

POLARBEAR 8.2.1 Comb 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.

b154-w1-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

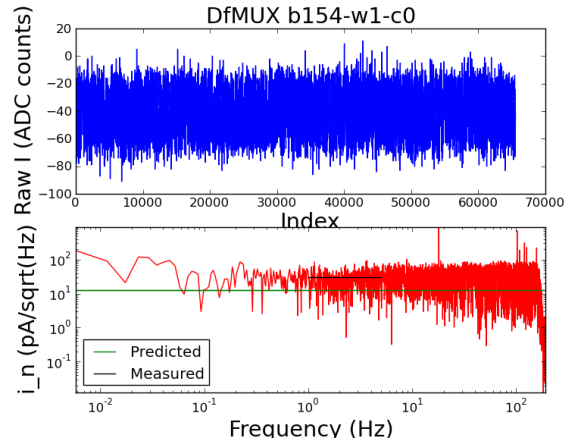
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 371430 Hz
Carrier gain is : 2
Carrier amplitude : 1.03
Nuller gain is : 2
Nuller amplitude : 0.53
Voltage bias is : 5.48372 uV_RMS
R normal is : 1.6 ohm
R is : 1.28 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.214721679688 V
SQUID current bias : 5.36212158203 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.438 K
T_bath is : 0.26 K
G is guessed : 185.602263673 pW/K
 γ : 0.498

Dark bolo in transition
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.91934492474 pA/sqrt(Hz)
20 ohms noise : 1.67862333172 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.65795777963 pA/sqrt(Hz)
Current bias shot noise : 3.82284199594 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.91350090936 pA/sqrt(Hz)
Carrier shot noise : 2.34158881135 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 : 2.73908037122 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.14634037456 pA/sqrt(Hz)
Phonon noise : 5.705250052 pA/sqrt(Hz)

Predicted noise : 12.8562141202 pA/sqrt(Hz)
Measured noise : 30.5925043205 pA/sqrt(Hz)
Standard deviation : 16.5029941709 pA/sqrt(Hz)
Measured/predicted : 2.37958889253



b154-w1-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

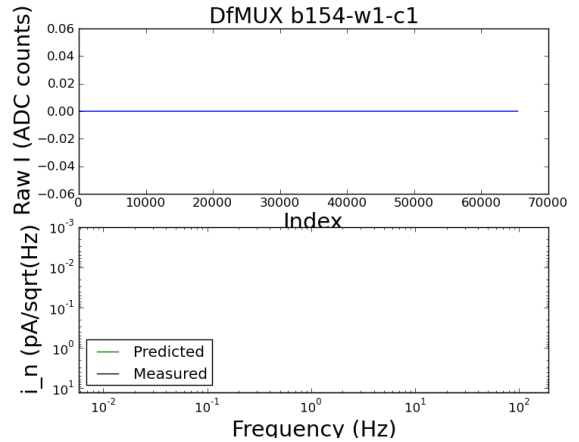
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 455712 Hz
Carrier gain is : 2
Carrier amplitude : 1.1
Nuller gain is : 2
Nuller amplitude : 0.53
Voltage bias is : 5.8564 uV_RMS
R normal is : 1.61 ohm
R is : 1.288 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.214721679688 V
SQUID current bias : 5.36212158203 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.438 K
T_bath is : 0.26 K
G is guessed : 185.602263673 pW/K
 γ : 0.498

Dark bolo in transition
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.96419004054 pA/sqrt(Hz)
20 ohms noise : 1.70440927331 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.65795777963 pA/sqrt(Hz)
Current bias shot noise : 3.88156605782 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.89540463042 pA/sqrt(Hz)
Carrier shot noise : 2.41232277908 pA/sqrt(Hz)
Carrier digitization noise : 0.341951276223 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 : 2.73908037122 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.1272226288 pA/sqrt(Hz)
Phonon noise : 5.34218868505 pA/sqrt(Hz)

Predicted noise : 12.7306674733 pA/sqrt(Hz)
Measured noise : 0.0 pA/sqrt(Hz)
Standard deviation : 0.0 pA/sqrt(Hz)
Measured/predicted : 0.0



b154-w1-c2

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

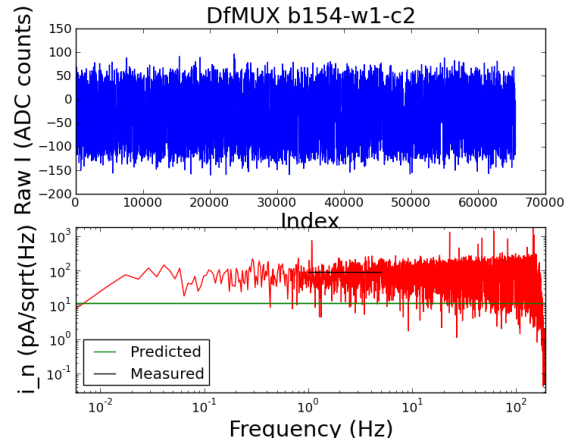
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 552291 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.455
Voltage bias is : 7.986 uV_RMS
R normal is : 1.69 ohm
R is : 1.69 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.214721679688 V
SQUID current bias : 5.36212158203 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.438 K
T_bath is : 0.26 K
G is guessed : 185.602263673 pW/K
 γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.02566252855 pA/sqrt(Hz)
20 ohms noise : 1.73975595391 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.65795777963 pA/sqrt(Hz)
Current bias shot noise : 3.96206343473 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.20667524496 pA/sqrt(Hz)
Carrier shot noise : 2.45923076923 pA/sqrt(Hz)
Carrier digitization noise : 0.260611386849 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 2.53788850819 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 5.34906948718 pA/sqrt(Hz)

Predicted noise : 11.0147996359 pA/sqrt(Hz)
Measured noise : 90.5890800916 pA/sqrt(Hz)
Standard deviation : 59.9386081479 pA/sqrt(Hz)
Measured/predicted : 8.22430576004



b154-w1-c3

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

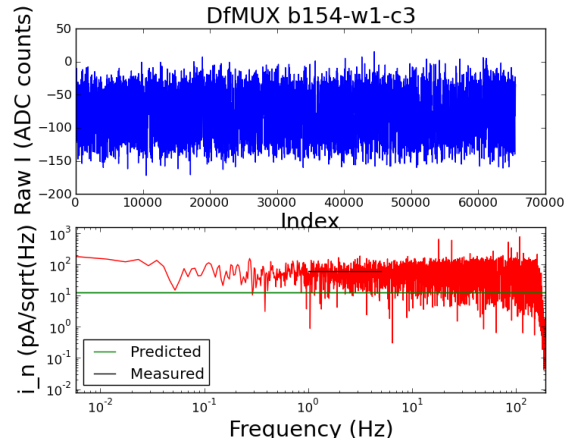
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 624378 Hz
Carrier gain is : 2
Carrier amplitude : 1.14
Nuller gain is : 2
Nuller amplitude : 0.506
Voltage bias is : 6.06936 uV_RMS
R normal is : 1.6 ohm
R is : 1.28 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.214721679688 V
SQUID current bias : 5.36212158203 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.438 K
T_bath is : 0.26 K
G is guessed : 185.602263673 pW/K
 γ : 0.498

Dark bolo in transition
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.07818534218 pA/sqrt(Hz)
20 ohms noise : 1.76995657176 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.65795777963 pA/sqrt(Hz)
Current bias shot noise : 4.03084133624 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.91350090936 pA/sqrt(Hz)
Carrier shot noise : 2.46345394594 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 : 2.67634501812 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.14634037456 pA/sqrt(Hz)
Phonon noise : 5.15474346803 pA/sqrt(Hz)

Predicted noise : 12.7456170218 pA/sqrt(Hz)
Measured noise : 60.2026219091 pA/sqrt(Hz)
Standard deviation : 33.8038636693 pA/sqrt(Hz)
Measured/predicted : 4.72339799681



b154-w1-c4

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

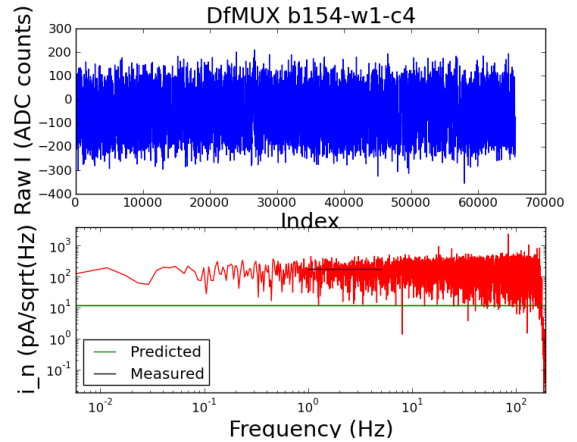
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 793674 Hz
Carrier gain is : 2
Carrier amplitude : 1.5
Nuller gain is : 2
Nuller amplitude : 0.989
Voltage bias is : 7.986 uV_RMS
R normal is : 1.56 ohm
R is : 1.56 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.214721679688 V
SQUID current bias : 5.36212158203 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.438 K
T_bath is : 0.26 K
G is guessed : 185.602263673 pW/K
 γ : 0.498

Dark bolo overbiased
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.22202162327 pA/sqrt(Hz)
20 ohms noise : 1.85266243338 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.65795777963 pA/sqrt(Hz)
Current bias shot noise : 4.21919296651 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.3905648487 pA/sqrt(Hz)
Carrier shot noise : 2.55964853857 pA/sqrt(Hz)
Carrier digitization noise : 0.28232900242 pA/sqrt(Hz)
Nuller 1st stage noise : 3.59302226213 pA/sqrt(Hz)
Nuller 2nd stage noise : 0.934185788153 pA/sqrt(Hz)
4x820 Ohm resitors noise : 3.11126983722 pA/sqrt(Hz)
Nuller shot noise : 3.74166573387 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 5.56748804012 pA/sqrt(Hz)

Predicted noise : 11.6776099584 pA/sqrt(Hz)
Measured noise : 172.895330702 pA/sqrt(Hz)
Standard deviation : 90.1178122562 pA/sqrt(Hz)
Measured/predicted : 14.8057120693



b154-w1-c5

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

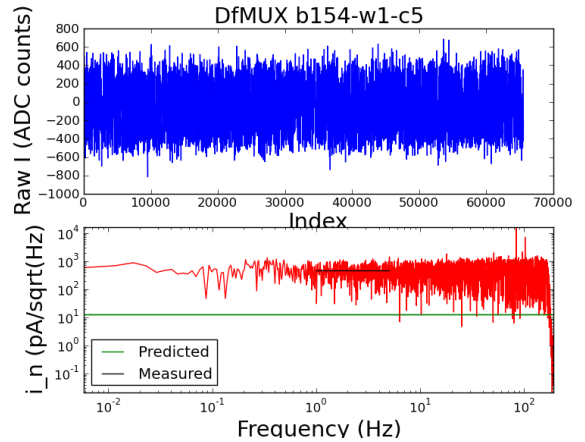
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 867507 Hz
Carrier gain is : 2
Carrier amplitude : 1.15
Nuller gain is : 2
Nuller amplitude : 0.592
Voltage bias is : 6.1226 uV_RMS
R normal is : 1.64 ohm
R is : 1.312 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.214721679688 V
SQUID current bias : 5.36212158203 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.438 K
T_bath is : 0.26 K
G is guessed : 185.602263673 pW/K
 γ : 0.498

Dark bolo in transition
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.29298213095 pA/sqrt(Hz)
20 ohms noise : 1.8934647253 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.65795777963 pA/sqrt(Hz)
Current bias shot noise : 4.31211477459 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.84243991157 pA/sqrt(Hz)
Carrier shot noise : 2.44387511636 pA/sqrt(Hz)
Carrier digitization noise : 0.335696069951 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 : 2.89486085883 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.07092229904 pA/sqrt(Hz)
Phonon noise : 5.10991961179 pA/sqrt(Hz)

Predicted noise : 12.8819043144 pA/sqrt(Hz)
Measured noise : 458.556607268 pA/sqrt(Hz)
Standard deviation : 244.443780542 pA/sqrt(Hz)
Measured/predicted : 35.5969580332



b154-w1-c6

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

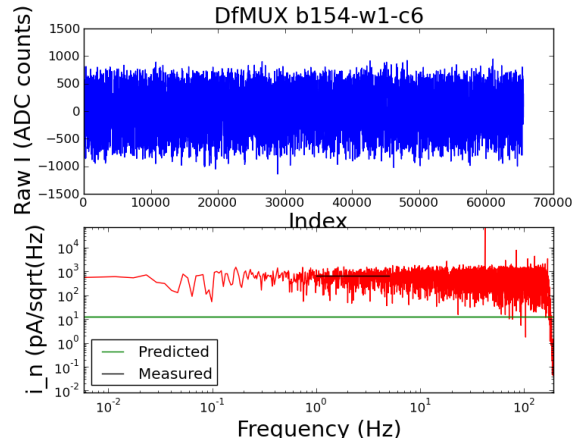
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 945012 Hz
Carrier gain is : 2
Carrier amplitude : 1.21
Nuller gain is : 2
Nuller amplitude : 0.621
Voltage bias is : 6.44204 uV_RMS
R normal is : 1.62 ohm
R is : 1.296 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.214721679688 V
SQUID current bias : 5.36212158203 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.438 K
T_bath is : 0.26 K
G is guessed : 185.602263673 pW/K
 γ : 0.498

Dark bolo in transition
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 3.37234275778 pA/sqrt(Hz)
20 ohms noise : 1.93909708573 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 1.65795777963 pA/sqrt(Hz)
Current bias shot noise : 4.41603642307 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.87753176233 pA/sqrt(Hz)
Carrier shot noise : 2.52224454326 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 : 2.9649176879 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.1082821735 pA/sqrt(Hz)
Phonon noise : 4.85653516823 pA/sqrt(Hz)

Predicted noise : 12.902994161 pA/sqrt(Hz)
Measured noise : 665.222734772 pA/sqrt(Hz)
Standard deviation : 326.090072235 pA/sqrt(Hz)
Measured/predicted : 51.5556874994



b155-w1-c0

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

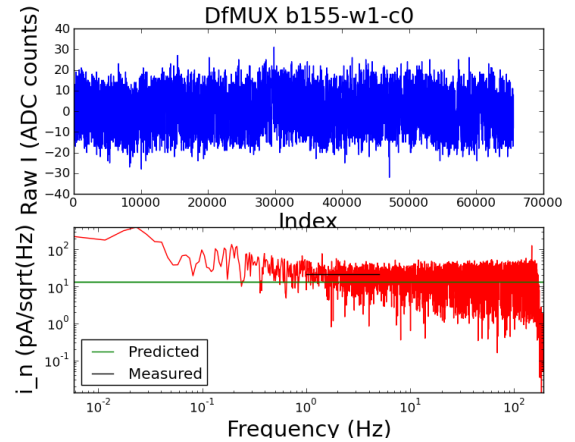
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 387135 Hz
Carrier gain is : 2
Carrier amplitude : 1.02
Nuller gain is : 2
Nuller amplitude : 0.519
Voltage bias is : 5.43048 uV_RMS
R normal is : 1.58 ohm
R is : 1.264 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.359558105469 V
SQUID current bias : 6.2939453125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.438 K
T_bath is : 0.26 K
G is guessed : 185.602263673 pW/K
 γ : 0.498

Dark bolo in transition
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.92705892309 pA/sqrt(Hz)
20 ohms noise : 1.68305888077 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.14545821553 pA/sqrt(Hz)
Current bias shot noise : 4.15265218088 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.9503806677 pA/sqrt(Hz)
Carrier shot noise : 2.34489583721 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 : 2.71050691643 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.18511893196 pA/sqrt(Hz)
Phonon noise : 5.76118387604 pA/sqrt(Hz)

Predicted noise : 13.0776693302 pA/sqrt(Hz)
Measured noise : 21.5576332164 pA/sqrt(Hz)
Standard deviation : 11.1576446827 pA/sqrt(Hz)
Measured/predicted : 1.64843082295



b155-w1-c1

Removing gradient
Applying Hanning window
Correcting PSD for Hanning window

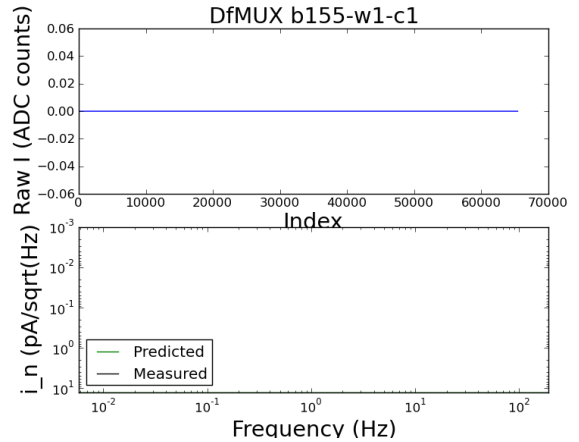
Measured I increased by 5% for DMFD imperfections.

Measured value is the average between 1.0 and 5.0Hz.

Demod gain is : 2
Demod frequency is : 467883 Hz
Carrier gain is : 2
Carrier amplitude : 1.07
Nuller gain is : 2
Nuller amplitude : 0.477
Voltage bias is : 5.69668 uV_RMS
R normal is : 1.67 ohm
R is : 1.336 ohm
SQUID feedback loop: 10000 ohm
SQUID flux bias : -0.359558105469 V
SQUID current bias : 6.2939453125 V
Leadlag R : 10 ohm
Optical loading : 0.0 pW
Frequency band : 0 GHz
Tc is : 0.438 K
T_bath is : 0.26 K
G is guessed : 185.602263673 pW/K
 γ : 0.498

Dark bolo in transition
SQUID noise : 3.53553390593 pA/sqrt(Hz)
SQUID ctrl 1st stage noise : 2.97135554998 pA/sqrt(Hz)
20 ohms noise : 1.70852944124 pA/sqrt(Hz)
Feedback resistor noise : 1.81971212009 pA/sqrt(Hz)
SQUID ctrl 2nd stage noise : 0.183847763109 pA/sqrt(Hz)
Flux bias 50kOhm noise : 0.820243866176 pA/sqrt(Hz)
Flux bias shot noise : 2.14545821553 pA/sqrt(Hz)
Current bias shot noise : 4.21549631525 pA/sqrt(Hz)
Demod digitization stage noise : 0.00810783178394 pA/sqrt(Hz)
Carrier 1st stage noise : 1.76776695297 pA/sqrt(Hz)
Carrier 2nd stage noise : 0.459572267319 pA/sqrt(Hz)
50 Ohm bolo termination noise : 0.735391052434 pA/sqrt(Hz)
30mOhm resistor noise : 2.79137811675 pA/sqrt(Hz)
Carrier shot noise : 2.33606900117 pA/sqrt(Hz)
Carrier digitization noise : 0.329665601628 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 : 2.59851980019 pA/sqrt(Hz)
Nuller digitization noise : 0.895291465886 pA/sqrt(Hz)
Johnson noise : 6.01614594039 pA/sqrt(Hz)
Phonon noise : 5.49196967622 pA/sqrt(Hz)

Predicted noise : 12.8548141917 pA/sqrt(Hz)
Measured noise : 0.0 pA/sqrt(Hz)
Standard deviation : 0.0 pA/sqrt(Hz)
Measured/predicted : 0.0



b154-w1

