

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

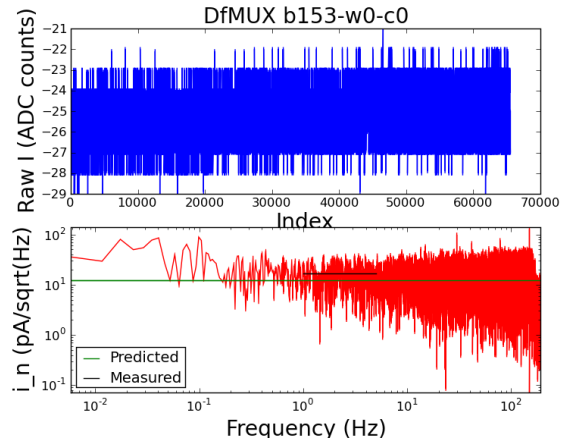
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 522177 Hz
Carrier gain is : 2
Carrier amplitude : 1.08
Nuller gain is : 2
Nuller amplitude : 0.519
Voltage bias is : 5.74992 uV_RMS
R normal is : 1.62 ohm
R is : 1.296 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 : 0.48 K
T_bath is : 0.75 K
G is guessed : 45.3586556297 pW/K
 γ : 0.498

Dark bolo in transition
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 : 0.0567548224876 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 : 2.87753176233 pA/sqrt(Hz)
Carrier shot noise : 2.38290310802 pA/sqrt(Hz)
Carrier digitization noise : 0.339840465876 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 : 2.71050691643 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.39444203108 pA/sqrt(Hz)
Phonon noise : 2.94777093509 pA/sqrt(Hz)

Predicted noise : 12.1082889644 pA/sqrt(Hz)
Measured noise : 16.4992283841 pA/sqrt(Hz)
Standard deviation : 8.6181146199 pA/sqrt(Hz)
Measured/predicted : 1.36263913362



b153-w0-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

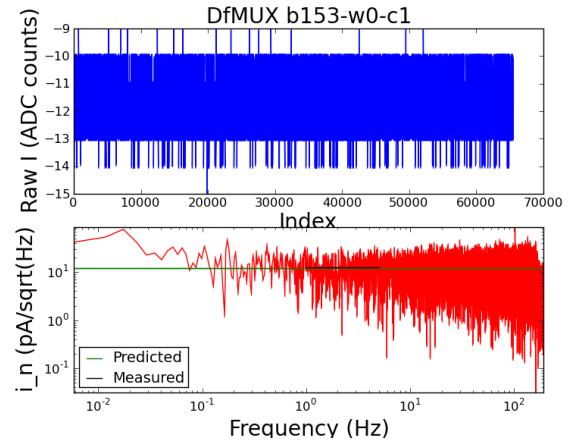
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 616488 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.518
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 : -0.159606933594 V
SQUID current bias : 5.84661865234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 resistors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.70789437903 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.99957733297 pA/sqrt(Hz)

Predicted noise : 12.0428039741 pA/sqrt(Hz)
Measured noise : 12.6964729147 pA/sqrt(Hz)
Standard deviation : 6.48795697351 pA/sqrt(Hz)
Measured/predicted : 1.05427879935



b153-w0-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

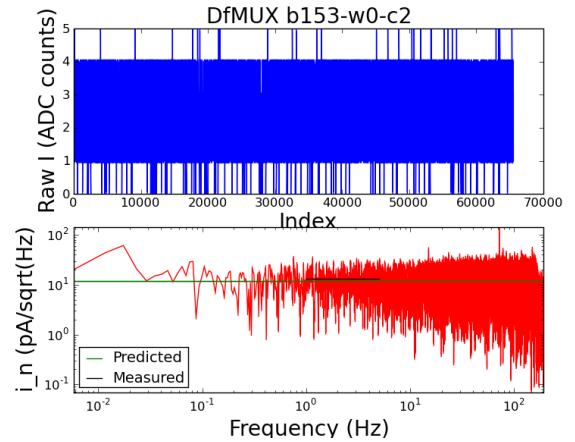
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 707700 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.492
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 : -0.159606933594 V
SQUID current bias : 5.84661865234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.63906077838 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.87853805065 pA/sqrt(Hz)

Predicted noise : 11.9947238921 pA/sqrt(Hz)
Measured noise : 13.1416220363 pA/sqrt(Hz)
Standard deviation : 6.68359742874 pA/sqrt(Hz)
Measured/predicted : 1.09561688577



b153-w0-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

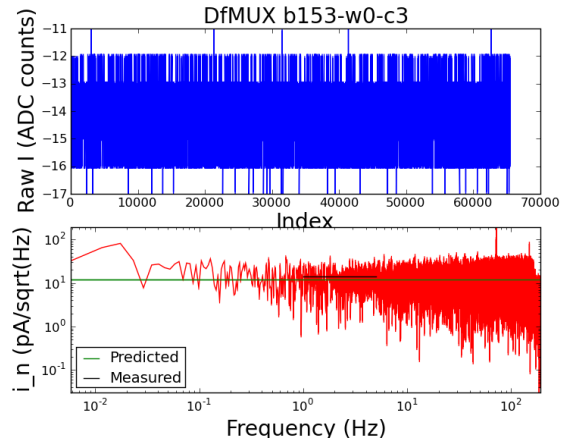
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 787827 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.556
Voltage bias is : 9.0508 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.59511880058 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 : 2.80546100597 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.93826598537 pA/sqrt(Hz)

Predicted noise : 12.1379208573 pA/sqrt(Hz)
Measured noise : 14.3120845131 pA/sqrt(Hz)
Standard deviation : 7.24653633596 pA/sqrt(Hz)
Measured/predicted : 1.17912158774



b153-w0-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

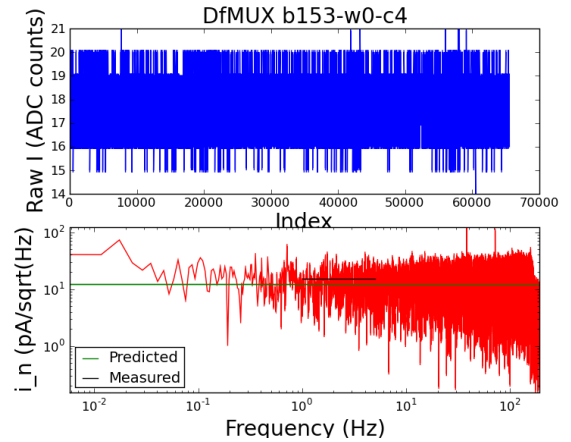
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 847089 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 : 1.59 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.76735881591 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.21633367425 pA/sqrt(Hz)

Predicted noise : 12.3928864717 pA/sqrt(Hz)
Measured noise : 14.9898171547 pA/sqrt(Hz)
Standard deviation : 8.09999886559 pA/sqrt(Hz)
Measured/predicted : 1.20955010674



b153-w0-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

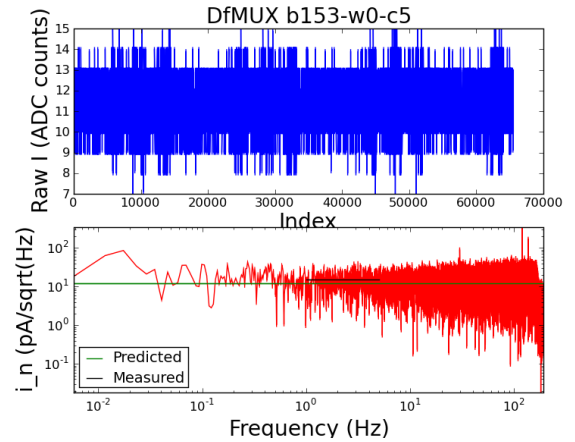
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 958239 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 : 1.79 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.54387022408 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 : 2.6175170647 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.80124865302 pA/sqrt(Hz)

Predicted noise : 12.1402483182 pA/sqrt(Hz)
Measured noise : 15.3040415379 pA/sqrt(Hz)
Standard deviation : 7.79961024606 pA/sqrt(Hz)
Measured/predicted : 1.26060366615



b153-w0-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

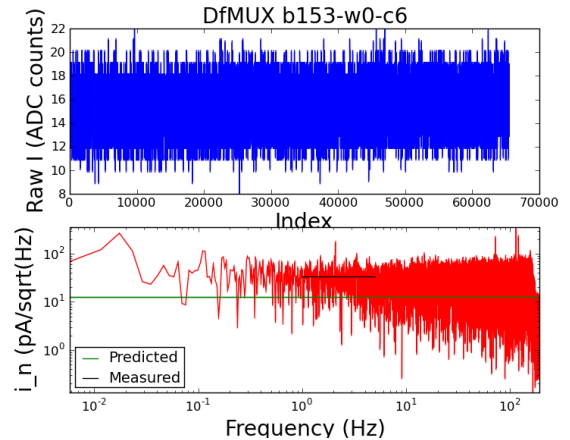
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

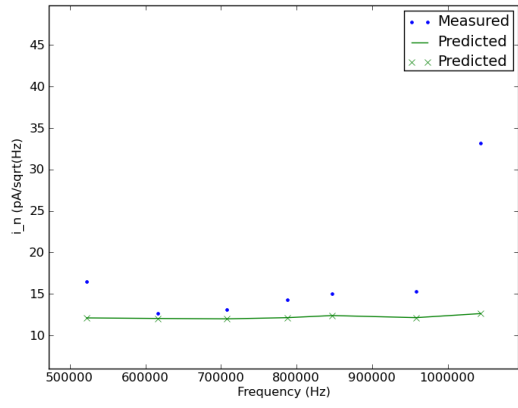
Demod gain is : 1
Demod frequency is : 1043505 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 1.288
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.83 ohm
R is : 1.83 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.159606933594 V
SQUID current bias : 5.84661865234 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.51591475758 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 resistors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 4.26996949497 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.72650738789 pA/sqrt(Hz)

Predicted noise : 12.6284568729 pA/sqrt(Hz)
Measured noise : 33.183910625 pA/sqrt(Hz)
Standard deviation : 21.240502874 pA/sqrt(Hz)
Measured/predicted : 2.62770906684



b153-w0



b153-w3-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

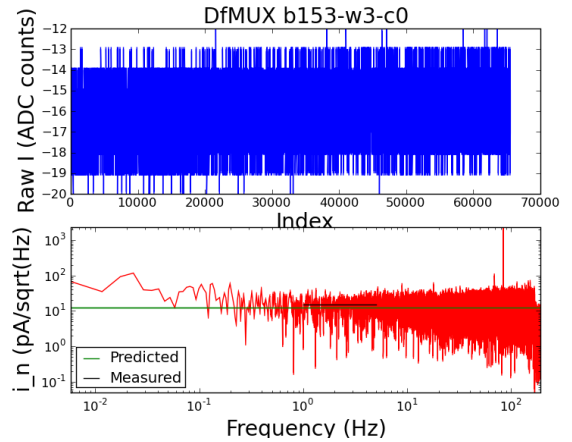
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 380394 Hz
Carrier gain is : 2
Carrier amplitude : 1.1
Nuller gain is : 2
Nuller amplitude : 0.508
Voltage bias is : 5.8564 uV_RMS
R normal is : 1.55 ohm
R is : 1.24 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 : 0.48 K
T_bath is : 0.75 K
G is guessed : 45.3586556297 pW/K
 γ : 0.498

Dark bolo in transition
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 : 0.0567548224876 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 : 3.00748480966 pA/sqrt(Hz)
Carrier shot noise : 2.45856959681 pA/sqrt(Hz)
Carrier digitization noise : 0.355188099819 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 : 2.68162902132 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.53723824493 pA/sqrt(Hz)
Phonon noise : 2.89417509991 pA/sqrt(Hz)

Predicted noise : 12.1776755046 pA/sqrt(Hz)
Measured noise : 15.4067131442 pA/sqrt(Hz)
Standard deviation : 7.71791419873 pA/sqrt(Hz)
Measured/predicted : 1.26516042724



b153-w3-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

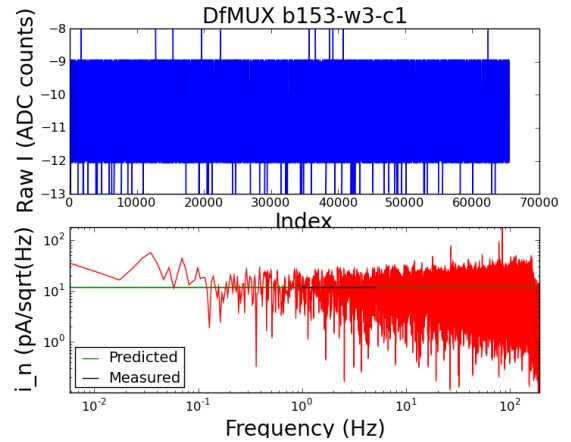
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 469851 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.505
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 : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.6736991005 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.14920352984 pA/sqrt(Hz)

Predicted noise : 12.1028887271 pA/sqrt(Hz)
Measured noise : 11.9887060594 pA/sqrt(Hz)
Standard deviation : 6.213598368 pA/sqrt(Hz)
Measured/predicted : 0.990565668227



b153-w3-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

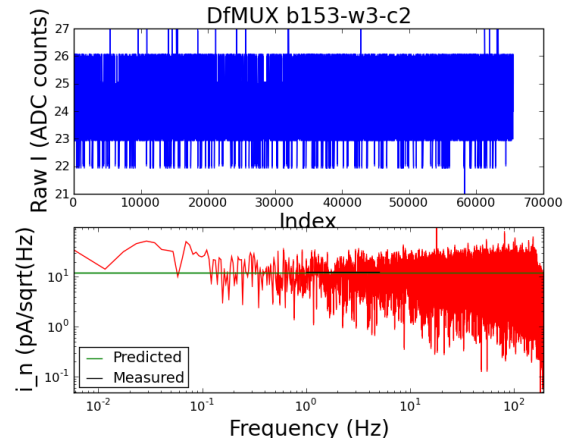
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 631053 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.535
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 : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.7519702324 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.21633367425 pA/sqrt(Hz)

Predicted noise : 12.2617858057 pA/sqrt(Hz)
Measured noise : 12.4600214994 pA/sqrt(Hz)
Standard deviation : 7.07813733514 pA/sqrt(Hz)
Measured/predicted : 1.01616695128



b153-w3-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

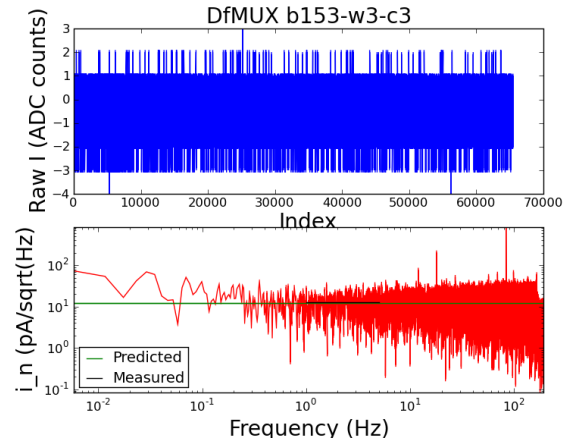
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 710043 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.588
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 : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.88506434729 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.28539107234 pA/sqrt(Hz)

Predicted noise : 12.3990914815 pA/sqrt(Hz)
Measured noise : 12.9686344835 pA/sqrt(Hz)
Standard deviation : 6.8877531048 pA/sqrt(Hz)
Measured/predicted : 1.04593425275



b153-w3-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

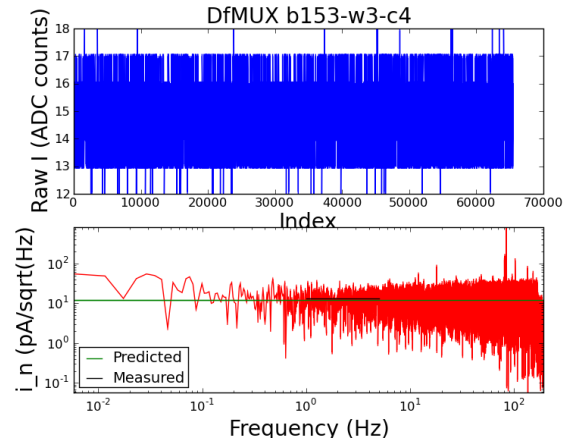
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 811617 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.495
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 : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.64709446752 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.85896891271 pA/sqrt(Hz)

Predicted noise : 12.0899081559 pA/sqrt(Hz)
Measured noise : 13.1101453446 pA/sqrt(Hz)
Standard deviation : 6.6776994705 pA/sqrt(Hz)
Measured/predicted : 1.08438750531



b153-w3-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

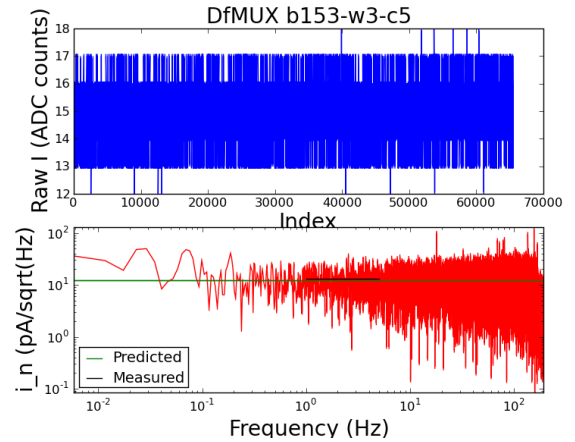
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 874749 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.457
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 : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.54346016914 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.06254331472 pA/sqrt(Hz)

Predicted noise : 12.2761941015 pA/sqrt(Hz)
Measured noise : 12.9353736174 pA/sqrt(Hz)
Standard deviation : 6.73659440292 pA/sqrt(Hz)
Measured/predicted : 1.05369575542



b153-w3-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

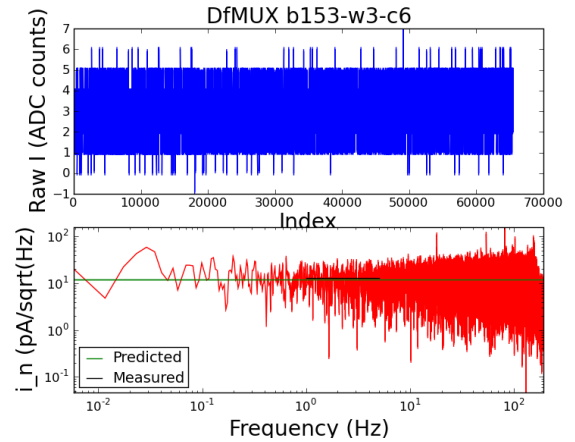
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

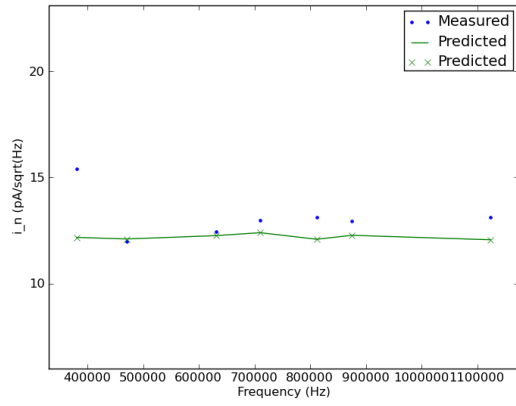
Demod gain is : 1
Demod frequency is : 1123656 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.449
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.99 ohm
R is : 1.99 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.219848632812 V
SQUID current bias : 5.82611083984 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.41265336257 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 : 2.52109964579 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.45042945865 pA/sqrt(Hz)

Predicted noise : 12.0656302812 pA/sqrt(Hz)
Measured noise : 13.1110758628 pA/sqrt(Hz)
Standard deviation : 6.78419061848 pA/sqrt(Hz)
Measured/predicted : 1.08664657852



b153-w3



b154-w0-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

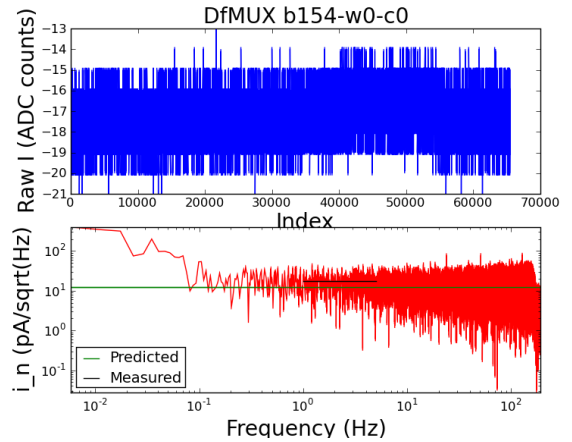
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 427917 Hz
Carrier gain is : 2
Carrier amplitude : 1.05
Nuller gain is : 2
Nuller amplitude : 0.512
Voltage bias is : 5.5902 uV_RMS
R normal is : 1.59 ohm
R is : 1.272 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 : 0.48 K
T_bath is : 0.75 K
G is guessed : 45.3586556297 pW/K
 γ : 0.498

Dark bolo in transition
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 : 0.0567548224876 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 : 2.93182481445 pA/sqrt(Hz)
Carrier shot noise : 2.37163636354 pA/sqrt(Hz)
Carrier digitization noise : 0.346252550138 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 : 2.69216591465 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.45448505758 pA/sqrt(Hz)
Phonon noise : 3.03199296181 pA/sqrt(Hz)

Predicted noise : 12.1339831113 pA/sqrt(Hz)
Measured noise : 17.6150000451 pA/sqrt(Hz)
Standard deviation : 9.12946052707 pA/sqrt(Hz)
Measured/predicted : 1.4517079745



b154-w0-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

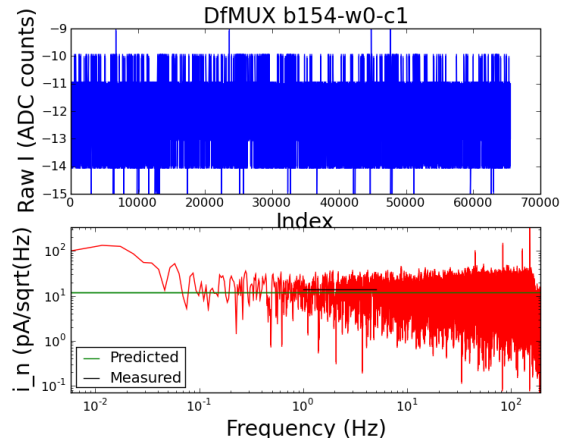
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 512388 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.528
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 : -0.249328613281 V
SQUID current bias : 5.52874755859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.73390741028 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.10547710418 pA/sqrt(Hz)

Predicted noise : 12.0826994438 pA/sqrt(Hz)
Measured noise : 14.1434289738 pA/sqrt(Hz)
Standard deviation : 7.41400830125 pA/sqrt(Hz)
Measured/predicted : 1.17055208066



b154-w0-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

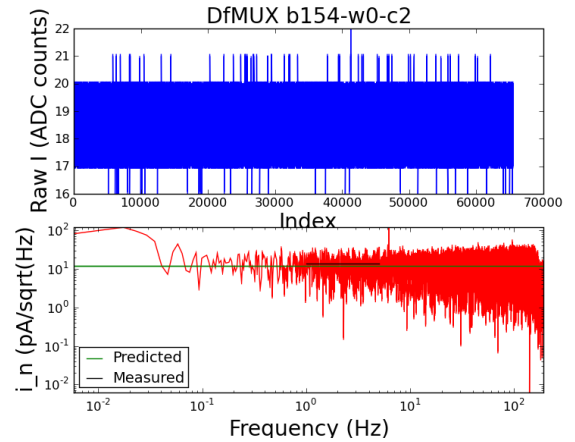
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 588882 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.503
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 : -0.249328613281 V
SQUID current bias : 5.52874755859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.66839939439 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.12723971901 pA/sqrt(Hz)

Predicted noise : 12.1260980879 pA/sqrt(Hz)
Measured noise : 13.9626293108 pA/sqrt(Hz)
Standard deviation : 7.72368209358 pA/sqrt(Hz)
Measured/predicted : 1.15145277646



b154-w0-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

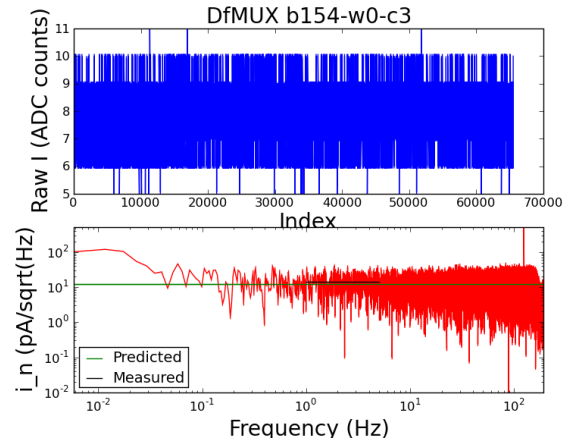
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 679236 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 : 1.68 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.60667843817 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.02037850017 pA/sqrt(Hz)

Predicted noise : 12.0840151611 pA/sqrt(Hz)
Measured noise : 14.4781863845 pA/sqrt(Hz)
Standard deviation : 7.59966118478 pA/sqrt(Hz)
Measured/predicted : 1.1981271284



b154-w0-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

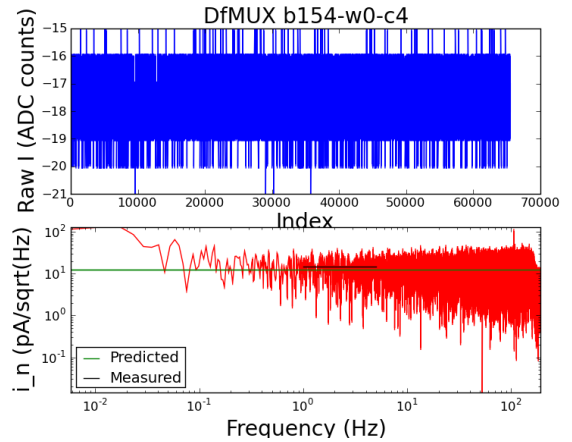
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 758955 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 : 1.57 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.8105022697 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.26215212614 pA/sqrt(Hz)

Predicted noise : 12.3745455244 pA/sqrt(Hz)
Measured noise : 14.7897822178 pA/sqrt(Hz)
Standard deviation : 7.72008016387 pA/sqrt(Hz)
Measured/predicted : 1.19517780986



b154-w0-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

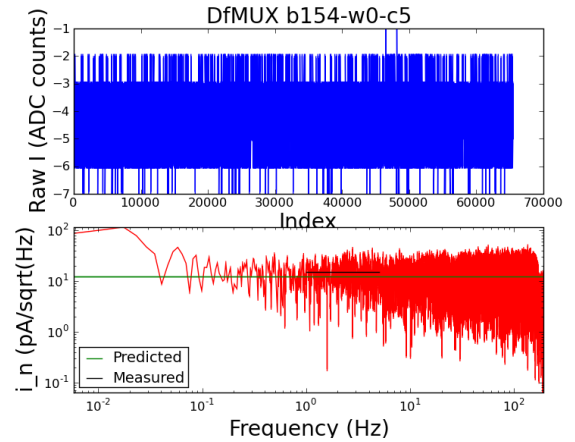
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 859341 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.513
Voltage bias is : 9.0508 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.59511880058 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 : 2.69479370045 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.93826598537 pA/sqrt(Hz)

Predicted noise : 12.173464585 pA/sqrt(Hz)
Measured noise : 15.3480383037 pA/sqrt(Hz)
Standard deviation : 7.84205277584 pA/sqrt(Hz)
Measured/predicted : 1.26077816192



b154-w0-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

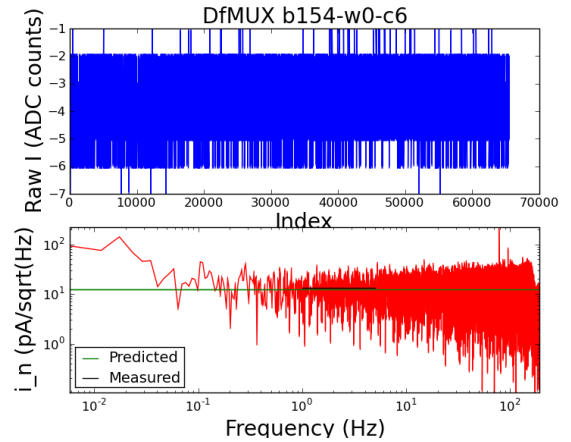
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 946806 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.479
Voltage bias is : 9.0508 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.58016121894 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 resistors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.60396173244 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.89827564661 pA/sqrt(Hz)

Predicted noise : 12.1989979793 pA/sqrt(Hz)
Measured noise : 13.4812850101 pA/sqrt(Hz)
Standard deviation : 6.9659372236 pA/sqrt(Hz)
Measured/predicted : 1.10511412765



b154-w0-c7

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

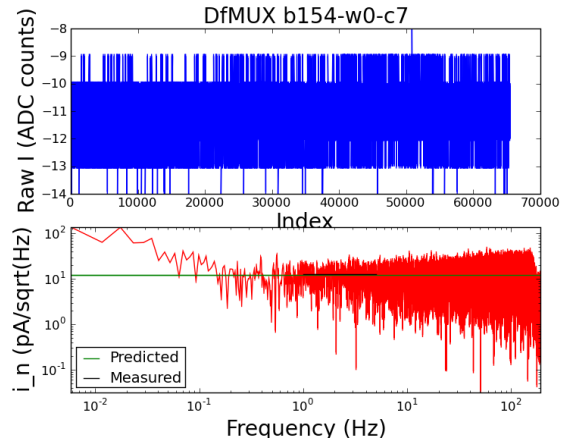
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

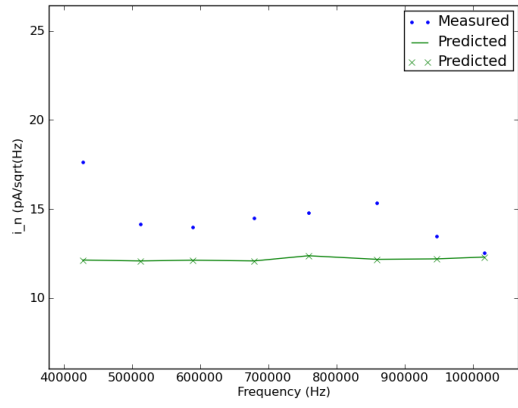
Demod gain is : 1
Demod frequency is : 1016985 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.436
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.7 ohm
R is : 1.7 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.249328613281 V
SQUID current bias : 5.52874755859 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.61033956923 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 : 2.48433458616 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.97895997645 pA/sqrt(Hz)

Predicted noise : 12.3008596618 pA/sqrt(Hz)
Measured noise : 12.5303931554 pA/sqrt(Hz)
Standard deviation : 6.43627588378 pA/sqrt(Hz)
Measured/predicted : 1.01865995548



b154-w0



b154-w3-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

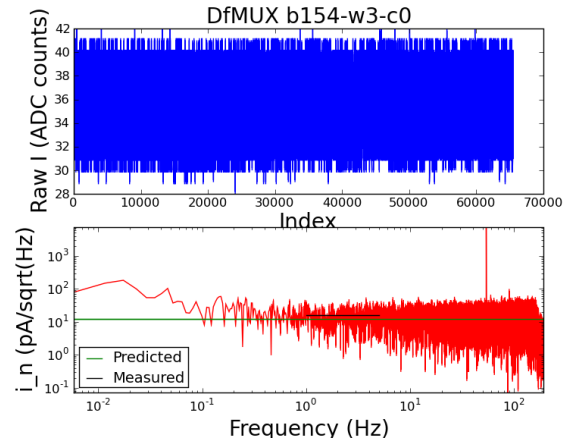
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 367212 Hz
Carrier gain is : 2
Carrier amplitude : 1.1
Nuller gain is : 2
Nuller amplitude : 0.521
Voltage bias is : 5.8564 uV_RMS
R normal is : 1.58 ohm
R is : 1.264 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 : 0.48 K
T_bath is : 0.75 K
G is guessed : 45.3586556297 pW/K
 γ : 0.498

Dark bolo in transition
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 : 0.0567548224876 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 : 2.9503806677 pA/sqrt(Hz)
Carrier shot noise : 2.43511688653 pA/sqrt(Hz)
Carrier digitization noise : 0.348444021974 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 : 6.47487842611 pA/sqrt(Hz)
Phonon noise : 2.89417509991 pA/sqrt(Hz)

Predicted noise : 12.2254186076 pA/sqrt(Hz)
Measured noise : 16.0597451764 pA/sqrt(Hz)
Standard deviation : 8.34464798662 pA/sqrt(Hz)
Measured/predicted : 1.31363560561



b154-w3-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

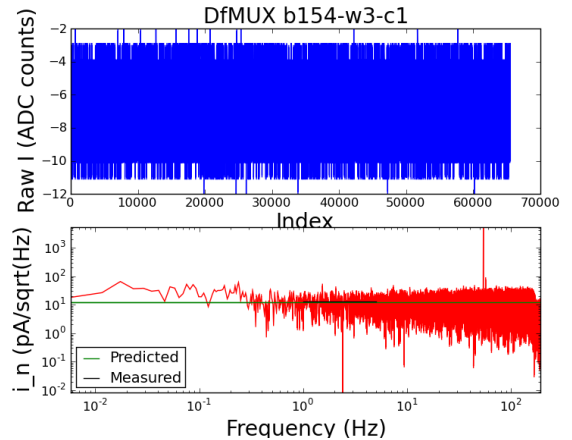
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 450729 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.54
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 : -0.246765136719 V
SQUID current bias : 6.57080078125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.7648 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.14920352984 pA/sqrt(Hz)

Predicted noise : 12.2145650644 pA/sqrt(Hz)
Measured noise : 13.0504867195 pA/sqrt(Hz)
Standard deviation : 6.97300643439 pA/sqrt(Hz)
Measured/predicted : 1.06843646505



b154-w3-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

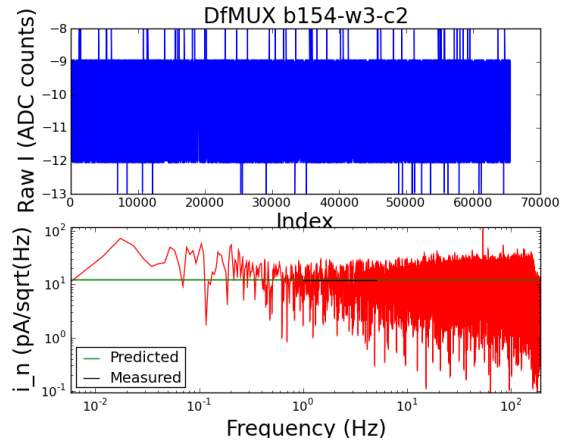
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 529710 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.494
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 : -0.246765136719 V
SQUID current bias : 6.57080078125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.64441928294 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.10547710418 pA/sqrt(Hz)

Predicted noise : 12.1946273822 pA/sqrt(Hz)
Measured noise : 11.8932954127 pA/sqrt(Hz)
Standard deviation : 6.26915652042 pA/sqrt(Hz)
Measured/predicted : 0.975289776388



b154-w3-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

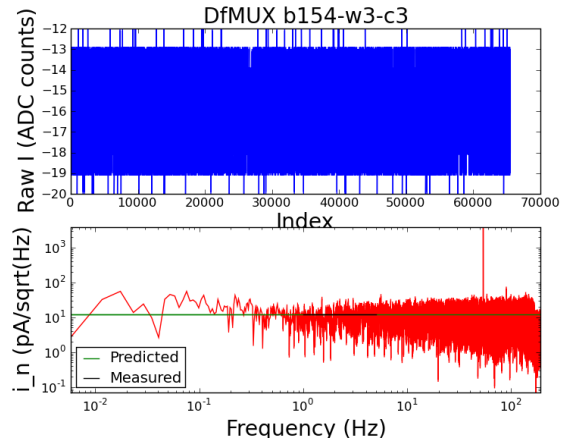
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 630825 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.457
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 : -0.246765136719 V
SQUID current bias : 6.57080078125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 resistors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.54346016914 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.78232998313 pA/sqrt(Hz)

Predicted noise : 11.987539027 pA/sqrt(Hz)
Measured noise : 11.8994272502 pA/sqrt(Hz)
Standard deviation : 6.19692506362 pA/sqrt(Hz)
Measured/predicted : 0.992649719292



b154-w3-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

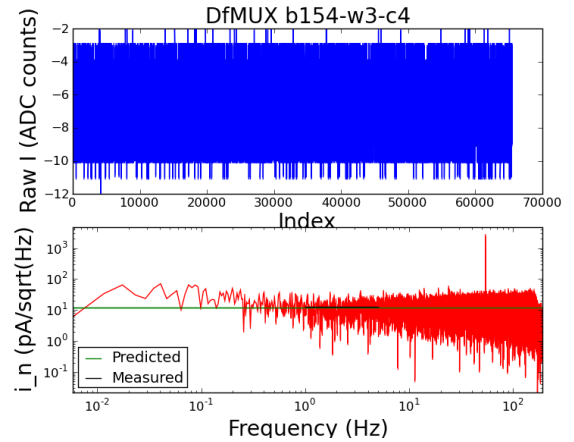
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 714396 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.542
Voltage bias is : 9.0508 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.59511880058 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 : 2.76991526802 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.93826598537 pA/sqrt(Hz)

Predicted noise : 12.2153373662 pA/sqrt(Hz)
Measured noise : 12.621618524 pA/sqrt(Hz)
Standard deviation : 6.59243827181 pA/sqrt(Hz)
Measured/predicted : 1.03325992116



b154-w3-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

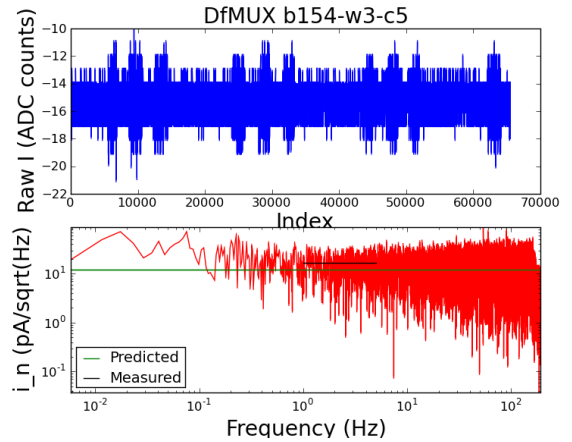
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 799047 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.495
Voltage bias is : 9.0508 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.522817143 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 : 2.64709446752 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.74496148948 pA/sqrt(Hz)

Predicted noise : 12.1112954972 pA/sqrt(Hz)
Measured noise : 16.5117611023 pA/sqrt(Hz)
Standard deviation : 8.42324159358 pA/sqrt(Hz)
Measured/predicted : 1.36333566513



b154-w3-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

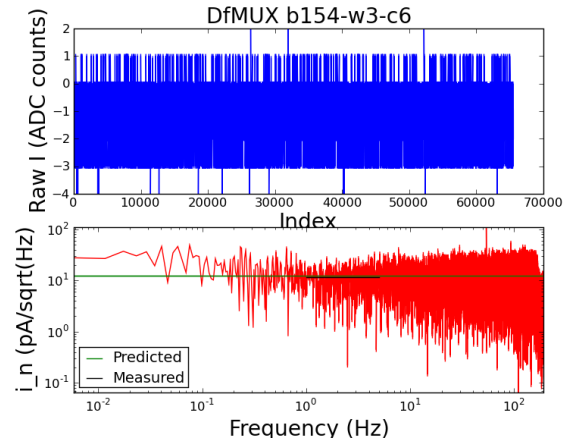
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 879132 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.476
Voltage bias is : 9.0508 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.51591475758 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 resistors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.59579455582 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.72650738789 pA/sqrt(Hz)

Predicted noise : 12.158252073 pA/sqrt(Hz)
Measured noise : 11.6519689694 pA/sqrt(Hz)
Standard deviation : 5.99121656662 pA/sqrt(Hz)
Measured/predicted : 0.958358890688



b154-w3-c7

Removing gradient
 Applying Hanning window
 Correcting PSD for Hanning window

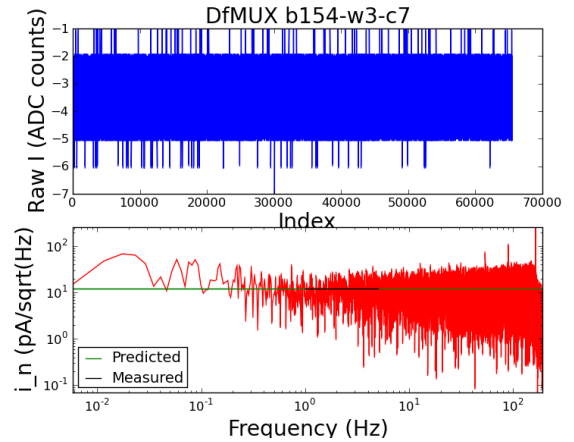
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

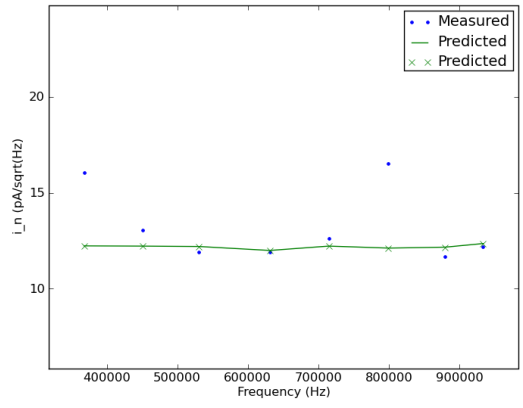
Demod gain is : 1
 Demod frequency is : 933324 Hz
 Carrier gain is : 2
 Carrier amplitude : 1.7
 Nuller gain is : 2
 Nuller amplitude : 0.442
 Voltage bias is : 9.0508 uV_RMS
 R normal is : 1.72 ohm
 R is : 1.72 ohm
 SQUID feedback loop: 10000 ohm
 SQUID flux bias : -0.246765136719 V
 SQUID current bias : 6.57080078125 V
 Leadlag R : 10 ohm
 Optical loading : 0.0 pW
 Frequency band : 0 GHz
 Tc is : 0.75 K
 T_bath is : 0.75 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 : 0.0567548224876 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 : 2.59511880058 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 : 2.5013702229 pA/sqrt(Hz)
 Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
 Johnson noise : 6.93826598537 pA/sqrt(Hz)

Predicted noise : 12.3476851459 pA/sqrt(Hz)
 Measured noise : 12.1894933804 pA/sqrt(Hz)
 Standard deviation : 6.48742629714 pA/sqrt(Hz)
 Measured/predicted : 0.98718854881



b154-w3



b155-w3-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

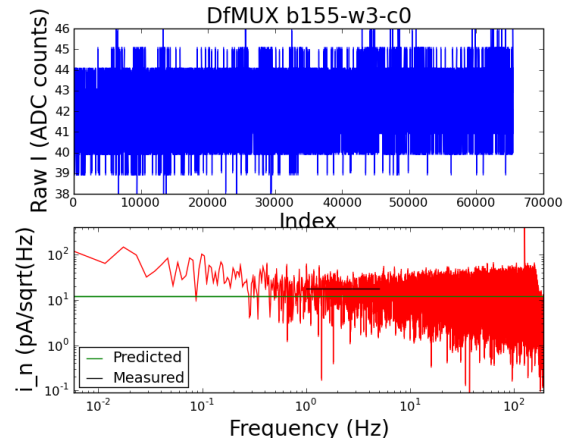
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 383193 Hz
Carrier gain is : 2
Carrier amplitude : 1.13
Nuller gain is : 2
Nuller amplitude : 0.519
Voltage bias is : 6.01612 uV_RMS
R normal is : 1.6 ohm
R is : 1.28 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 : 0.48 K
T_bath is : 0.75 K
G is guessed : 45.3586556297 pW/K
 γ : 0.498

Dark bolo in transition
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 : 0.0567548224876 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 : 2.91350090936 pA/sqrt(Hz)
Carrier shot noise : 2.45262552452 pA/sqrt(Hz)
Carrier digitization noise : 0.344088471699 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 : 2.71050691643 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.43428317686 pA/sqrt(Hz)
Phonon noise : 2.81733859283 pA/sqrt(Hz)

Predicted noise : 12.214598141 pA/sqrt(Hz)
Measured noise : 17.811893291 pA/sqrt(Hz)
Standard deviation : 9.35120500716 pA/sqrt(Hz)
Measured/predicted : 1.45824636107



b155-w3-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

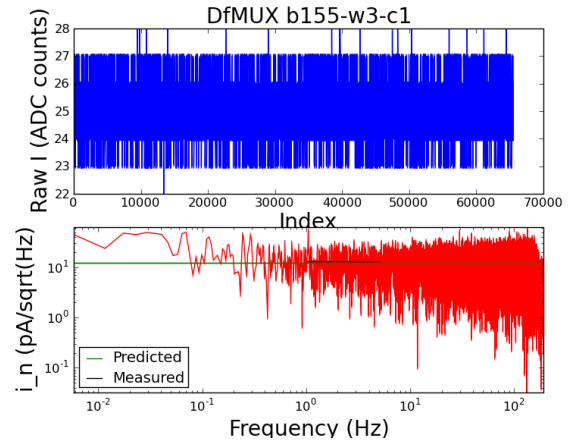
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 474282 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 : 1.65 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 resistors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.702661728 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.08391263228 pA/sqrt(Hz)

Predicted noise : 12.1915590913 pA/sqrt(Hz)
Measured noise : 13.32685357 pA/sqrt(Hz)
Standard deviation : 7.22477510929 pA/sqrt(Hz)
Measured/predicted : 1.09312135307



b155-w3-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

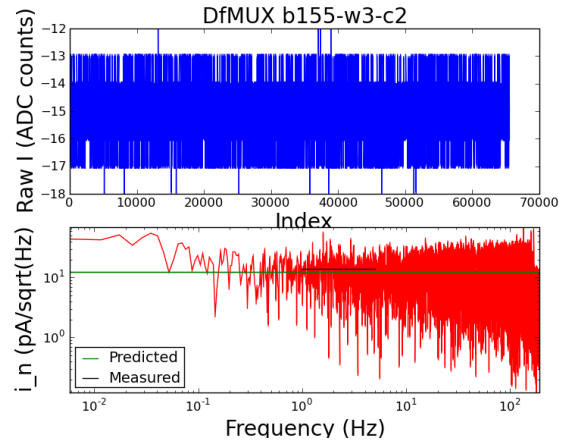
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 554574 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 : 1.62 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.6175170647 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.14920352984 pA/sqrt(Hz)

Predicted noise : 12.2699777631 pA/sqrt(Hz)
Measured noise : 13.8070007595 pA/sqrt(Hz)
Standard deviation : 7.48529205155 pA/sqrt(Hz)
Measured/predicted : 1.1252669749



b155-w3-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

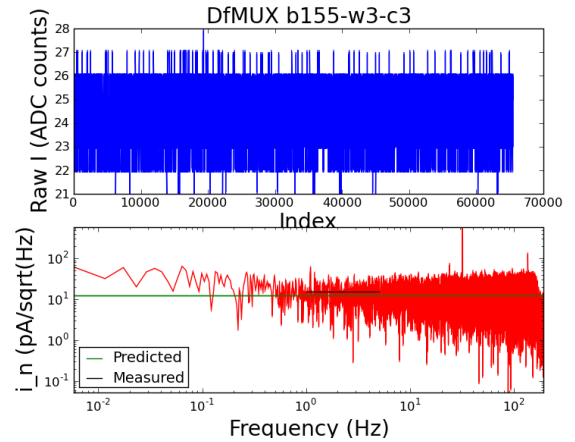
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 726759 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.589
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 : -0.203186035156 V
SQUID current bias : 7.0322265625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.88751659112 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.95852373938 pA/sqrt(Hz)

Predicted noise : 12.3046635065 pA/sqrt(Hz)
Measured noise : 15.2442748607 pA/sqrt(Hz)
Standard deviation : 8.34003967601 pA/sqrt(Hz)
Measured/predicted : 1.238902214



b155-w3-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

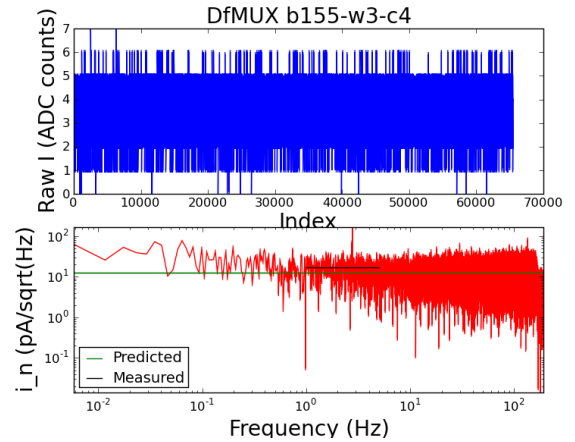
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 802038 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.523
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 : -0.203186035156 V
SQUID current bias : 7.0322265625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.72093198151 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.99957733297 pA/sqrt(Hz)

Predicted noise : 12.3609276165 pA/sqrt(Hz)
Measured noise : 16.9395181286 pA/sqrt(Hz)
Standard deviation : 11.0510373129 pA/sqrt(Hz)
Measured/predicted : 1.37040832648



b155-w3-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

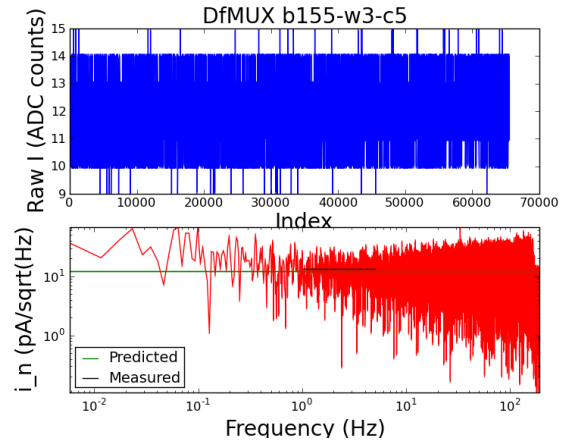
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 893481 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.461
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 : -0.203186035156 V
SQUID current bias : 7.0322265625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.55456703494 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.87853805065 pA/sqrt(Hz)

Predicted noise : 12.3190382586 pA/sqrt(Hz)
Measured noise : 13.2062148999 pA/sqrt(Hz)
Standard deviation : 6.59154524354 pA/sqrt(Hz)
Measured/predicted : 1.07201671289



b155-w3-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

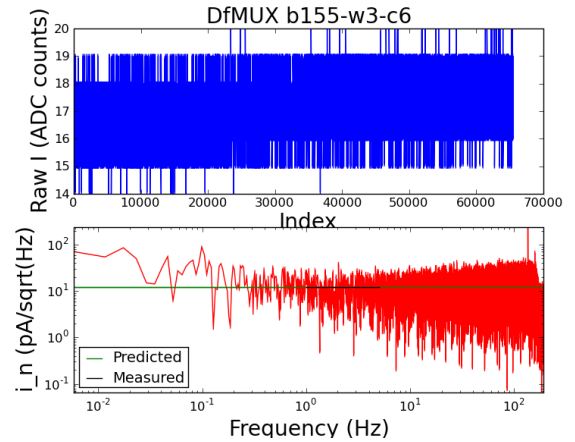
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

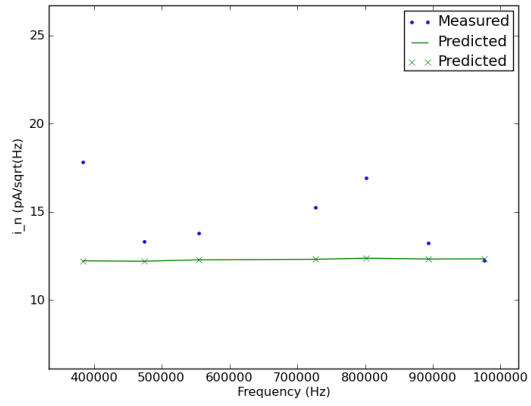
Demod gain is : 1
Demod frequency is : 976395 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.423
Voltage bias is : 9.0508 uV_RMS
R normal is : 1.79 ohm
R is : 1.79 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.203186035156 V
SQUID current bias : 7.0322265625 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.54387022408 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 : 2.44701721449 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.80124865302 pA/sqrt(Hz)

Predicted noise : 12.3248062374 pA/sqrt(Hz)
Measured noise : 12.2585971822 pA/sqrt(Hz)
Standard deviation : 6.5308200046 pA/sqrt(Hz)
Measured/predicted : 0.994627984087



b155-w3



b156-w0-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

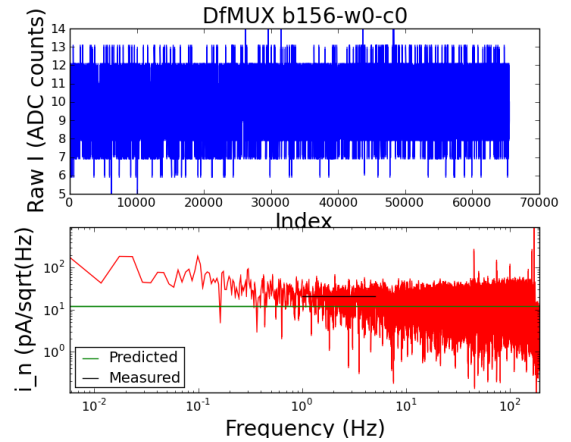
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 428289 Hz
Carrier gain is : 2
Carrier amplitude : 1.07
Nuller gain is : 2
Nuller amplitude : 0.515
Voltage bias is : 5.69668 uV_RMS
R normal is : 1.62 ohm
R is : 1.296 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 : 0.48 K
T_bath is : 0.75 K
G is guessed : 45.3586556297 pW/K
 γ : 0.498

Dark bolo in transition
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 : 0.0567548224876 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 : 2.87753176233 pA/sqrt(Hz)
Carrier shot noise : 2.37184549333 pA/sqrt(Hz)
Carrier digitization noise : 0.339840465876 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 : 2.70004159968 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.39444203108 pA/sqrt(Hz)
Phonon noise : 2.97532019617 pA/sqrt(Hz)

Predicted noise : 12.1274585043 pA/sqrt(Hz)
Measured noise : 20.621356758 pA/sqrt(Hz)
Standard deviation : 10.5874691557 pA/sqrt(Hz)
Measured/predicted : 1.70038567856



b156-w0-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

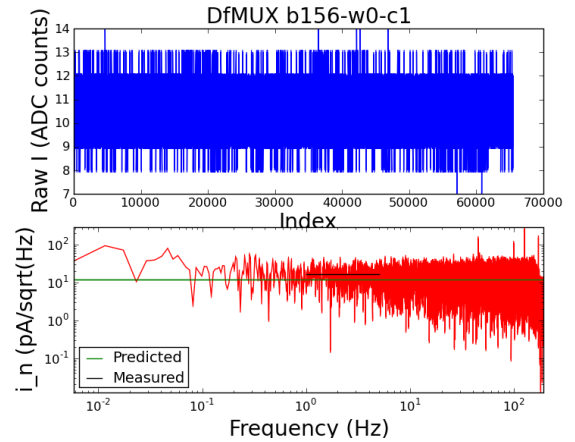
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 516456 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.533
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 : -0.0903930664062 V
SQUID current bias : 6.70153808594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.74682154644 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 7.10547710418 pA/sqrt(Hz)

Predicted noise : 12.1431419034 pA/sqrt(Hz)
Measured noise : 16.7310372194 pA/sqrt(Hz)
Standard deviation : 8.50167623679 pA/sqrt(Hz)
Measured/predicted : 1.37781781292



b156-w0-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

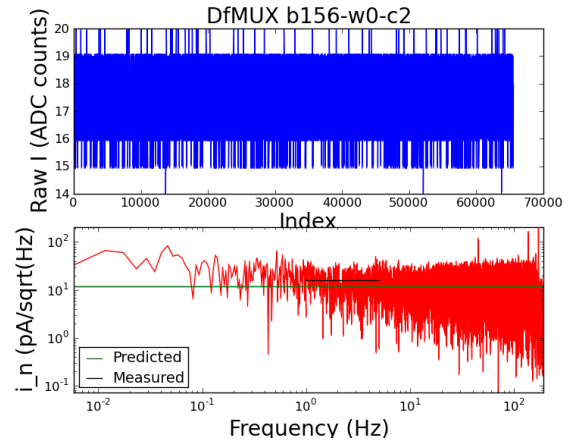
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 600951 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 : 1.72 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.59511880058 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 resistors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.6175170647 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.93826598537 pA/sqrt(Hz)

Predicted noise : 12.0353234124 pA/sqrt(Hz)
Measured noise : 15.7491970044 pA/sqrt(Hz)
Standard deviation : 8.24833483497 pA/sqrt(Hz)
Measured/predicted : 1.30858112114



b156-w0-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

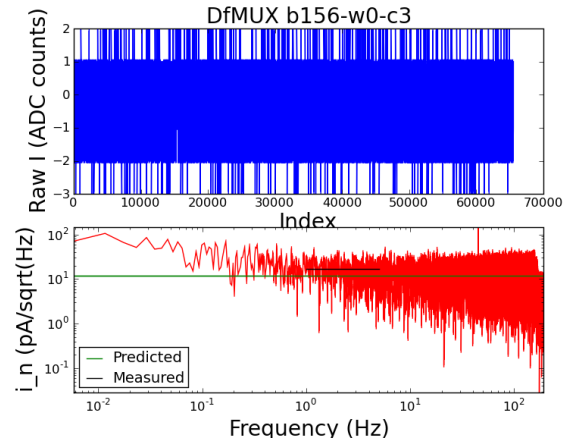
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 680790 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.463
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 : -0.0903930664062 V
SQUID current bias : 6.70153808594 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 resistors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.56010239795 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.95852373938 pA/sqrt(Hz)

Predicted noise : 12.0942714738 pA/sqrt(Hz)
Measured noise : 16.9416886438 pA/sqrt(Hz)
Standard deviation : 8.86847311269 pA/sqrt(Hz)
Measured/predicted : 1.40080274207



b156-w0-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

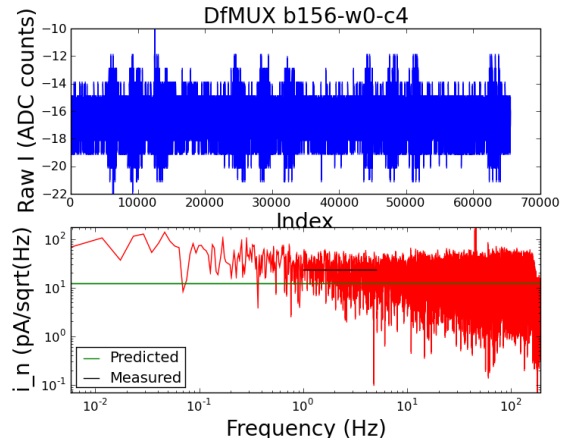
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 779313 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 : 1.77 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.76735881591 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.83956585003 pA/sqrt(Hz)

Predicted noise : 12.1272006379 pA/sqrt(Hz)
Measured noise : 23.3496835903 pA/sqrt(Hz)
Standard deviation : 12.0453262901 pA/sqrt(Hz)
Measured/predicted : 1.92539764844



b156-w0-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

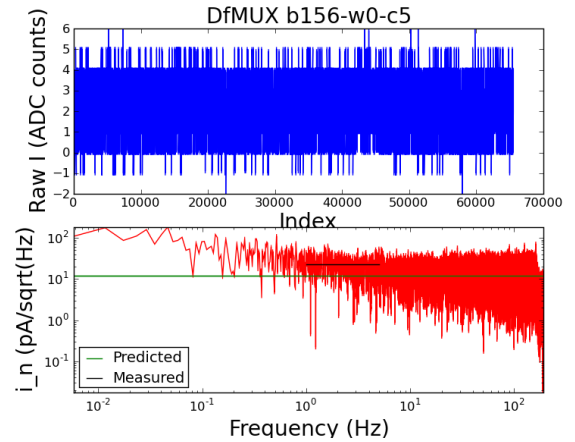
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 861942 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 : 1.76 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.66574559026 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.85896891271 pA/sqrt(Hz)

Predicted noise : 12.1920918379 pA/sqrt(Hz)
Measured noise : 22.7085611292 pA/sqrt(Hz)
Standard deviation : 12.4303616705 pA/sqrt(Hz)
Measured/predicted : 1.86256480275



b156-w0-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

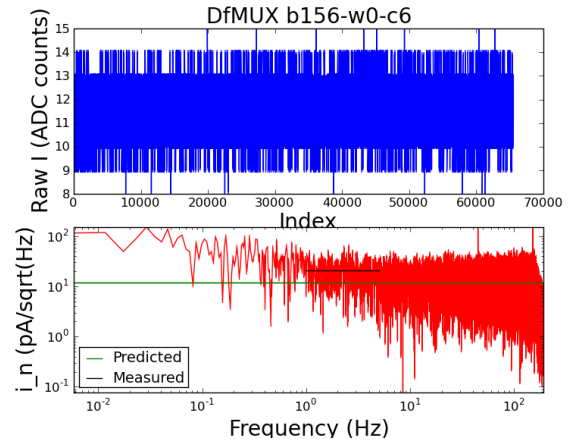
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 947364 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 0.457
Voltage bias is : 9.0508 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.49554264288 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 : 2.54346016914 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.67204084462 pA/sqrt(Hz)

Predicted noise : 12.1108293614 pA/sqrt(Hz)
Measured noise : 20.5928404296 pA/sqrt(Hz)
Standard deviation : 11.0754415095 pA/sqrt(Hz)
Measured/predicted : 1.70036583086



b156-w0-c7

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

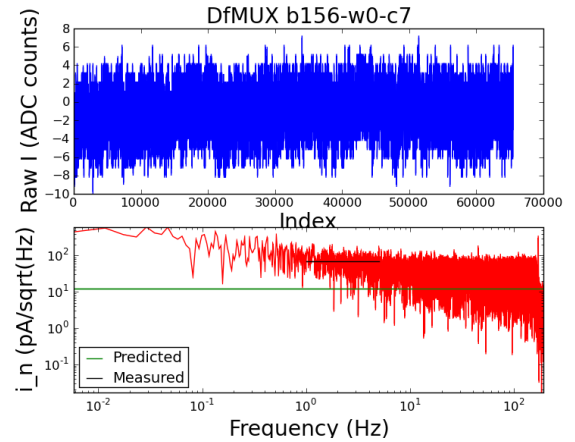
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 1
Demod frequency is : 1024209 Hz
Carrier gain is : 2
Carrier amplitude : 1.7
Nuller gain is : 2
Nuller amplitude : 1.203
Voltage bias is : 9.0508 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 : 0.75 K
T_bath is : 0.75 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 : 0.0567548224876 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 : 2.43727291206 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 resistors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 4.12666918083 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.51625187217 pA/sqrt(Hz)

Predicted noise : 12.5100820333 pA/sqrt(Hz)
Measured noise : 69.243380979 pA/sqrt(Hz)
Standard deviation : 36.3731912984 pA/sqrt(Hz)
Measured/predicted : 5.53500614904



b156-w0

