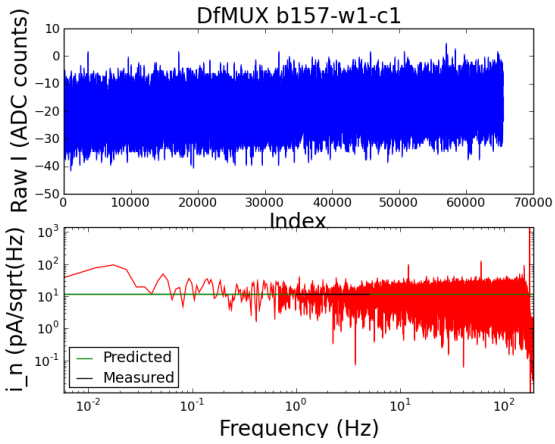
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 474906 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.514
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.6 ohm
R is : 1.6 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.216003417969 V
SQUID current bias : 4.15087890625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.97556779976 pA/sqrt(Hz)
20 ohms noise : 1.71095148486 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.66289884123 pA/sqrt(Hz)
Current bias shot noise : 3.42825005401 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.33080072749 pA/sqrt(Hz)
Carrier shot noise : 2.69067644066 pA/sqrt(Hz)
Carrier digitization noise : 0.275270777359 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.69741892631 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.4296702484 pA/sqrt(Hz)

Predicted noise : 12.09060742 pA/sqrt(Hz)
Measured noise : 11.5288544468 pA/sqrt(Hz)
Standard deviation : 6.04306925369 pA/sqrt(Hz)
Measured/predicted : 0.953538068544



b157-w1-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

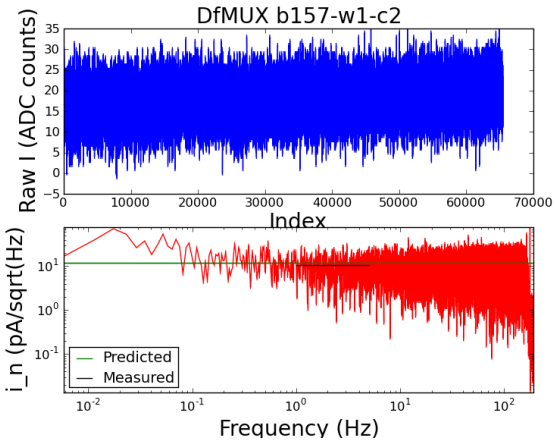
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 561435 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.488
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.61 ohm
R is : 1.61 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.216003417969 V
SQUID current bias : 4.15087890625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.03201841884 pA/sqrt(Hz)
20 ohms noise : 1.74341059083 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.66289884123 pA/sqrt(Hz)
Current bias shot noise : 3.49328867888 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.31632370433 pA/sqrt(Hz)
Carrier shot noise : 2.68230728682 pA/sqrt(Hz)
Carrier digitization noise : 0.273561020978 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.6283109953 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.40656079818 pA/sqrt(Hz)

Predicted noise : 12.0938051526 pA/sqrt(Hz)
Measured noise : 10.7581015009 pA/sqrt(Hz)
Standard deviation : 5.70282201284 pA/sqrt(Hz)
Measured/predicted : 0.88955472369



b157-w1-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

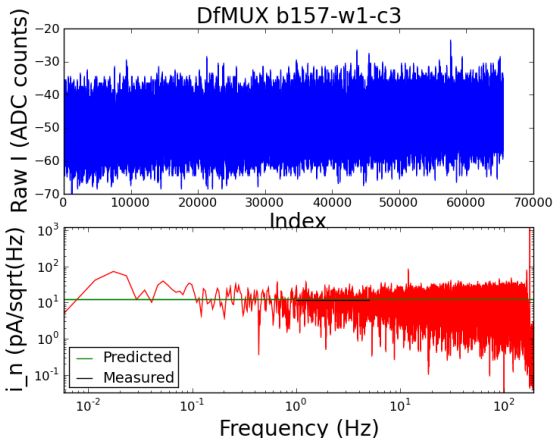
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 636267 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.471
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.53 ohm
R is : 1.53 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.216003417969 V
SQUID current bias : 4.15087890625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.08736941895 pA/sqrt(Hz)
20 ohms noise : 1.7752374159 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.66289884123 pA/sqrt(Hz)
Current bias shot noise : 3.55706039638 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.43743866927 pA/sqrt(Hz)
Carrier shot noise : 2.75153950174 pA/sqrt(Hz)
Carrier digitization noise : 0.287864865212 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.58212518984 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.59772927894 pA/sqrt(Hz)

Predicted noise : 12.2779524465 pA/sqrt(Hz)
Measured noise : 11.5790398023 pA/sqrt(Hz)
Standard deviation : 6.20479189579 pA/sqrt(Hz)
Measured/predicted : 0.943075798081



b157-w1-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

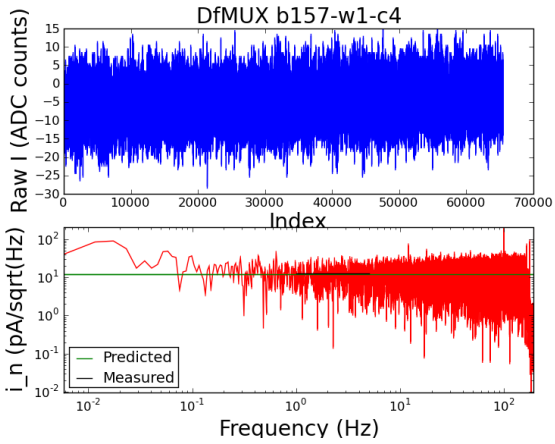
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 729255 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.516
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.63 ohm
R is : 1.63 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.216003417969 V
SQUID current bias : 4.15087890625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.16406537654 pA/sqrt(Hz)
20 ohms noise : 1.81933759151 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.66289884123 pA/sqrt(Hz)
Current bias shot noise : 3.64542434519 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.28790255459 pA/sqrt(Hz)
Carrier shot noise : 2.66580062368 pA/sqrt(Hz)
Carrier digitization noise : 0.270204444034 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.702661728 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.36098152964 pA/sqrt(Hz)

Predicted noise : 12.1629422703 pA/sqrt(Hz)
Measured noise : 12.7517736265 pA/sqrt(Hz)
Standard deviation : 6.7244763108 pA/sqrt(Hz)
Measured/predicted : 1.04841191737



b157-w1-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

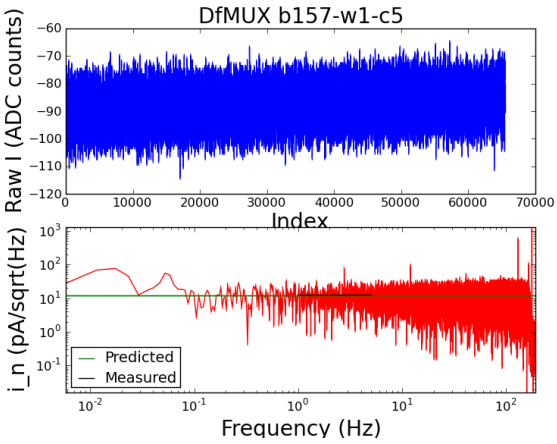
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 818916 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.48
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.65 ohm
R is : 1.65 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.216003417969 V
SQUID current bias : 4.15087890625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.24575158071 pA/sqrt(Hz)
20 ohms noise : 1.86630715891 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.66289884123 pA/sqrt(Hz)
Current bias shot noise : 3.7395377221 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.26017040241 pA/sqrt(Hz)
Carrier shot noise : 2.64959499859 pA/sqrt(Hz)
Carrier digitization noise : 0.266929238652 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.60667843817 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.31623350689 pA/sqrt(Hz)

Predicted noise : 12.1634076012 pA/sqrt(Hz)
Measured noise : 12.4928394506 pA/sqrt(Hz)
Standard deviation : 9.28945358181 pA/sqrt(Hz)
Measured/predicted : 1.02708384526



b157-w1-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

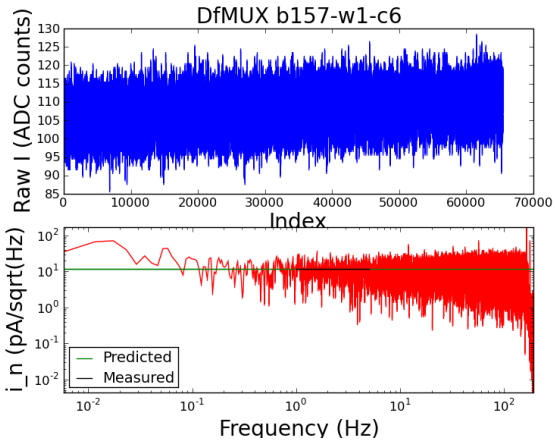
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 902700 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.401
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.8 ohm
R is : 1.8 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.216003417969 V
SQUID current bias : 4.15087890625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.32842085192 pA/sqrt(Hz)
20 ohms noise : 1.91384198986 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.66289884123 pA/sqrt(Hz)
Current bias shot noise : 3.83478372305 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.07182286888 pA/sqrt(Hz)
Carrier shot noise : 2.53679407623 pA/sqrt(Hz)
Carrier digitization noise : 0.244685135431 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.38253356241 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.00476028617 pA/sqrt(Hz)

Predicted noise : 11.933224066 pA/sqrt(Hz)
Measured noise : 11.4863957176 pA/sqrt(Hz)
Standard deviation : 6.11347517691 pA/sqrt(Hz)
Measured/predicted : 0.962555940797



b157-w1-c7

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

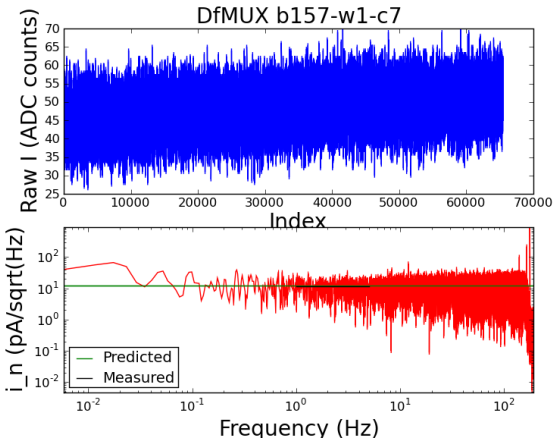
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

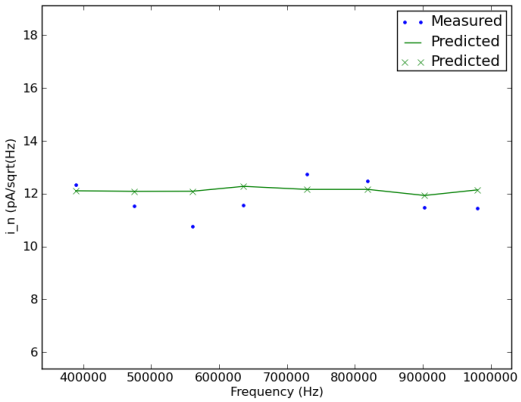
Demod gain is : 2
Demod frequency is : 980454 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.36
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.69 ohm
R is : 1.69 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.216003417969 V
SQUID current bias : 4.15087890625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.41019740242 pA/sqrt(Hz)
20 ohms noise : 1.96086350639 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.66289884123 pA/sqrt(Hz)
Current bias shot noise : 3.92900119095 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.20667524496 pA/sqrt(Hz)
Carrier shot noise : 2.61805107663 pA/sqrt(Hz)
Carrier digitization noise : 0.260611386849 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.25744974695 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.22913238429 pA/sqrt(Hz)

Predicted noise : 12.1442891174 pA/sqrt(Hz)
Measured noise : 11.4575504587 pA/sqrt(Hz)
Standard deviation : 5.89206109789 pA/sqrt(Hz)
Measured/predicted : 0.94345172022



b157-w1


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
18
16
14
12
10
8
6
400000
500000
600000
700000
800000
900000
1000000

b157-w2-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

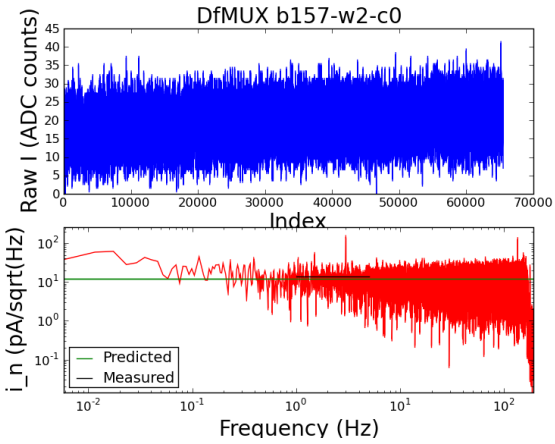
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 436140 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.598
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.54 ohm
R is : 1.54 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.267272949219 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.95302759129 pA/sqrt(Hz)
20 ohms noise : 1.69799086499 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.84974994021 pA/sqrt(Hz)
Current bias shot noise : 3.48223595899 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.42161114544 pA/sqrt(Hz)
Carrier shot noise : 2.7425913821 pA/sqrt(Hz)
Carrier digitization noise : 0.285995612841 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.90949377865 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.57302115081 pA/sqrt(Hz)

Predicted noise : 12.2920208039 pA/sqrt(Hz)
Measured noise : 13.5725529098 pA/sqrt(Hz)
Standard deviation : 14.0538973515 pA/sqrt(Hz)
Measured/predicted : 1.10417588177



b157-w2-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

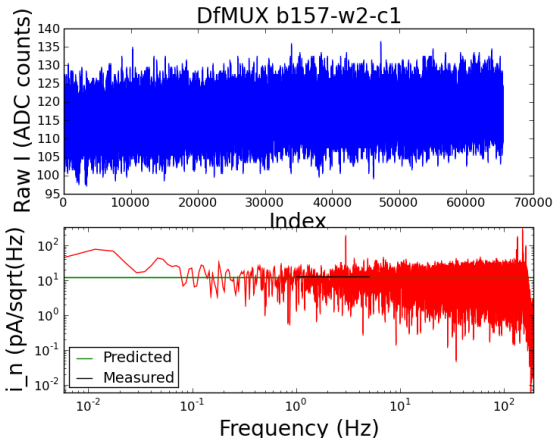
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 517995 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.502
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.64 ohm
R is : 1.64 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.267272949219 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.00263767066 pA/sqrt(Hz)
20 ohms noise : 1.72651666063 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.84974994021 pA/sqrt(Hz)
Current bias shot noise : 3.54073659842 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.27395192925 pA/sqrt(Hz)
Carrier shot noise : 2.65766075545 pA/sqrt(Hz)
Carrier digitization noise : 0.26855685596 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.66574559026 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.33850519769 pA/sqrt(Hz)

Predicted noise : 12.0780861762 pA/sqrt(Hz)
Measured noise : 12.5759898216 pA/sqrt(Hz)
Standard deviation : 16.4676616383 pA/sqrt(Hz)
Measured/predicted : 1.04122372023



b157-w2-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

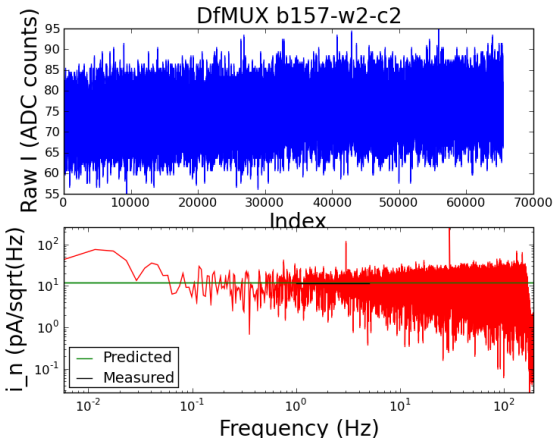
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 611625 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.468
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.68 ohm
R is : 1.68 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.267272949219 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.06849557395 pA/sqrt(Hz)
20 ohms noise : 1.76438495502 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.84974994021 pA/sqrt(Hz)
Current bias shot noise : 3.61839681388 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.21981021665 pA/sqrt(Hz)
Carrier shot noise : 2.62583133472 pA/sqrt(Hz)
Carrier digitization noise : 0.262162645104 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.57388872487 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.2506157374 pA/sqrt(Hz)

Predicted noise : 12.0328625757 pA/sqrt(Hz)
Measured noise : 11.7095912595 pA/sqrt(Hz)
Standard deviation : 7.12268795851 pA/sqrt(Hz)
Measured/predicted : 0.973134296666



b157-w2-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

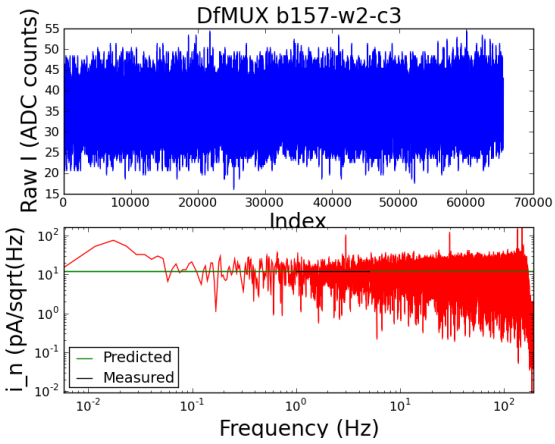
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 704238 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.471
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.65 ohm
R is : 1.65 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.267272949219 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.14260182826 pA/sqrt(Hz)
20 ohms noise : 1.80699605125 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.84974994021 pA/sqrt(Hz)
Current bias shot noise : 3.705783557 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.26017040241 pA/sqrt(Hz)
Carrier shot noise : 2.64959499859 pA/sqrt(Hz)
Carrier digitization noise : 0.266929238652 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.58212518984 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.31623350689 pA/sqrt(Hz)

Predicted noise : 12.1387515592 pA/sqrt(Hz)
Measured noise : 12.1150524497 pA/sqrt(Hz)
Standard deviation : 7.4784831068 pA/sqrt(Hz)
Measured/predicted : 0.998047648521



b157-w2-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

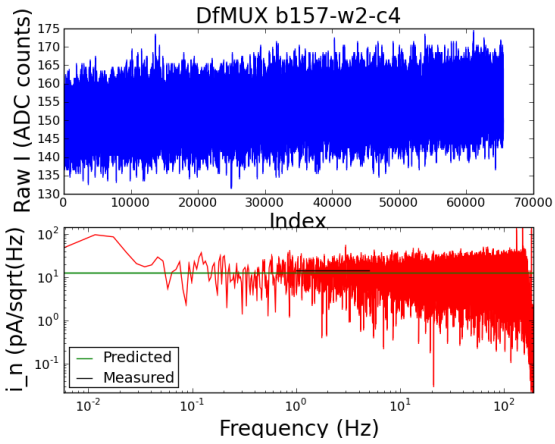
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 769191 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.558
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.48 ohm
R is : 1.48 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.267272949219 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.19954743499 pA/sqrt(Hz)
20 ohms noise : 1.83973977512 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.84974994021 pA/sqrt(Hz)
Current bias shot noise : 3.77293431443 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.51978457026 pA/sqrt(Hz)
Carrier shot noise : 2.79763214713 pA/sqrt(Hz)
Carrier digitization noise : 0.297590029578 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.8105022697 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.72500327998 pA/sqrt(Hz)

Predicted noise : 12.5609178132 pA/sqrt(Hz)
Measured noise : 14.0640826639 pA/sqrt(Hz)
Standard deviation : 7.39764180879 pA/sqrt(Hz)
Measured/predicted : 1.11966998536



b157-w2-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

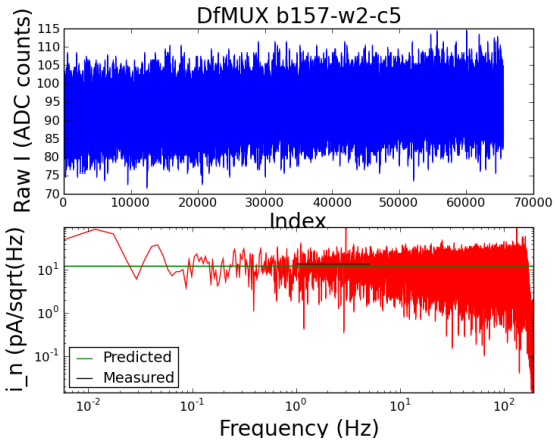
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 840285 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.485
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.53 ohm
R is : 1.53 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.267272949219 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.26627458069 pA/sqrt(Hz)
20 ohms noise : 1.8781078839 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.84974994021 pA/sqrt(Hz)
Current bias shot noise : 3.85161954814 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.43743866927 pA/sqrt(Hz)
Carrier shot noise : 2.75153950174 pA/sqrt(Hz)
Carrier digitization noise : 0.287864865212 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.62021971598 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.59772927894 pA/sqrt(Hz)

Predicted noise : 12.4618399506 pA/sqrt(Hz)
Measured noise : 13.8159429368 pA/sqrt(Hz)
Standard deviation : 8.0525027284 pA/sqrt(Hz)
Measured/predicted : 1.10865995644



b157-w2-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

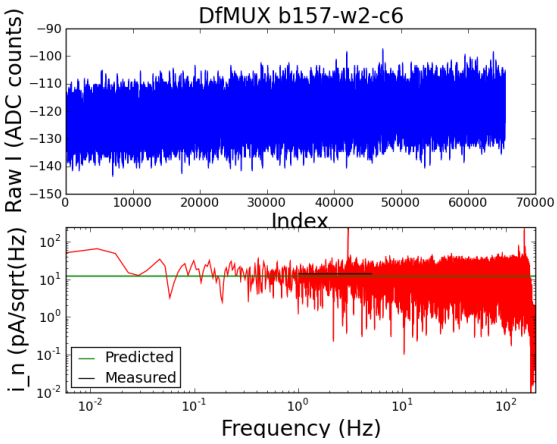
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 951804 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.434
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.64 ohm
R is : 1.64 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.267272949219 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.37952319862 pA/sqrt(Hz)
20 ohms noise : 1.94322583921 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.84974994021 pA/sqrt(Hz)
Current bias shot noise : 3.98516330873 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.27395192925 pA/sqrt(Hz)
Carrier shot noise : 2.65766075545 pA/sqrt(Hz)
Carrier digitization noise : 0.26855685596 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.4786300216 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.33850519769 pA/sqrt(Hz)

Predicted noise : 12.3070262371 pA/sqrt(Hz)
Measured noise : 14.3078476385 pA/sqrt(Hz)
Standard deviation : 13.6077370336 pA/sqrt(Hz)
Measured/predicted : 1.16257553716



b157-w2-c7

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

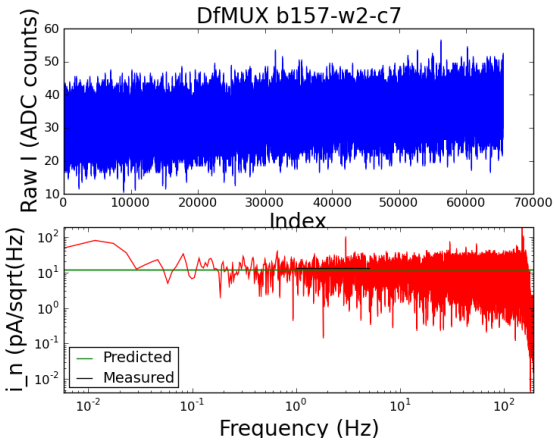
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

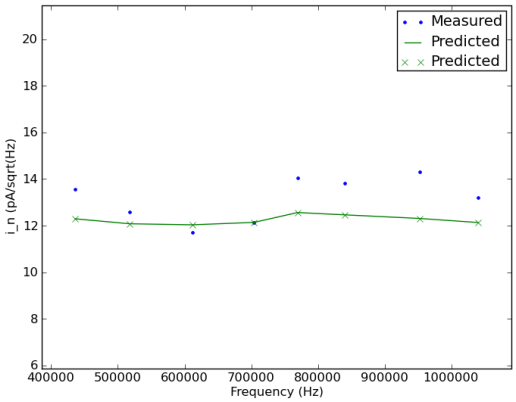
Demod gain is : 2
Demod frequency is : 1039470 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.349
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.76 ohm
R is : 1.76 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.267272949219 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.47528641286 pA/sqrt(Hz)
20 ohms noise : 1.99828968739 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.84974994021 pA/sqrt(Hz)
Current bias shot noise : 4.09808812838 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.11890975226 pA/sqrt(Hz)
Carrier shot noise : 2.56545932594 pA/sqrt(Hz)
Carrier digitization noise : 0.250246161236 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.22269337157 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.08391263228 pA/sqrt(Hz)

Predicted noise : 12.1326802147 pA/sqrt(Hz)
Measured noise : 13.2002673505 pA/sqrt(Hz)
Standard deviation : 10.7141409442 pA/sqrt(Hz)
Measured/predicted : 1.08799268726



b157-w2


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
20
18
16
14
12
10
8
6
400000
500000
600000
700000
800000
900000
1000000

b157-w3-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

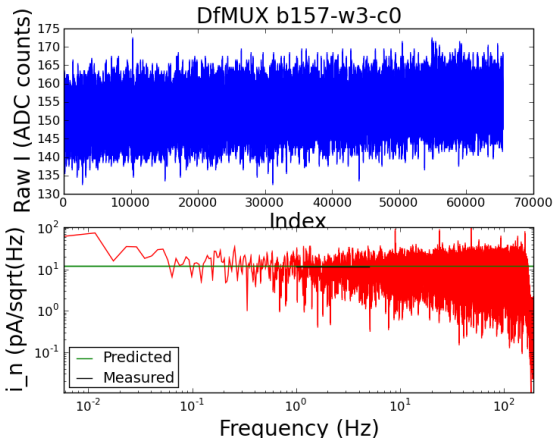
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 387468 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.578
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.6 ohm
R is : 1.6 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.269836425781 V
SQUID current bias : 4.35980224609 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.92722571167 pA/sqrt(Hz)
20 ohms noise : 1.68315478421 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.85859946077 pA/sqrt(Hz)
Current bias shot noise : 3.45638582861 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.33080072749 pA/sqrt(Hz)
Carrier shot noise : 2.69067644066 pA/sqrt(Hz)
Carrier digitization noise : 0.275270777359 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.86042628431 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.4296702484 pA/sqrt(Hz)

Predicted noise : 12.1487416259 pA/sqrt(Hz)
Measured noise : 11.8477578521 pA/sqrt(Hz)
Standard deviation : 6.54936514615 pA/sqrt(Hz)
Measured/predicted : 0.975225107005



b157-w3-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

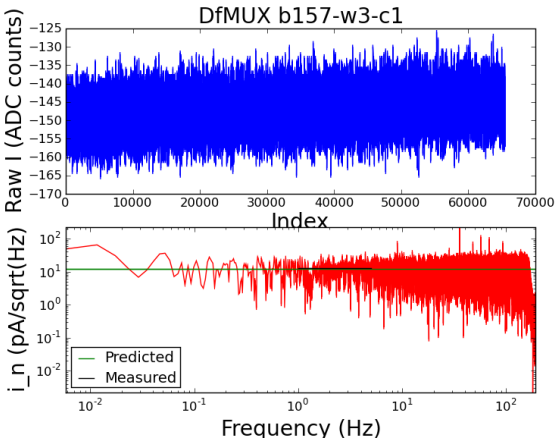
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 472224 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.527
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.61 ohm
R is : 1.61 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.269836425781 V
SQUID current bias : 4.35980224609 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.97395251645 pA/sqrt(Hz)
20 ohms noise : 1.71002269696 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.85859946077 pA/sqrt(Hz)
Current bias shot noise : 3.51155952608 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.31632370433 pA/sqrt(Hz)
Carrier shot noise : 2.68230728682 pA/sqrt(Hz)
Carrier digitization noise : 0.273561020978 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.73131725583 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.40656079818 pA/sqrt(Hz)

Predicted noise : 12.1311704818 pA/sqrt(Hz)
Measured noise : 12.4530073513 pA/sqrt(Hz)
Standard deviation : 6.43124447325 pA/sqrt(Hz)
Measured/predicted : 1.02652974583



b157-w3-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

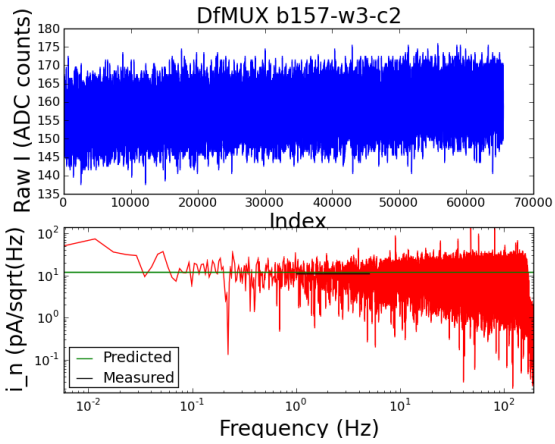
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 551253 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.49
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.6 ohm
R is : 1.6 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.269836425781 V
SQUID current bias : 4.35980224609 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.02494675522 pA/sqrt(Hz)
20 ohms noise : 1.73934438425 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.85859946077 pA/sqrt(Hz)
Current bias shot noise : 3.57177208964 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.33080072749 pA/sqrt(Hz)
Carrier shot noise : 2.69067644066 pA/sqrt(Hz)
Carrier digitization noise : 0.275270777359 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.63369137144 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.4296702484 pA/sqrt(Hz)

Predicted noise : 12.1626941519 pA/sqrt(Hz)
Measured noise : 11.2259121278 pA/sqrt(Hz)
Standard deviation : 5.87858991438 pA/sqrt(Hz)
Measured/predicted : 0.92297906924



b157-w3-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

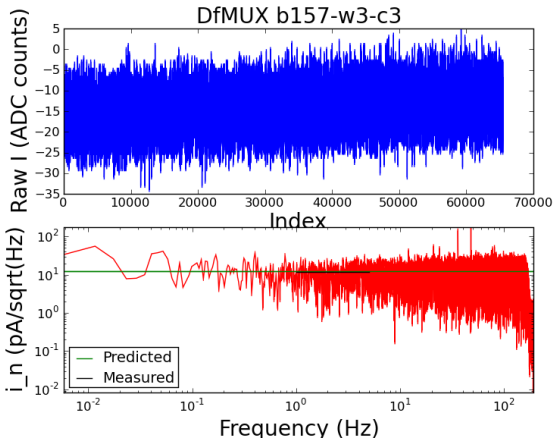
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 632844 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.453
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.63 ohm
R is : 1.63 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.269836425781 V
SQUID current bias : 4.35980224609 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.08471037028 pA/sqrt(Hz)
20 ohms noise : 1.77370846291 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.85859946077 pA/sqrt(Hz)
Current bias shot noise : 3.6423392862 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.28790255459 pA/sqrt(Hz)
Carrier shot noise : 2.66580062368 pA/sqrt(Hz)
Carrier digitization noise : 0.270204444034 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.53230458831 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.36098152964 pA/sqrt(Hz)

Predicted noise : 12.1265084754 pA/sqrt(Hz)
Measured noise : 12.0898185799 pA/sqrt(Hz)
Standard deviation : 6.17163444734 pA/sqrt(Hz)
Measured/predicted : 0.996974405656



b157-w3-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

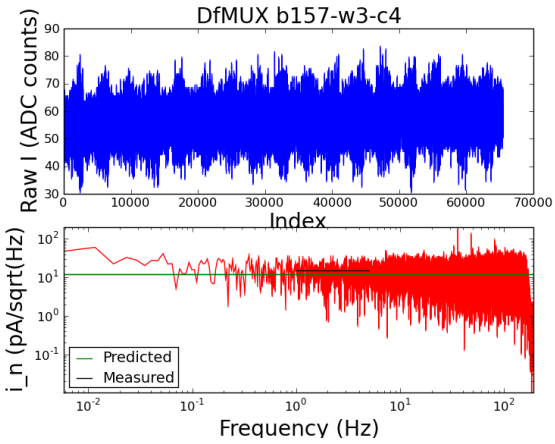
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 713496 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.521
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.62 ohm
R is : 1.62 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.269836425781 V
SQUID current bias : 4.35980224609 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.15047515759 pA/sqrt(Hz)
20 ohms noise : 1.81152321561 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.85859946077 pA/sqrt(Hz)
Current bias shot noise : 3.71999249824 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.30202540986 pA/sqrt(Hz)
Carrier shot noise : 2.67401574523 pA/sqrt(Hz)
Carrier digitization noise : 0.271872372701 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.71572445141 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.38366565593 pA/sqrt(Hz)

Predicted noise : 12.2301350481 pA/sqrt(Hz)
Measured noise : 15.1471693734 pA/sqrt(Hz)
Standard deviation : 7.8553431608 pA/sqrt(Hz)
Measured/predicted : 1.238512029



b157-w3-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

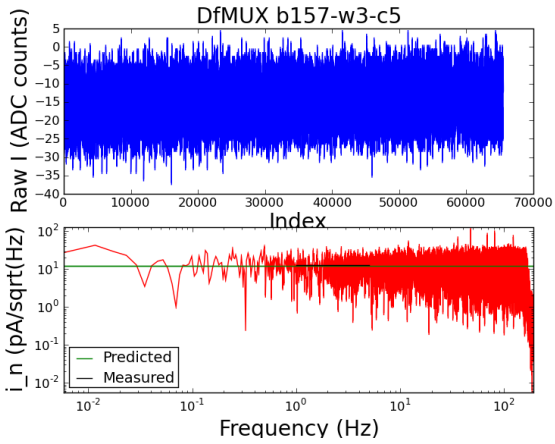
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 819909 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.504
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.76 ohm
R is : 1.76 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.269836425781 V
SQUID current bias : 4.35980224609 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.2466965223 pA/sqrt(Hz)
20 ohms noise : 1.86685050032 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.85859946077 pA/sqrt(Hz)
Current bias shot noise : 3.83360798066 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.11890975226 pA/sqrt(Hz)
Carrier shot noise : 2.56545932594 pA/sqrt(Hz)
Carrier digitization noise : 0.250246161236 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.67105056186 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.08391263228 pA/sqrt(Hz)

Predicted noise : 12.0534852719 pA/sqrt(Hz)
Measured noise : 12.9302484669 pA/sqrt(Hz)
Standard deviation : 7.10578263012 pA/sqrt(Hz)
Measured/predicted : 1.0727393924



b157-w3-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

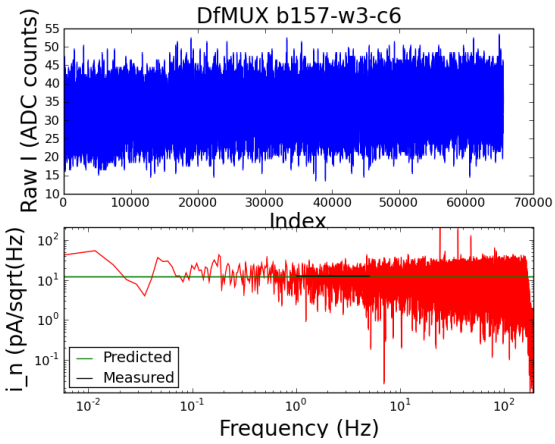
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 866916 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.465
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.59 ohm
R is : 1.59 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.269836425781 V
SQUID current bias : 4.35980224609 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.29239569882 pA/sqrt(Hz)
20 ohms noise : 1.89312752682 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.85859946077 pA/sqrt(Hz)
Current bias shot noise : 3.88756828358 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.34545985156 pA/sqrt(Hz)
Carrier shot noise : 2.69912442516 pA/sqrt(Hz)
Carrier digitization noise : 0.27700204011 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.56562581839 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.45299737095 pA/sqrt(Hz)

Predicted noise : 12.3548878677 pA/sqrt(Hz)
Measured noise : 12.6400849014 pA/sqrt(Hz)
Standard deviation : 6.24423492517 pA/sqrt(Hz)
Measured/predicted : 1.02308374117



b157-w3-c7

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

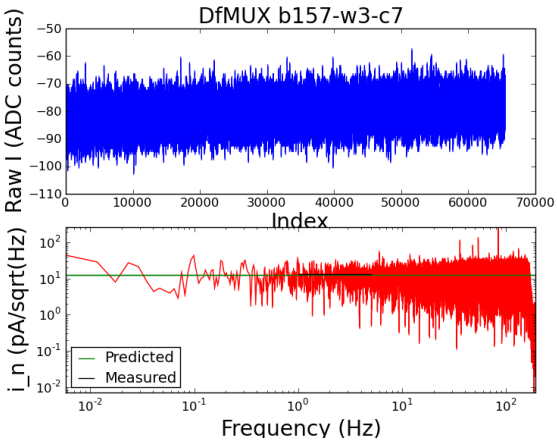
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

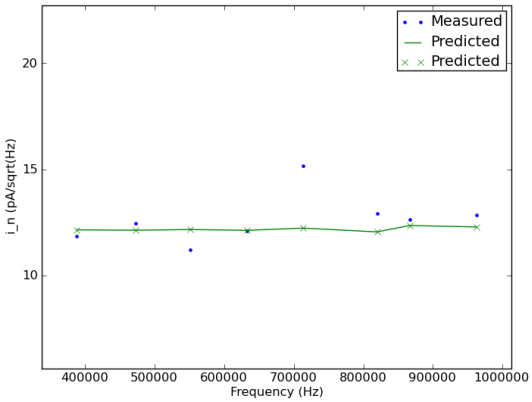
Demod gain is : 2
Demod frequency is : 962928 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.372
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.64 ohm
R is : 1.64 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.269836425781 V
SQUID current bias : 4.35980224609 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.39135953569 pA/sqrt(Hz)
20 ohms noise : 1.95003173302 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.85859946077 pA/sqrt(Hz)
Current bias shot noise : 4.00442200003 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.27395192925 pA/sqrt(Hz)
Carrier shot noise : 2.65766075545 pA/sqrt(Hz)
Carrier digitization noise : 0.26855685596 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.2947654939 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.33850519769 pA/sqrt(Hz)

Predicted noise : 12.283263504 pA/sqrt(Hz)
Measured noise : 12.84951144 pA/sqrt(Hz)
Standard deviation : 6.16437365387 pA/sqrt(Hz)
Measured/predicted : 1.04609914424



b157-w3


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz))
Frequency (Hz)
20
15
10
400000
500000
600000
700000
800000
900000
1000000

b158-w0-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

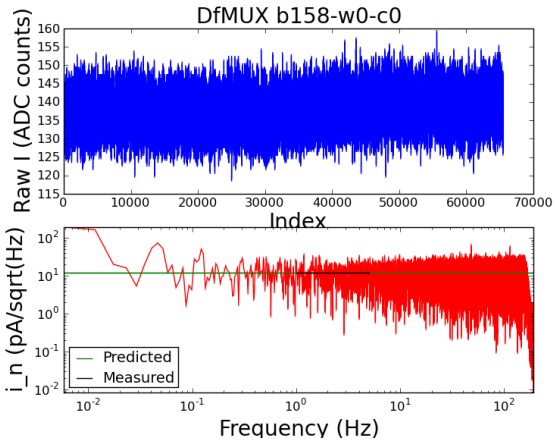
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 431103 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.531
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.62 ohm
R is : 1.62 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.260864257812 V
SQUID current bias : 4.37005615234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.95022727136 pA/sqrt(Hz)
20 ohms noise : 1.69638068103 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.82743865989 pA/sqrt(Hz)
Current bias shot noise : 3.48763952795 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.30202540986 pA/sqrt(Hz)
Carrier shot noise : 2.67401574523 pA/sqrt(Hz)
Carrier digitization noise : 0.271872372701 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.74166319157 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.38366565593 pA/sqrt(Hz)

Predicted noise : 12.0955621917 pA/sqrt(Hz)
Measured noise : 12.1528422486 pA/sqrt(Hz)
Standard deviation : 6.38926478577 pA/sqrt(Hz)
Measured/predicted : 1.00473562585



b158-w0-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

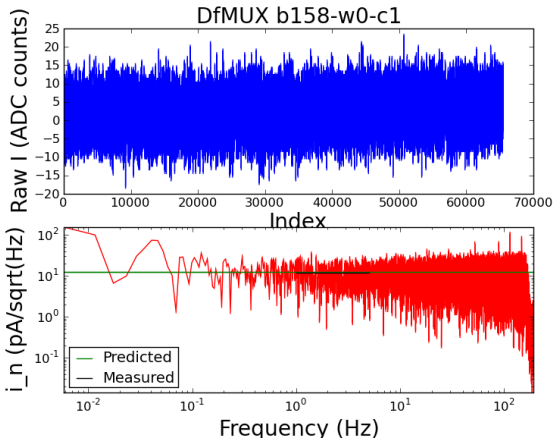
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 592404 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.541
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.61 ohm
R is : 1.61 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.260864257812 V
SQUID current bias : 4.37005615234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.05421129775 pA/sqrt(Hz)
20 ohms noise : 1.75617149621 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.82743865989 pA/sqrt(Hz)
Current bias shot noise : 3.61056524431 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.31632370433 pA/sqrt(Hz)
Carrier shot noise : 2.68230728682 pA/sqrt(Hz)
Carrier digitization noise : 0.273561020978 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.76735881591 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.40656079818 pA/sqrt(Hz)

Predicted noise : 12.1900583707 pA/sqrt(Hz)
Measured noise : 11.9426918744 pA/sqrt(Hz)
Standard deviation : 6.47140708686 pA/sqrt(Hz)
Measured/predicted : 0.979707521588



b158-w0-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

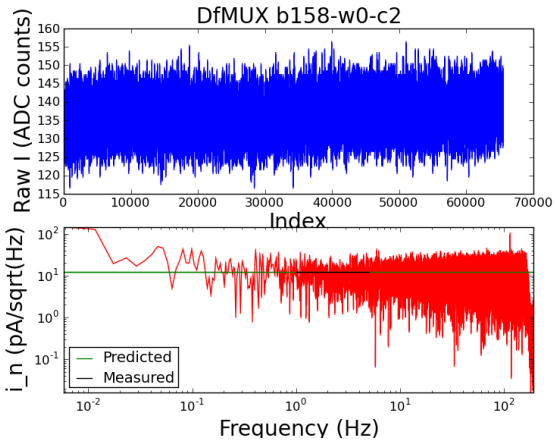
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 671754 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.46
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.62 ohm
R is : 1.62 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.260864257812 V
SQUID current bias : 4.37005615234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.11563424977 pA/sqrt(Hz)
20 ohms noise : 1.79148969362 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.82743865989 pA/sqrt(Hz)
Current bias shot noise : 3.68317697746 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.30202540986 pA/sqrt(Hz)
Carrier shot noise : 2.67401574523 pA/sqrt(Hz)
Carrier digitization noise : 0.271872372701 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.55179485069 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.38366565593 pA/sqrt(Hz)

Predicted noise : 12.1669549001 pA/sqrt(Hz)
Measured noise : 12.2665719086 pA/sqrt(Hz)
Standard deviation : 6.53076898715 pA/sqrt(Hz)
Measured/predicted : 1.00818750537



b158-w0-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

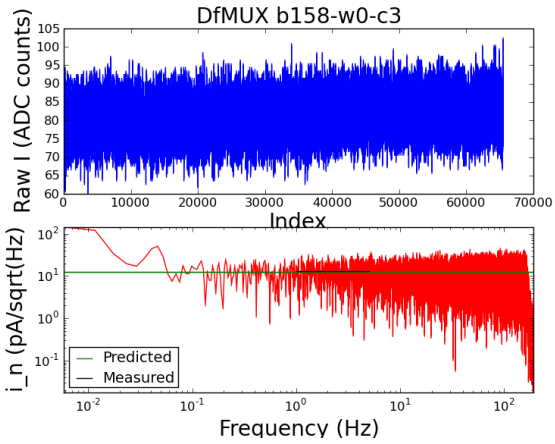
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 766101 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.449
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.58 ohm
R is : 1.58 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.260864257812 V
SQUID current bias : 4.37005615234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.19674952665 pA/sqrt(Hz)
20 ohms noise : 1.83813097782 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.82743865989 pA/sqrt(Hz)
Current bias shot noise : 3.77906818174 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.36030453416 pA/sqrt(Hz)
Carrier shot noise : 2.70765248566 pA/sqrt(Hz)
Carrier digitization noise : 0.278755217579 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.52109964579 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.47654560457 pA/sqrt(Hz)

Predicted noise : 12.2927908317 pA/sqrt(Hz)
Measured noise : 13.2788533012 pA/sqrt(Hz)
Standard deviation : 6.82101599684 pA/sqrt(Hz)
Measured/predicted : 1.08021469518



b158-w0-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

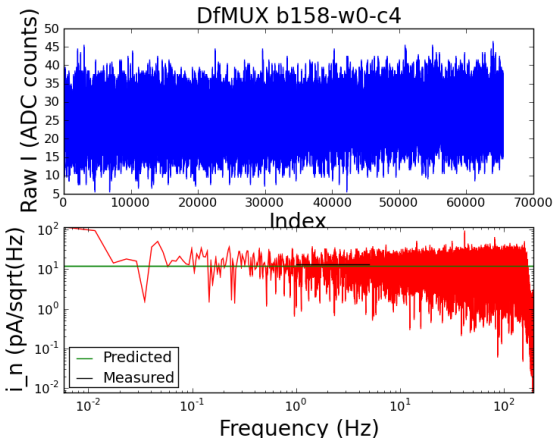
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

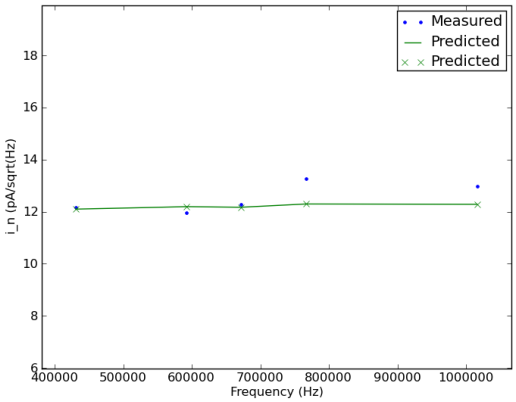
Demod gain is : 2
Demod frequency is : 1015845 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.388
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.67 ohm
R is : 1.67 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.260864257812 V
SQUID current bias : 4.37005615234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.44892939404 pA/sqrt(Hz)
20 ohms noise : 1.98313440158 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.82743865989 pA/sqrt(Hz)
Current bias shot noise : 4.07718503607 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.2331024934 pA/sqrt(Hz)
Carrier shot noise : 2.63368137117 pA/sqrt(Hz)
Carrier digitization noise : 0.263732481302 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.34359576036 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.27229176704 pA/sqrt(Hz)

Predicted noise : 12.2809298157 pA/sqrt(Hz)
Measured noise : 12.9841141429 pA/sqrt(Hz)
Standard deviation : 6.86466512558 pA/sqrt(Hz)
Measured/predicted : 1.0572582319



b158-w0


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
18
16
14
12
10
8
6
400000
500000
600000
700000
800000
900000
1000000

b158-w1-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

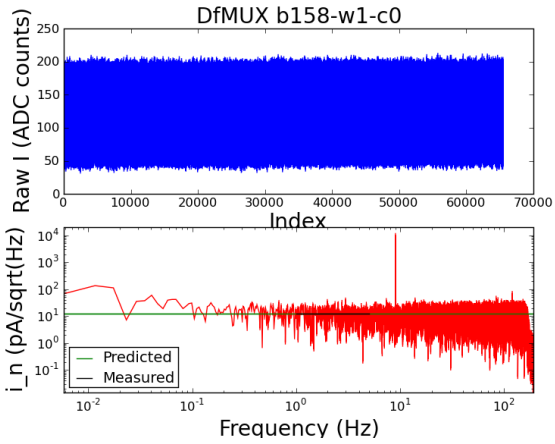
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 378231 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.58
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.57 ohm
R is : 1.57 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.336486816406 V
SQUID current bias : 4.32904052734 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.92264881713 pA/sqrt(Hz)
20 ohms noise : 1.68052306985 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.07548474489 pA/sqrt(Hz)
Current bias shot noise : 3.43878535975 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.37533832101 pA/sqrt(Hz)
Carrier shot noise : 2.71626189526 pA/sqrt(Hz)
Carrier digitization noise : 0.280530728519 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.86537084511 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.50031846458 pA/sqrt(Hz)

Predicted noise : 12.2360996446 pA/sqrt(Hz)
Measured noise : 12.4741194968 pA/sqrt(Hz)
Standard deviation : 6.63355025911 pA/sqrt(Hz)
Measured/predicted : 1.01945226495



b158-w1-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

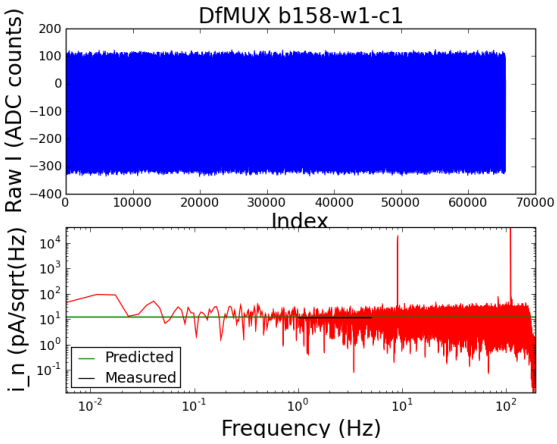
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 465384 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.51
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.66 ohm
R is : 1.66 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.336486816406 V
SQUID current bias : 4.32904052734 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.96987036441 pA/sqrt(Hz)
20 ohms noise : 1.70767545954 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.07548474489 pA/sqrt(Hz)
Current bias shot noise : 3.49434617996 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.24655491806 pA/sqrt(Hz)
Carrier shot noise : 2.64160223529 pA/sqrt(Hz)
Carrier digitization noise : 0.26532123119 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.68690263314 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.29416337061 pA/sqrt(Hz)

Predicted noise : 12.0595685183 pA/sqrt(Hz)
Measured noise : 11.529904786 pA/sqrt(Hz)
Standard deviation : 6.05946969467 pA/sqrt(Hz)
Measured/predicted : 0.956079379501



b158-w1-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

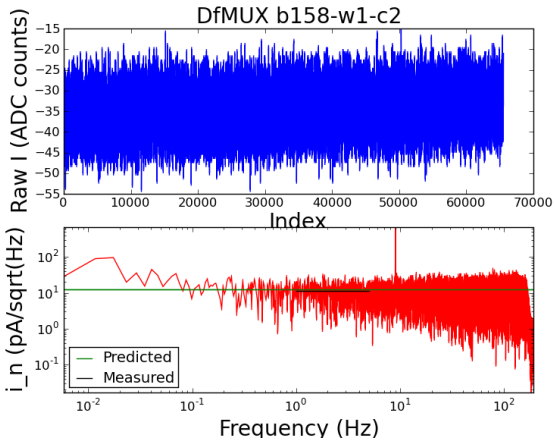
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 541296 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.491
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.58 ohm
R is : 1.58 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.336486816406 V
SQUID current bias : 4.32904052734 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.01814033463 pA/sqrt(Hz)
20 ohms noise : 1.73543069241 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.07548474489 pA/sqrt(Hz)
Current bias shot noise : 3.55114057343 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.36030453416 pA/sqrt(Hz)
Carrier shot noise : 2.70765248566 pA/sqrt(Hz)
Carrier digitization noise : 0.278755217579 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.63637744187 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.47654560457 pA/sqrt(Hz)

Predicted noise : 12.2281460036 pA/sqrt(Hz)
Measured noise : 11.6266683173 pA/sqrt(Hz)
Standard deviation : 6.11203861765 pA/sqrt(Hz)
Measured/predicted : 0.950812029381



b158-w1-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

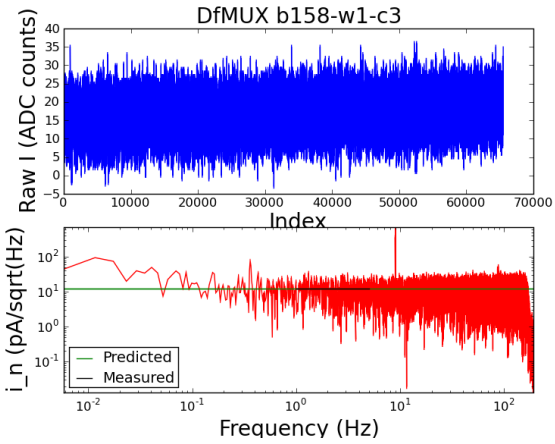
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 625419 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.481
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.55 ohm
R is : 1.55 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.336486816406 V
SQUID current bias : 4.32904052734 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.07898370829 pA/sqrt(Hz)
20 ohms noise : 1.77041563227 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.07548474489 pA/sqrt(Hz)
Current bias shot noise : 3.62272881946 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.40598784773 pA/sqrt(Hz)
Carrier shot noise : 2.73372999744 pA/sqrt(Hz)
Carrier digitization noise : 0.284150479855 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.60939231546 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.54855252093 pA/sqrt(Hz)

Predicted noise : 12.3222469065 pA/sqrt(Hz)
Measured noise : 12.1760043208 pA/sqrt(Hz)
Standard deviation : 6.54331554068 pA/sqrt(Hz)
Measured/predicted : 0.988131824754



b158-w1-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

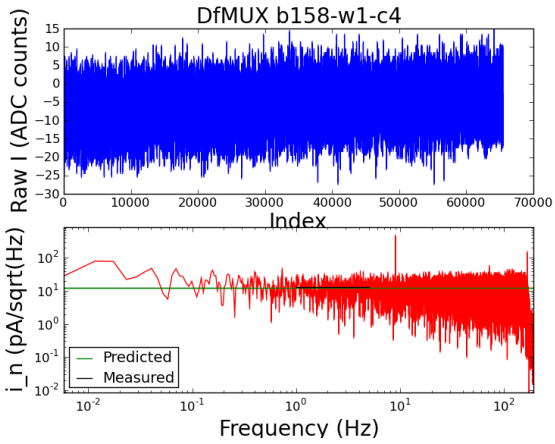
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 707955 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.543
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.52 ohm
R is : 1.52 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.336486816406 V
SQUID current bias : 4.32904052734 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.14575300371 pA/sqrt(Hz)
20 ohms noise : 1.80880797713 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.07548474489 pA/sqrt(Hz)
Current bias shot noise : 3.70128949846 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.45347444999 pA/sqrt(Hz)
Carrier shot noise : 2.76057578058 pA/sqrt(Hz)
Carrier digitization noise : 0.28975871301 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.77246936286 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.62268083799 pA/sqrt(Hz)

Predicted noise : 12.4639455137 pA/sqrt(Hz)
Measured noise : 13.3672064092 pA/sqrt(Hz)
Standard deviation : 7.04009455538 pA/sqrt(Hz)
Measured/predicted : 1.07246990084



b158-w1-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

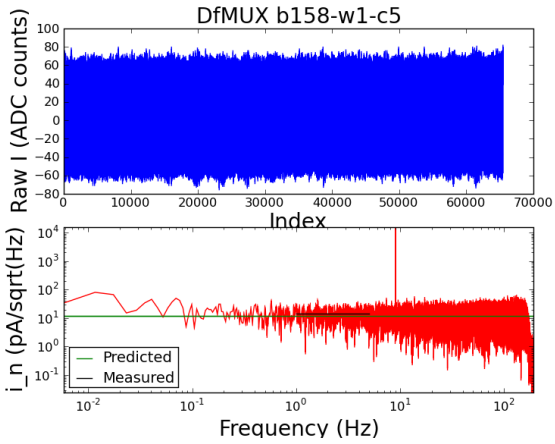
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 801198 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.483
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.63 ohm
R is : 1.63 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.336486816406 V
SQUID current bias : 4.32904052734 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.22903612452 pA/sqrt(Hz)
20 ohms noise : 1.8566957716 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.07548474489 pA/sqrt(Hz)
Current bias shot noise : 3.79928032612 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.28790255459 pA/sqrt(Hz)
Carrier shot noise : 2.66580062368 pA/sqrt(Hz)
Carrier digitization noise : 0.270204444034 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.61481161998 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.36098152964 pA/sqrt(Hz)

Predicted noise : 12.2764219248 pA/sqrt(Hz)
Measured noise : 13.942859152 pA/sqrt(Hz)
Standard deviation : 7.10075385184 pA/sqrt(Hz)
Measured/predicted : 1.13574290924



b158-w1-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

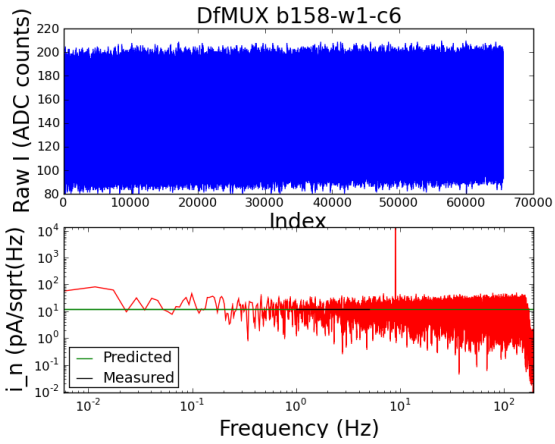
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 888360 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.431
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.66 ohm
R is : 1.66 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.336486816406 V
SQUID current bias : 4.32904052734 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.31385864261 pA/sqrt(Hz)
20 ohms noise : 1.9054687195 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.07548474489 pA/sqrt(Hz)
Current bias shot noise : 3.89908240692 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.24655491806 pA/sqrt(Hz)
Carrier shot noise : 2.64160223529 pA/sqrt(Hz)
Carrier digitization noise : 0.26532123119 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.4700484724 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.29416337061 pA/sqrt(Hz)

Predicted noise : 12.2549361329 pA/sqrt(Hz)
Measured noise : 12.0669938045 pA/sqrt(Hz)
Standard deviation : 6.54926216751 pA/sqrt(Hz)
Measured/predicted : 0.984663948763



b158-w1-c7

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

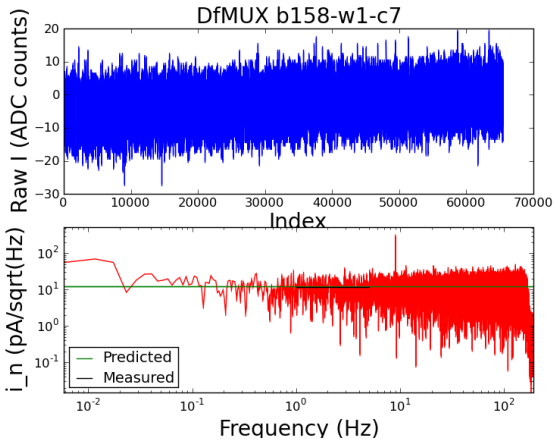
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

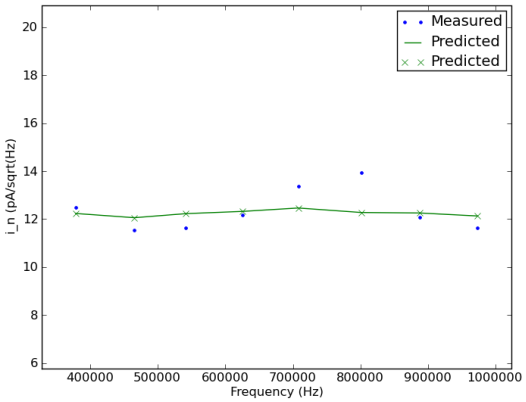
Demod gain is : 2
Demod frequency is : 973512 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.357
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.75 ohm
R is : 1.75 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.336486816406 V
SQUID current bias : 4.32904052734 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.40270823908 pA/sqrt(Hz)
20 ohms noise : 1.95655723747 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.07548474489 pA/sqrt(Hz)
Current bias shot noise : 4.00362274368 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.13101780799 pA/sqrt(Hz)
Carrier shot noise : 2.57277876827 pA/sqrt(Hz)
Carrier digitization noise : 0.2516761393 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.24802402834 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.10412355105 pA/sqrt(Hz)

Predicted noise : 12.1304660623 pA/sqrt(Hz)
Measured noise : 11.636922639 pA/sqrt(Hz)
Standard deviation : 6.27614245068 pA/sqrt(Hz)
Measured/predicted : 0.959313729516



b158-w1


Measured
Predicted
Predicted
i_n (pA/sqrt(Hz)
Frequency (Hz)
20
18
16
14
12
10
8
6
400000
500000
600000
700000
800000
900000
1000000

b158-w3-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

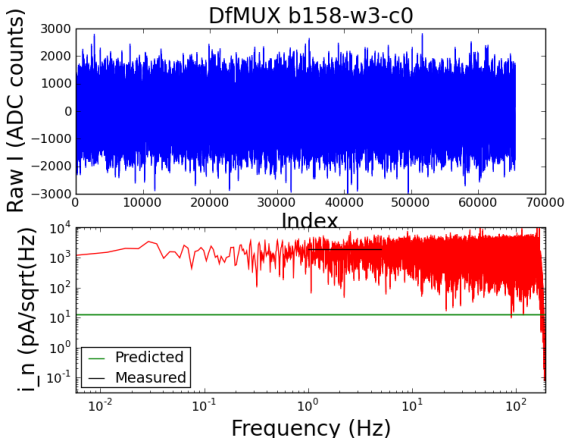
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 465495 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.56
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.45 ohm
R is : 1.45 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.356994628906 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.96993618055 pA/sqrt(Hz)
20 ohms noise : 1.70771330381 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.1377964918 pA/sqrt(Hz)
Current bias shot noise : 3.5021747153 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.57191804412 pA/sqrt(Hz)
Carrier shot noise : 2.82642500322 pA/sqrt(Hz)
Carrier digitization noise : 0.303747064672 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.81553450698 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.80450798113 pA/sqrt(Hz)

Predicted noise : 12.5205660052 pA/sqrt(Hz)
Measured noise : 1885.24990704 pA/sqrt(Hz)
Standard deviation : 1034.34562827 pA/sqrt(Hz)
Measured/predicted : 150.572258975



b158-w3-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

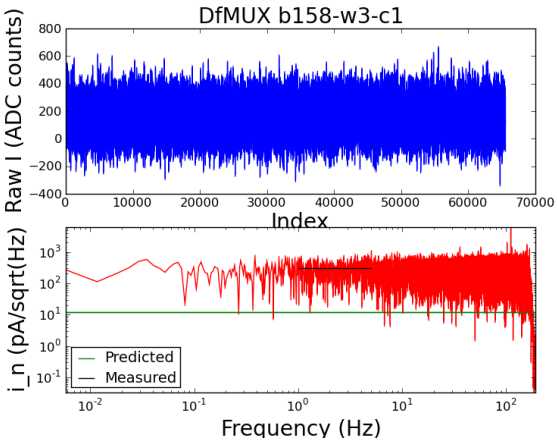
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 533958 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.488
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.66 ohm
R is : 1.66 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.356994628906 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.01319363269 pA/sqrt(Hz)
20 ohms noise : 1.73258633879 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.1377964918 pA/sqrt(Hz)
Current bias shot noise : 3.55318428114 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.24655491806 pA/sqrt(Hz)
Carrier shot noise : 2.64160223529 pA/sqrt(Hz)
Carrier digitization noise : 0.26532123119 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.6283109953 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.29416337061 pA/sqrt(Hz)

Predicted noise : 12.0889979665 pA/sqrt(Hz)
Measured noise : 297.952160787 pA/sqrt(Hz)
Standard deviation : 155.757914825 pA/sqrt(Hz)
Measured/predicted : 24.6465556213



b158-w3-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

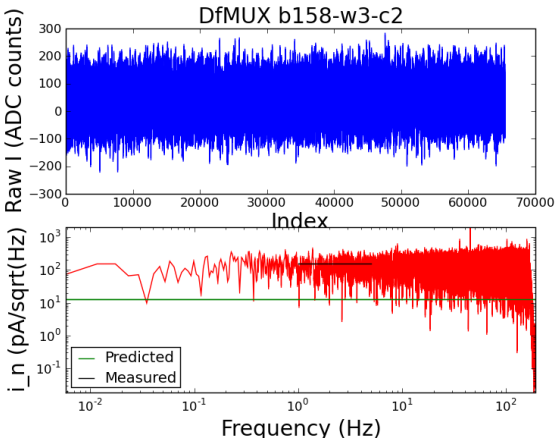
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 701682 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.668
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.55 ohm
R is : 1.55 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.356994628906 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.1404426452 pA/sqrt(Hz)
20 ohms noise : 1.80575452099 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.1377964918 pA/sqrt(Hz)
Current bias shot noise : 3.70323742945 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.40598784773 pA/sqrt(Hz)
Carrier shot noise : 2.73372999744 pA/sqrt(Hz)
Carrier digitization noise : 0.284150479855 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 3.07507046553 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.54855252093 pA/sqrt(Hz)

Predicted noise : 12.4838237901 pA/sqrt(Hz)
Measured noise : 151.873834081 pA/sqrt(Hz)
Standard deviation : 80.7848887597 pA/sqrt(Hz)
Measured/predicted : 12.1656502555



b158-w3-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

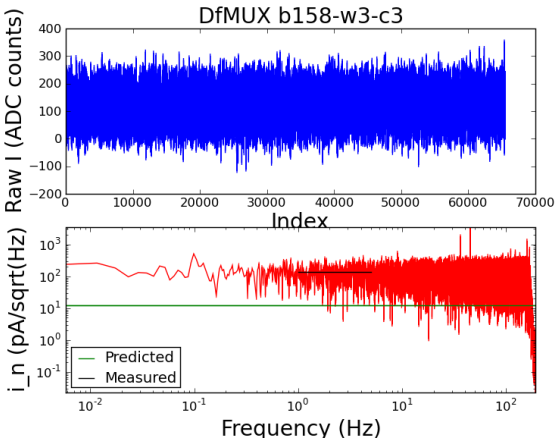
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 777714 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.737
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.56 ohm
R is : 1.56 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.356994628906 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.20730978203 pA/sqrt(Hz)
20 ohms noise : 1.84420312467 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.1377964918 pA/sqrt(Hz)
Current bias shot noise : 3.78208774194 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.3905648487 pA/sqrt(Hz)
Carrier shot noise : 2.72495395554 pA/sqrt(Hz)
Carrier digitization noise : 0.28232900242 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 3.22998559006 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.52431954501 pA/sqrt(Hz)

Predicted noise : 12.5494797405 pA/sqrt(Hz)
Measured noise : 138.913668556 pA/sqrt(Hz)
Standard deviation : 75.6287021263 pA/sqrt(Hz)
Measured/predicted : 11.0692770878



b158-w3-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

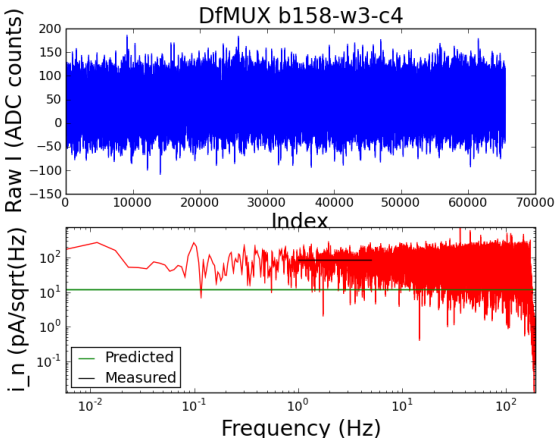
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 886230 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.439
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.8 ohm
R is : 1.8 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.356994628906 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.31170987242 pA/sqrt(Hz)
20 ohms noise : 1.90423317664 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.1377964918 pA/sqrt(Hz)
Current bias shot noise : 3.90519724147 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.07182286888 pA/sqrt(Hz)
Carrier shot noise : 2.53679407623 pA/sqrt(Hz)
Carrier digitization noise : 0.244685135431 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.49286695674 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.00476028617 pA/sqrt(Hz)

Predicted noise : 12.0474912913 pA/sqrt(Hz)
Measured noise : 87.3319501883 pA/sqrt(Hz)
Standard deviation : 46.2542494621 pA/sqrt(Hz)
Measured/predicted : 7.24897392134



b158-w3-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

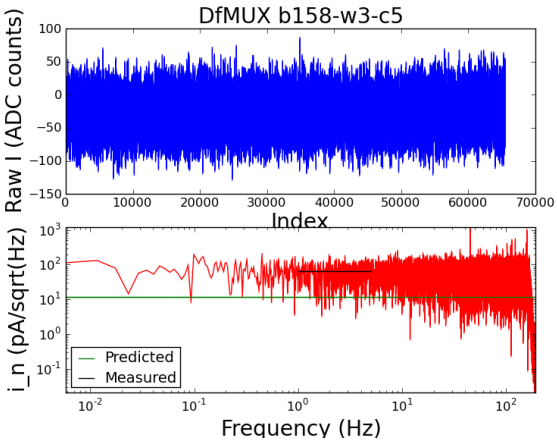
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

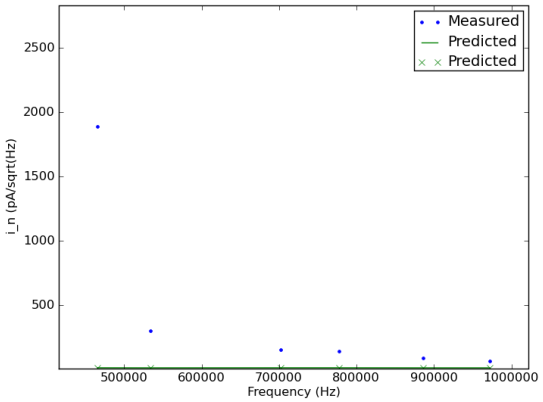
Demod gain is : 2
Demod frequency is : 971778 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.357
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.89 ohm
R is : 1.89 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.356994628906 V
SQUID current bias : 4.34826660156 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.8 K
T_bath is : 0.8 K
G is guessed : -1.0 pW/K
γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.40084318783 pA/sqrt(Hz)
20 ohms noise : 1.955484833 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.1377964918 pA/sqrt(Hz)
Current bias shot noise : 4.01030402645 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 1.97316463703 pA/sqrt(Hz)
Carrier shot noise : 2.47565752405 pA/sqrt(Hz)
Carrier digitization noise : 0.233033462315 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.24802402834 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.83594607426 pA/sqrt(Hz)

Predicted noise : 11.9399240048 pA/sqrt(Hz)
Measured noise : 65.0465678916 pA/sqrt(Hz)
Standard deviation : 33.5885002024 pA/sqrt(Hz)
Measured/predicted : 5.44782092963



b158-w3


Measured
Predicted
Predicted
2500
2000
1500
1000
500
i_n (pA/sqrt(Hz)
500000
600000
700000
800000
900000
1000000
Frequency (Hz)