QPD #0

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 85.363 MOhm
Elem2: 83.188 MOhm
Elem3: 85.980 MOhm
Elem4: 86.891 MOhm

Series Resistance: (R_s):

Elem1: 49.0 Ohm
Elem2: 47.5 Ohm
Elem3: 51.9 Ohm
Elem4: 50.1 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 80.1 pF
Elem2: 81.1 pF
Elem3: 77.9 pF
Elem4: 79.3 pF

Dark Current [nA]:

Elem1: 0.65 nA
Elem2: 0.66 nA
Elem3: 0.64 nA
Elem4: 0.68 nA

Dark Noise:

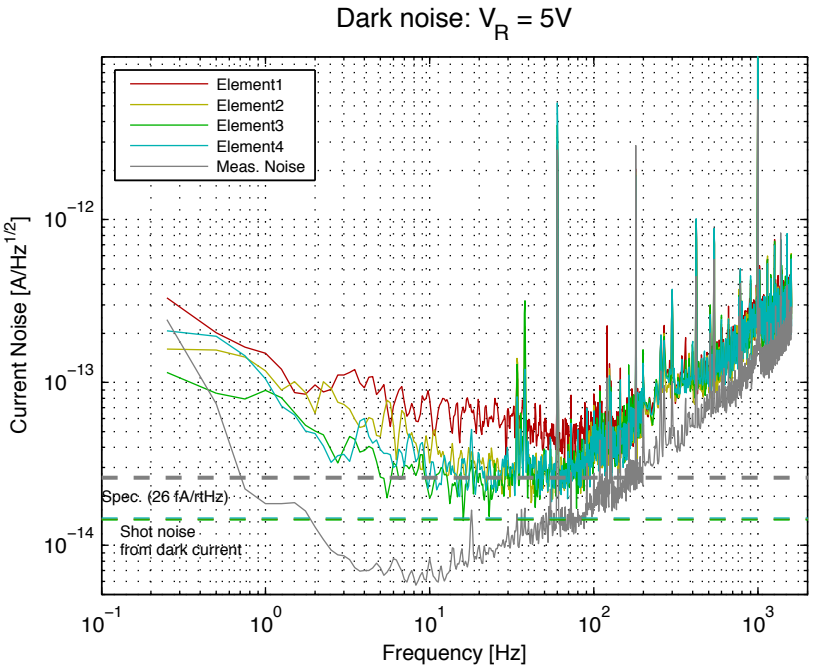
1~10Hz avg

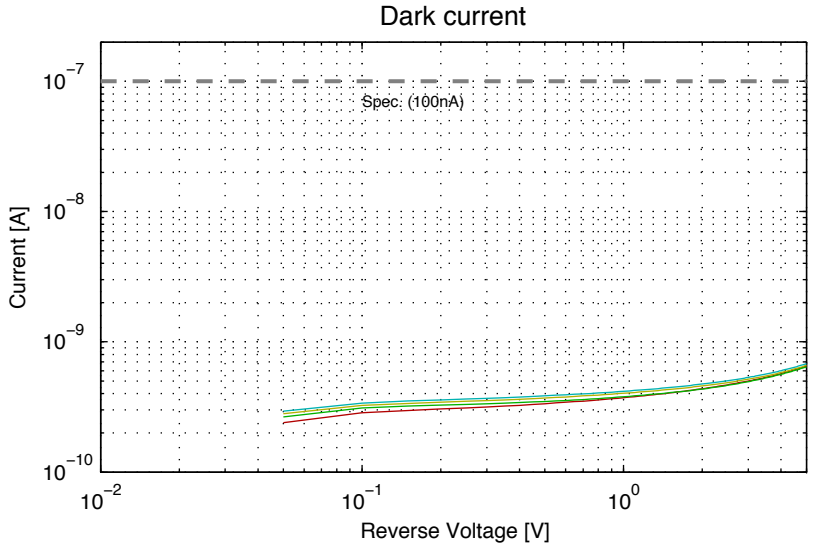
Elem1: 0.090 pA/rtHz
Elem2: 0.064 pA/rtHz
Elem3: 0.040 pA/rtHz
Elem4: 0.045 pA/rtHz

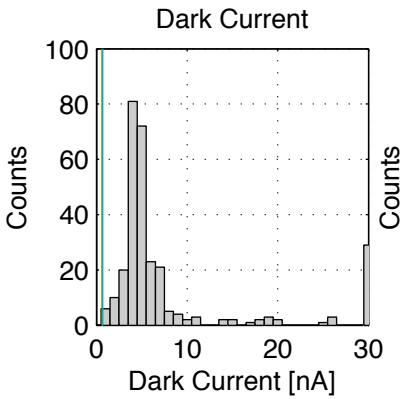
200~290Hz avg

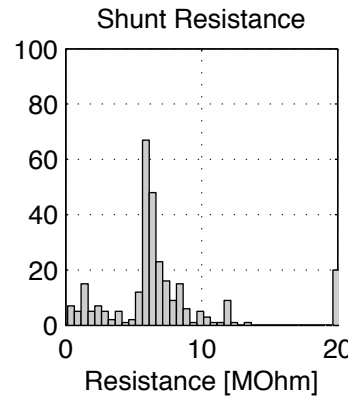
Elem1: 0.108 pA/rtHz
Elem2: 0.097 pA/rtHz
Elem3: 0.106 pA/rtHz
Elem4: 0.102 pA/rtHz

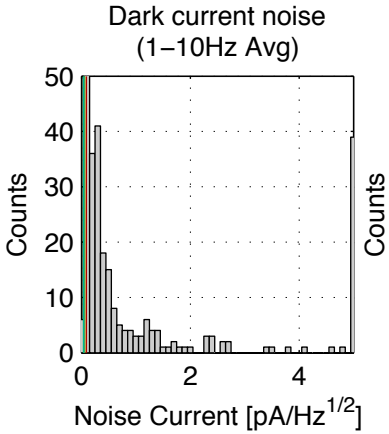
Total Penalty: −110

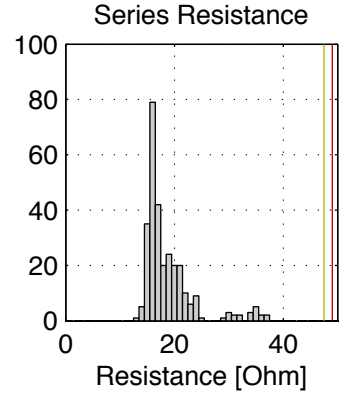


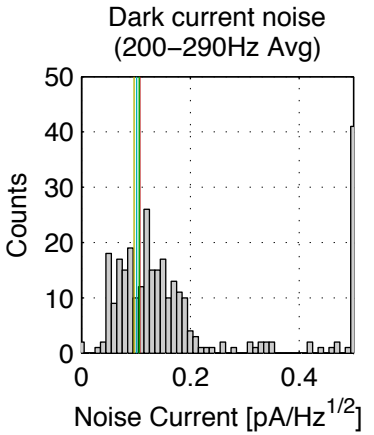


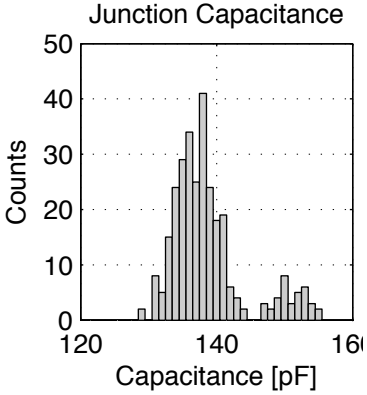












Errors / Warnings

Elem1: R_s > 40 Ohm
Elem2: R_s > 40 Ohm
Elem3: R_s > 50 Ohm
Elem4: R_s > 50 Ohm

QPD #1

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 7.099 MOhm
Elem2: 7.059 MOhm
Elem3: 7.067 MOhm
Elem4: 7.052 MOhm

Series Resistance: (R_s):

Elem1: 14.4 Ohm
Elem2: 14.8 Ohm
Elem3: 15.4 Ohm
Elem4: 15.2 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 149.8 pF
Elem2: 150.1 pF
Elem3: 146.7 pF
Elem4: 148.3 pF

Dark Current [nA]:

Elem1: 4.40 nA
Elem2: 4.64 nA
Elem3: 4.45 nA
Elem4: 4.61 nA

Dark Noise:

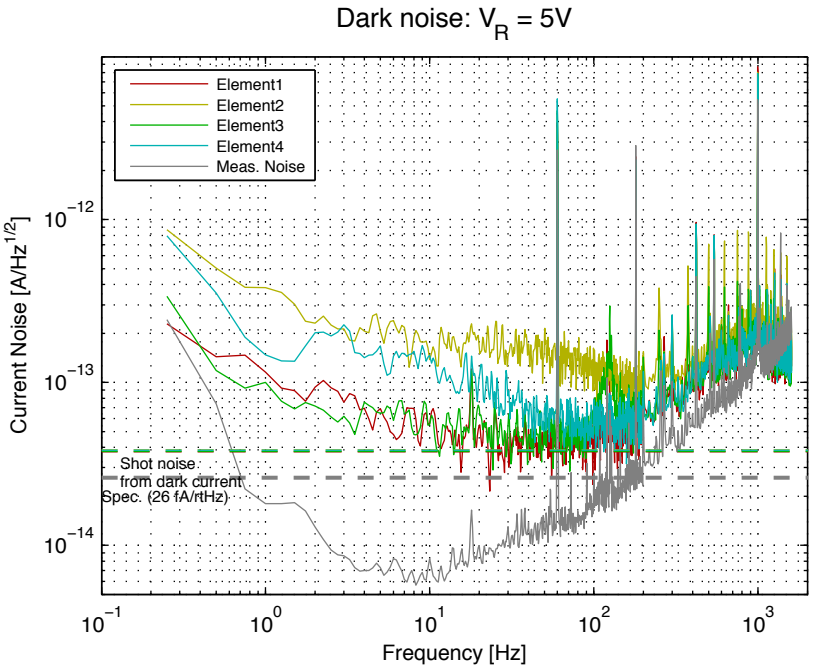
1~10Hz avg

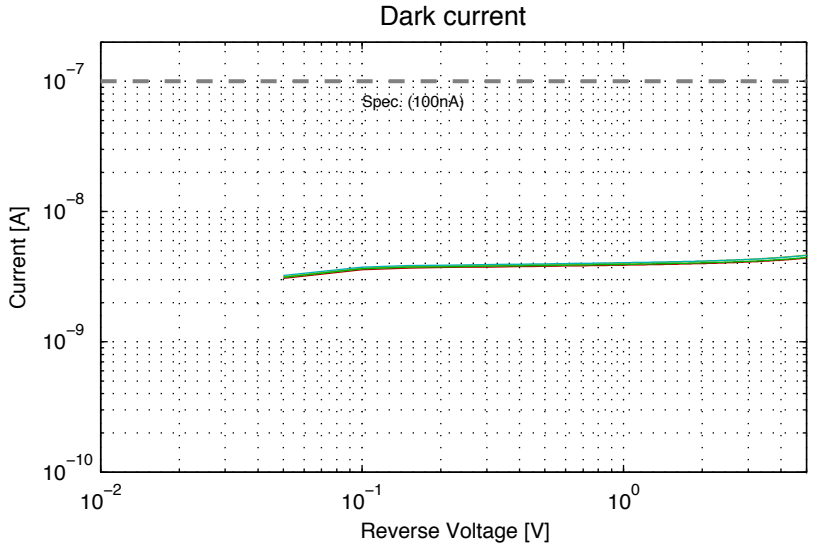
Elem1: 0.070 pA/rtHz
Elem2: 0.220 pA/rtHz
Elem3: 0.066 pA/rtHz
Elem4: 0.157 pA/rtHz

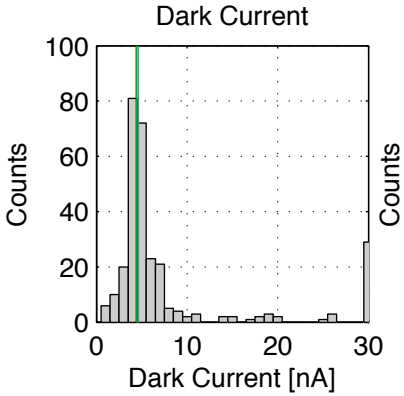
200~290Hz avg

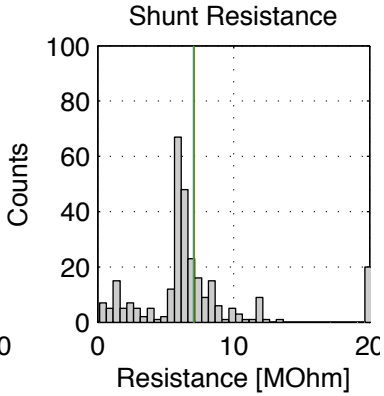
Elem1: 0.087 pA/rtHz
Elem2: 0.146 pA/rtHz
Elem3: 0.095 pA/rtHz
Elem4: 0.081 pA/rtHz

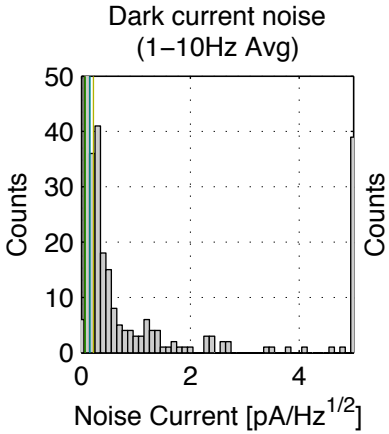
Total Penalty: −5

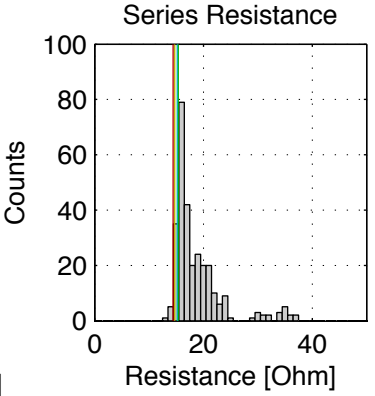


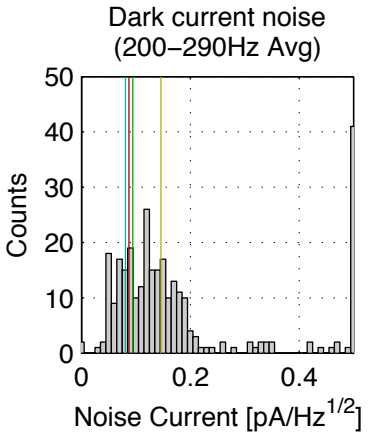


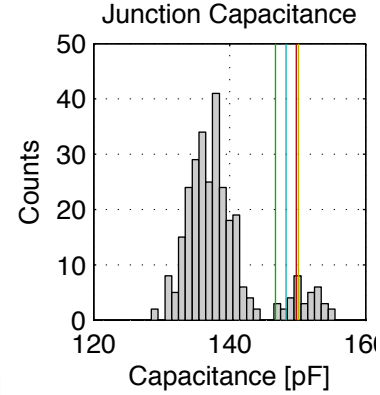












Errors / Warnings

Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #2

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 11.911 MOhm
Elem2: 11.823 MOhm
Elem3: 11.938 MOhm
Elem4: 11.619 MOhm

Series Resistance: (R_s):

Elem1: 22.8 Ohm
Elem2: 23.4 Ohm
Elem3: 24.2 Ohm
Elem4: 24.2 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 152.0 pF
Elem2: 153.5 pF
Elem3: 150.2 pF
Elem4: 151.6 pF

Dark Current [nA]:

Elem1: 2.54 nA
Elem2: 2.58 nA
Elem3: 2.57 nA
Elem4: 2.65 nA

Dark Noise:

1~10Hz avg

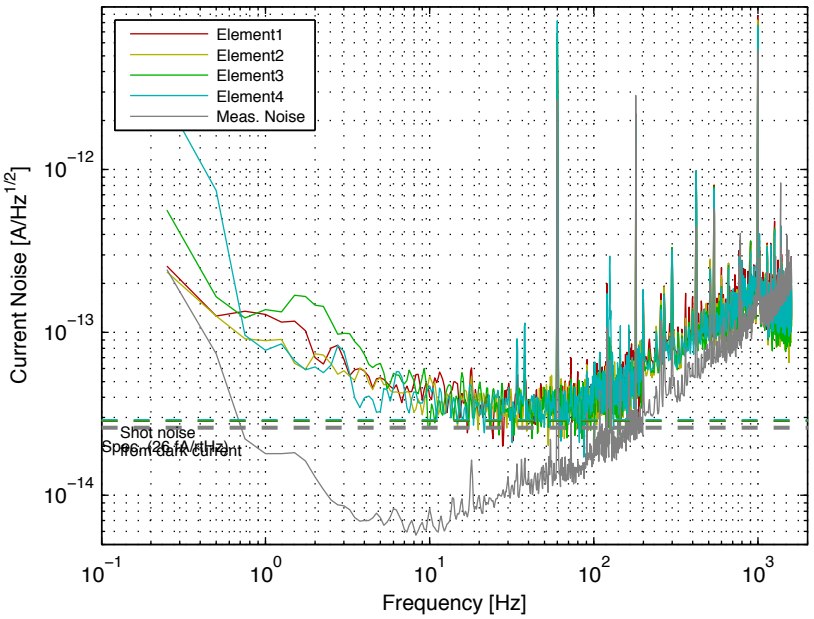
Elem1: 0.063 pA/rtHz
Elem2: 0.053 pA/rtHz
Elem3: 0.084 pA/rtHz
Elem4: 0.051 pA/rtHz

200~290Hz avg

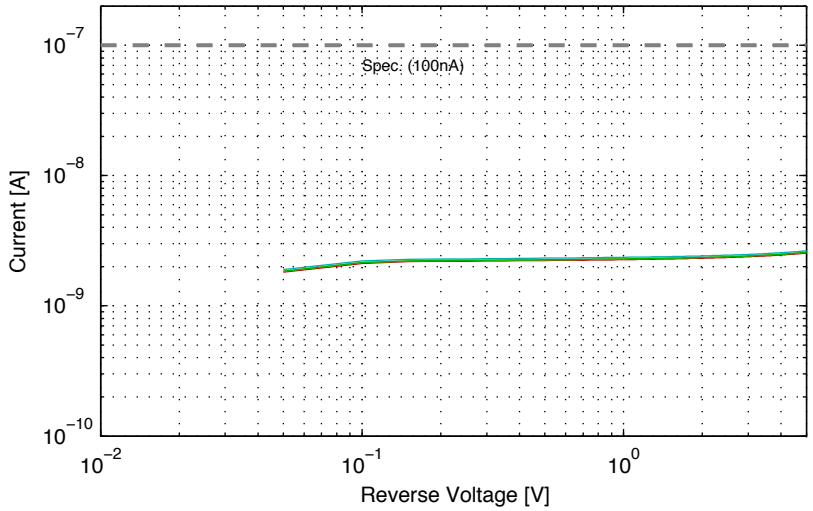
Elem1: 0.094 pA/rtHz
Elem2: 0.089 pA/rtHz
Elem3: 0.084 pA/rtHz
Elem4: 0.085 pA/rtHz

Total Penalty: 0

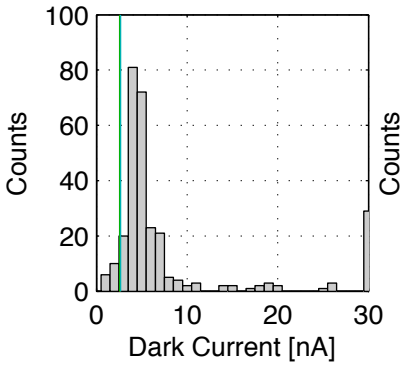
Dark noise: V_R = 5V



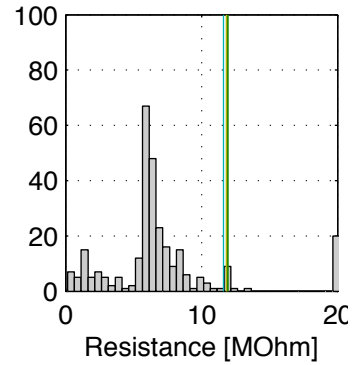
Dark current



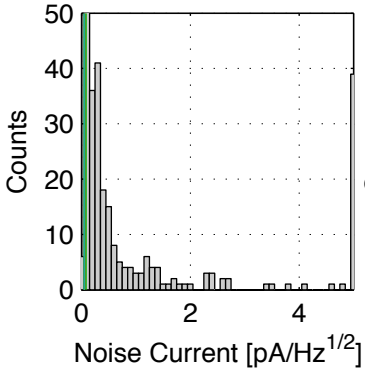
Dark Current



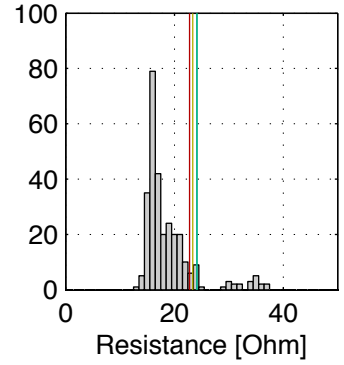
Shunt Resistance



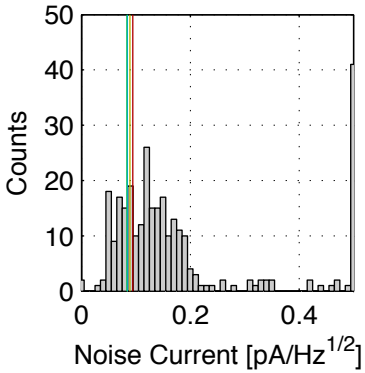
Dark current noise (1–10Hz Avg)



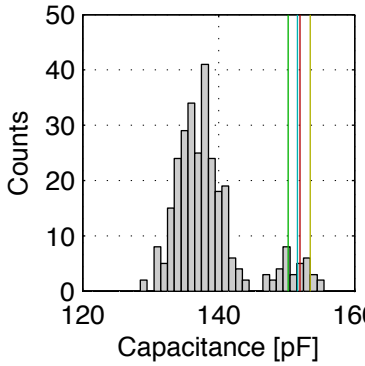
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

QPD #4

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 8.529 MOhm
Elem2: 8.302 MOhm
Elem3: 8.153 MOhm
Elem4: 7.710 MOhm

Series Resistance: (R_s):

Elem1: 13.2 Ohm
Elem2: 13.9 Ohm
Elem3: 14.5 Ohm
Elem4: 14.4 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 152.1 pF
Elem2: 153.1 pF
Elem3: 149.4 pF
Elem4: 151.1 pF

Dark Current [nA]:

Elem1: 3.76 nA
Elem2: 3.91 nA
Elem3: 4.02 nA
Elem4: 4.20 nA

Dark Noise:

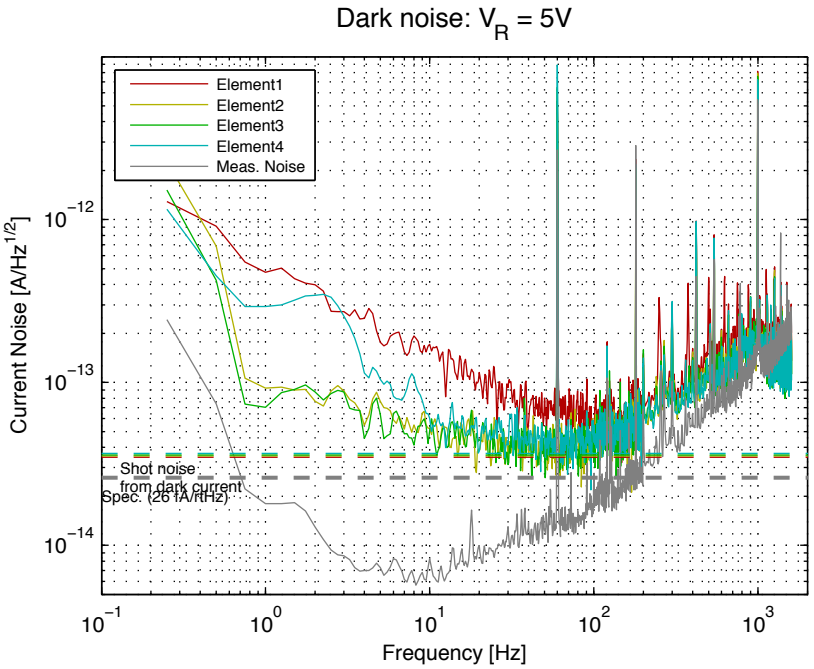
1~10Hz avg

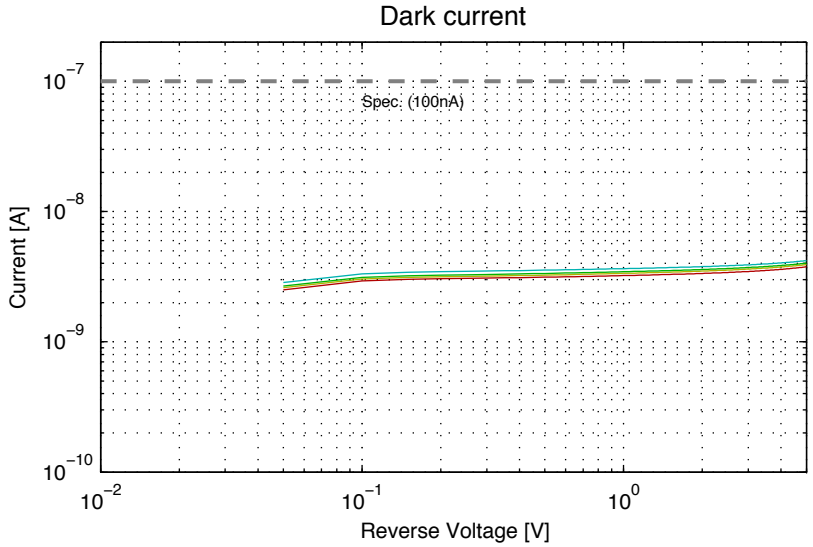
Elem1: 0.257 pA/rtHz
Elem2: 0.070 pA/rtHz
Elem3: 0.065 pA/rtHz
Elem4: 0.182 pA/rtHz

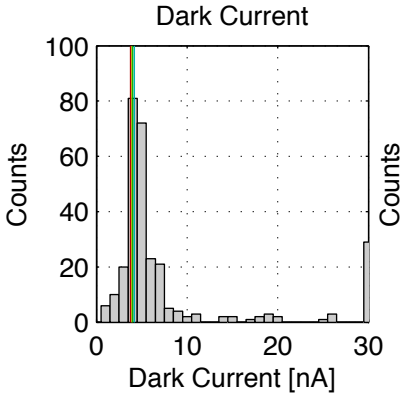
200~290Hz avg

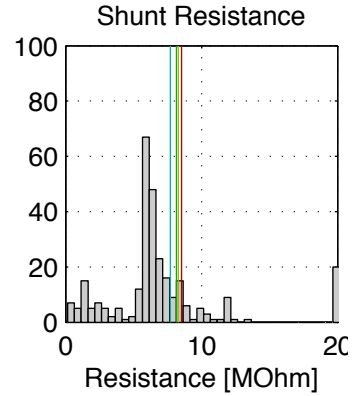
Elem1: 0.124 pA/rtHz
Elem2: 0.086 pA/rtHz
Elem3: 0.086 pA/rtHz
Elem4: 0.083 pA/rtHz

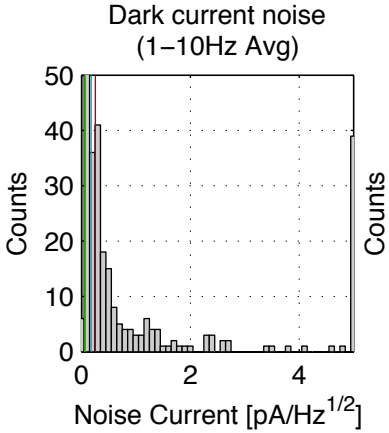
Total Penalty: −10

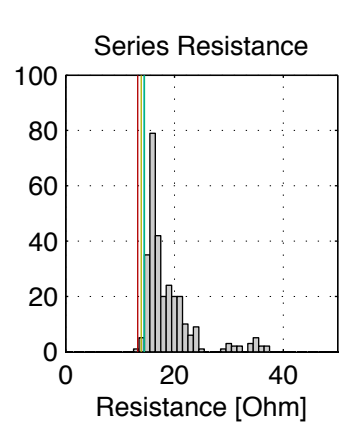


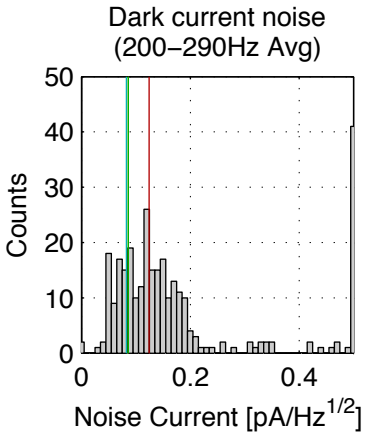


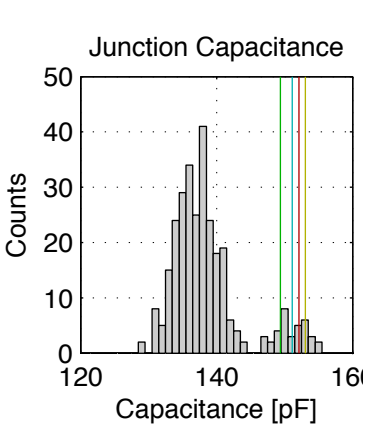












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #5

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 10.963 MOhm
Elem2: 10.362 MOhm
Elem3: 10.297 MOhm
Elem4: 9.992 MOhm

Series Resistance: (R_s):

Elem1: 23.1 Ohm
Elem2: 23.9 Ohm
Elem3: 24.4 Ohm
Elem4: 24.3 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 150.3 pF
Elem2: 151.4 pF
Elem3: 148.7 pF
Elem4: 149.9 pF

Dark Current [nA]:

Elem1: 5.90 nA
Elem2: 7.63 nA
Elem3: 6.61 nA
Elem4: 5.71 nA

Dark Noise:

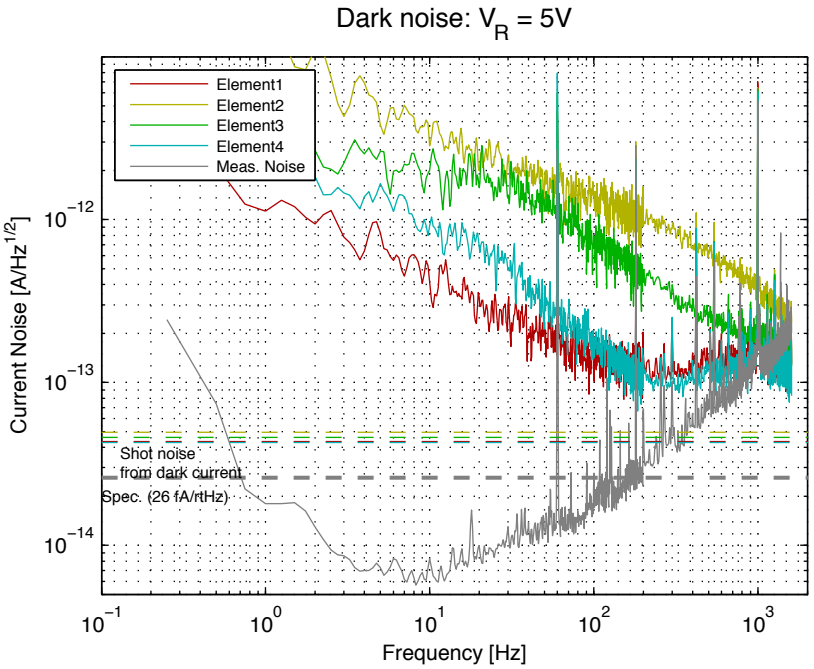
1~10Hz avg

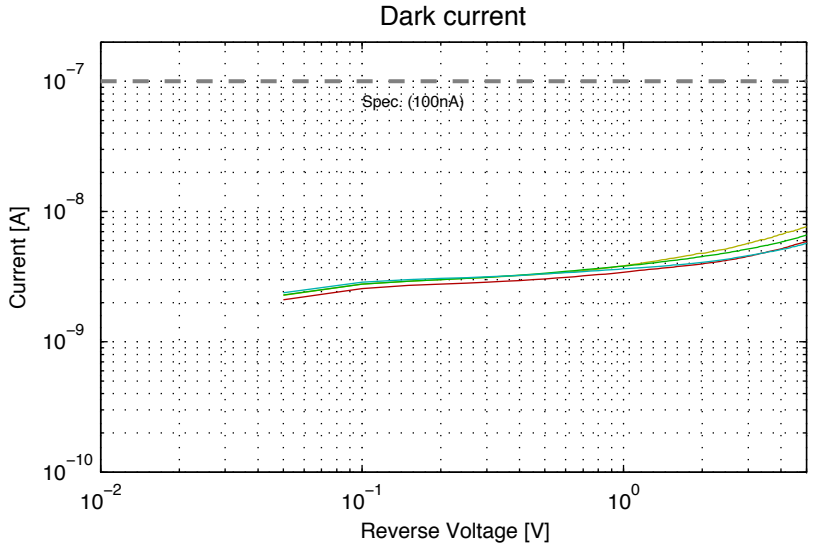
Elem1: 0.757 pA/rtHz
Elem2: 6.472 pA/rtHz
Elem3: 2.352 pA/rtHz
Elem4: 1.406 pA/rtHz

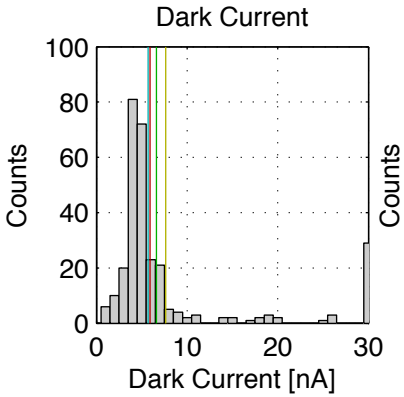
200~290Hz avg

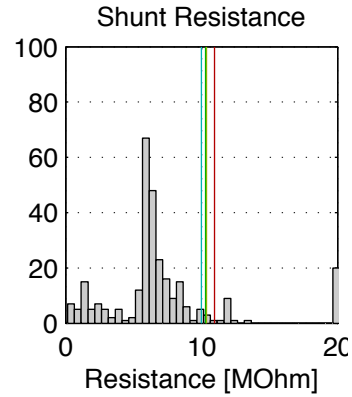
Elem1: 0.123 pA/rtHz
Elem2: 0.959 pA/rtHz
Elem3: 0.419 pA/rtHz
Elem4: 0.107 pA/rtHz

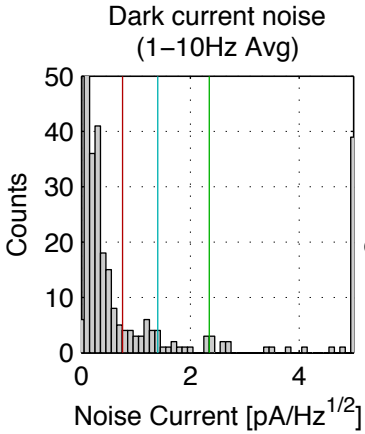
Total Penalty: −120

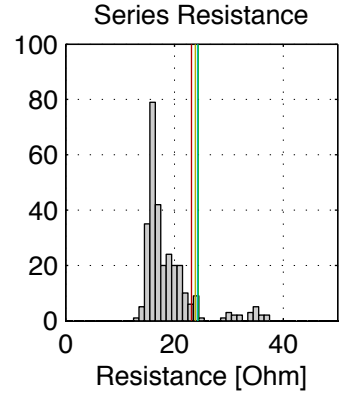


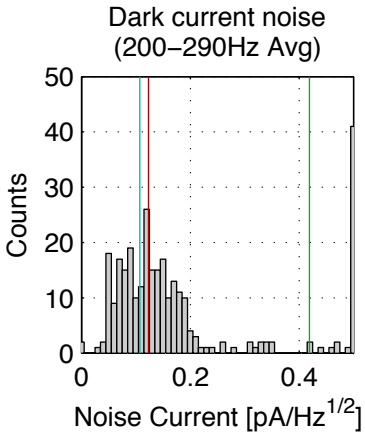


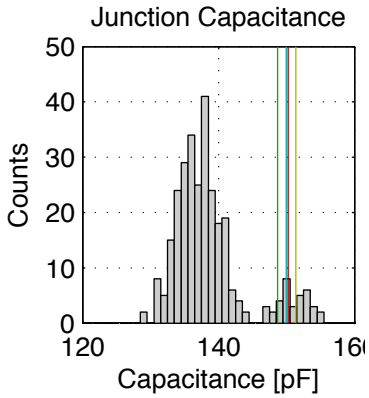












Errors / Warnings

Elem1: i_{noise} (LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise} (LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise} (LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise} (LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise} (HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise} (HF) > 180fA/rtHz (100nA shot)

QPD #6

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 13.479 MOhm
Elem2: 12.233 MOhm
Elem3: 12.143 MOhm
Elem4: 11.862 MOhm

Series Resistance: (R_s):

Elem1: 22.4 Ohm
Elem2: 23.2 Ohm
Elem3: 24.0 Ohm
Elem4: 23.7 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 152.6 pF
Elem2: 153.1 pF
Elem3: 150.9 pF
Elem4: 152.6 pF

Dark Current [nA]:

Elem1: 2.35 nA
Elem2: 2.45 nA
Elem3: 2.50 nA
Elem4: 2.54 nA

Dark Noise:

1~10Hz avg

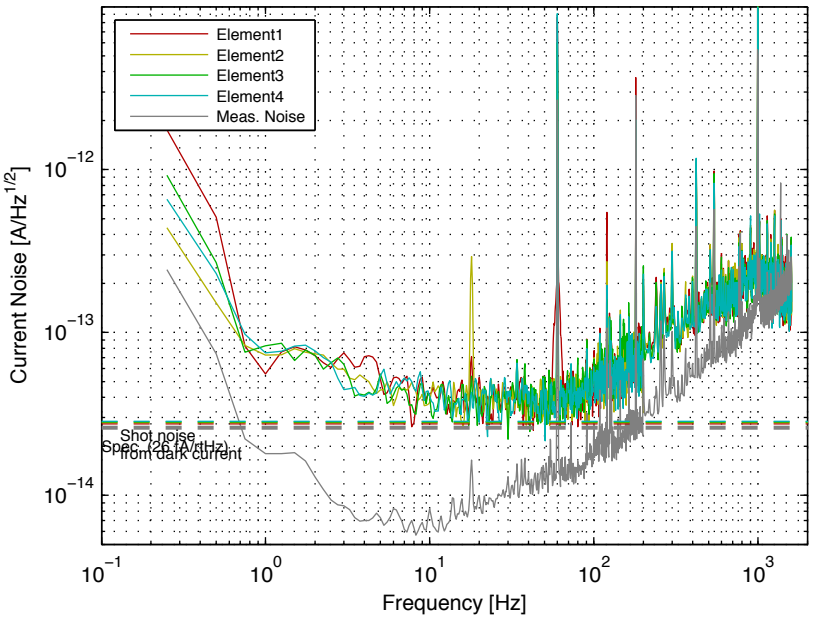
Elem1: 0.057 pA/rtHz
Elem2: 0.052 pA/rtHz
Elem3: 0.051 pA/rtHz
Elem4: 0.054 pA/rtHz

200~290Hz avg

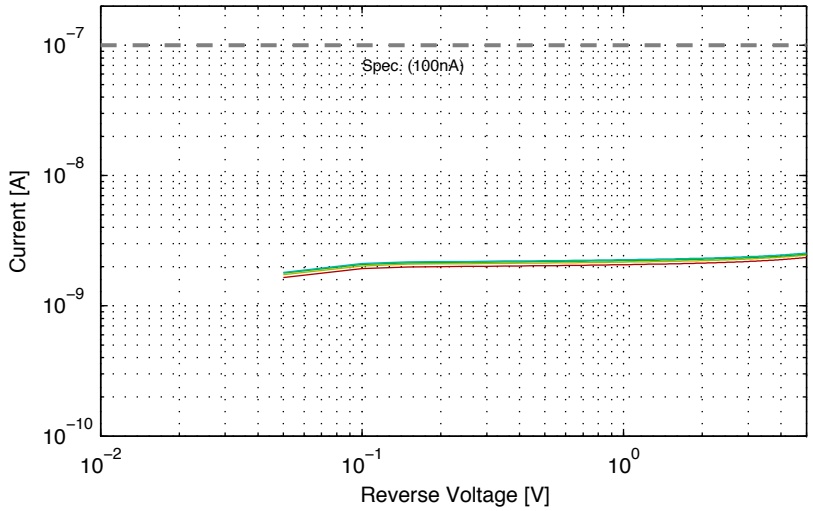
Elem1: 0.125 pA/rtHz
Elem2: 0.116 pA/rtHz
Elem3: 0.120 pA/rtHz
Elem4: 0.113 pA/rtHz

Total Penalty: 0

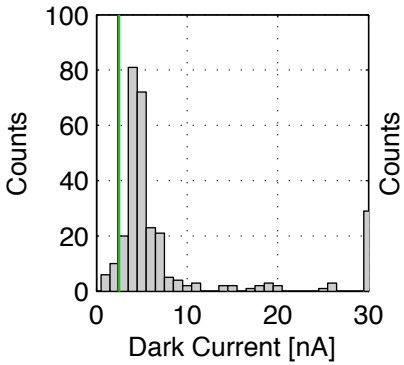
Dark noise: V_R = 5V



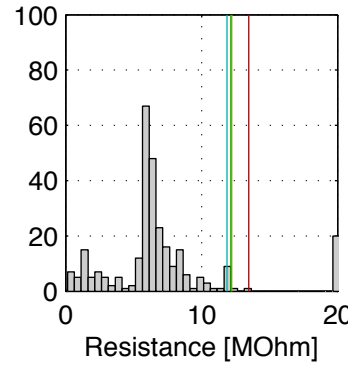
Dark current



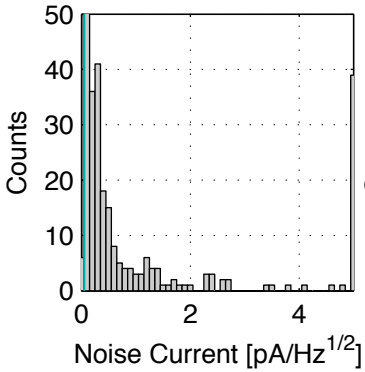
Dark Current



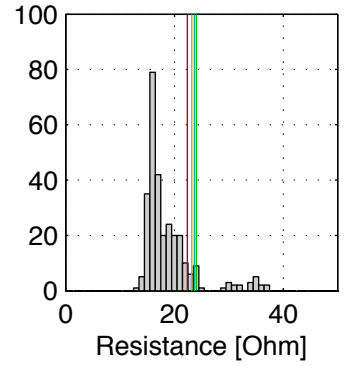
Shunt Resistance



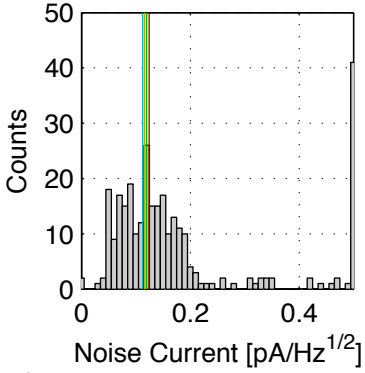
Dark current noise (1–10Hz Avg)



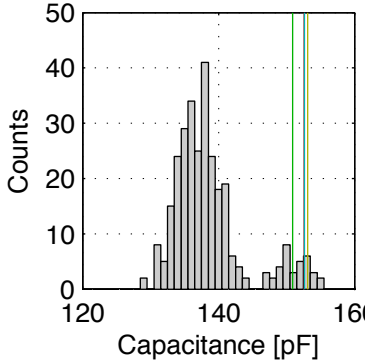
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

QPD #7

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 11.702 MOhm
Elem2: 11.838 MOhm
Elem3: 12.105 MOhm
Elem4: 11.995 MOhm

Series Resistance: (R_s):

Elem1: 23.0 Ohm
Elem2: 23.9 Ohm
Elem3: 24.6 Ohm
Elem4: 24.2 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 148.5 pF
Elem2: 149.5 pF
Elem3: 147.0 pF
Elem4: 148.4 pF

Dark Current [nA]:

Elem1: 2.74 nA
Elem2: 2.54 nA
Elem3: 2.50 nA
Elem4: 2.50 nA

Dark Noise:

1~10Hz avg

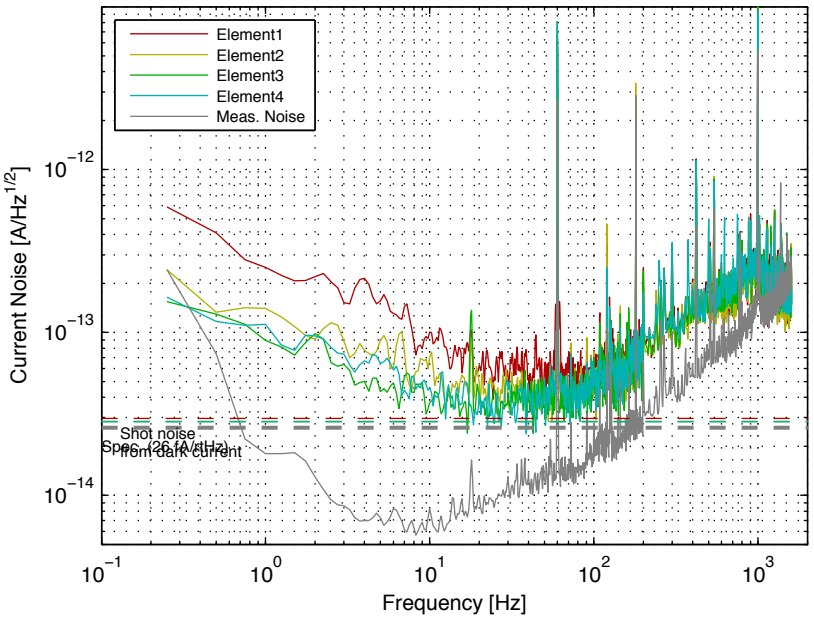
Elem1: 0.159 pA/rtHz
Elem2: 0.083 pA/rtHz
Elem3: 0.056 pA/rtHz
Elem4: 0.065 pA/rtHz

200~290Hz avg

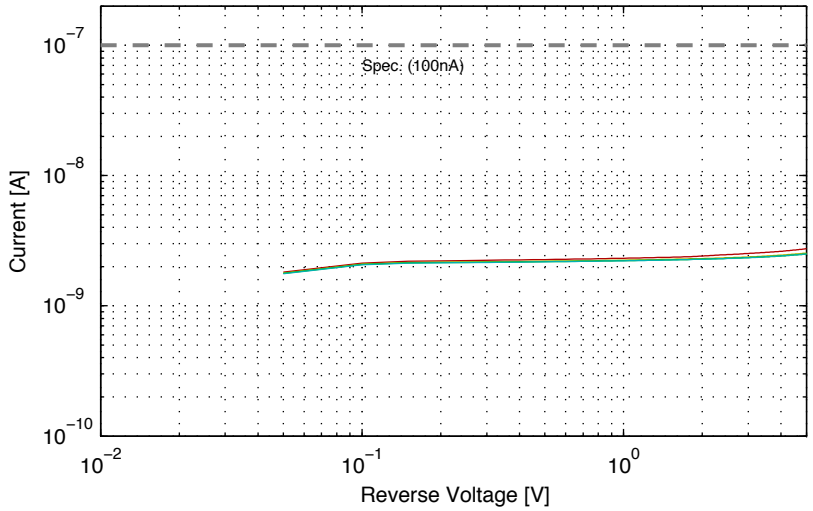
Elem1: 0.123 pA/rtHz
Elem2: 0.118 pA/rtHz
Elem3: 0.119 pA/rtHz
Elem4: 0.138 pA/rtHz

Total Penalty: 0

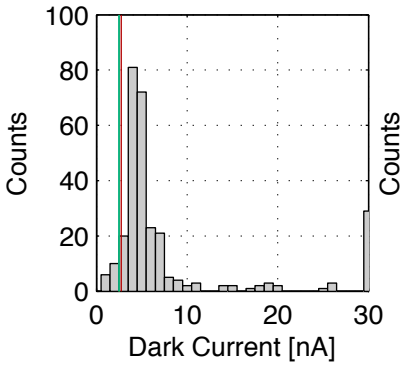
Dark noise: V_R = 5V



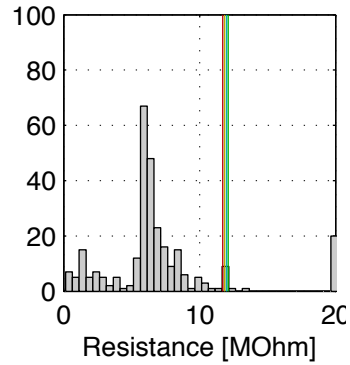
Dark current



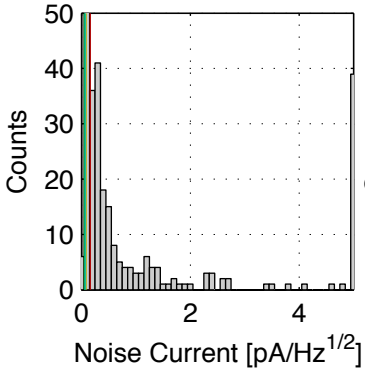
Dark Current



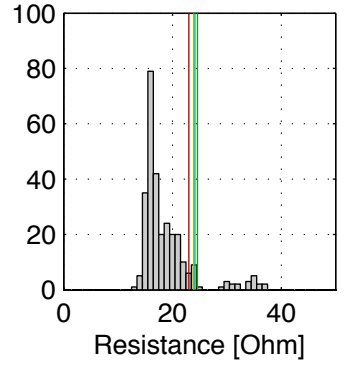
Shunt Resistance



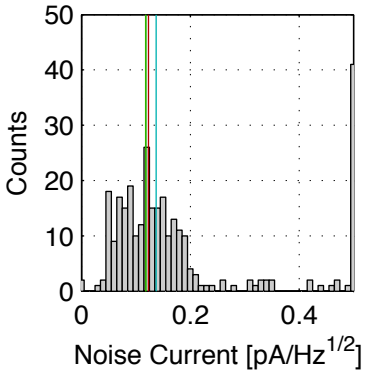
Dark current noise (1–10Hz Avg)



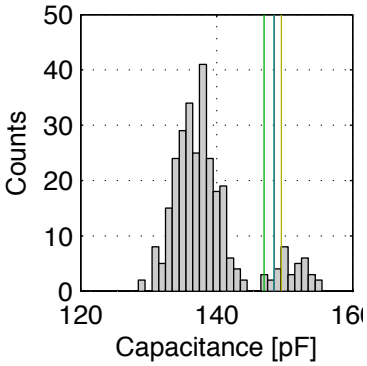
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

QPD #8

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.131 MOhm
Elem2: 6.524 MOhm
Elem3: 6.836 MOhm
Elem4: 6.931 MOhm

Series Resistance: (R_s):

Elem1: 14.0 Ohm
Elem2: 14.9 Ohm
Elem3: 15.1 Ohm
Elem4: 15.2 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 150.0 pF
Elem2: 150.2 pF
Elem3: 147.4 pF
Elem4: 148.9 pF

Dark Current [nA]:

Elem1: 5.12 nA
Elem2: 4.82 nA
Elem3: 4.64 nA
Elem4: 4.56 nA

Dark Noise:

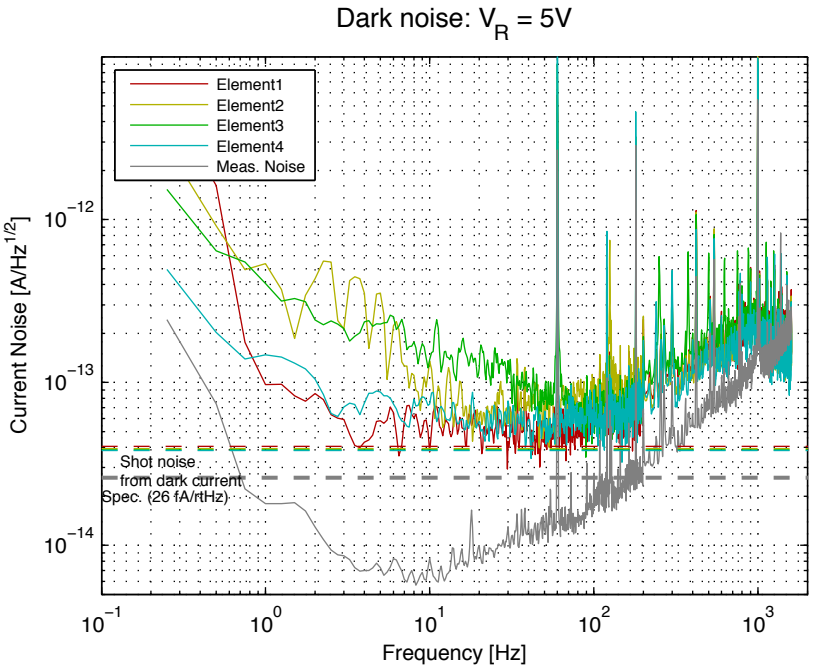
1~10Hz avg

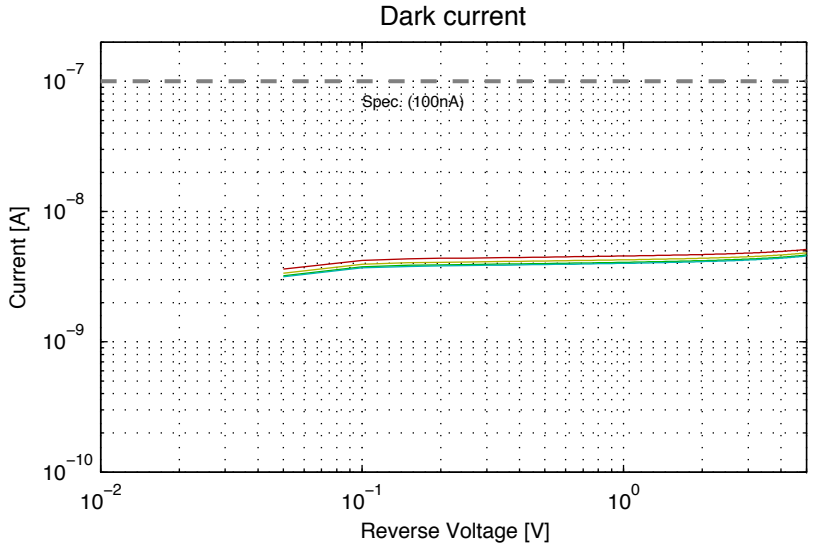
Elem1: 0.061 pA/rtHz
Elem2: 0.281 pA/rtHz
Elem3: 0.223 pA/rtHz
Elem4: 0.084 pA/rtHz

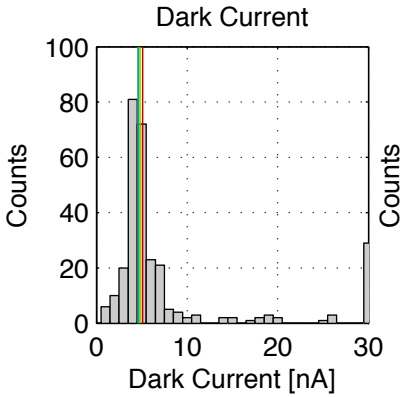
200~290Hz avg

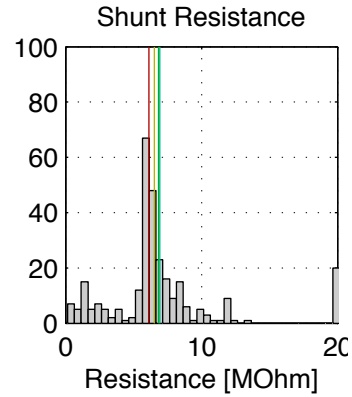
Elem1: 0.123 pA/rtHz
Elem2: 0.119 pA/rtHz
Elem3: 0.191 pA/rtHz
Elem4: 0.124 pA/rtHz

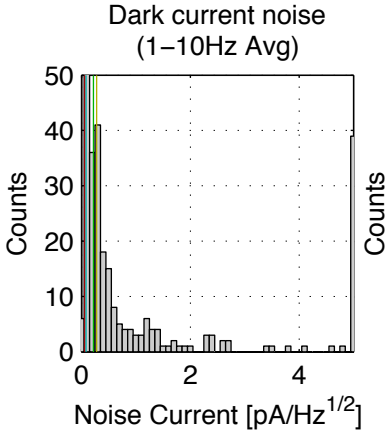
Total Penalty: −15

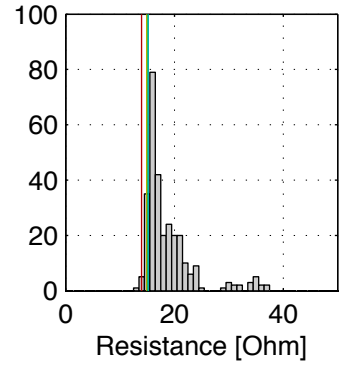


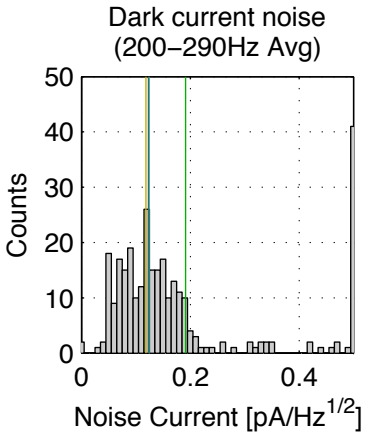


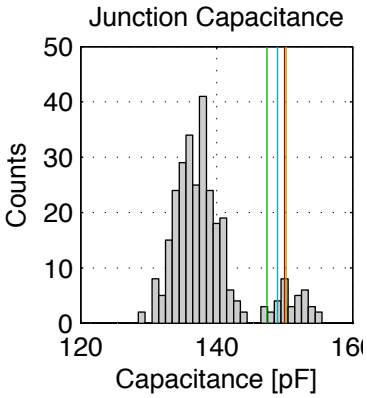












Errors / Warnings

Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #9

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 10.414 MOhm
Elem2: 9.836 MOhm
Elem3: 10.003 MOhm
Elem4: 9.760 MOhm

Series Resistance: (R_s):

Elem1: 19.7 Ohm
Elem2: 20.6 Ohm
Elem3: 21.0 Ohm
Elem4: 21.0 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 153.8 pF
Elem2: 155.5 pF
Elem3: 151.7 pF
Elem4: 153.7 pF

Dark Current [nA]:

Elem1: 2.78 nA
Elem2: 3.43 nA
Elem3: 2.96 nA
Elem4: 3.03 nA

Dark Noise:
1~10Hz avg

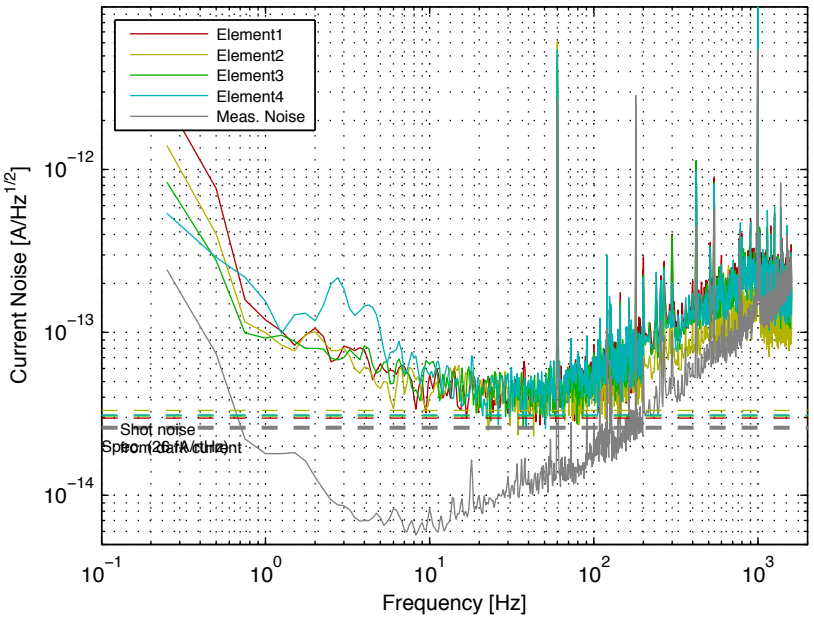
Elem1: 0.068 pA/rtHz
Elem2: 0.062 pA/rtHz
Elem3: 0.066 pA/rtHz
Elem4: 0.111 pA/rtHz

200~290Hz avg

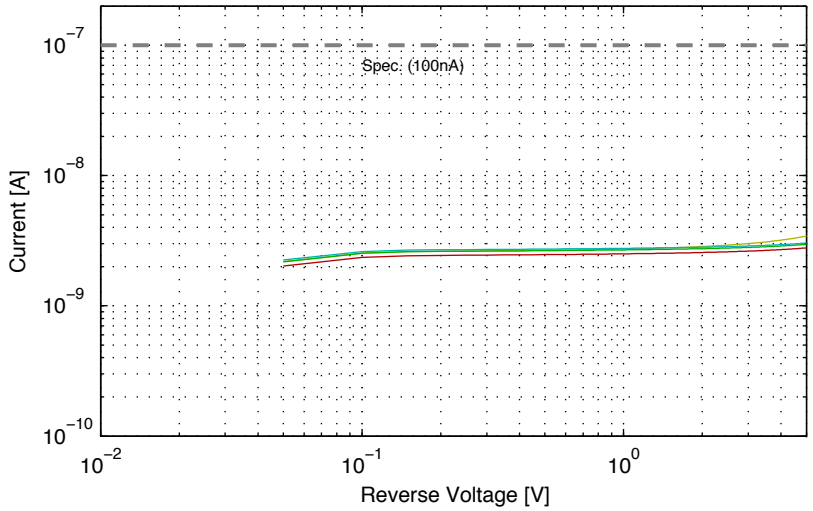
Elem1: 0.136 pA/rtHz
Elem2: 0.082 pA/rtHz
Elem3: 0.124 pA/rtHz
Elem4: 0.127 pA/rtHz

Total Penalty: 0

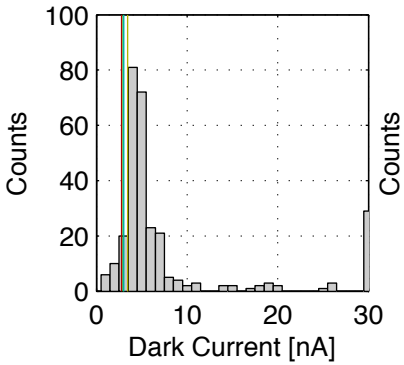
Dark noise: V_R = 5V



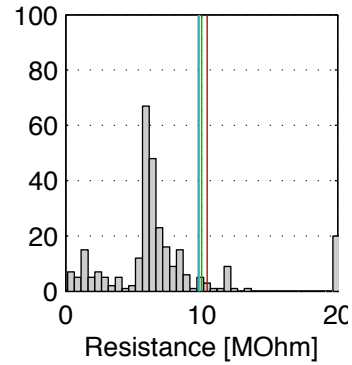
Dark current



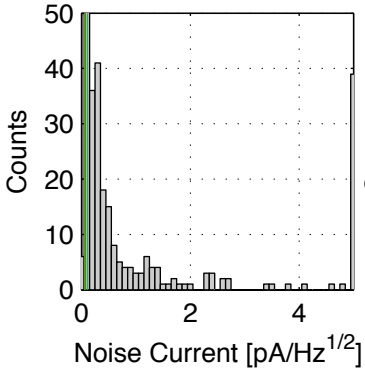
Dark Current



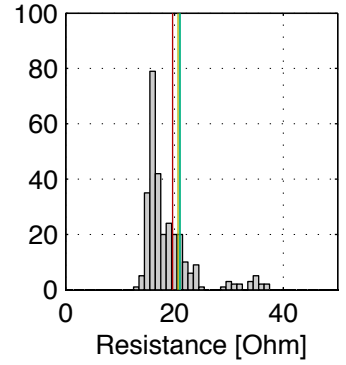
Shunt Resistance



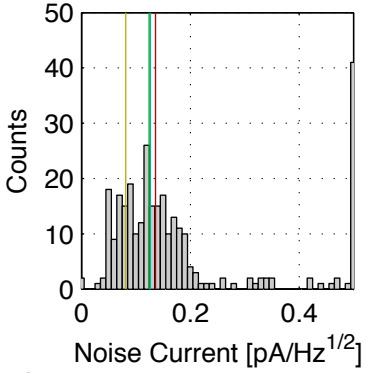
Dark current noise (1–10Hz Avg)



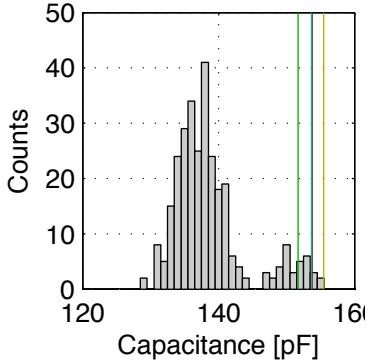
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

QPD #10

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 8.761 MOhm
Elem2: 8.589 MOhm
Elem3: 8.614 MOhm
Elem4: 8.505 MOhm

Series Resistance: (R_s):

Elem1: 19.7 Ohm
Elem2: 19.8 Ohm
Elem3: 21.1 Ohm
Elem4: 21.5 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 153.8 pF
Elem2: 154.9 pF
Elem3: 151.6 pF
Elem4: 153.2 pF

Dark Current [nA]:

Elem1: 6.61 nA
Elem2: 4.07 nA
Elem3: 3.90 nA
Elem4: 4.15 nA

Dark Noise:

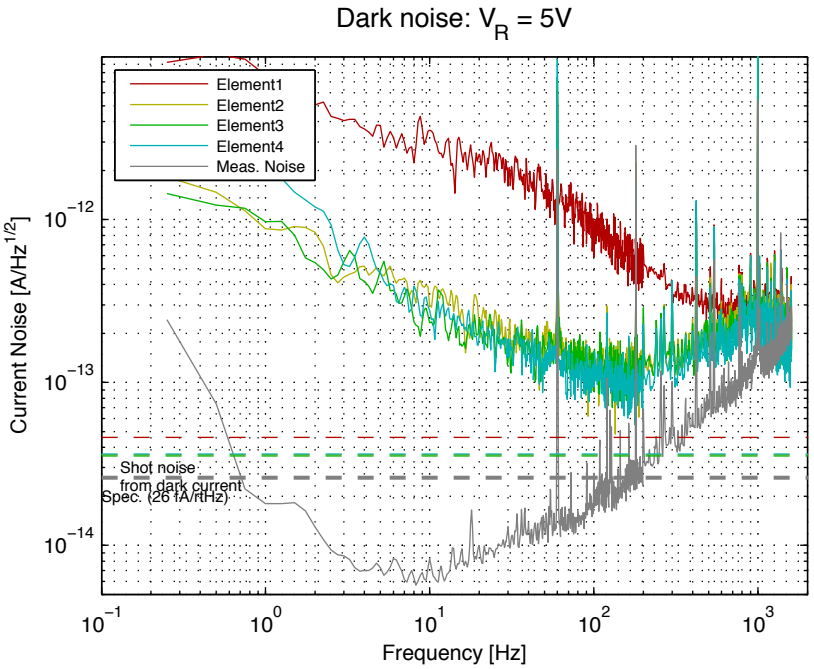
1~10Hz avg

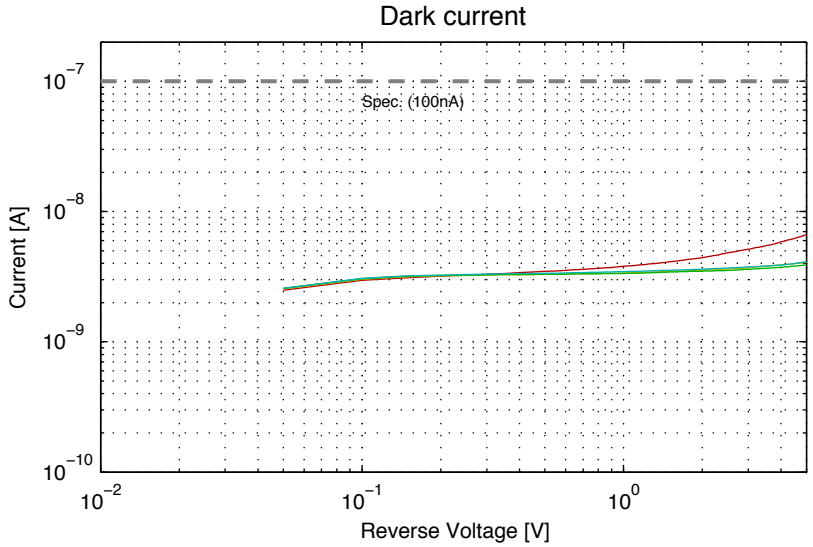
Elem1: 3.849 pA/rtHz
Elem2: 0.522 pA/rtHz
Elem3: 0.465 pA/rtHz
Elem4: 0.761 pA/rtHz

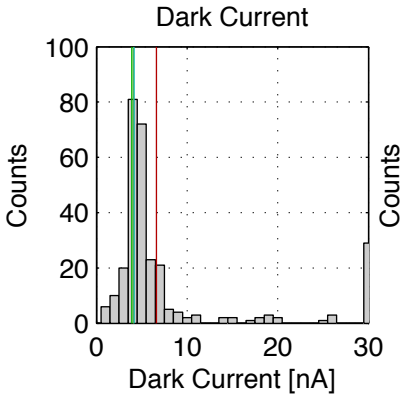
200~290Hz avg

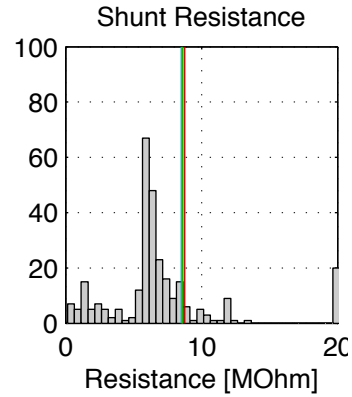
Elem1: 0.467 pA/rtHz
Elem2: 0.155 pA/rtHz
Elem3: 0.164 pA/rtHz
Elem4: 0.142 pA/rtHz

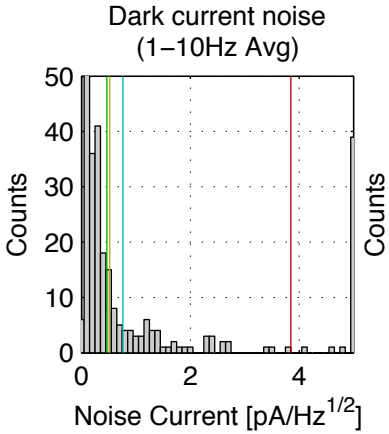
Total Penalty: −70

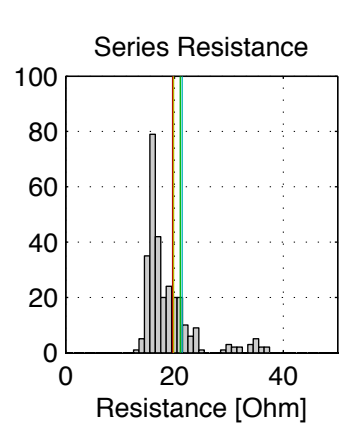


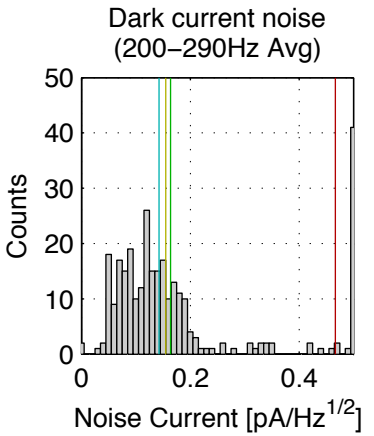


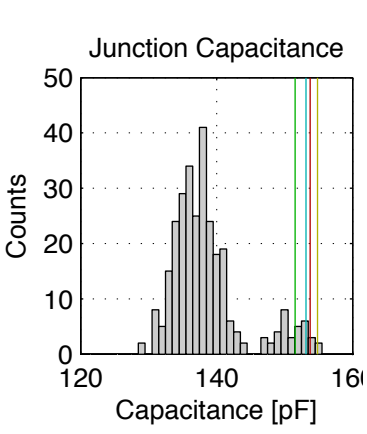












Errors / Warnings

Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #16

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 35.800 MOhm
Elem2: 34.179 MOhm
Elem3: 37.267 MOhm
Elem4: 39.913 MOhm

Series Resistance: (R_s):

Elem1: 34.0 Ohm
Elem2: 34.2 Ohm
Elem3: 35.5 Ohm
Elem4: 34.9 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 135.0 pF
Elem2: 136.1 pF
Elem3: 133.0 pF
Elem4: 134.8 pF

Dark Current [nA]:

Elem1: 3.44 nA
Elem2: 5.30 nA
Elem3: 3.21 nA
Elem4: 2.45 nA

Dark Noise:

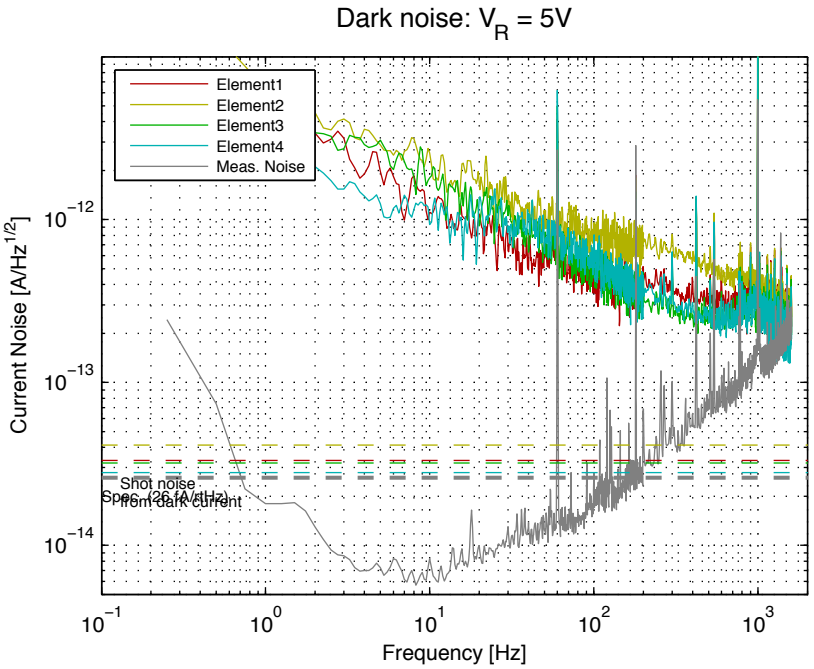
1~10Hz avg

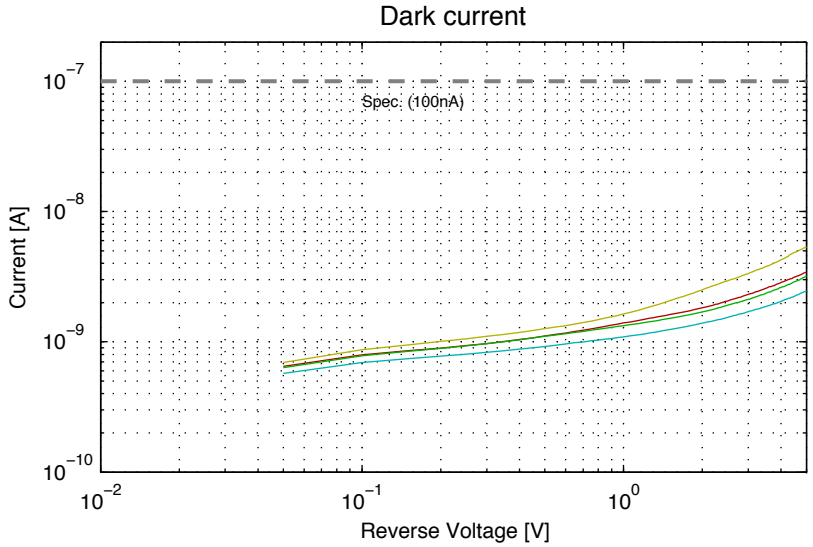
Elem1: 2.329 pA/rtHz
Elem2: 3.434 pA/rtHz
Elem3: 2.677 pA/rtHz
Elem4: 1.495 pA/rtHz

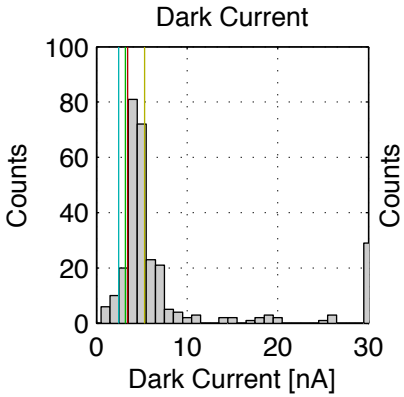
200~290Hz avg

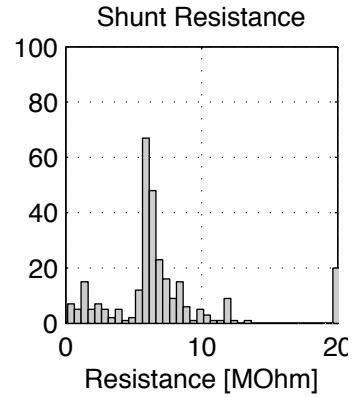
Elem1: 0.417 pA/rtHz
Elem2: 0.690 pA/rtHz
Elem3: 0.316 pA/rtHz
Elem4: 0.351 pA/rtHz

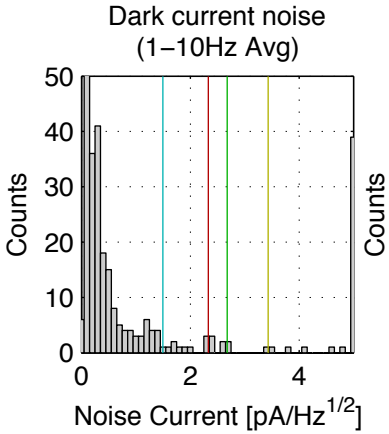
Total Penalty: −175

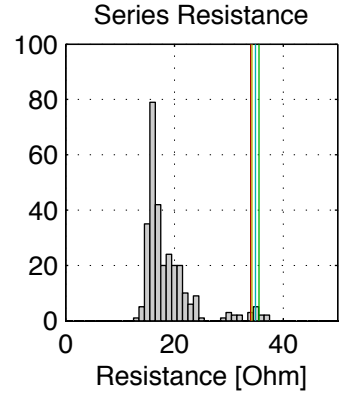


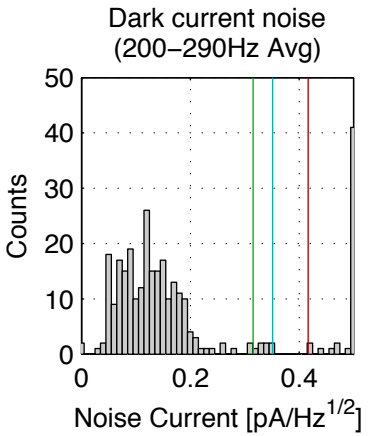


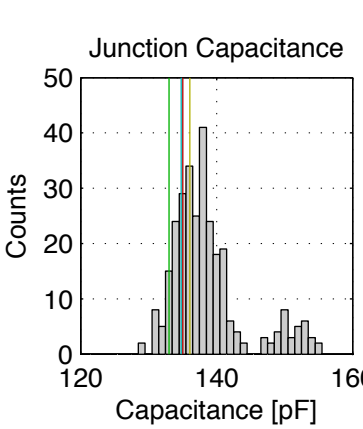












Errors / Warnings

Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #17

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 43.557 MOhm
Elem2: 42.767 MOhm
Elem3: 43.997 MOhm
Elem4: 43.078 MOhm

Series Resistance: (R_s):

Elem1: 30.4 Ohm
Elem2: 30.6 Ohm
Elem3: 32.2 Ohm
Elem4: 32.0 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 138.6 pF
Elem2: 140.0 pF
Elem3: 136.6 pF
Elem4: 137.5 pF

Dark Current [nA]:

Elem1: 1.42 nA
Elem2: 1.57 nA
Elem3: 1.44 nA
Elem4: 1.55 nA

Dark Noise:

1~10Hz avg

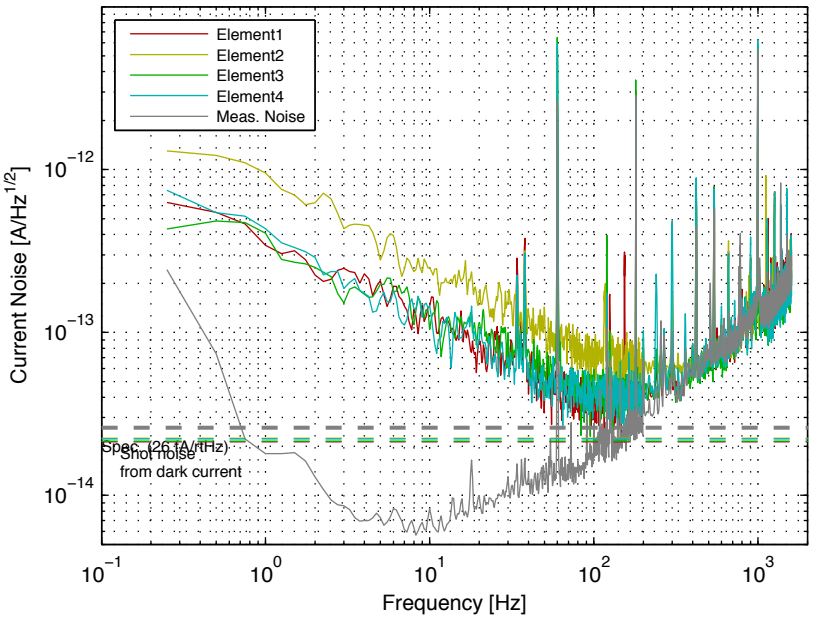
Elem1: 0.196 pA/rtHz
Elem2: 0.442 pA/rtHz
Elem3: 0.195 pA/rtHz
Elem4: 0.200 pA/rtHz

200~290Hz avg

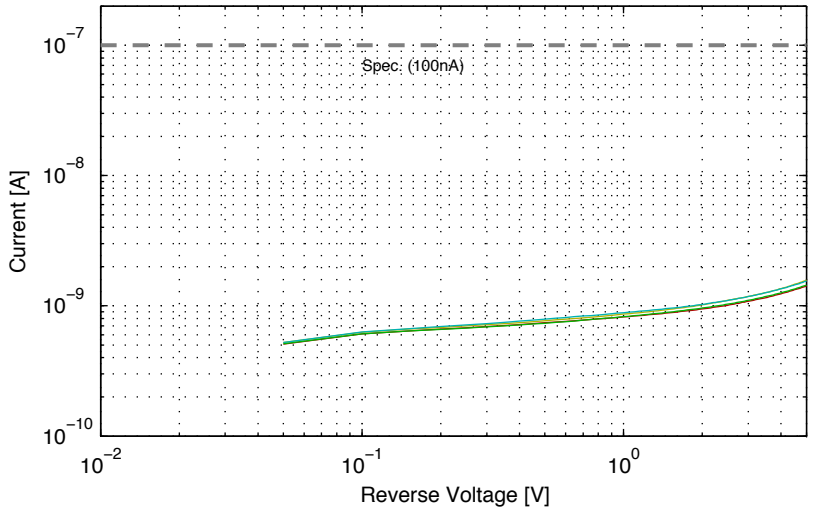
Elem1: 0.051 pA/rtHz
Elem2: 0.064 pA/rtHz
Elem3: 0.054 pA/rtHz
Elem4: 0.073 pA/rtHz

Total Penalty: –20

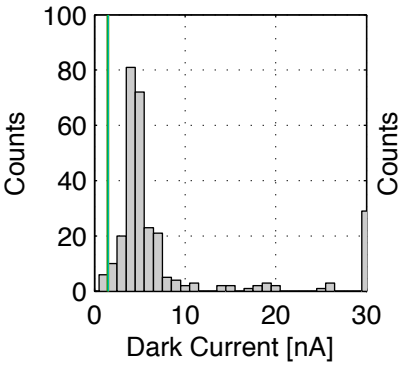
Dark noise: V_R = 5V



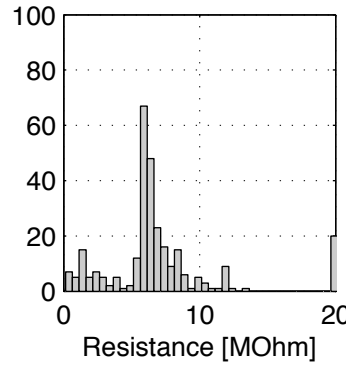
Dark current



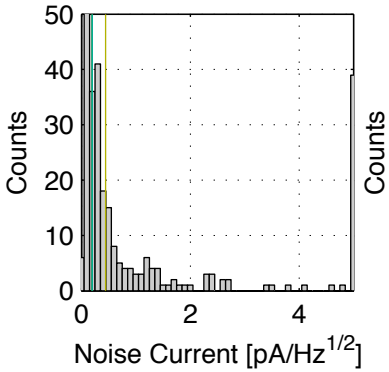
Dark Current



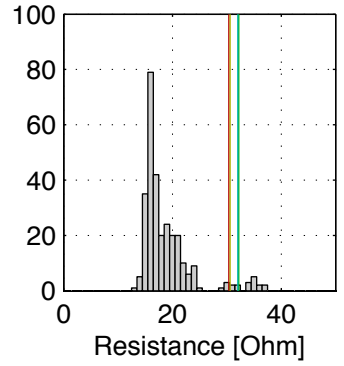
Shunt Resistance



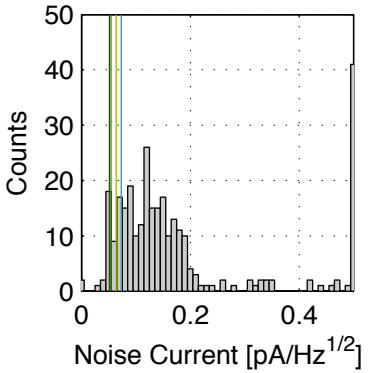
Dark current noise
(1–10Hz Avg)



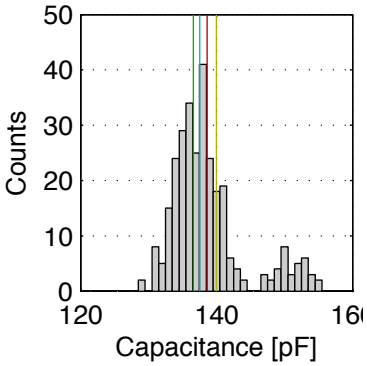
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #18

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 41.677 MOhm
Elem2: 43.597 MOhm
Elem3: 44.842 MOhm
Elem4: 42.798 MOhm

Series Resistance: (R_s):

Elem1: 34.9 Ohm
Elem2: 35.0 Ohm
Elem3: 36.9 Ohm
Elem4: 36.6 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 133.1 pF
Elem2: 134.2 pF
Elem3: 131.0 pF
Elem4: 132.5 pF

Dark Current [nA]:

Elem1: 1.48 nA
Elem2: 1.61 nA
Elem3: 1.42 nA
Elem4: 1.64 nA

Dark Noise:

1~10Hz avg

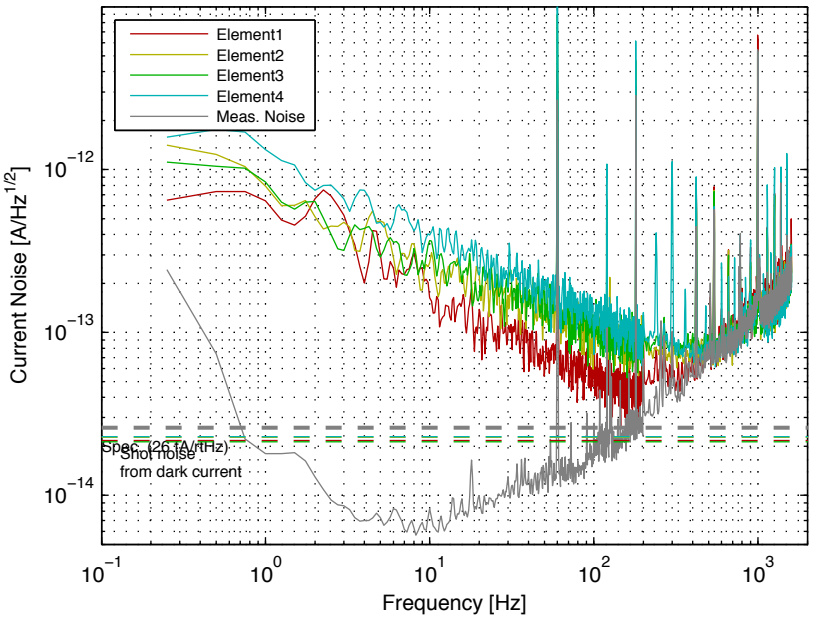
Elem1: 0.378 pA/rtHz
Elem2: 0.410 pA/rtHz
Elem3: 0.403 pA/rtHz
Elem4: 0.640 pA/rtHz

200~290Hz avg

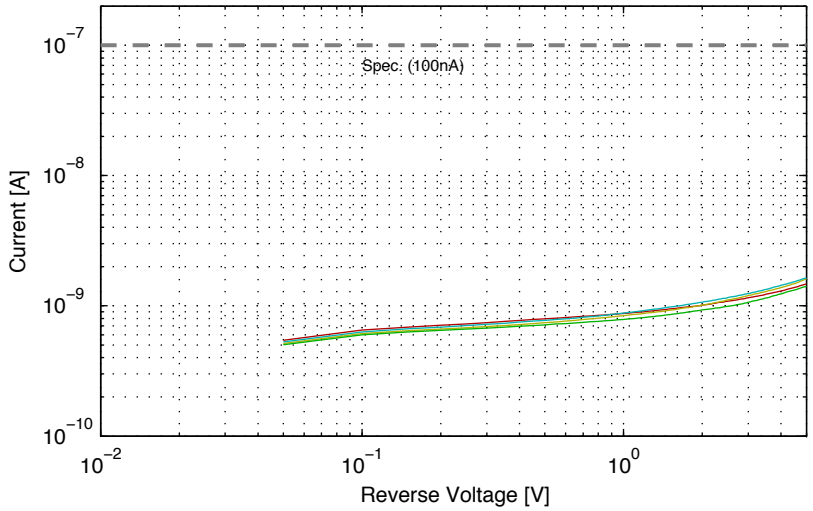
Elem1: 0.063 pA/rtHz
Elem2: 0.080 pA/rtHz
Elem3: 0.089 pA/rtHz
Elem4: 0.126 pA/rtHz

Total Penalty: –20

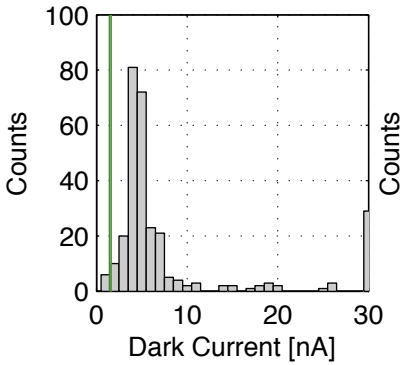
Dark noise: V_R = 5V



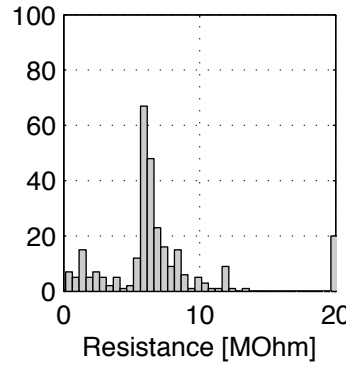
Dark current



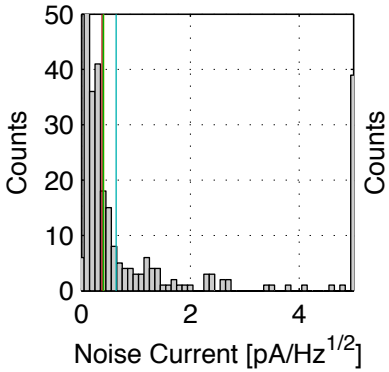
Dark Current



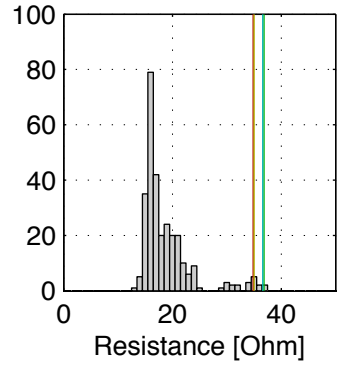
Shunt Resistance



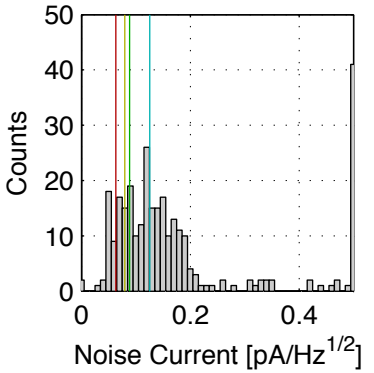
Dark current noise
(1–10Hz Avg)



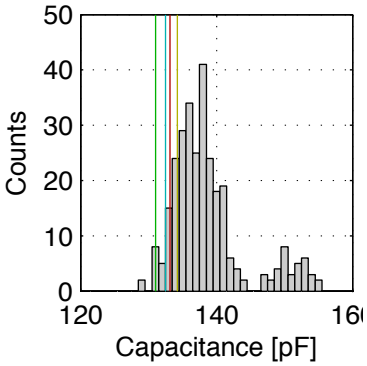
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #19

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 45.029 MOhm
Elem2: 45.145 MOhm
Elem3: 41.101 MOhm
Elem4: 44.225 MOhm

Series Resistance: (R_s):

Elem1: 29.0 Ohm
Elem2: 30.1 Ohm
Elem3: 30.8 Ohm
Elem4: 30.5 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 136.7 pF
Elem2: 138.1 pF
Elem3: 135.3 pF
Elem4: 137.6 pF

Dark Current [nA]:

Elem1: 3.21 nA
Elem2: 2.61 nA
Elem3: 3.44 nA
Elem4: 2.52 nA

Dark Noise:

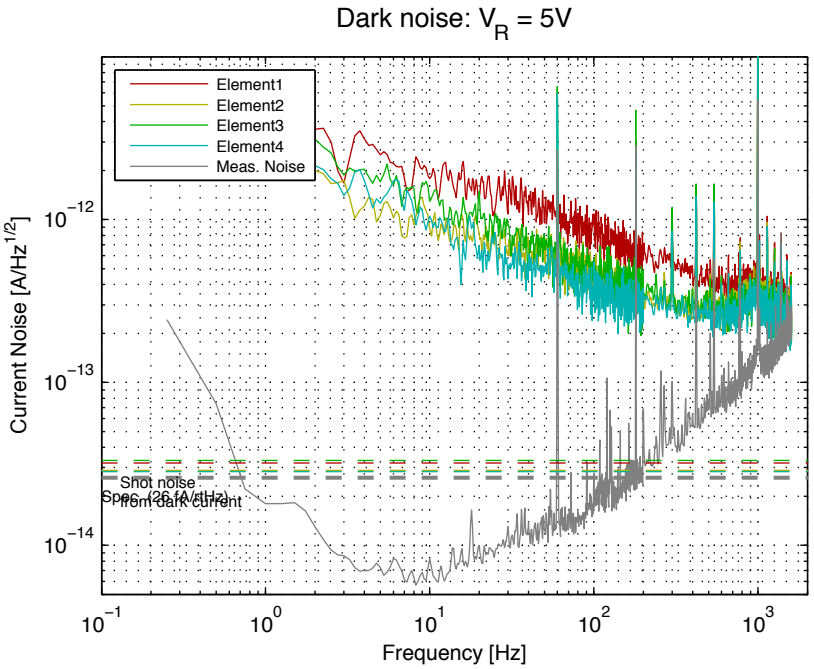
1~10Hz avg

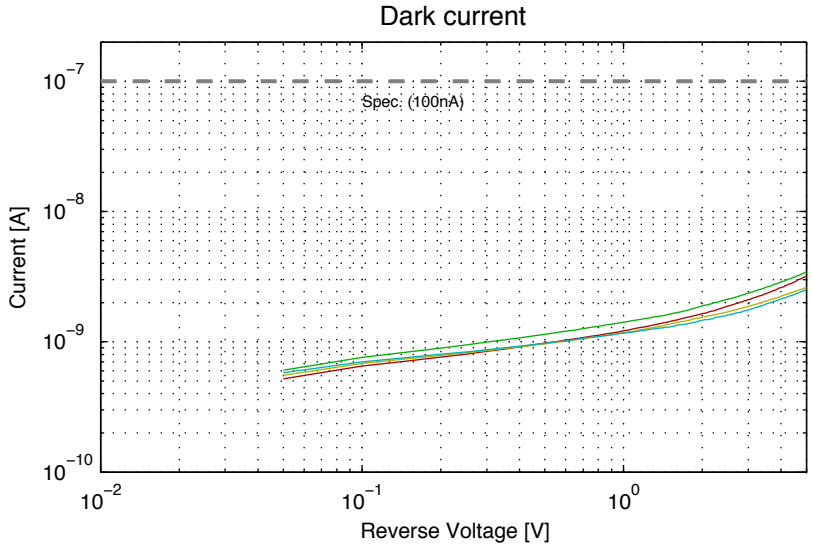
Elem1: 2.681 pA/rtHz
Elem2: 1.412 pA/rtHz
Elem3: 1.977 pA/rtHz
Elem4: 1.678 pA/rtHz

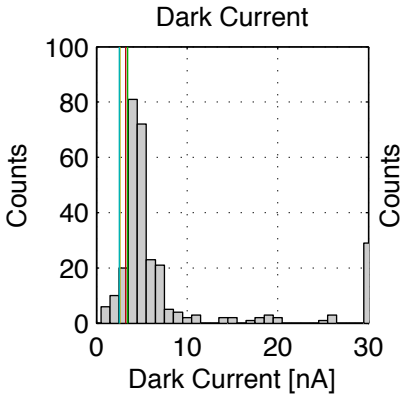
200~290Hz avg

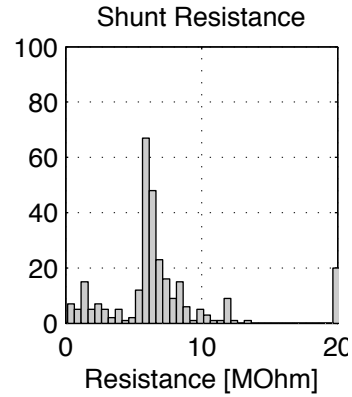
Elem1: 0.590 pA/rtHz
Elem2: 0.327 pA/rtHz
Elem3: 0.354 pA/rtHz
Elem4: 0.309 pA/rtHz

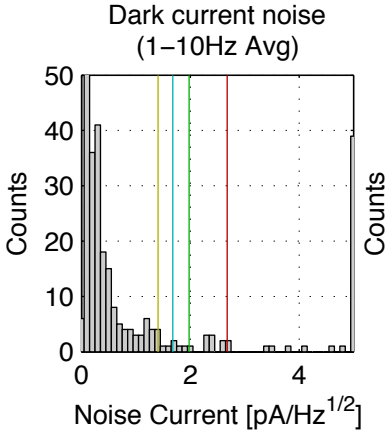
Total Penalty: −130

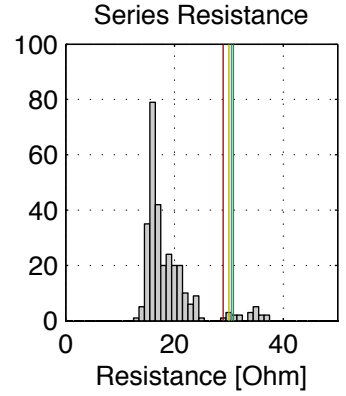


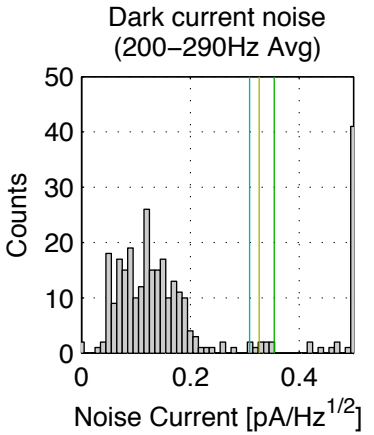


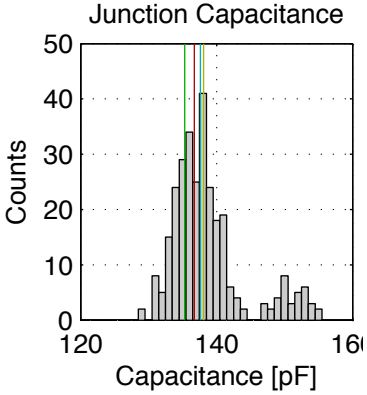












Errors / Warnings

Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #20

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 43.131 MOhm
Elem2: 42.858 MOhm
Elem3: 28.368 MOhm
Elem4: 42.705 MOhm

Series Resistance: (R_s):

Elem1: 34.5 Ohm
Elem2: 34.8 Ohm
Elem3: 35.7 Ohm
Elem4: 35.4 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 134.2 pF
Elem2: 135.9 pF
Elem3: 133.1 pF
Elem4: 135.0 pF

Dark Current [nA]:

Elem1: 1.40 nA
Elem2: 1.51 nA
Elem3: 2.42 nA
Elem4: 1.43 nA

Dark Noise:

1~10Hz avg

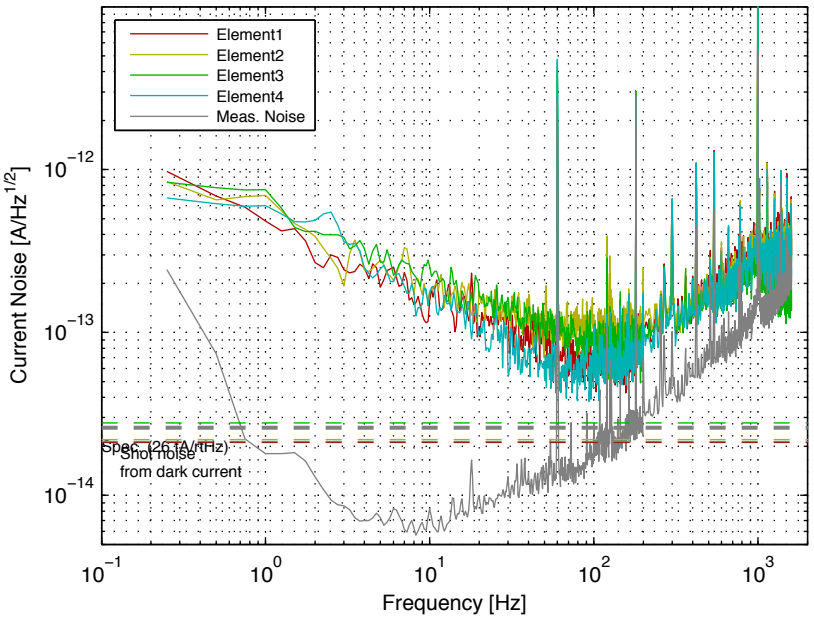
Elem1: 0.245 pA/rtHz
Elem2: 0.300 pA/rtHz
Elem3: 0.336 pA/rtHz
Elem4: 0.312 pA/rtHz

200~290Hz avg

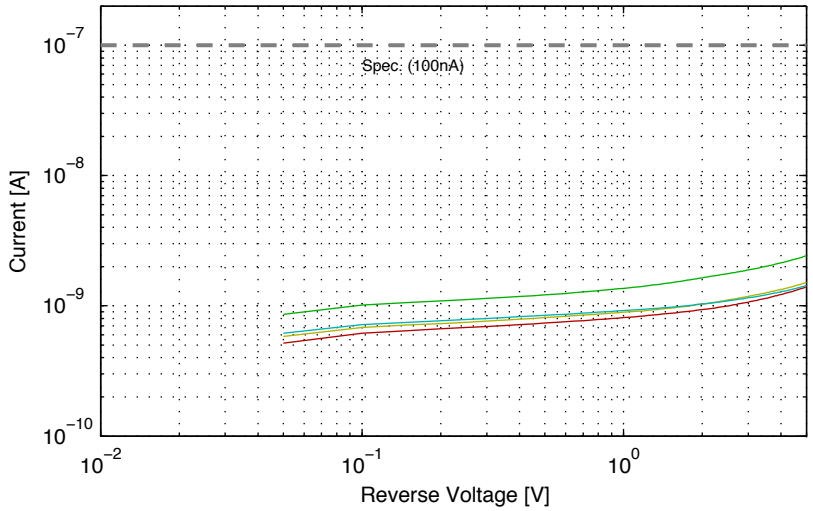
Elem1: 0.130 pA/rtHz
Elem2: 0.139 pA/rtHz
Elem3: 0.127 pA/rtHz
Elem4: 0.117 pA/rtHz

Total Penalty: –20

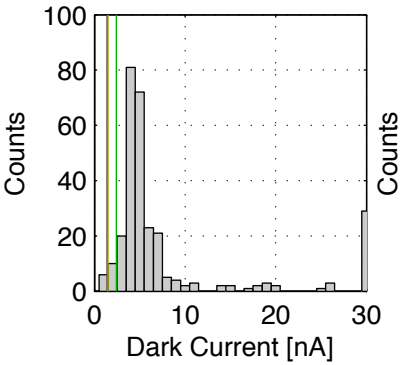
Dark noise: V_R = 5V



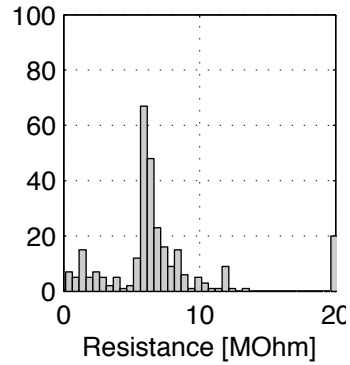
Dark current



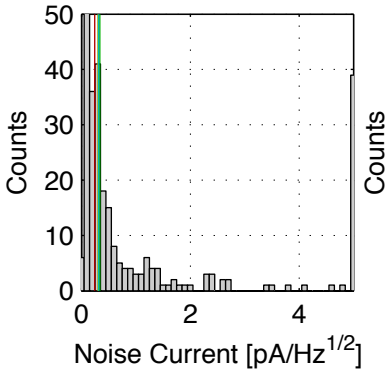
Dark Current



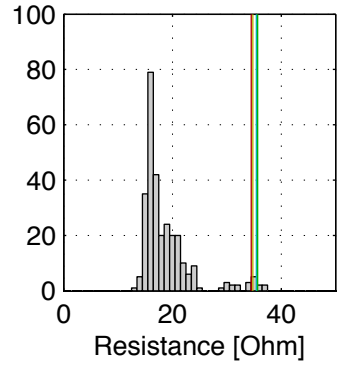
Shunt Resistance



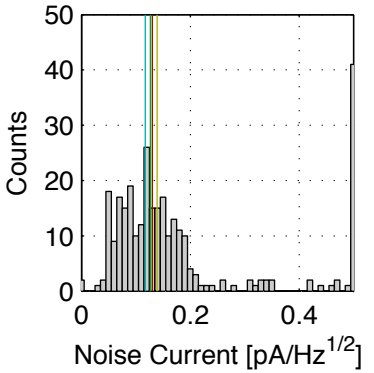
Dark current noise
(1–10Hz Avg)



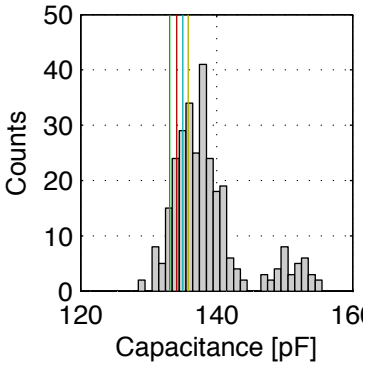
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #21

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 5.400 MOhm
Elem2: 5.610 MOhm
Elem3: 5.769 MOhm
Elem4: 5.841 MOhm

Series Resistance: (R_s):

Elem1: 15.0 Ohm
Elem2: 15.8 Ohm
Elem3: 16.5 Ohm
Elem4: 16.5 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 138.1 pF
Elem2: 139.8 pF
Elem3: 136.4 pF
Elem4: 138.4 pF

Dark Current [nA]:

Elem1: 5.07 nA
Elem2: 4.93 nA
Elem3: 4.79 nA
Elem4: 4.69 nA

Dark Noise:

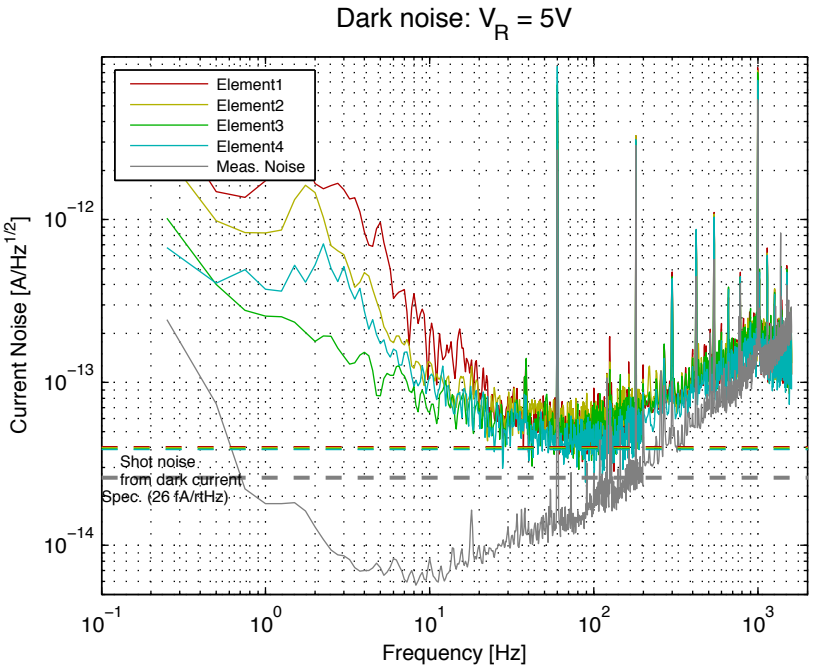
1~10Hz avg

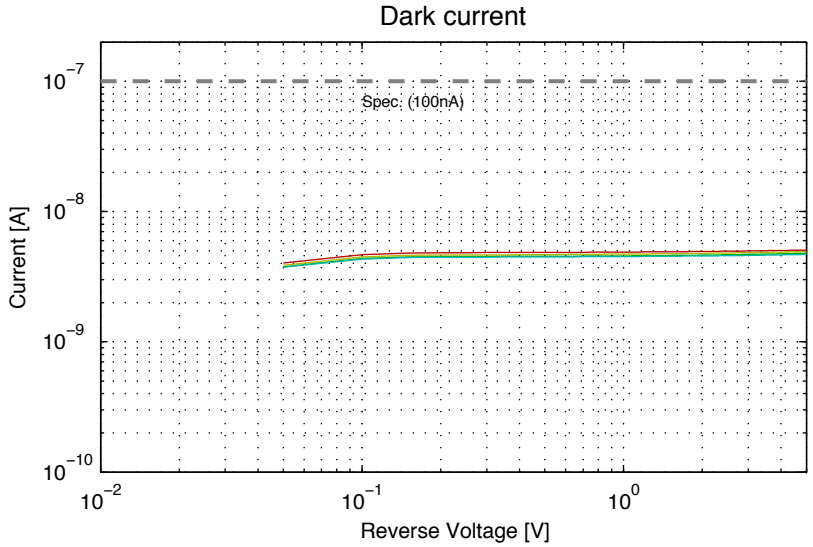
Elem1: 1.138 pA/rtHz
Elem2: 0.572 pA/rtHz
Elem3: 0.137 pA/rtHz
Elem4: 0.292 pA/rtHz

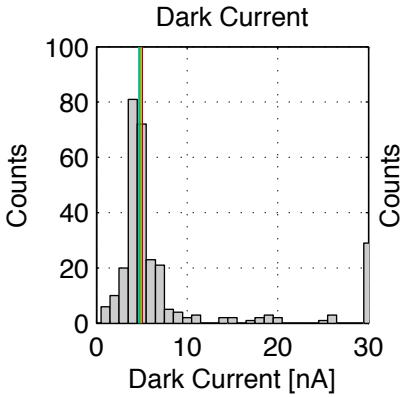
200~290Hz avg

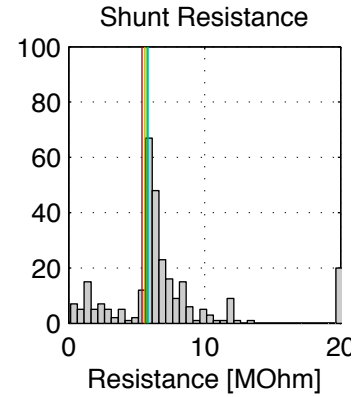
Elem1: 0.086 pA/rtHz
Elem2: 0.092 pA/rtHz
Elem3: 0.088 pA/rtHz
Elem4: 0.074 pA/rtHz

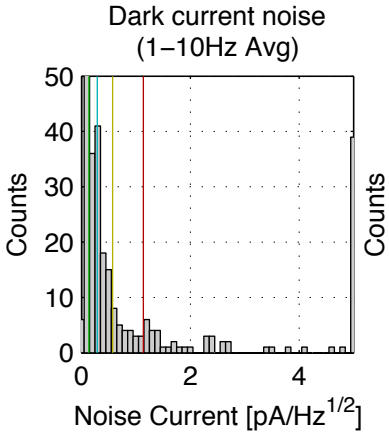
Total Penalty: −15

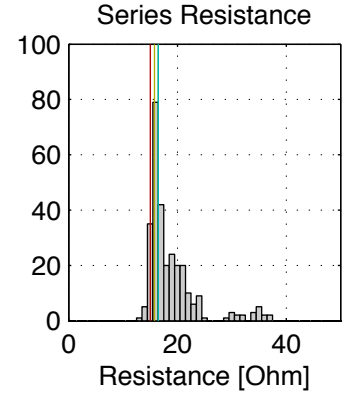


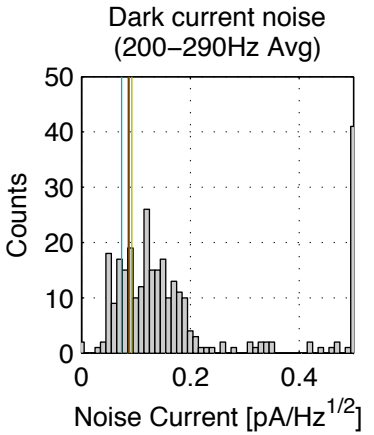


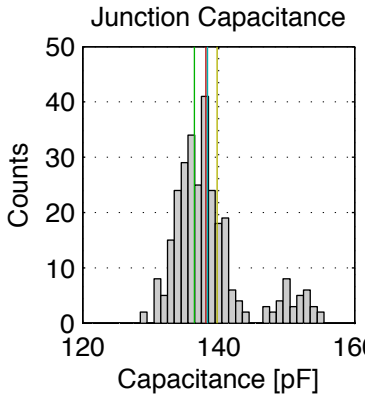












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #22

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.039 MOhm
Elem2: 6.165 MOhm
Elem3: 6.269 MOhm
Elem4: 6.287 MOhm

Series Resistance: (R_s):

Elem1: 16.5 Ohm
Elem2: 17.1 Ohm
Elem3: 17.9 Ohm
Elem4: 17.8 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 140.8 pF
Elem2: 142.8 pF
Elem3: 139.0 pF
Elem4: 140.4 pF

Dark Current [nA]:

Elem1: 4.63 nA
Elem2: 4.52 nA
Elem3: 4.46 nA
Elem4: 4.46 nA

Dark Noise:

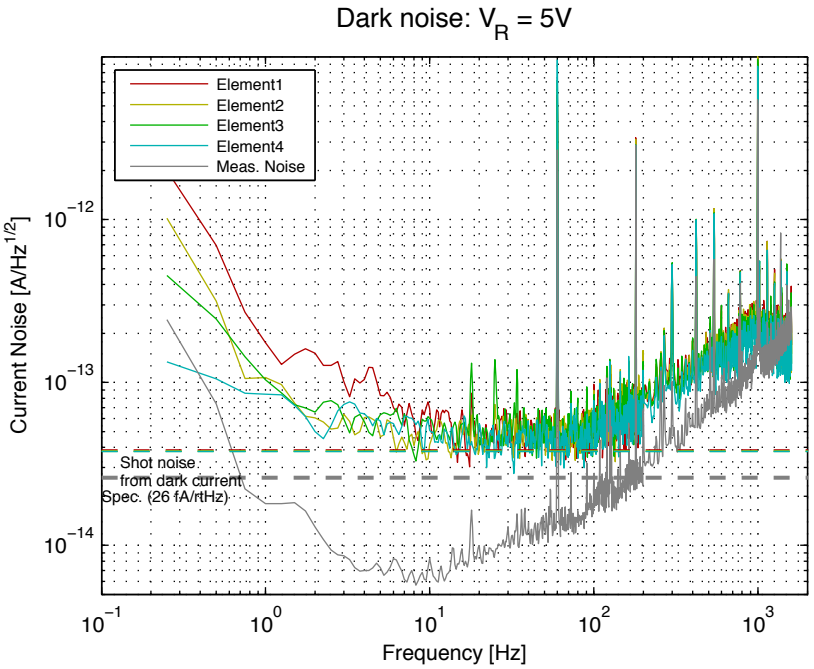
1~10Hz avg

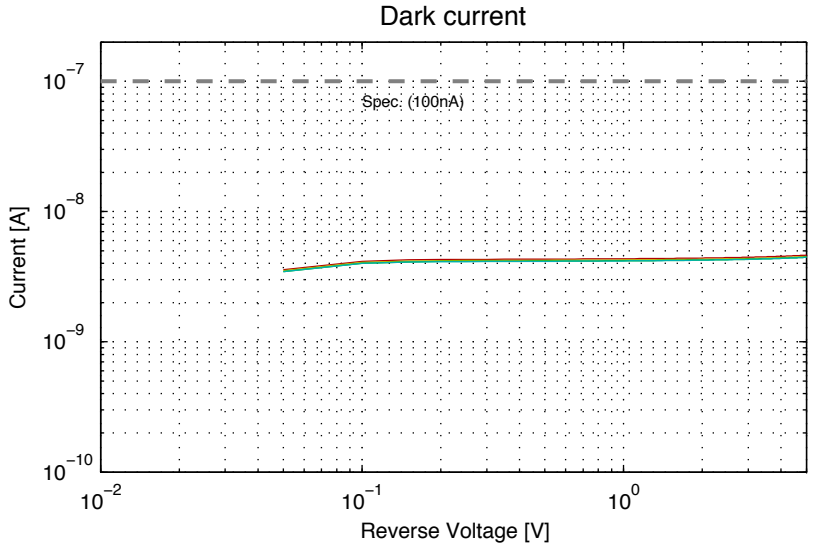
Elem1: 0.098 pA/rtHz
Elem2: 0.055 pA/rtHz
Elem3: 0.062 pA/rtHz
Elem4: 0.060 pA/rtHz

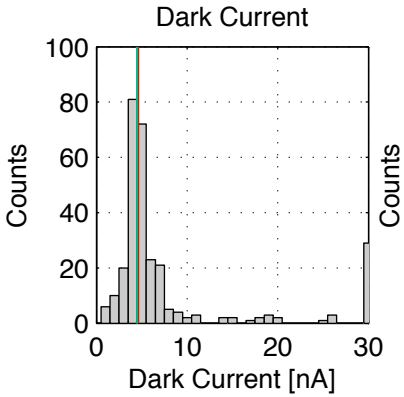
200~290Hz avg

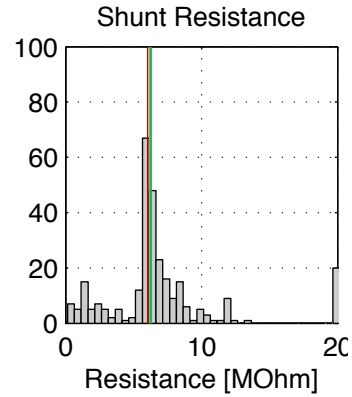
Elem1: 0.110 pA/rtHz
Elem2: 0.107 pA/rtHz
Elem3: 0.105 pA/rtHz
Elem4: 0.093 pA/rtHz

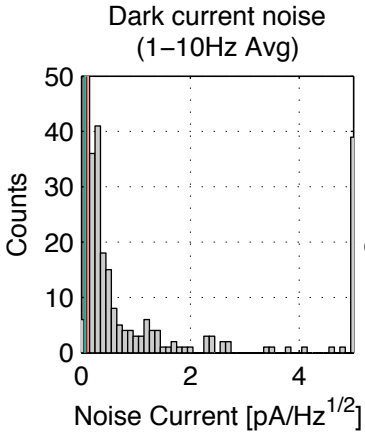
Total Penalty: 0

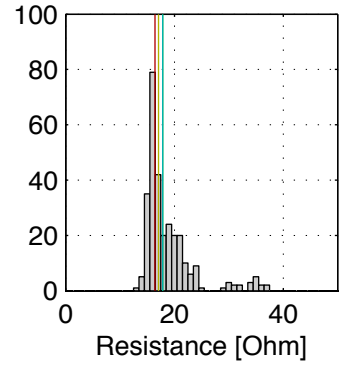


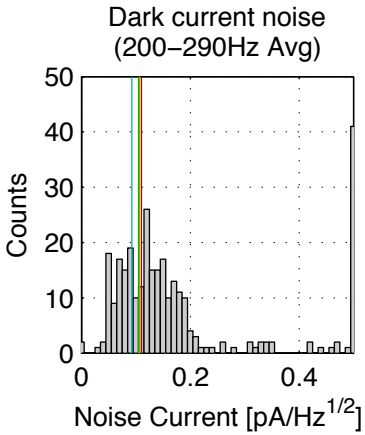


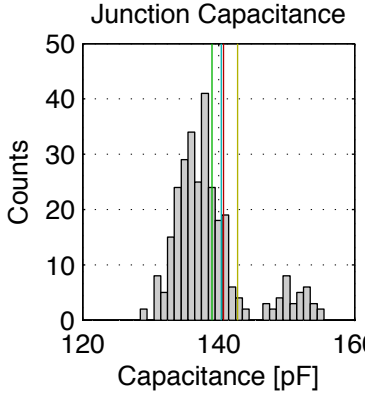












Errors / Warnings

QPD #23

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 0.525 MOhm
Elem2: 0.538 MOhm
Elem3: 0.531 MOhm
Elem4: 0.518 MOhm

Series Resistance: (R_s):

Elem1: 19.2 Ohm
Elem2: 20.1 Ohm
Elem3: 20.7 Ohm
Elem4: 20.5 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 134.5 pF
Elem2: 134.9 pF
Elem3: 132.3 pF
Elem4: 134.2 pF

Dark Current [nA]:

Elem1: 104.89 nA
Elem2: 100.47 nA
Elem3: 110.61 nA
Elem4: 106.63 nA

Dark Noise:

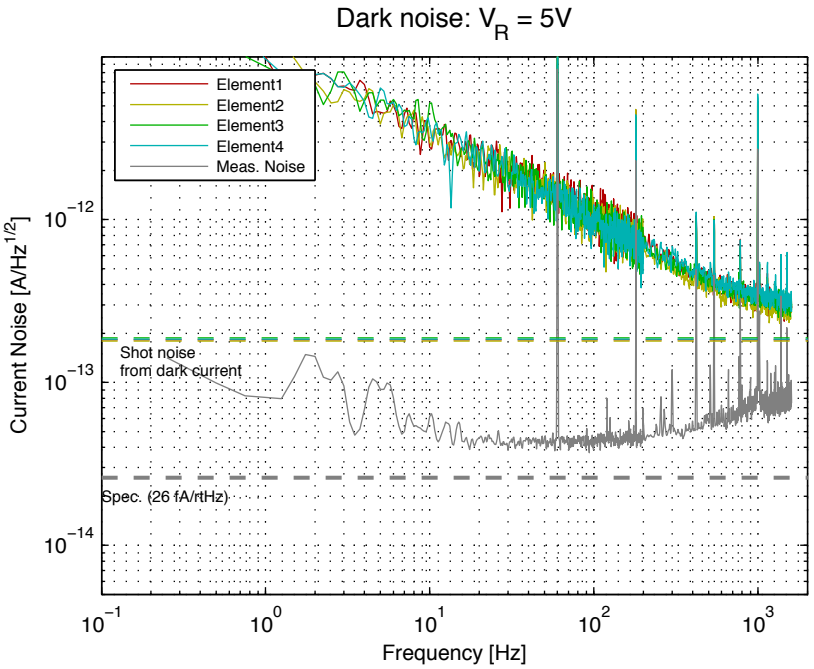
1~10Hz avg

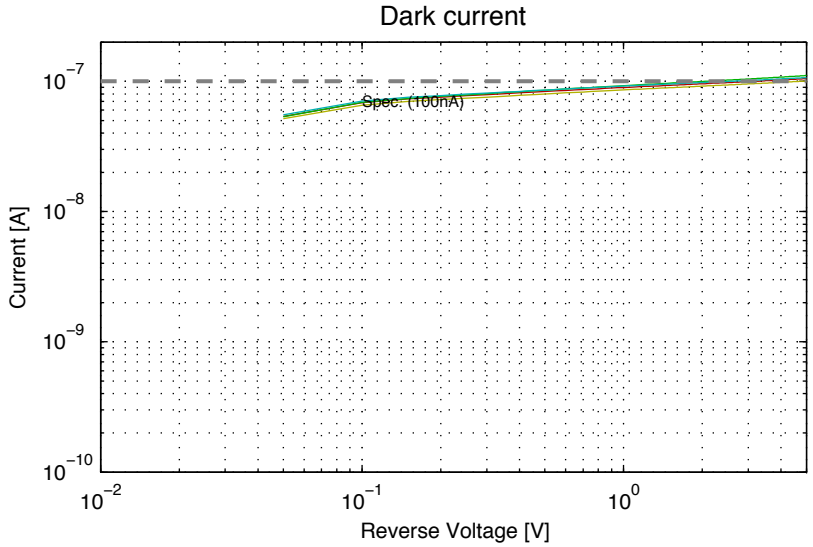
Elem1: 5.438 pA/rtHz
Elem2: 5.937 pA/rtHz
Elem3: 5.601 pA/rtHz
Elem4: 5.574 pA/rtHz

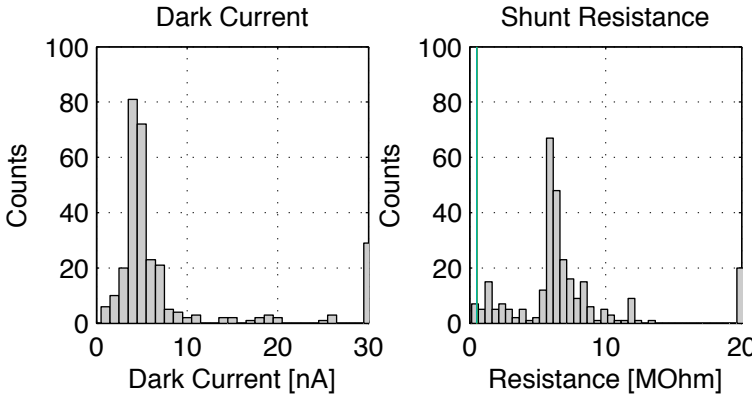
200~290Hz avg

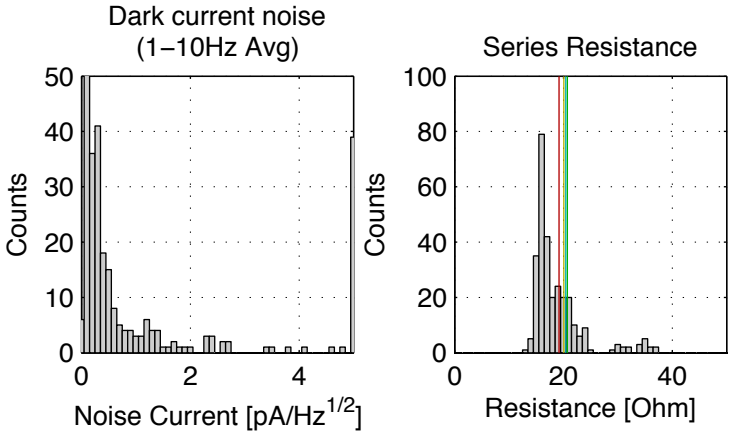
Elem1: 0.655 pA/rtHz
Elem2: 0.587 pA/rtHz
Elem3: 0.613 pA/rtHz
Elem4: 0.642 pA/rtHz

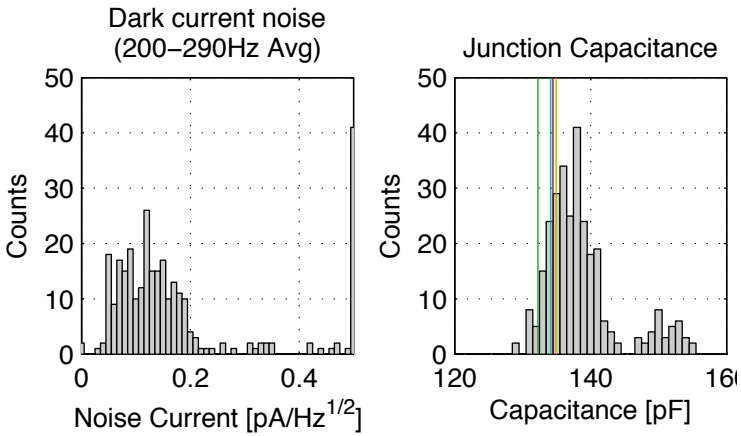
Total Penalty: –420











Errors / Warnings

Elem1: i_{dark} > 100nA
Elem2: i_{dark} > 100nA
Elem3: i_{dark} > 100nA
Elem4: i_{dark} > 100nA
Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #24

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 7.112 MOhm
Elem2: 7.084 MOhm
Elem3: 7.115 MOhm
Elem4: 7.092 MOhm

Series Resistance: (R_s):

Elem1: 18.6 Ohm
Elem2: 19.1 Ohm
Elem3: 19.6 Ohm
Elem4: 19.8 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 135.5 pF
Elem2: 137.7 pF
Elem3: 133.7 pF
Elem4: 135.6 pF

Dark Current [nA]:

Elem1: 4.29 nA
Elem2: 4.29 nA
Elem3: 4.23 nA
Elem4: 4.31 nA

Dark Noise:

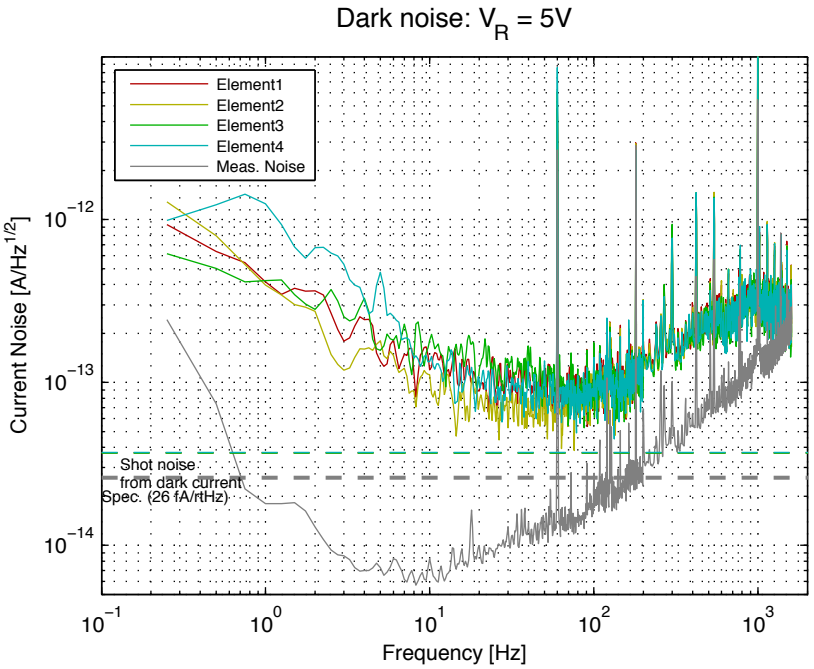
1~10Hz avg

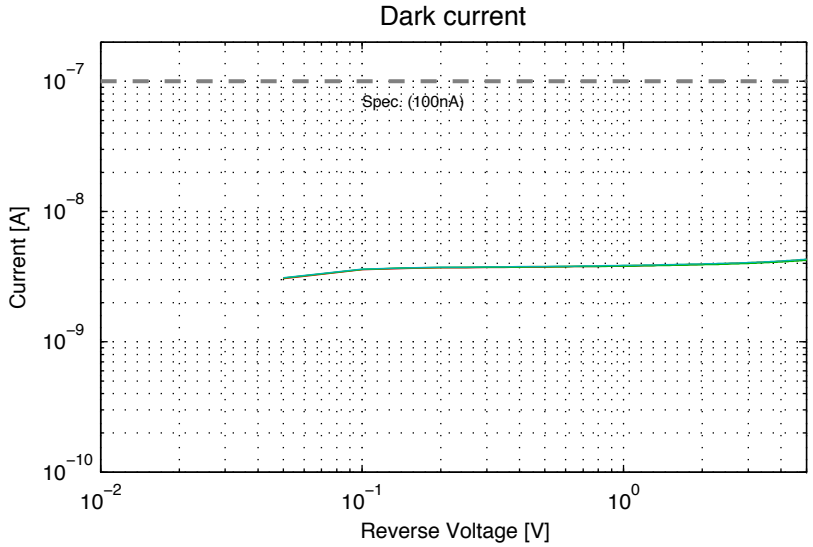
Elem1: 0.217 pA/rtHz
Elem2: 0.171 pA/rtHz
Elem3: 0.242 pA/rtHz
Elem4: 0.437 pA/rtHz

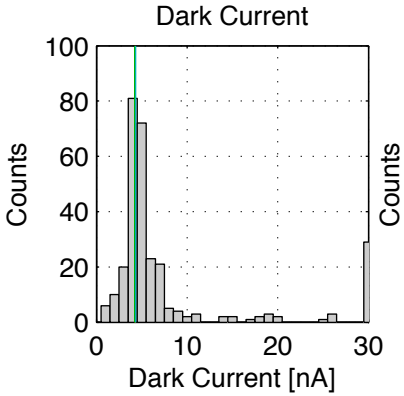
200~290Hz avg

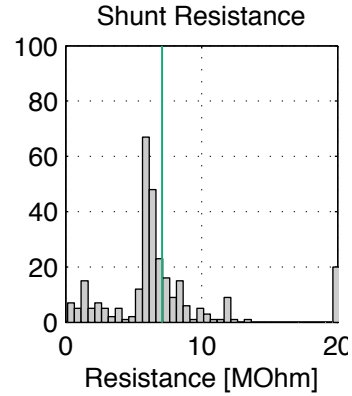
Elem1: 0.179 pA/rtHz
Elem2: 0.176 pA/rtHz
Elem3: 0.174 pA/rtHz
Elem4: 0.171 pA/rtHz

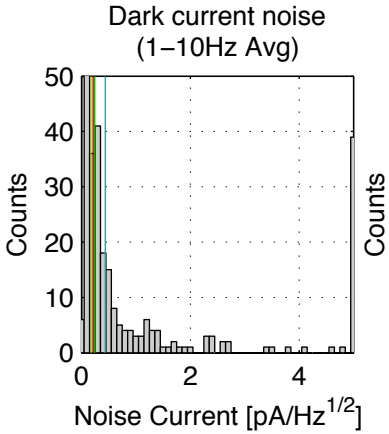
Total Penalty: −15

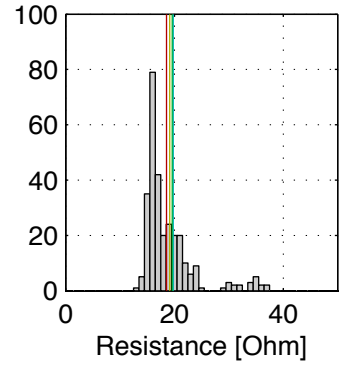


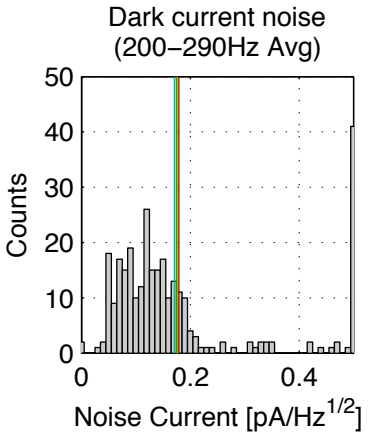


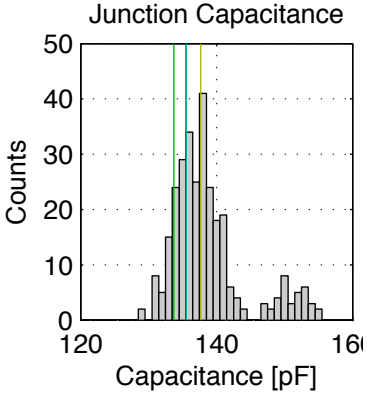












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #25

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 3.841 MOhm
Elem2: 3.681 MOhm
Elem3: 3.649 MOhm
Elem4: 3.602 MOhm

Series Resistance: (R_s):

Elem1: 18.3 Ohm
Elem2: 19.1 Ohm
Elem3: 20.0 Ohm
Elem4: 19.7 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 136.6 pF
Elem2: 137.7 pF
Elem3: 134.1 pF
Elem4: 136.8 pF

Dark Current [nA]:

Elem1: 8.85 nA
Elem2: 9.38 nA
Elem3: 9.65 nA
Elem4: 9.77 nA

Dark Noise:

1~10Hz avg

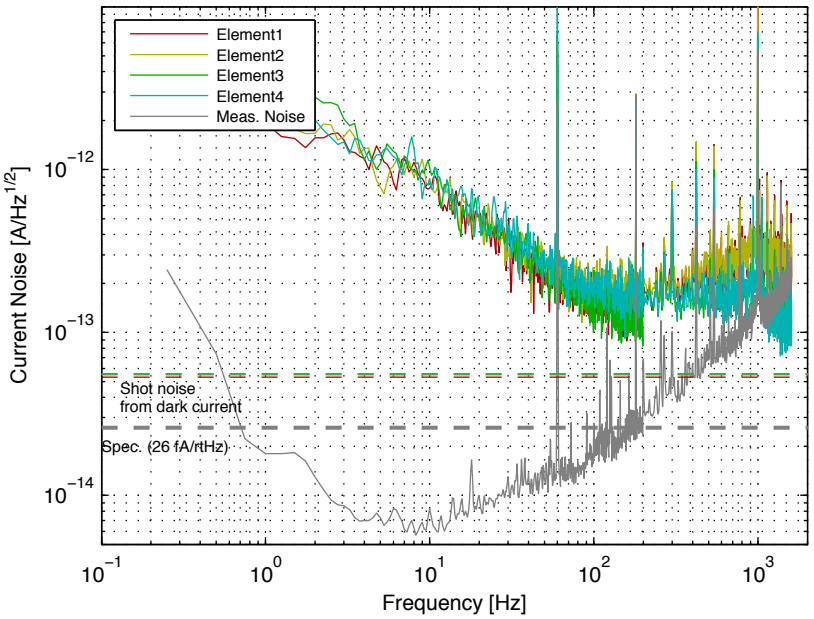
Elem1: 1.210 pA/rtHz
Elem2: 1.328 pA/rtHz
Elem3: 1.680 pA/rtHz
Elem4: 1.383 pA/rtHz

200~290Hz avg

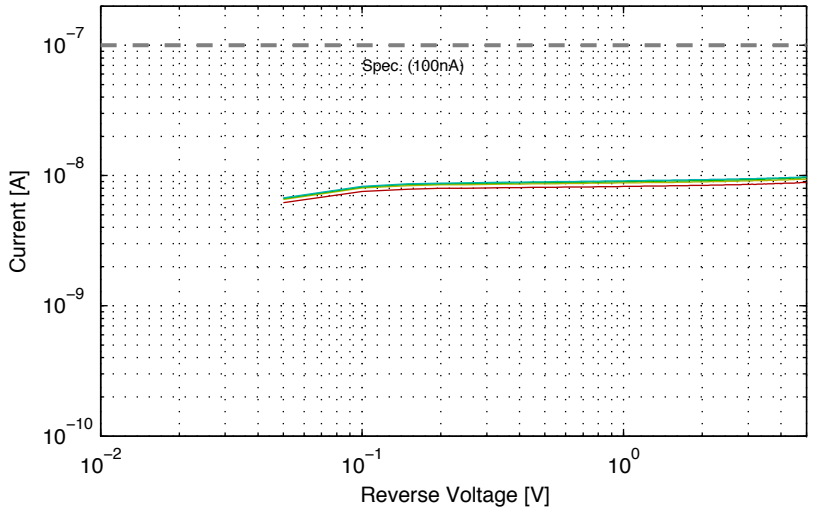
Elem1: 0.199 pA/rtHz
Elem2: 0.207 pA/rtHz
Elem3: 0.178 pA/rtHz
Elem4: 0.174 pA/rtHz

Total Penalty: –30

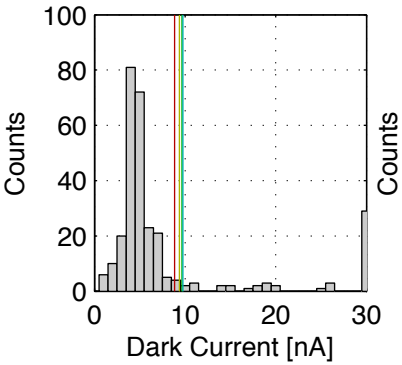
Dark noise: V_R = 5V



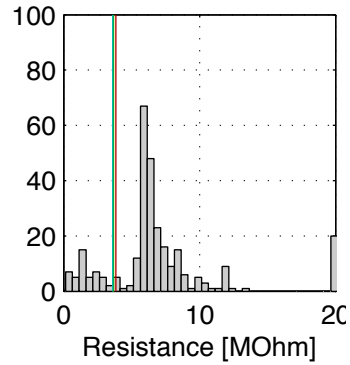
Dark current



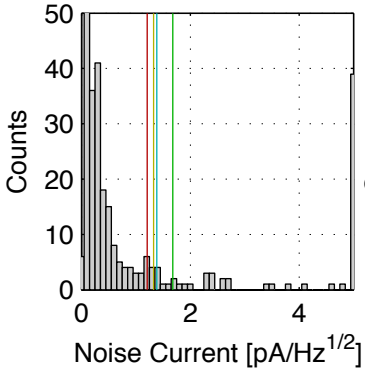
Dark Current



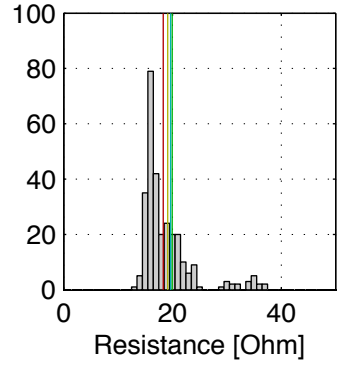
Shunt Resistance



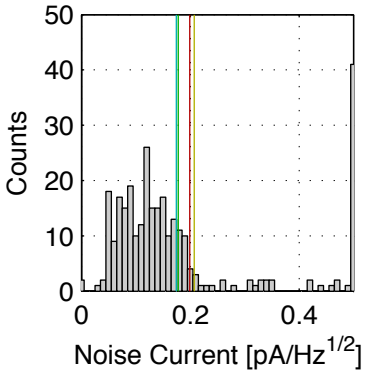
Dark current noise
(1–10Hz Avg)



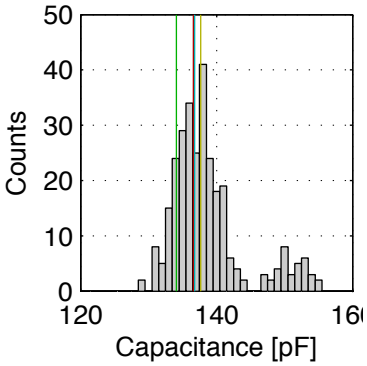
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #26

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 7.400 MOhm
Elem2: 7.323 MOhm
Elem3: 7.319 MOhm
Elem4: 7.262 MOhm

Series Resistance: (R_s):

Elem1: 20.0 Ohm
Elem2: 20.8 Ohm
Elem3: 21.3 Ohm
Elem4: 21.1 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 134.4 pF
Elem2: 136.1 pF
Elem3: 131.9 pF
Elem4: 134.3 pF

Dark Current [nA]:

Elem1: 5.17 nA
Elem2: 5.00 nA
Elem3: 5.20 nA
Elem4: 5.53 nA

Dark Noise:

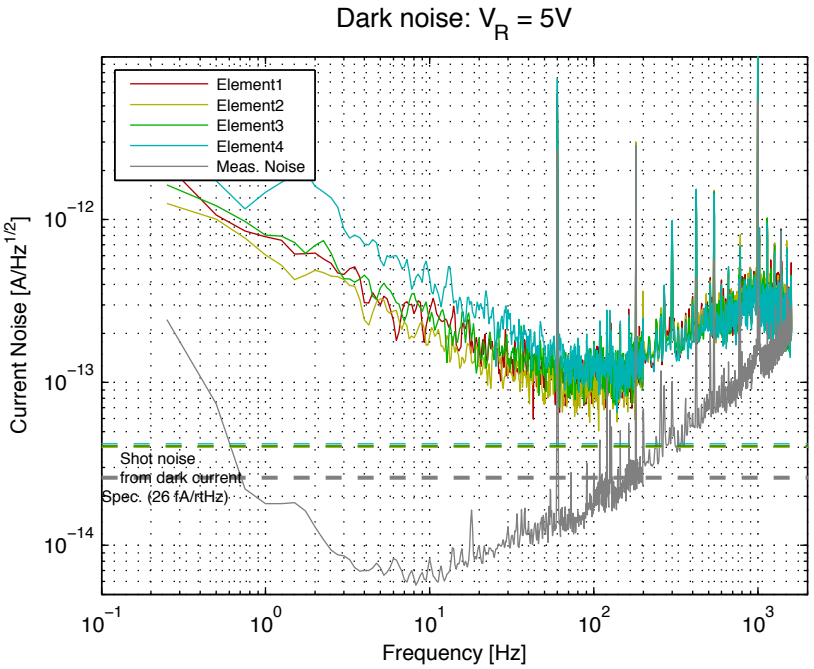
1~10Hz avg

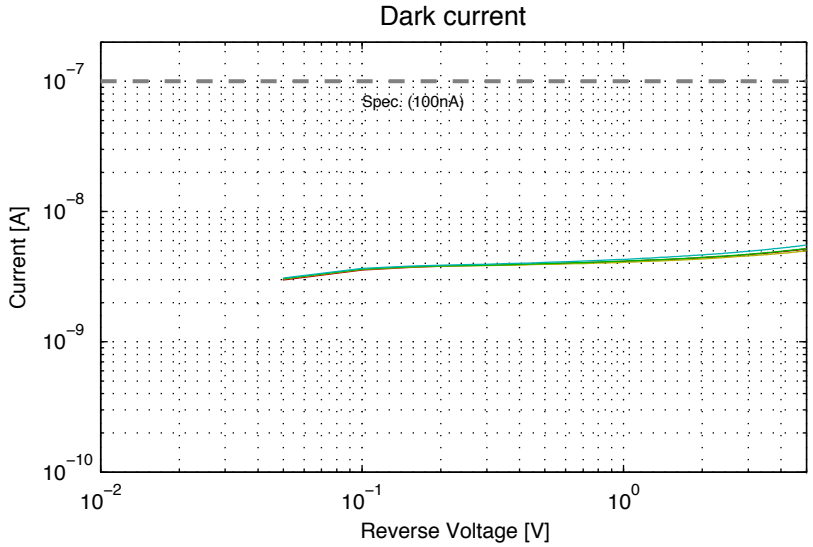
Elem1: 0.406 pA/rtHz
Elem2: 0.326 pA/rtHz
Elem3: 0.444 pA/rtHz
Elem4: 0.911 pA/rtHz

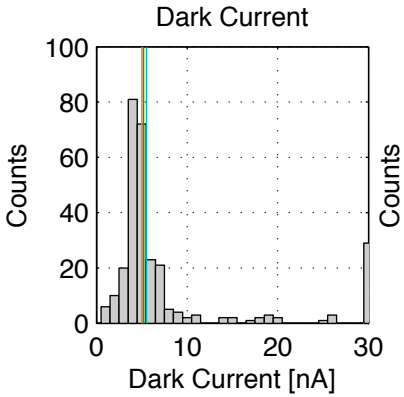
200~290Hz avg

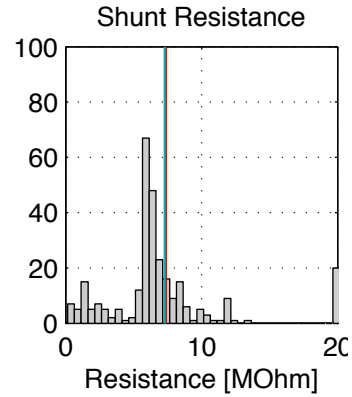
Elem1: 0.189 pA/rtHz
Elem2: 0.193 pA/rtHz
Elem3: 0.190 pA/rtHz
Elem4: 0.178 pA/rtHz

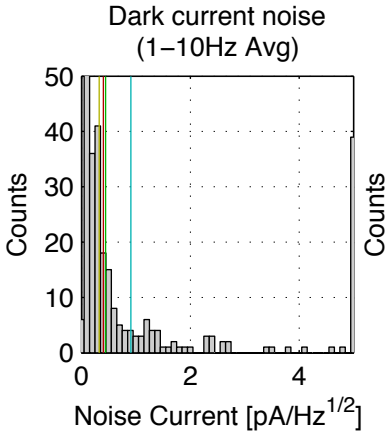
Total Penalty: –35

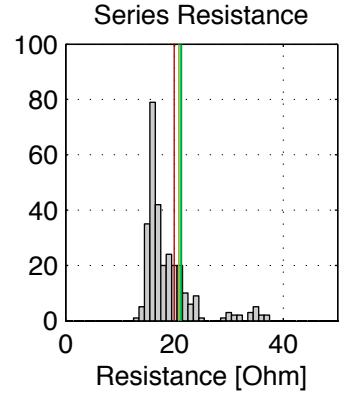


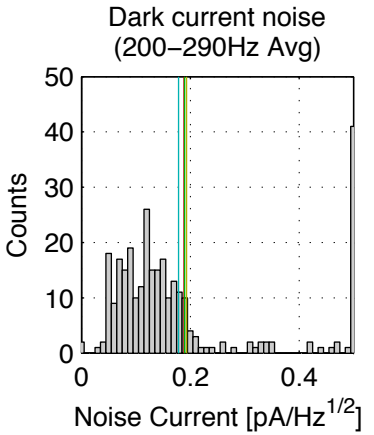


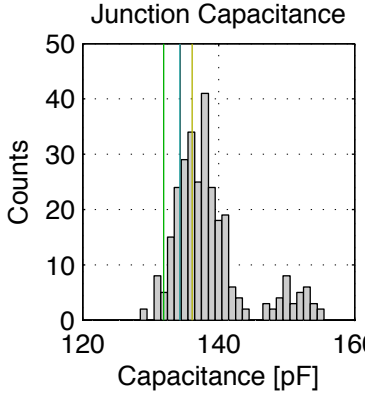












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #27

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 1.264 MOhm
Elem2: 1.245 MOhm
Elem3: 1.235 MOhm
Elem4: 1.235 MOhm

Series Resistance: (R_s):

Elem1: 18.6 Ohm
Elem2: 19.1 Ohm
Elem3: 19.5 Ohm
Elem4: 19.7 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 135.1 pF
Elem2: 136.2 pF
Elem3: 132.7 pF
Elem4: 134.1 pF

Dark Current [nA]:

Elem1: 52.47 nA
Elem2: 53.55 nA
Elem3: 54.78 nA
Elem4: 53.79 nA

Dark Noise:
1~10Hz avg

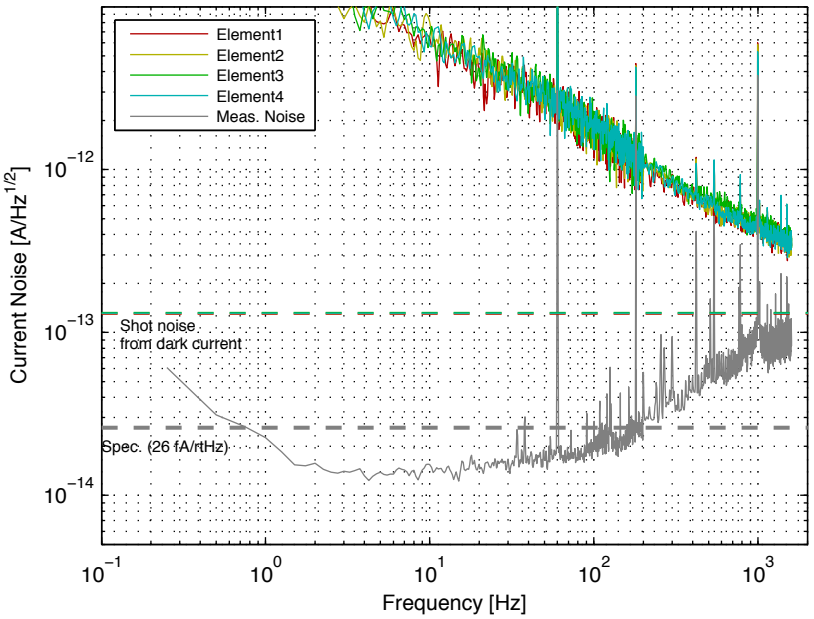
Elem1: 10.777 pA/rtHz
Elem2: 9.941 pA/rtHz
Elem3: 12.328 pA/rtHz
Elem4: 11.698 pA/rtHz

200~290Hz avg

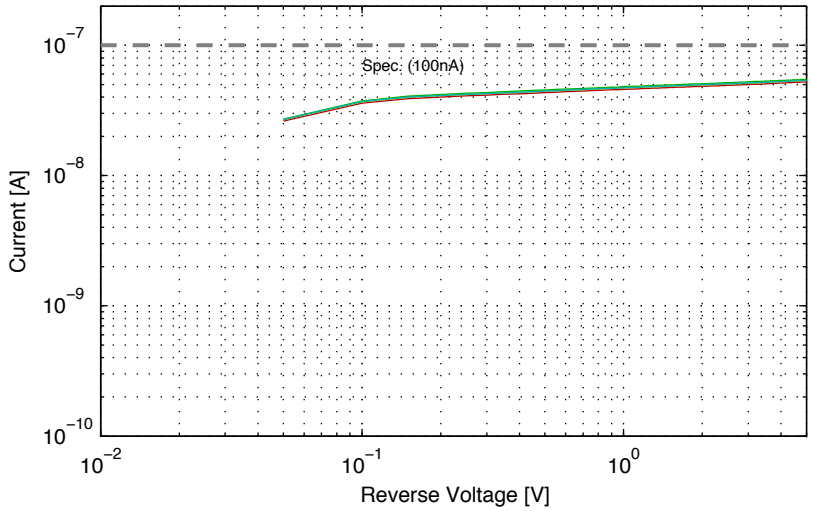
Elem1: 0.924 pA/rtHz
Elem2: 0.967 pA/rtHz
Elem3: 1.031 pA/rtHz
Elem4: 0.973 pA/rtHz

Total Penalty: –240

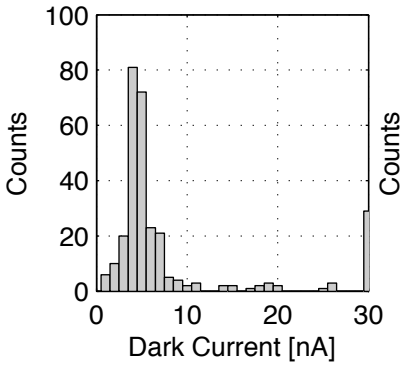
Dark noise: V_R = 5V



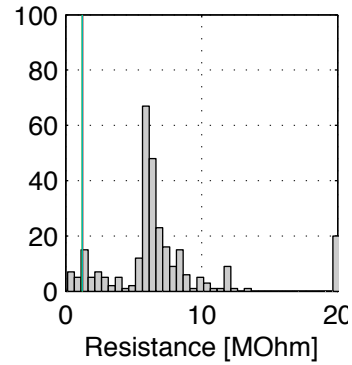
Dark current



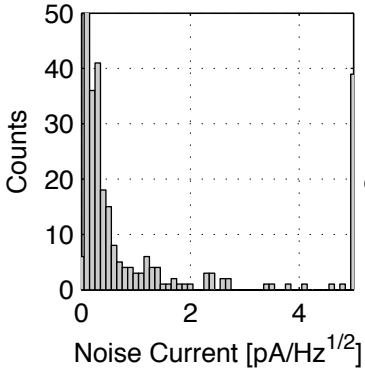
Dark Current



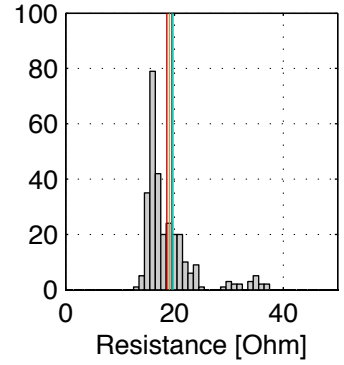
Shunt Resistance



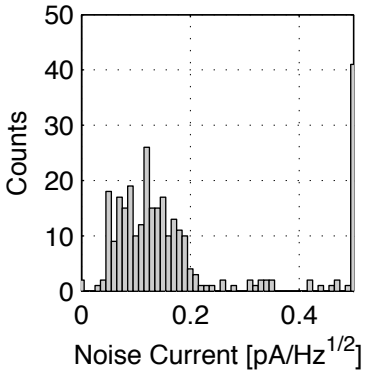
Dark current noise (1–10Hz Avg)



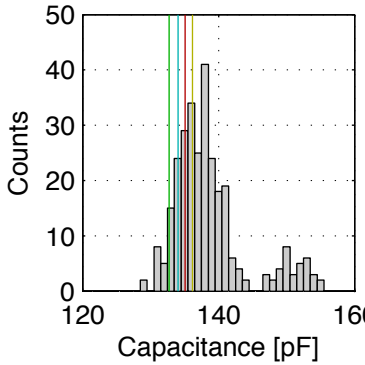
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{dark} > 10nA
Elem2: i_{dark} > 10nA
Elem3: i_{dark} > 10nA
Elem4: i_{dark} > 10nA
Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #28

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 5.725 MOhm
Elem2: 5.717 MOhm
Elem3: 5.734 MOhm
Elem4: 5.694 MOhm

Series Resistance: (R_s):

Elem1: 15.2 Ohm
Elem2: 15.8 Ohm
Elem3: 16.0 Ohm
Elem4: 16.2 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 136.7 pF
Elem2: 138.3 pF
Elem3: 135.5 pF
Elem4: 136.9 pF

Dark Current [nA]:

Elem1: 4.81 nA
Elem2: 4.84 nA
Elem3: 4.81 nA
Elem4: 7.37 nA

Dark Noise:

1~10Hz avg

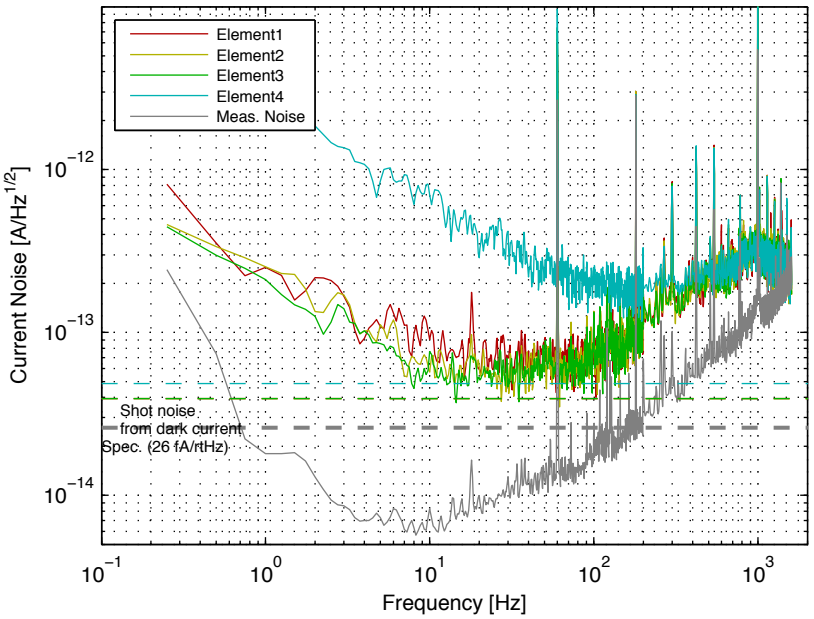
Elem1: 0.140 pA/rtHz
Elem2: 0.121 pA/rtHz
Elem3: 0.098 pA/rtHz
Elem4: 1.254 pA/rtHz

200~290Hz avg

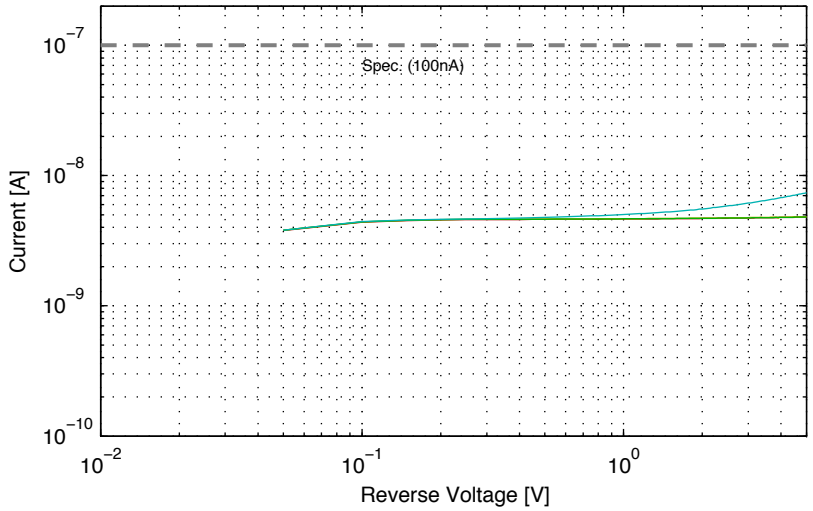
Elem1: 0.169 pA/rtHz
Elem2: 0.167 pA/rtHz
Elem3: 0.157 pA/rtHz
Elem4: 0.209 pA/rtHz

Total Penalty: −10

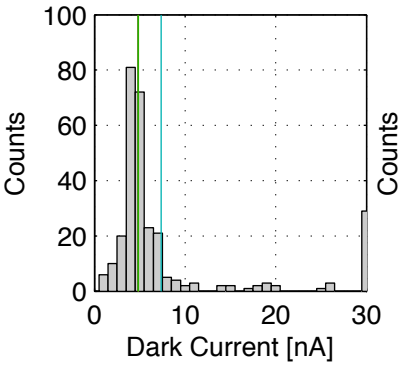
Dark noise: V_R = 5V



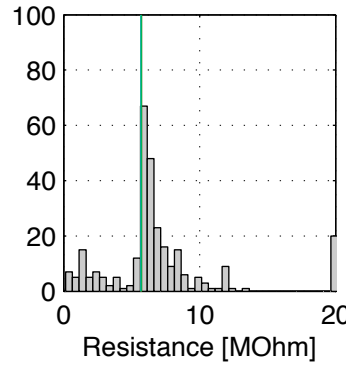
Dark current



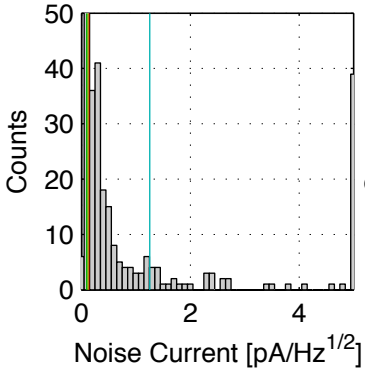
Dark Current



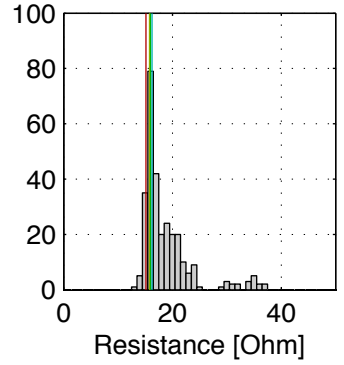
Shunt Resistance



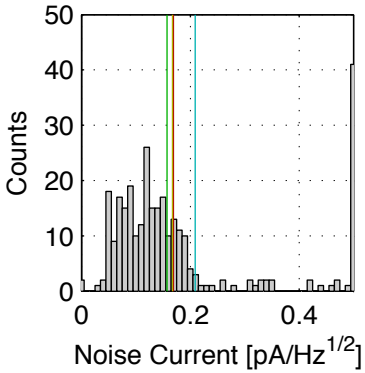
Dark current noise
(1–10Hz Avg)



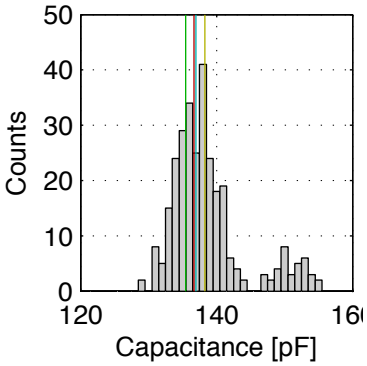
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #29

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 7.095 MOhm
Elem2: 7.171 MOhm
Elem3: 7.088 MOhm
Elem4: 6.947 MOhm

Series Resistance: (R_s):

Elem1: 16.4 Ohm
Elem2: 17.1 Ohm
Elem3: 17.7 Ohm
Elem4: 17.7 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 141.3 pF
Elem2: 141.9 pF
Elem3: 139.3 pF
Elem4: 141.8 pF

Dark Current [nA]:

Elem1: 3.81 nA
Elem2: 3.94 nA
Elem3: 3.95 nA
Elem4: 4.12 nA

Dark Noise:

1~10Hz avg

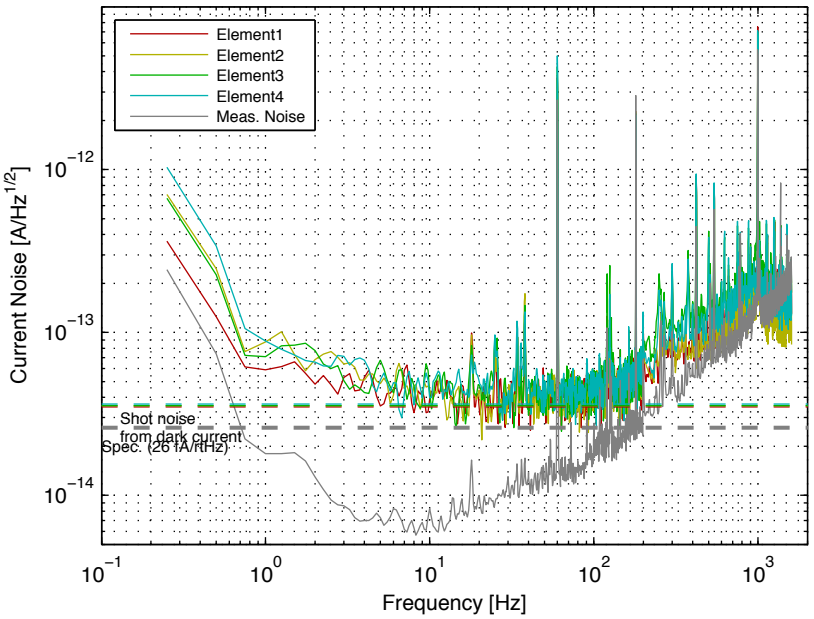
Elem1: 0.047 pA/rtHz
Elem2: 0.057 pA/rtHz
Elem3: 0.056 pA/rtHz
Elem4: 0.057 pA/rtHz

200~290Hz avg

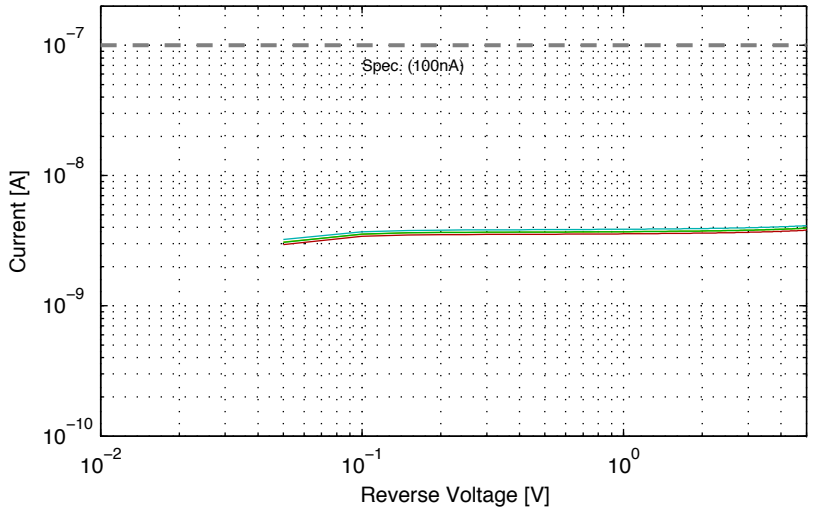
Elem1: 0.077 pA/rtHz
Elem2: 0.076 pA/rtHz
Elem3: 0.121 pA/rtHz
Elem4: 0.096 pA/rtHz

Total Penalty: 0

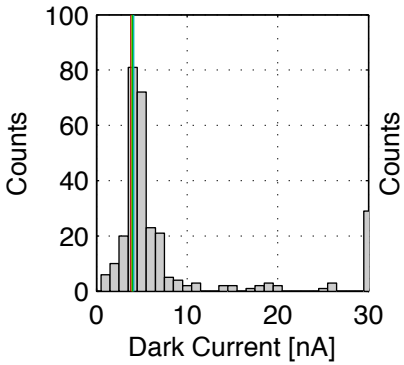
Dark noise: V_R = 5V



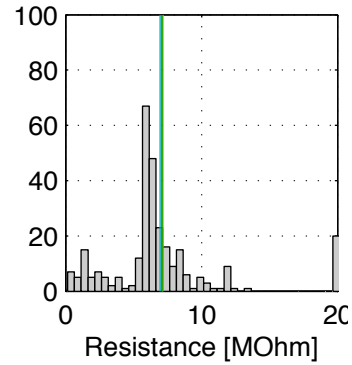
Dark current



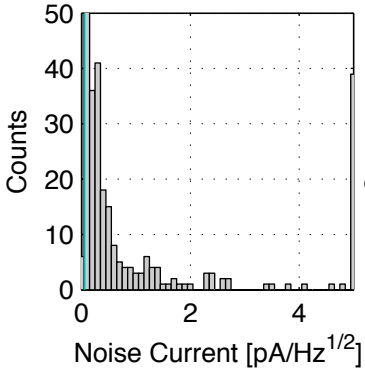
Dark Current



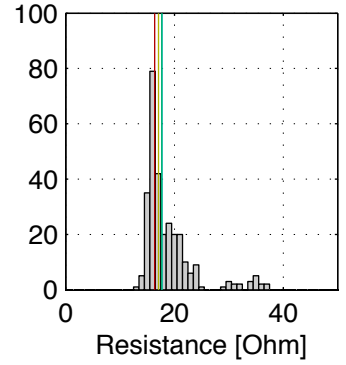
Shunt Resistance



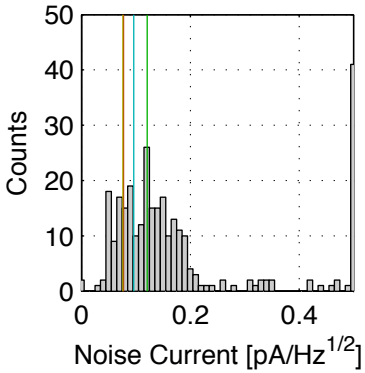
Dark current noise (1–10Hz Avg)



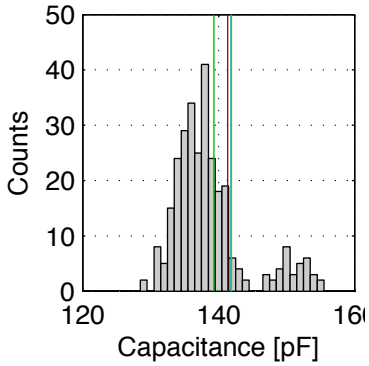
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

QPD #30

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.304 MOhm
Elem2: 6.168 MOhm
Elem3: 6.101 MOhm
Elem4: 6.022 MOhm

Series Resistance: (R_s):

Elem1: 16.7 Ohm
Elem2: 16.5 Ohm
Elem3: 17.0 Ohm
Elem4: 16.9 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 140.8 pF
Elem2: 140.8 pF
Elem3: 137.4 pF
Elem4: 139.7 pF

Dark Current [nA]:

Elem1: 5.49 nA
Elem2: 5.08 nA
Elem3: 5.09 nA
Elem4: 5.01 nA

Dark Noise:

1~10Hz avg

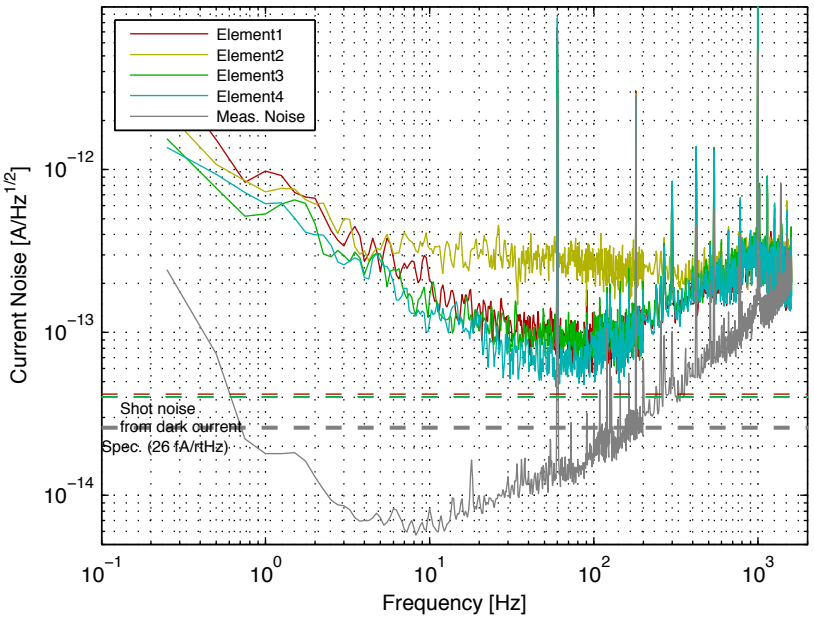
Elem1: 0.415 pA/rtHz
Elem2: 0.434 pA/rtHz
Elem3: 0.304 pA/rtHz
Elem4: 0.280 pA/rtHz

200~290Hz avg

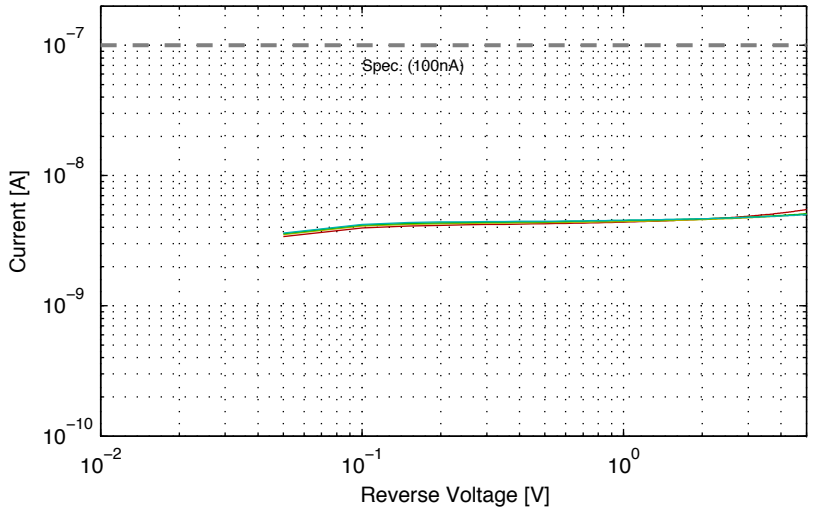
Elem1: 0.151 pA/rtHz
Elem2: 0.257 pA/rtHz
Elem3: 0.165 pA/rtHz
Elem4: 0.151 pA/rtHz

Total Penalty: –25

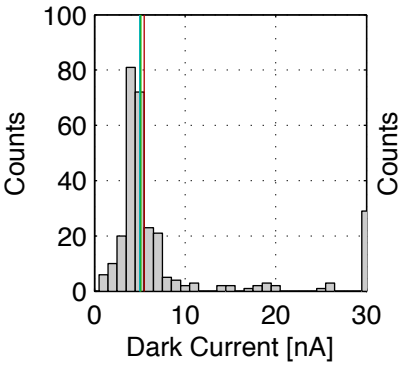
Dark noise: V_R = 5V



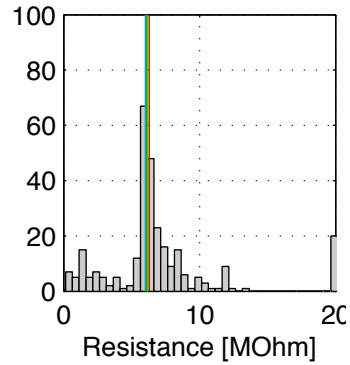
Dark current



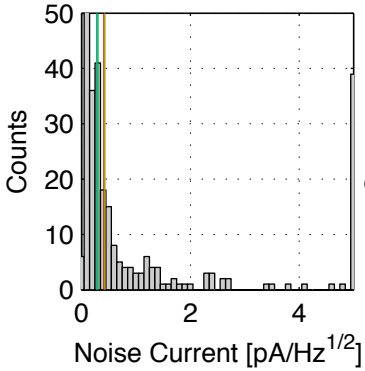
Dark Current



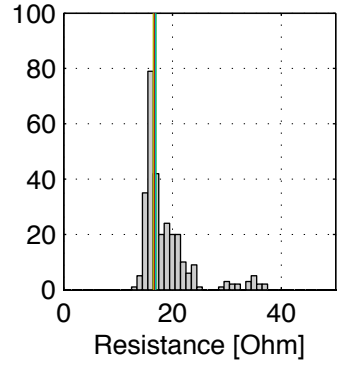
Shunt Resistance



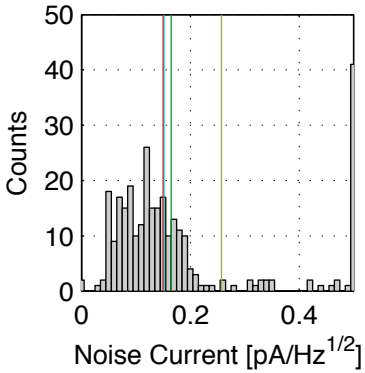
Dark current noise
(1–10Hz Avg)



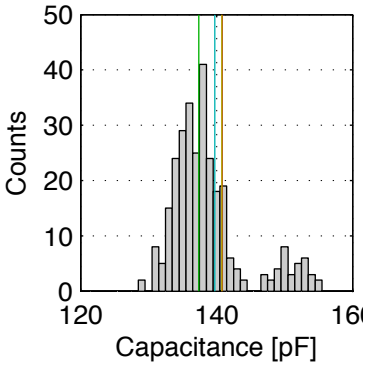
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #31

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 7.186 MOhm
Elem2: 6.586 MOhm
Elem3: 6.267 MOhm
Elem4: 6.044 MOhm

Series Resistance: (R_s):

Elem1: 15.6 Ohm
Elem2: 16.3 Ohm
Elem3: 17.3 Ohm
Elem4: 17.0 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 131.4 pF
Elem2: 133.0 pF
Elem3: 129.3 pF
Elem4: 131.5 pF

Dark Current [nA]:

Elem1: 5.49 nA
Elem2: 5.92 nA
Elem3: 8.33 nA
Elem4: 6.45 nA

Dark Noise:

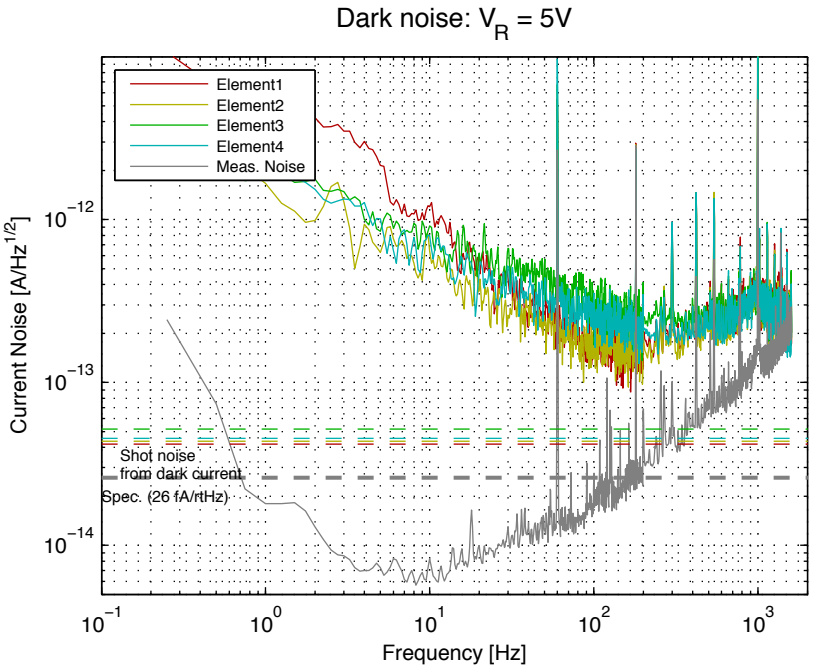
1~10Hz avg

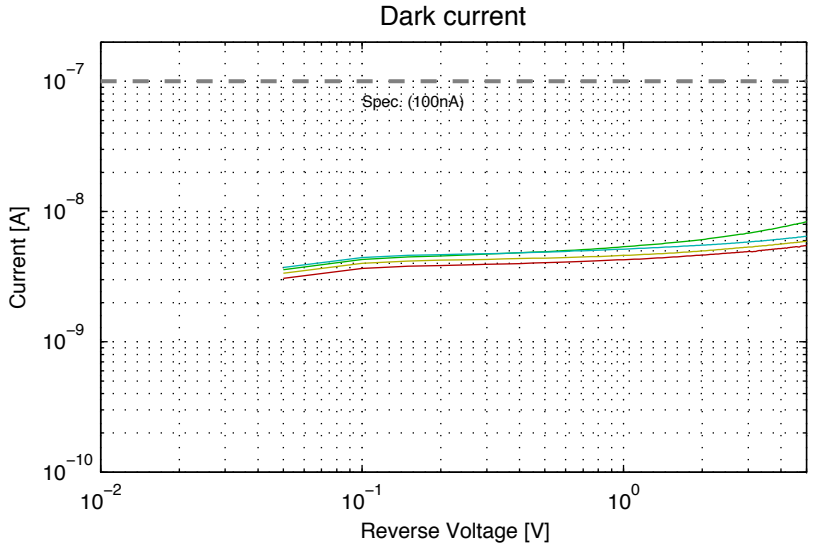
Elem1: 2.564 pA/rtHz
Elem2: 0.893 pA/rtHz
Elem3: 1.175 pA/rtHz
Elem4: 1.118 pA/rtHz

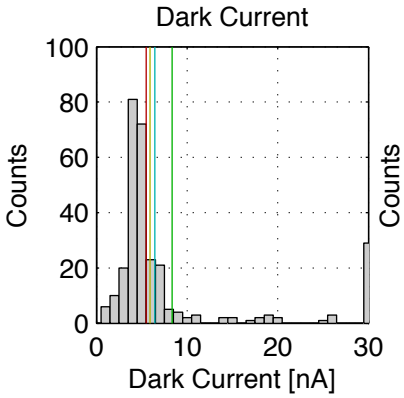
200~290Hz avg

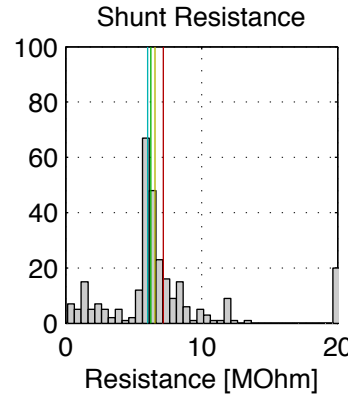
Elem1: 0.204 pA/rtHz
Elem2: 0.188 pA/rtHz
Elem3: 0.263 pA/rtHz
Elem4: 0.212 pA/rtHz

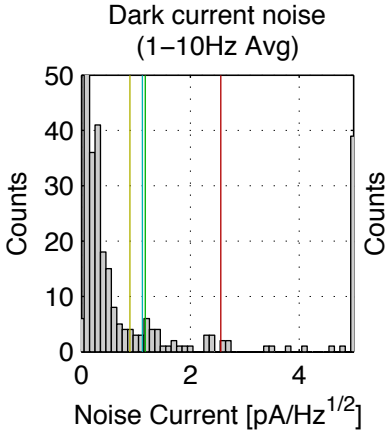
Total Penalty: –85

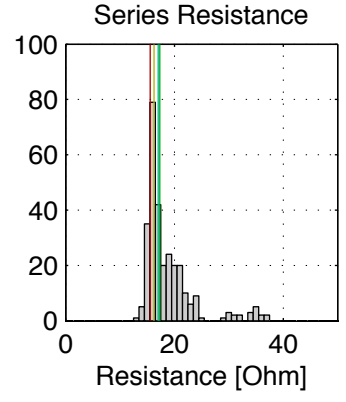


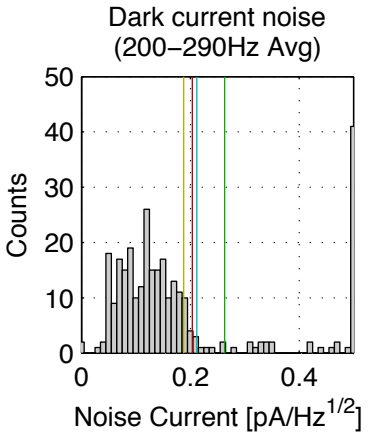


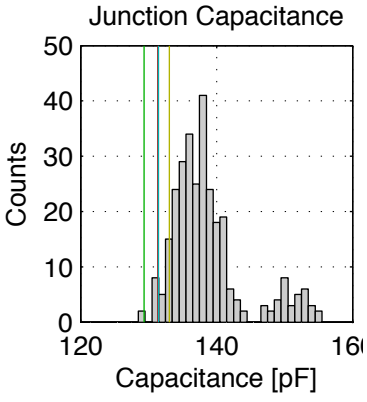












Errors / Warnings

Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #32

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 5.940 MOhm
Elem2: 5.789 MOhm
Elem3: 5.728 MOhm
Elem4: 5.672 MOhm

Series Resistance: (R_s):

Elem1: 15.2 Ohm
Elem2: 16.0 Ohm
Elem3: 16.5 Ohm
Elem4: 16.5 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 137.8 pF
Elem2: 138.7 pF
Elem3: 135.5 pF
Elem4: 137.9 pF

Dark Current [nA]:

Elem1: 6.90 nA
Elem2: 6.27 nA
Elem3: 6.56 nA
Elem4: 7.40 nA

Dark Noise:

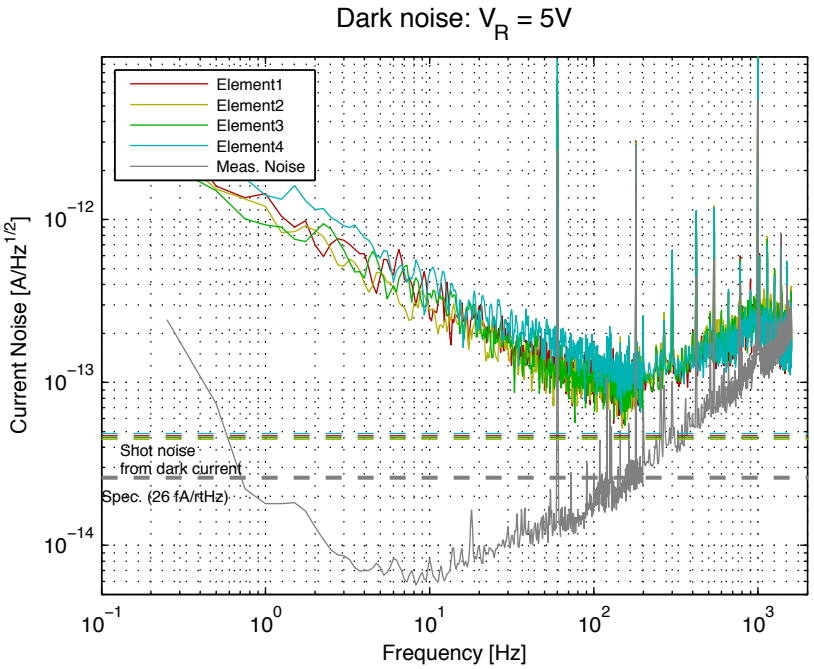
1~10Hz avg

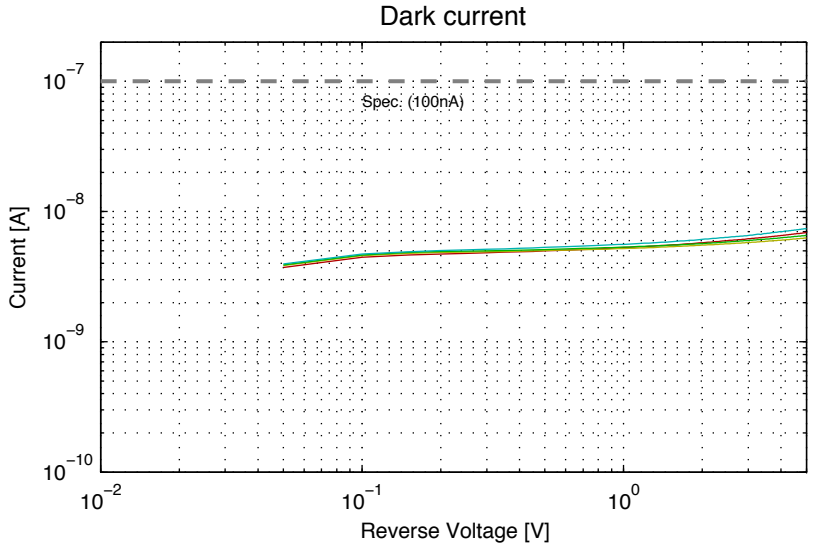
Elem1: 0.615 pA/rtHz
Elem2: 0.519 pA/rtHz
Elem3: 0.557 pA/rtHz
Elem4: 0.788 pA/rtHz

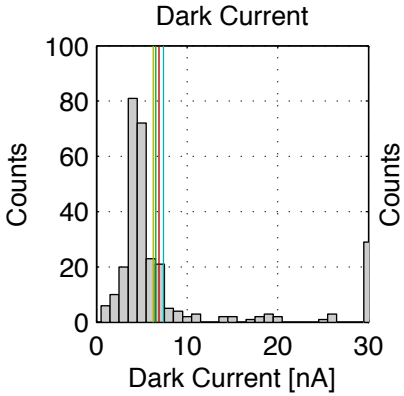
200~290Hz avg

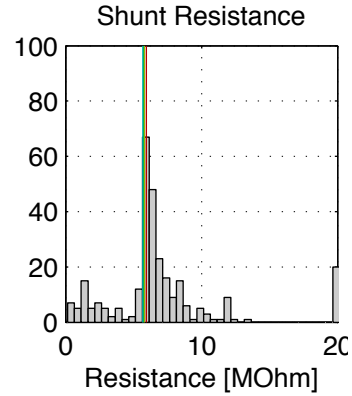
Elem1: 0.129 pA/rtHz
Elem2: 0.134 pA/rtHz
Elem3: 0.121 pA/rtHz
Elem4: 0.132 pA/rtHz

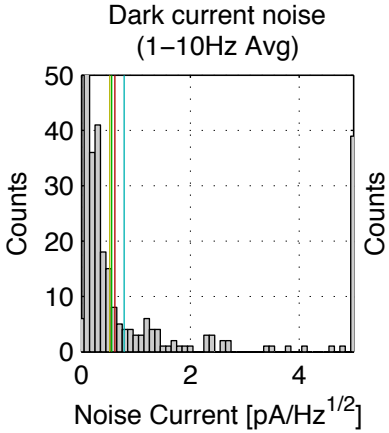
Total Penalty: –20

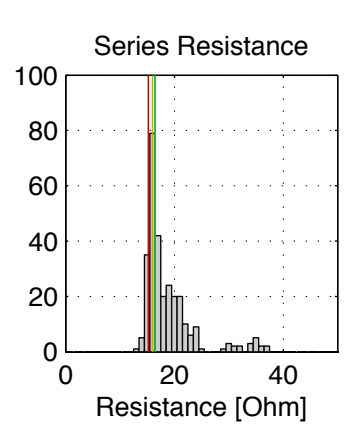


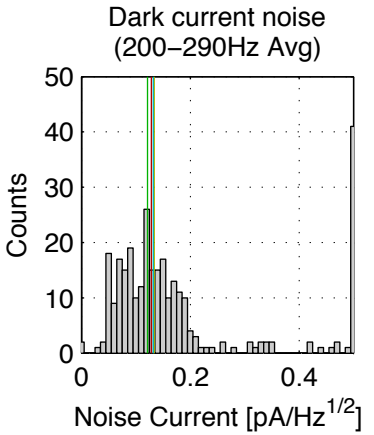


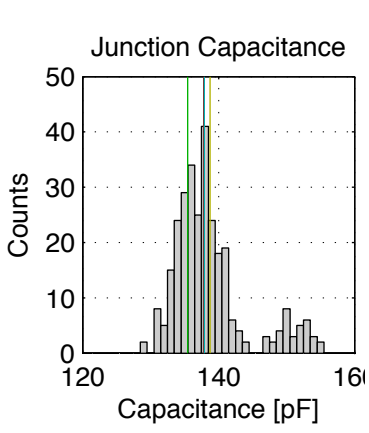












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #33

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 2.707 MOhm
Elem2: 2.615 MOhm
Elem3: 2.549 MOhm
Elem4: 2.528 MOhm

Series Resistance: (R_s):

Elem1: 15.1 Ohm
Elem2: 15.9 Ohm
Elem3: 16.2 Ohm
Elem4: 16.1 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 142.9 pF
Elem2: 142.7 pF
Elem3: 141.2 pF
Elem4: 142.0 pF

Dark Current [nA]:

Elem1: 17.84 nA
Elem2: 18.92 nA
Elem3: 18.78 nA
Elem4: 19.18 nA

Dark Noise:

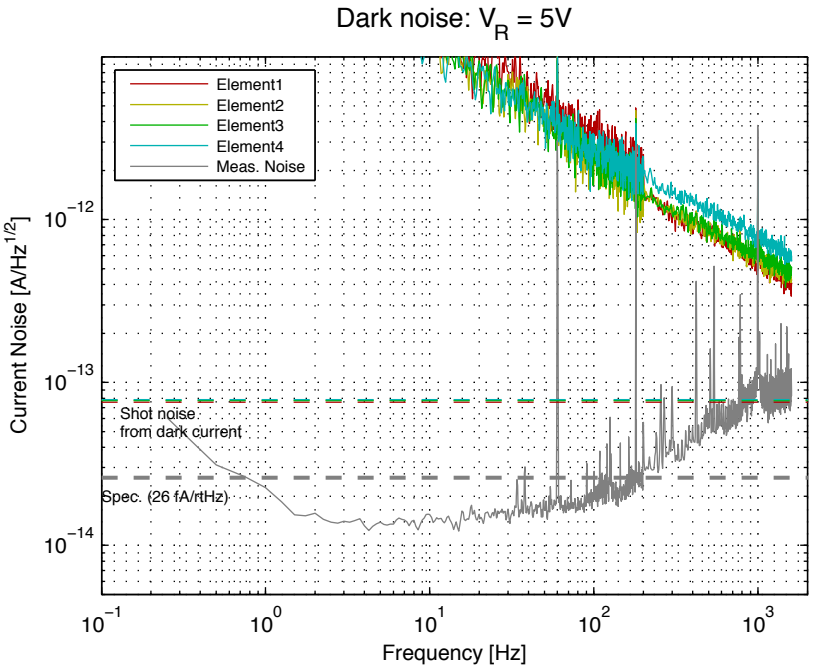
1~10Hz avg

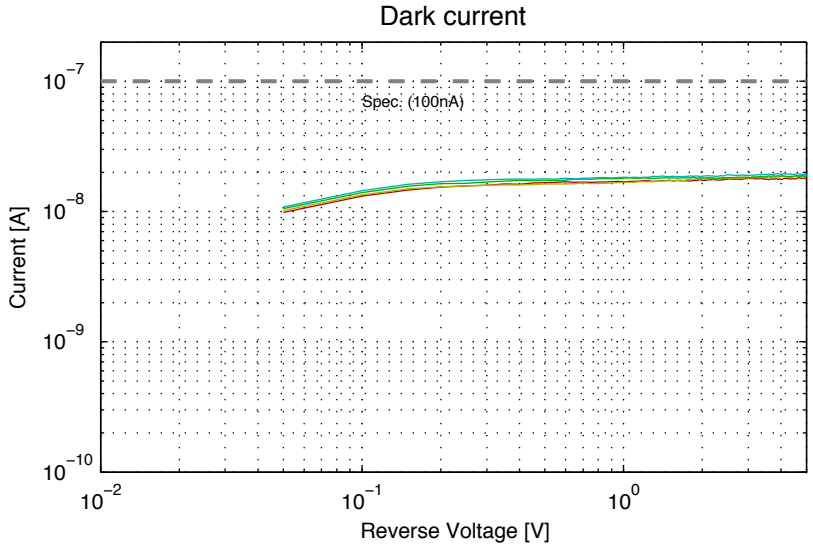
Elem1: 28.531 pA/rtHz
Elem2: 25.945 pA/rtHz
Elem3: 22.160 pA/rtHz
Elem4: 22.883 pA/rtHz

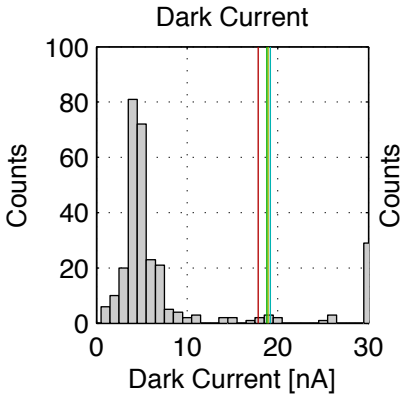
200~290Hz avg

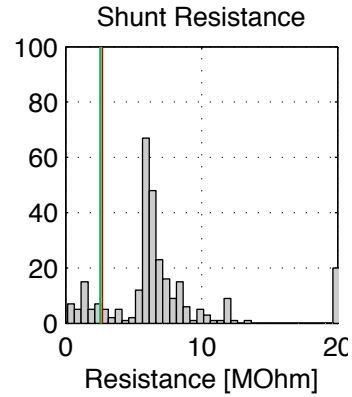
Elem1: 1.307 pA/rtHz
Elem2: 1.298 pA/rtHz
Elem3: 1.279 pA/rtHz
Elem4: 1.669 pA/rtHz

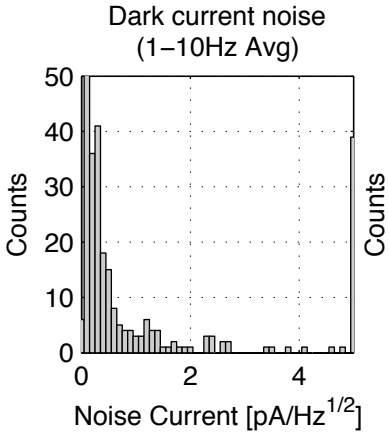
Total Penalty: –240

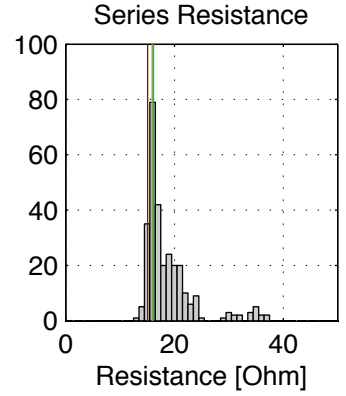


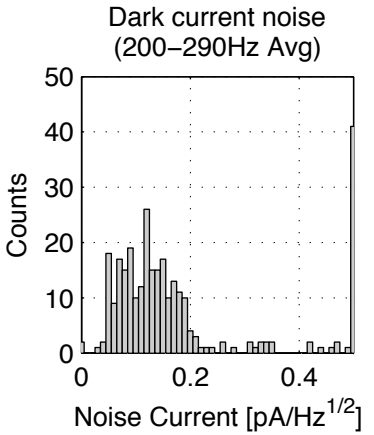


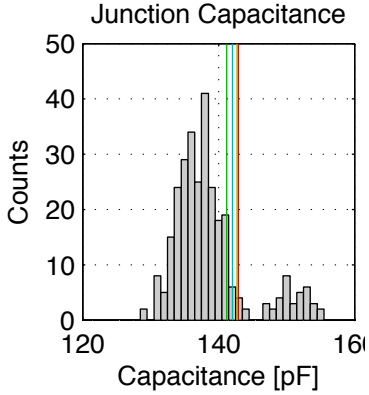












Errors / Warnings

Elem1: i_{dark} > 10nA
Elem2: i_{dark} > 10nA
Elem3: i_{dark} > 10nA
Elem4: i_{dark} > 10nA
Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #34

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.636 MOhm
Elem2: 6.422 MOhm
Elem3: 6.357 MOhm
Elem4: 6.277 MOhm

Series Resistance: (R_s):

Elem1: 15.2 Ohm
Elem2: 16.2 Ohm
Elem3: 17.0 Ohm
Elem4: 16.9 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 138.8 pF
Elem2: 140.3 pF
Elem3: 136.9 pF
Elem4: 139.0 pF

Dark Current [nA]:

Elem1: 4.04 nA
Elem2: 4.19 nA
Elem3: 4.29 nA
Elem4: 4.30 nA

Dark Noise:

1~10Hz avg

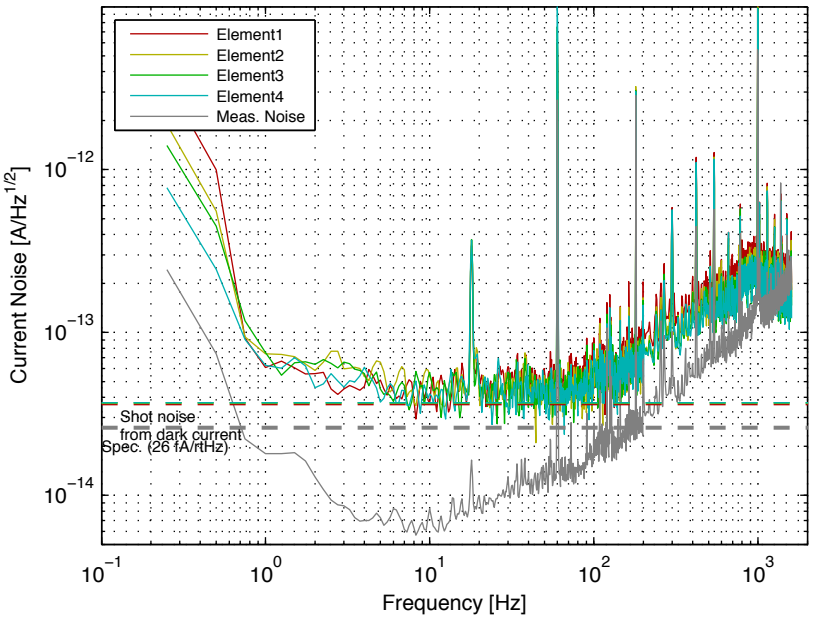
Elem1: 0.048 pA/rtHz
Elem2: 0.057 pA/rtHz
Elem3: 0.053 pA/rtHz
Elem4: 0.048 pA/rtHz

200~290Hz avg

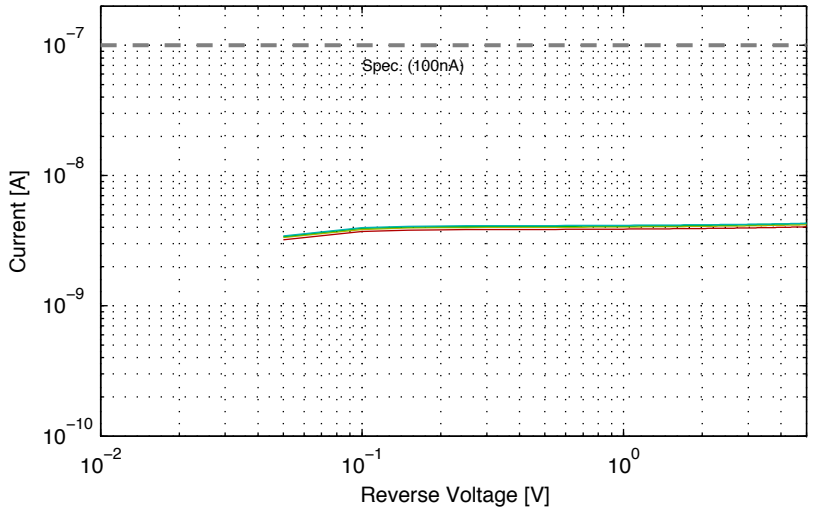
Elem1: 0.129 pA/rtHz
Elem2: 0.109 pA/rtHz
Elem3: 0.102 pA/rtHz
Elem4: 0.098 pA/rtHz

Total Penalty: 0

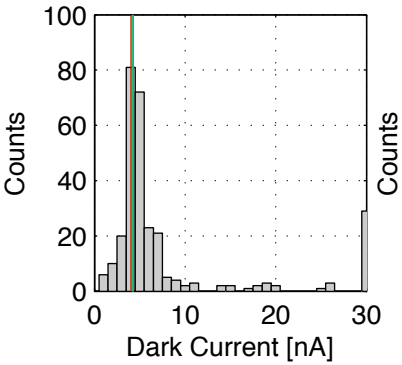
Dark noise: V_R = 5V



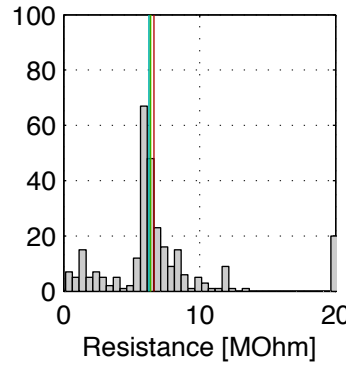
Dark current



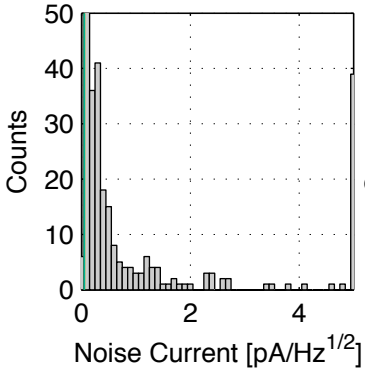
Dark Current



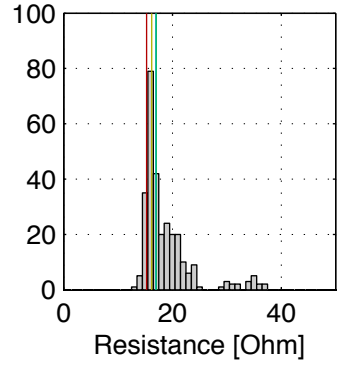
Shunt Resistance



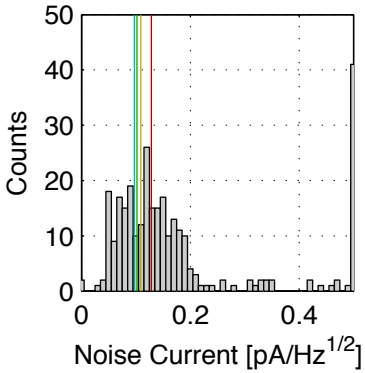
Dark current noise (1–10Hz Avg)



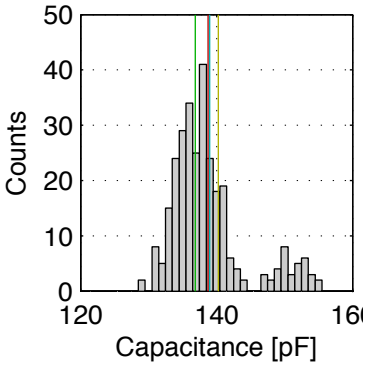
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

QPD #35

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 2.053 MOhm
Elem2: 2.006 MOhm
Elem3: 1.977 MOhm
Elem4: 1.977 MOhm

Series Resistance: (R_s):

Elem1: 18.5 Ohm
Elem2: 18.9 Ohm
Elem3: 19.4 Ohm
Elem4: 19.5 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 137.9 pF
Elem2: 138.3 pF
Elem3: 135.6 pF
Elem4: 136.3 pF

Dark Current [nA]:

Elem1: 24.71 nA
Elem2: 25.83 nA
Elem3: 26.04 nA
Elem4: 25.84 nA

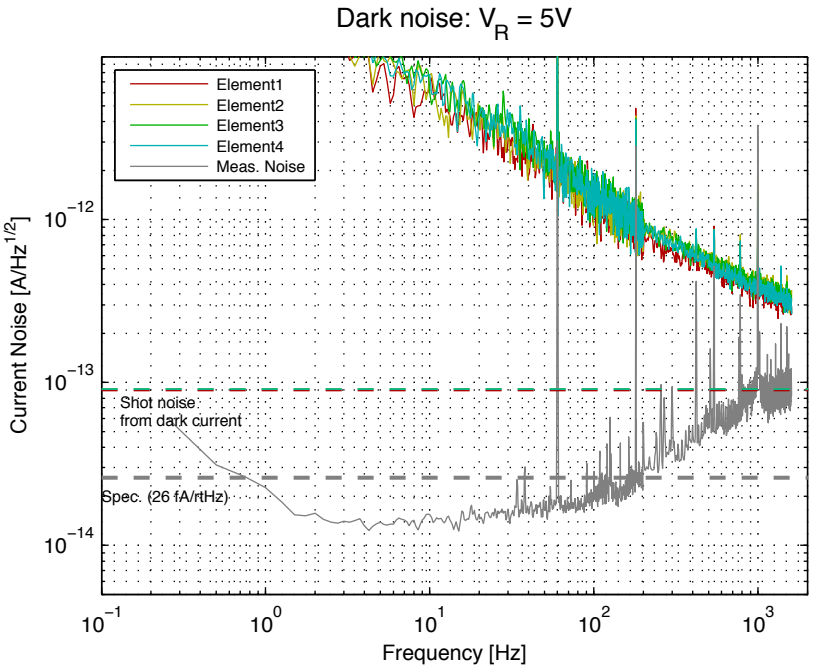
Dark Noise:
1~10Hz avg

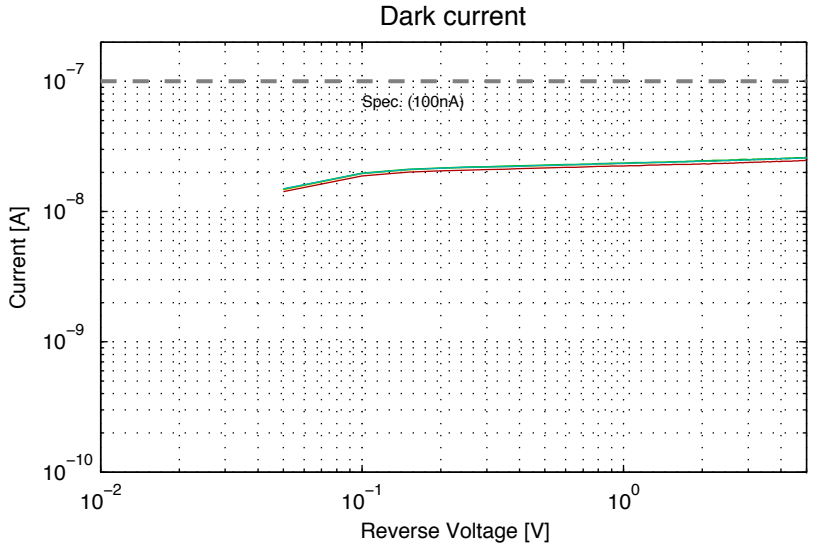
Elem1: 10.042 pA/rtHz
Elem2: 11.457 pA/rtHz
Elem3: 12.716 pA/rtHz
Elem4: 12.044 pA/rtHz

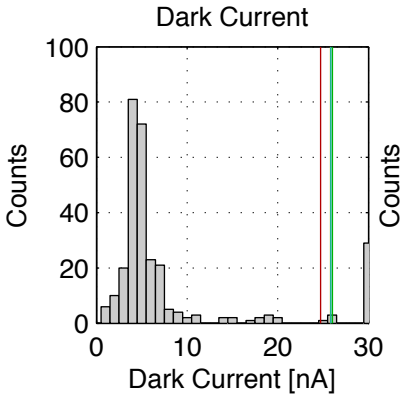
200~290Hz avg

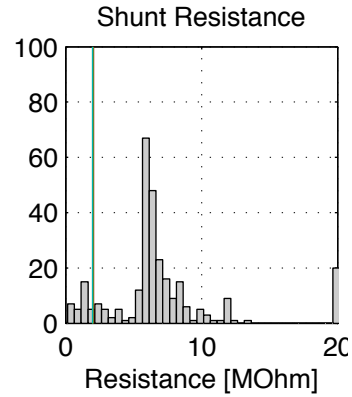
Elem1: 0.706 pA/rtHz
Elem2: 0.825 pA/rtHz
Elem3: 0.827 pA/rtHz
Elem4: 0.807 pA/rtHz

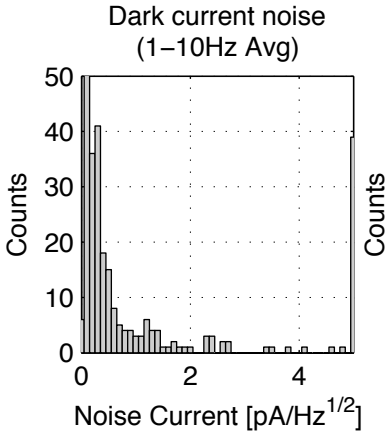
Total Penalty: –240

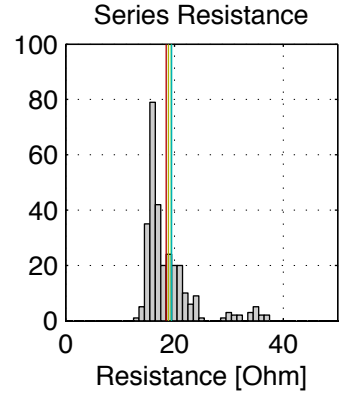


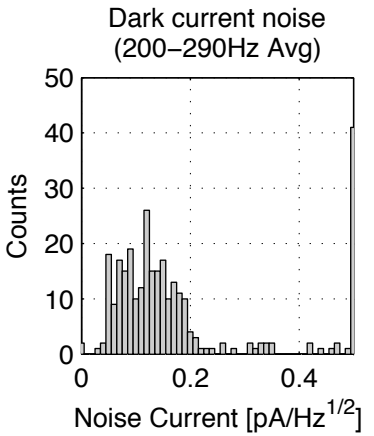


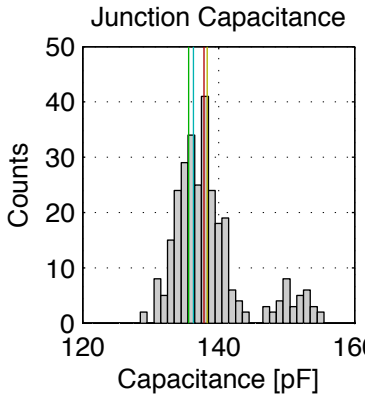












Errors / Warnings

Elem1: i_{dark} > 10nA
Elem2: i_{dark} > 10nA
Elem3: i_{dark} > 10nA
Elem4: i_{dark} > 10nA
Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #36

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.327 MOhm
Elem2: 6.256 MOhm
Elem3: 6.261 MOhm
Elem4: 6.226 MOhm

Series Resistance: (R_s):

Elem1: 15.1 Ohm
Elem2: 15.8 Ohm
Elem3: 16.3 Ohm
Elem4: 16.3 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 141.2 pF
Elem2: 142.1 pF
Elem3: 139.3 pF
Elem4: 140.1 pF

Dark Current [nA]:

Elem1: 4.34 nA
Elem2: 4.36 nA
Elem3: 4.35 nA
Elem4: 4.38 nA

Dark Noise:

1~10Hz avg

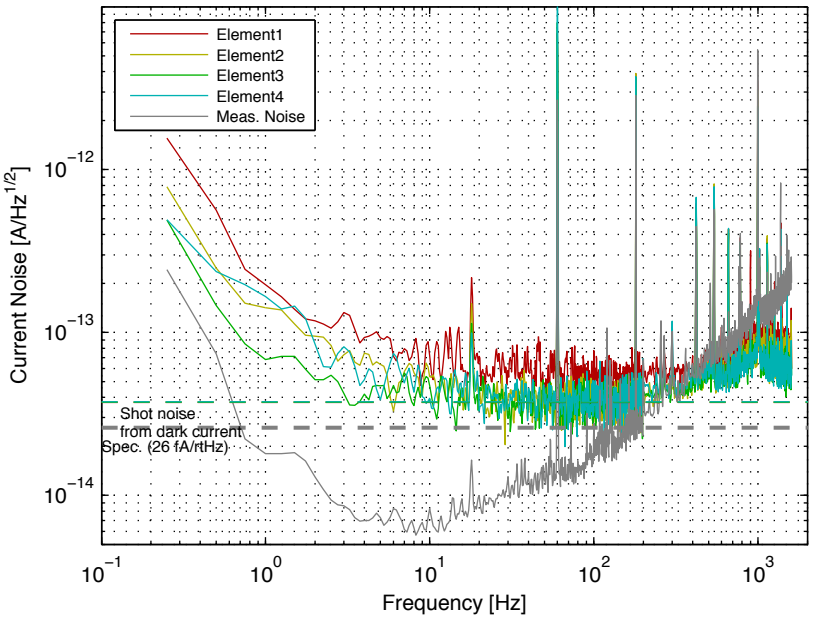
Elem1: 0.100 pA/rtHz
Elem2: 0.072 pA/rtHz
Elem3: 0.049 pA/rtHz
Elem4: 0.072 pA/rtHz

200~290Hz avg

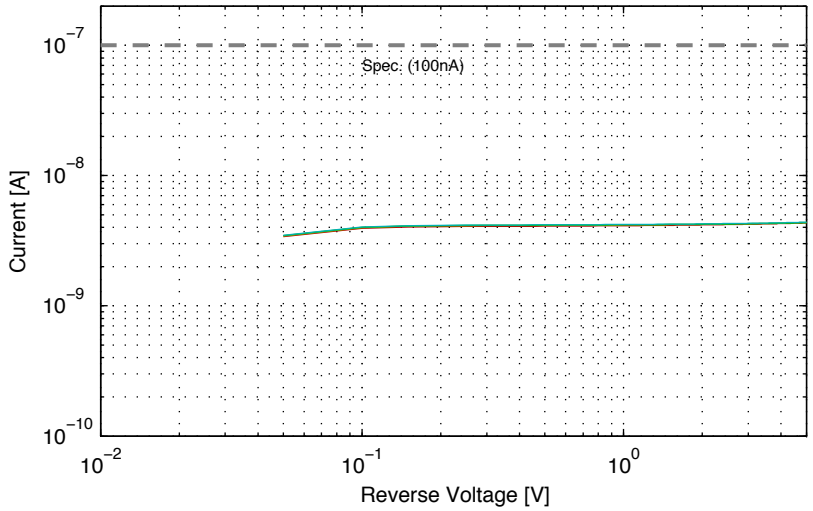
Elem1: 0.059 pA/rtHz
Elem2: 0.044 pA/rtHz
Elem3: 0.044 pA/rtHz
Elem4: 0.049 pA/rtHz

Total Penalty: 0

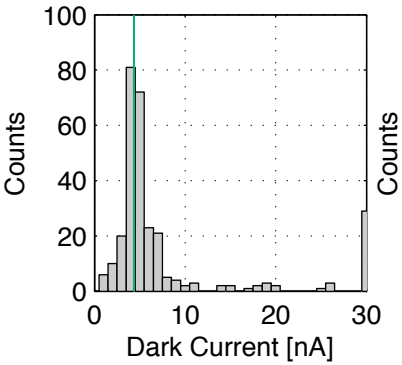
Dark noise: V_R = 5V



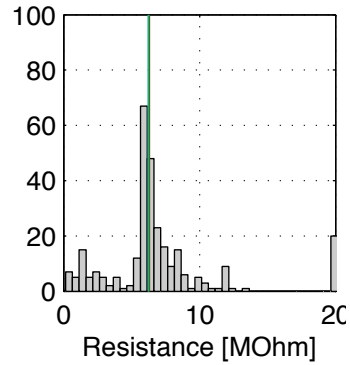
Dark current



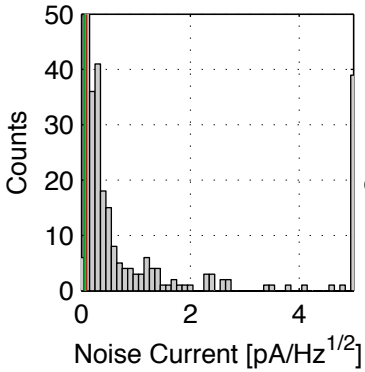
Dark Current



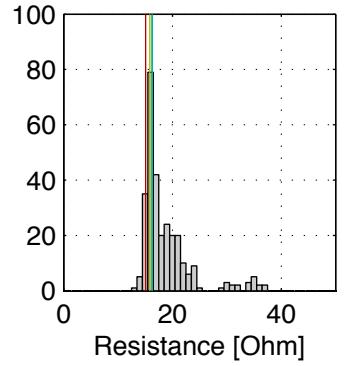
Shunt Resistance



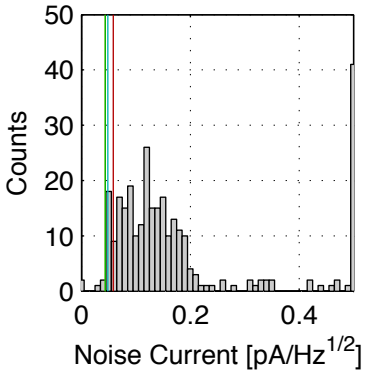
Dark current noise
(1–10Hz Avg)



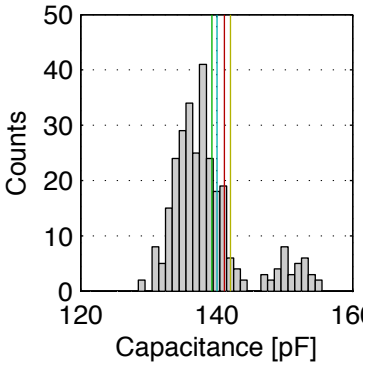
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

QPD #37

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 5.462 MOhm
Elem2: 5.671 MOhm
Elem3: 5.828 MOhm
Elem4: 5.886 MOhm

Series Resistance: (R_s):

Elem1: 16.7 Ohm
Elem2: 17.6 Ohm
Elem3: 17.8 Ohm
Elem4: 17.9 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 136.4 pF
Elem2: 138.0 pF
Elem3: 134.2 pF
Elem4: 135.9 pF

Dark Current [nA]:

Elem1: 7.83 nA
Elem2: 6.27 nA
Elem3: 5.17 nA
Elem4: 7.33 nA

Dark Noise:

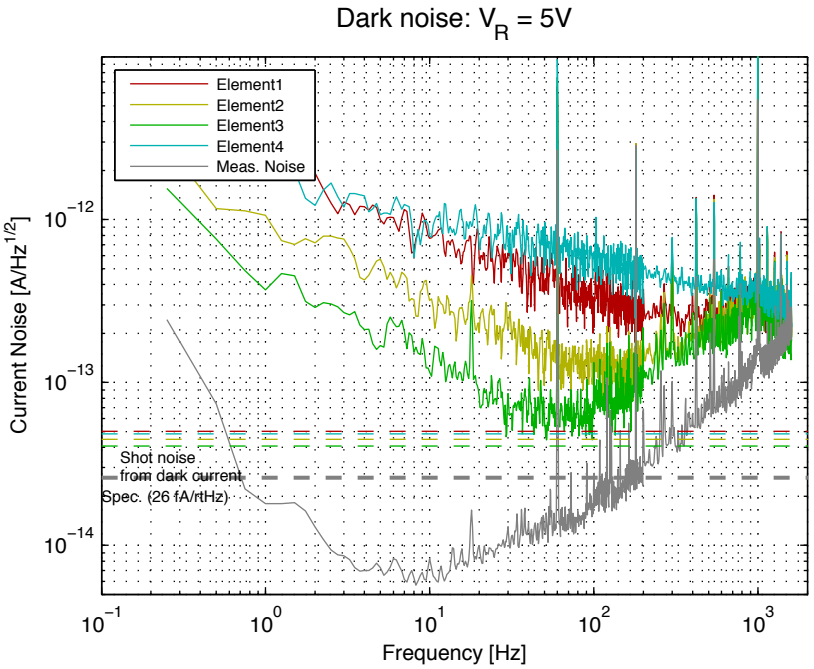
1~10Hz avg

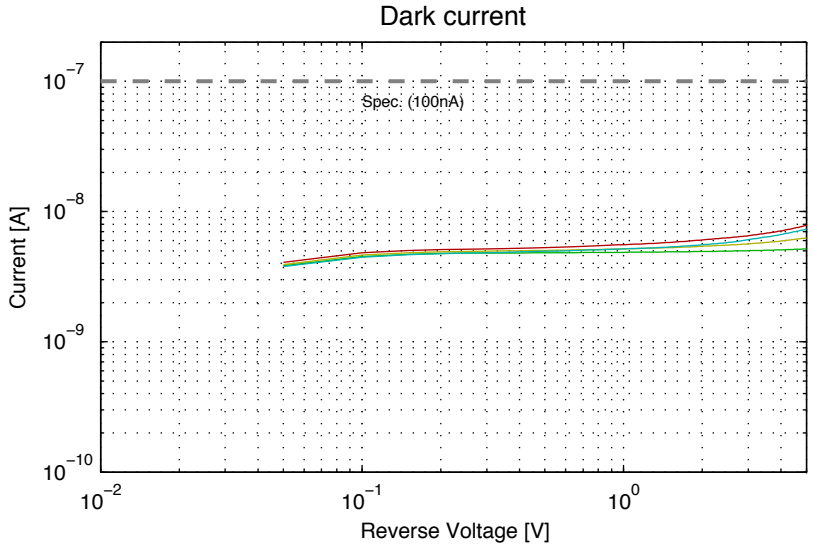
Elem1: 1.227 pA/rtHz
Elem2: 0.546 pA/rtHz
Elem3: 0.241 pA/rtHz
Elem4: 1.317 pA/rtHz

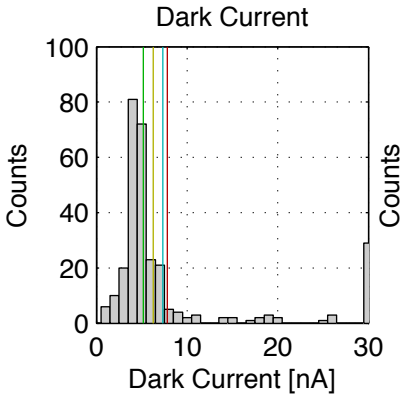
200~290Hz avg

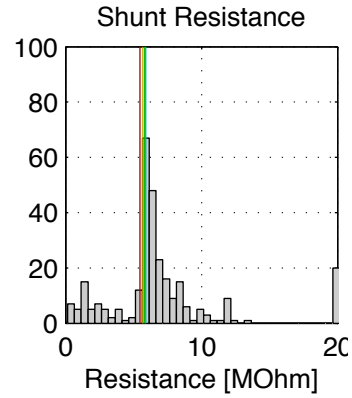
Elem1: 0.282 pA/rtHz
Elem2: 0.178 pA/rtHz
Elem3: 0.149 pA/rtHz
Elem4: 0.460 pA/rtHz

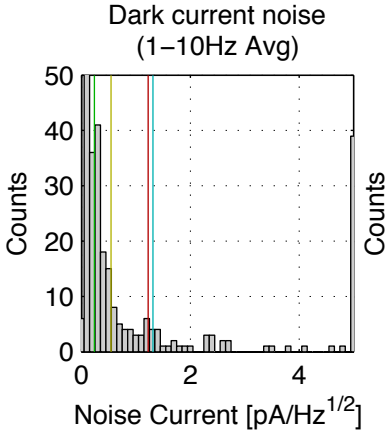
Total Penalty: –30

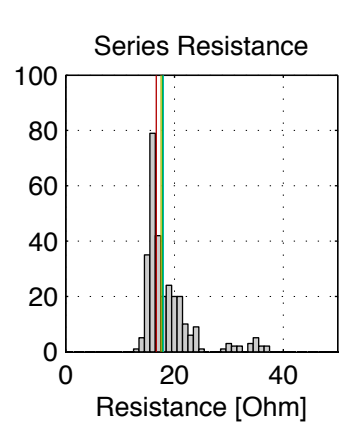


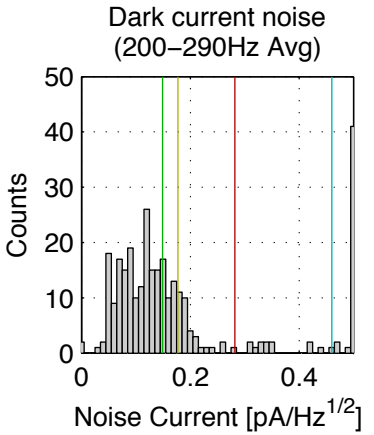


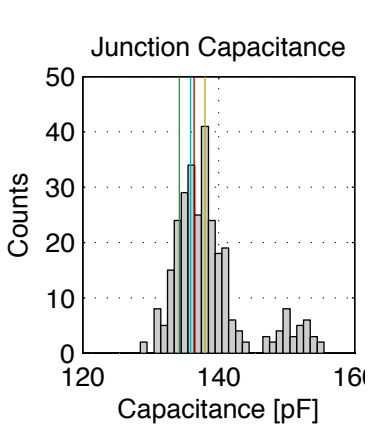












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #38

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 8.199 MOhm
Elem2: 8.092 MOhm
Elem3: 8.133 MOhm
Elem4: 8.028 MOhm

Series Resistance: (R_s):

Elem1: 19.4 Ohm
Elem2: 20.1 Ohm
Elem3: 20.5 Ohm
Elem4: 20.7 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 135.1 pF
Elem2: 136.6 pF
Elem3: 133.4 pF
Elem4: 135.0 pF

Dark Current [nA]:

Elem1: 4.16 nA
Elem2: 4.12 nA
Elem3: 3.99 nA
Elem4: 4.11 nA

Dark Noise:

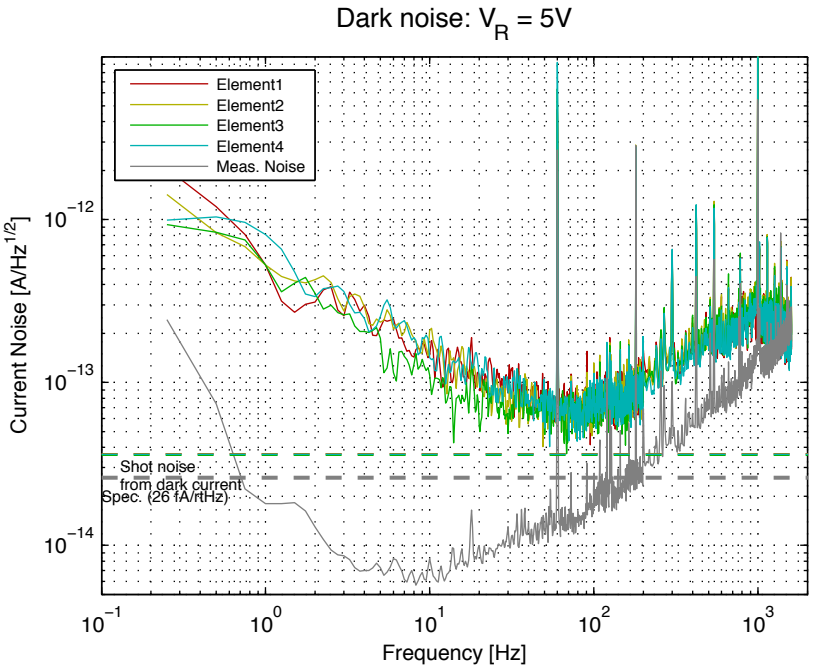
1~10Hz avg

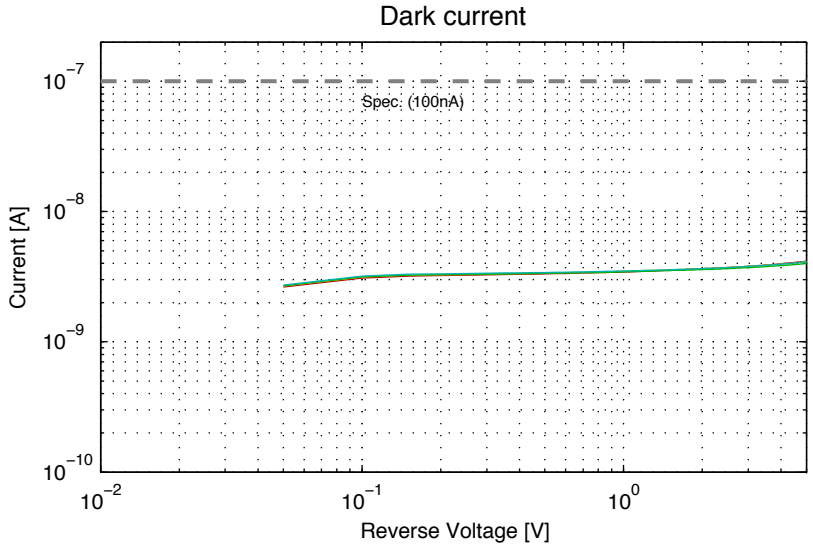
Elem1: 0.251 pA/rtHz
Elem2: 0.287 pA/rtHz
Elem3: 0.227 pA/rtHz
Elem4: 0.310 pA/rtHz

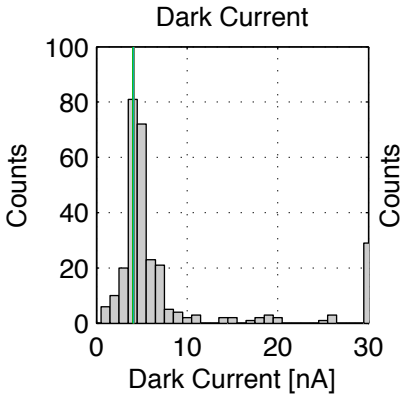
200~290Hz avg

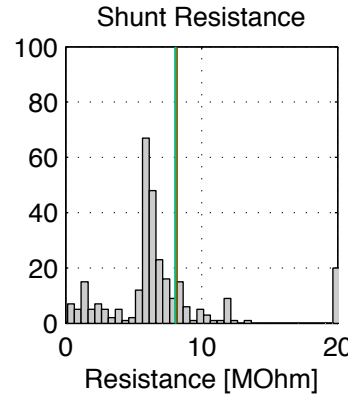
Elem1: 0.141 pA/rtHz
Elem2: 0.142 pA/rtHz
Elem3: 0.138 pA/rtHz
Elem4: 0.128 pA/rtHz

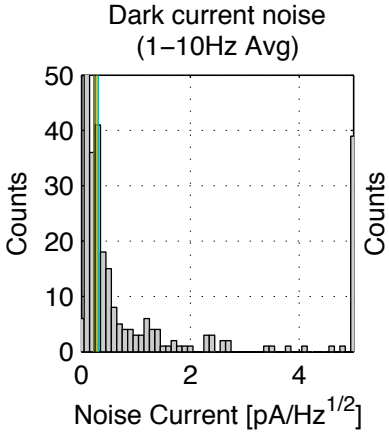
Total Penalty: –20

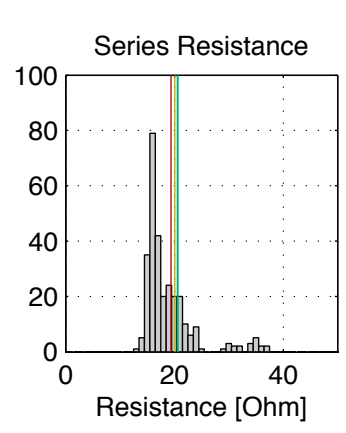


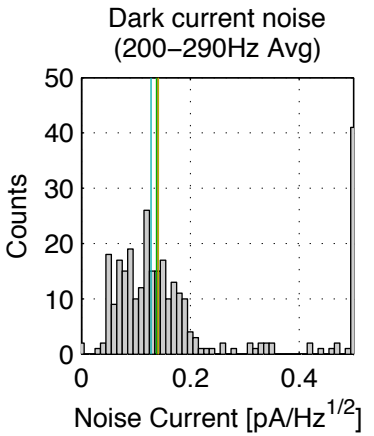


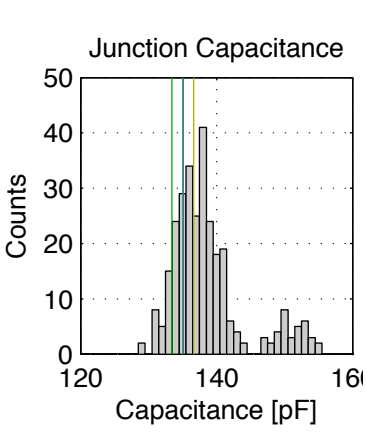












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #39

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.479 MOhm
Elem2: 6.299 MOhm
Elem3: 6.240 MOhm
Elem4: 6.174 MOhm

Series Resistance: (R_s):

Elem1: 14.9 Ohm
Elem2: 15.7 Ohm
Elem3: 16.2 Ohm
Elem4: 16.2 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 138.6 pF
Elem2: 139.8 pF
Elem3: 136.3 pF
Elem4: 138.4 pF

Dark Current [nA]:

Elem1: 4.36 nA
Elem2: 4.34 nA
Elem3: 4.36 nA
Elem4: 4.43 nA

Dark Noise:

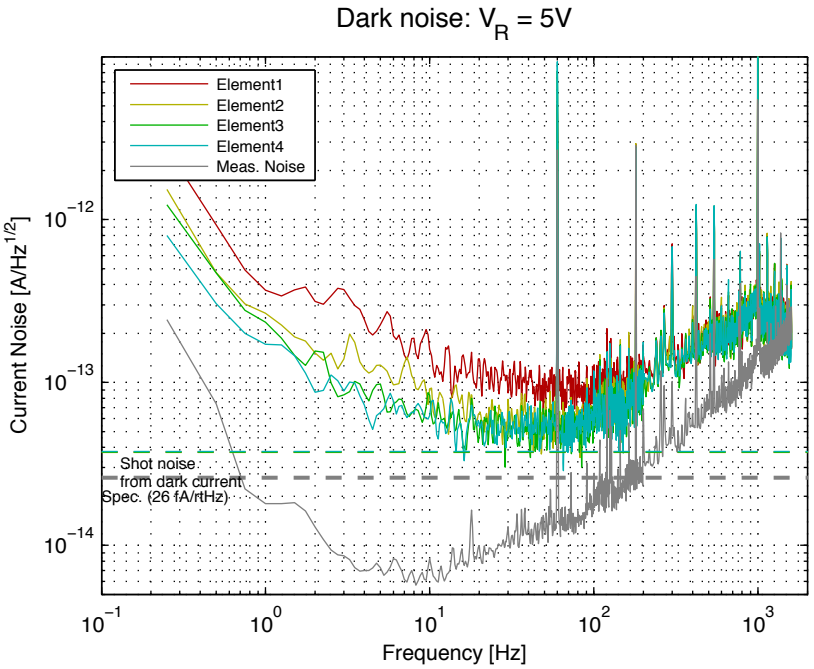
1~10Hz avg

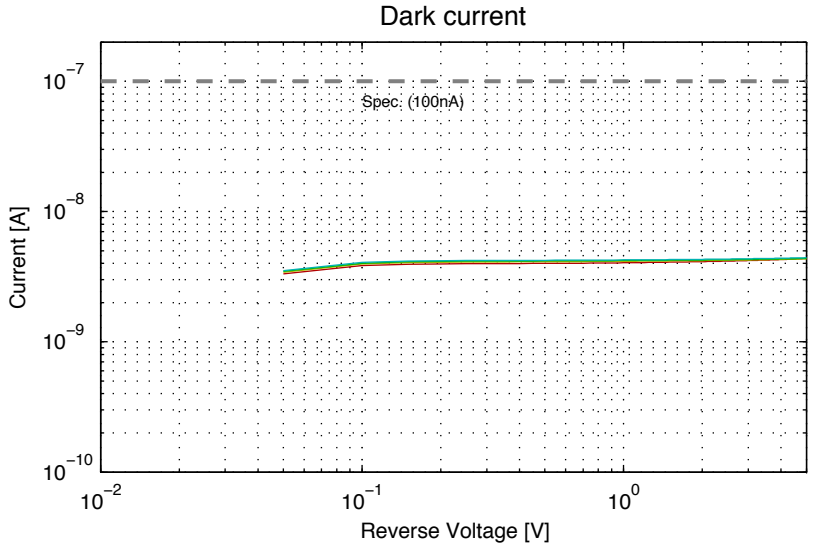
Elem1: 0.253 pA/rtHz
Elem2: 0.135 pA/rtHz
Elem3: 0.100 pA/rtHz
Elem4: 0.087 pA/rtHz

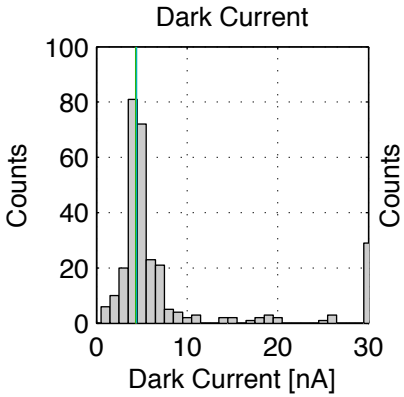
200~290Hz avg

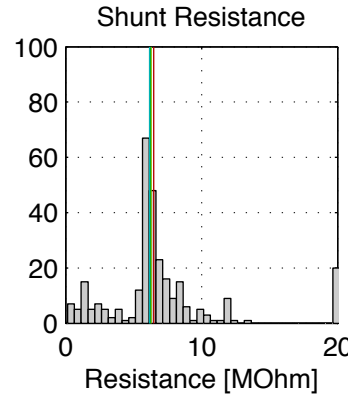
Elem1: 0.149 pA/rtHz
Elem2: 0.143 pA/rtHz
Elem3: 0.135 pA/rtHz
Elem4: 0.134 pA/rtHz

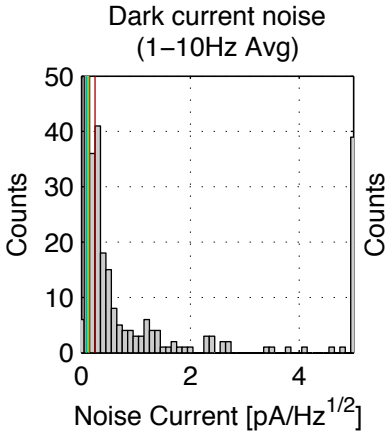
Total Penalty: −5

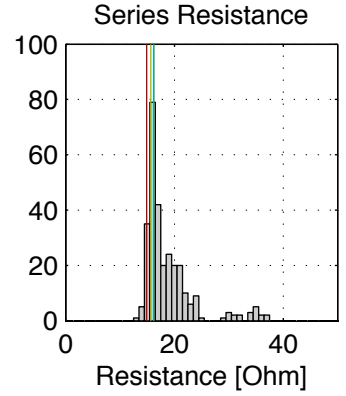


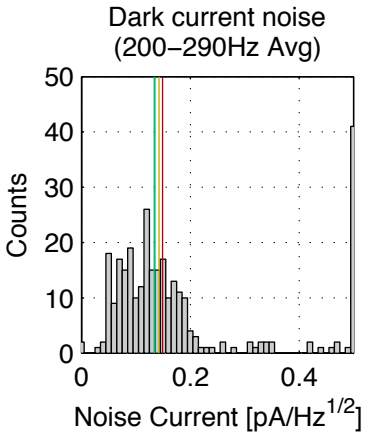


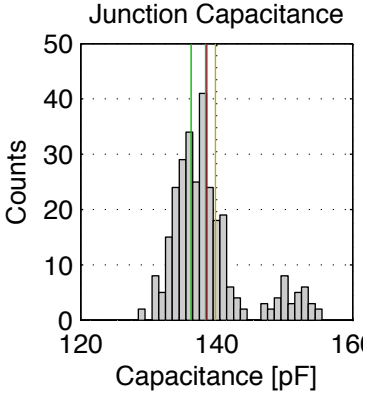












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #40

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 5.948 MOhm
Elem2: 5.805 MOhm
Elem3: 5.738 MOhm
Elem4: 5.675 MOhm

Series Resistance: (R_s):

Elem1: 14.7 Ohm
Elem2: 15.3 Ohm
Elem3: 16.0 Ohm
Elem4: 15.9 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 138.3 pF
Elem2: 139.3 pF
Elem3: 135.7 pF
Elem4: 138.1 pF

Dark Current [nA]:

Elem1: 6.09 nA
Elem2: 6.70 nA
Elem3: 6.45 nA
Elem4: 6.66 nA

Dark Noise:

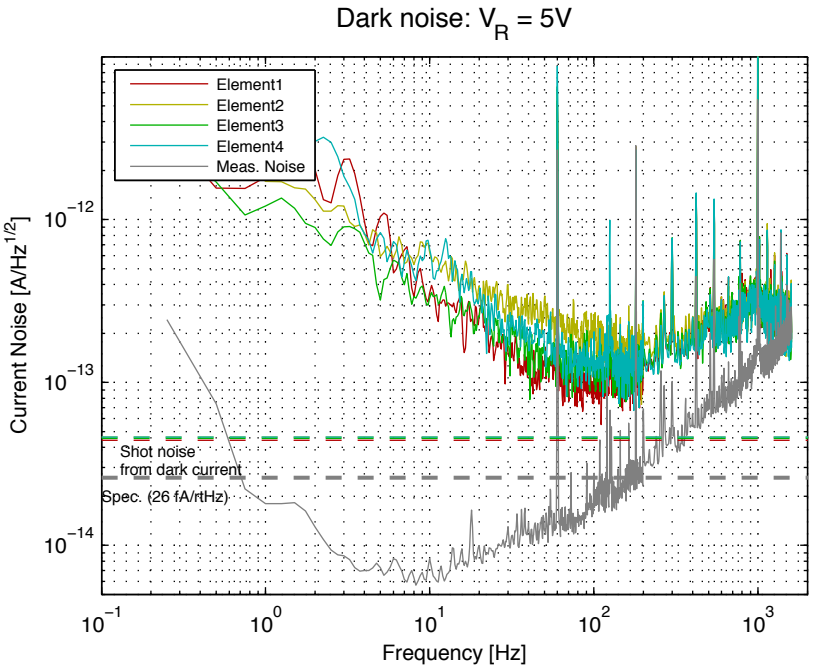
1~10Hz avg

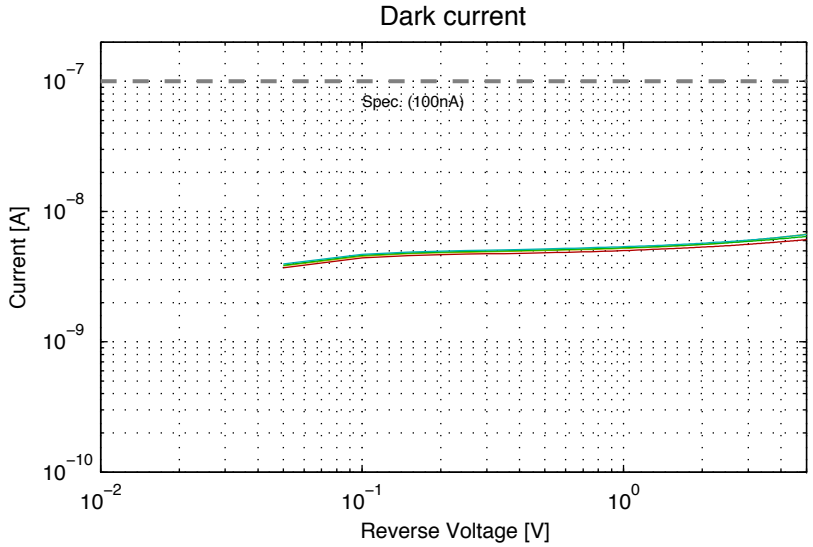
Elem1: 1.269 pA/rtHz
Elem2: 0.928 pA/rtHz
Elem3: 0.661 pA/rtHz
Elem4: 1.556 pA/rtHz

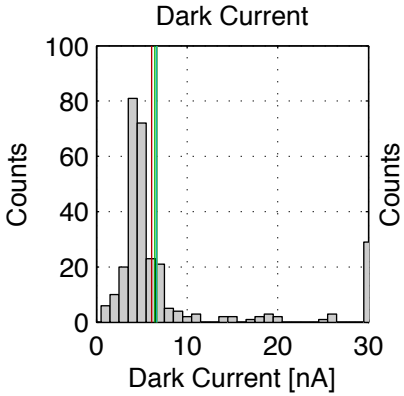
200~290Hz avg

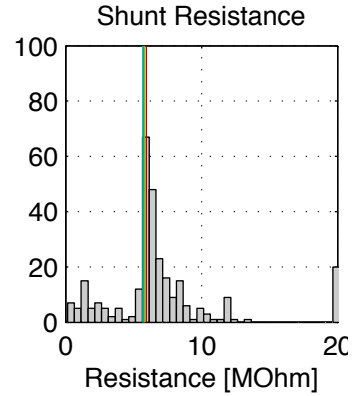
Elem1: 0.169 pA/rtHz
Elem2: 0.194 pA/rtHz
Elem3: 0.170 pA/rtHz
Elem4: 0.162 pA/rtHz

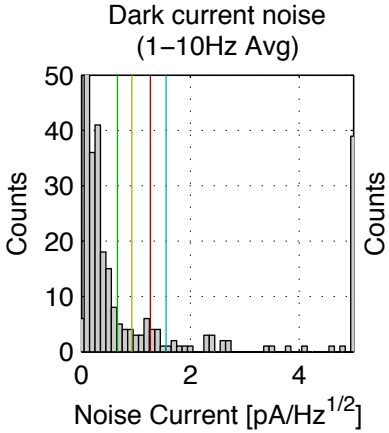
Total Penalty: –25

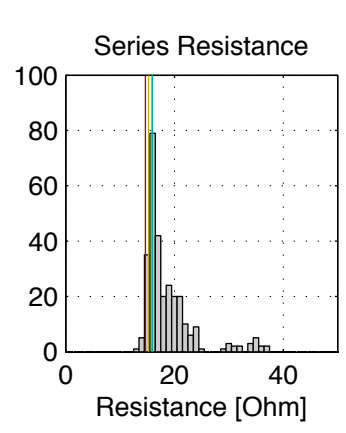


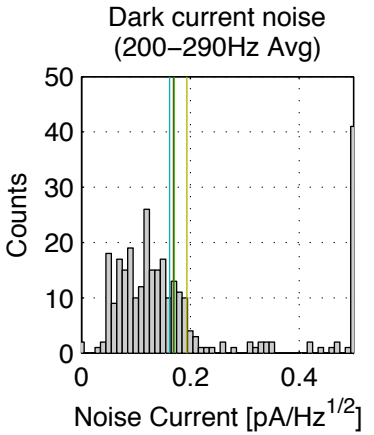


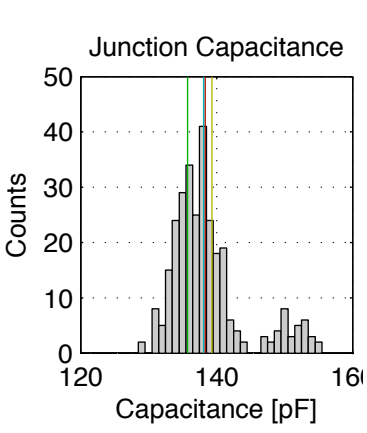












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #41

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 1.665 MOhm
Elem2: 1.589 MOhm
Elem3: 1.546 MOhm
Elem4: 1.521 MOhm

Series Resistance: (R_s):

Elem1: 15.5 Ohm
Elem2: 16.4 Ohm
Elem3: 16.9 Ohm
Elem4: 17.0 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 143.6 pF
Elem2: 143.6 pF
Elem3: 141.4 pF
Elem4: 142.7 pF

Dark Current [nA]:

Elem1: 31.19 nA
Elem2: 33.06 nA
Elem3: 34.18 nA
Elem4: 34.58 nA

Dark Noise:
1~10Hz avg

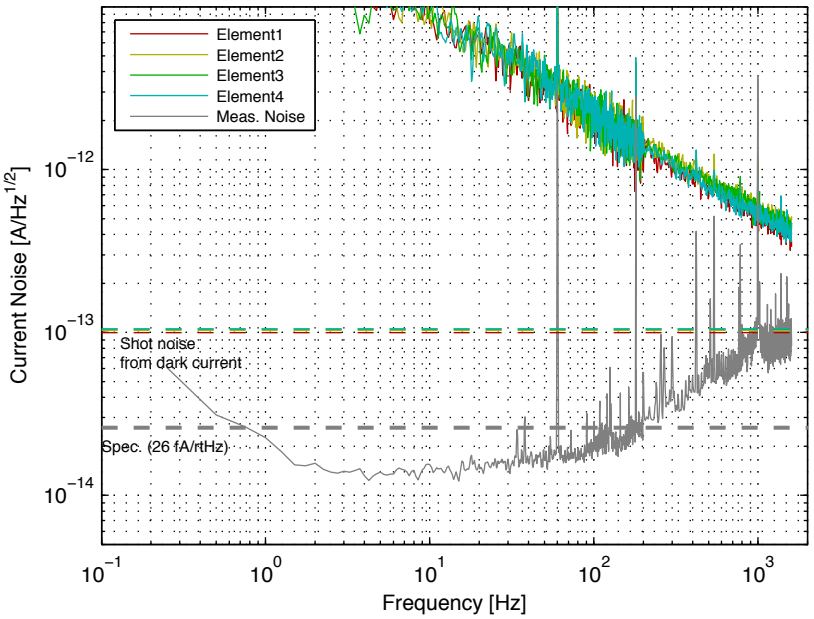
Elem1: 14.018 pA/rtHz
Elem2: 15.060 pA/rtHz
Elem3: 13.690 pA/rtHz
Elem4: 13.717 pA/rtHz

200~290Hz avg

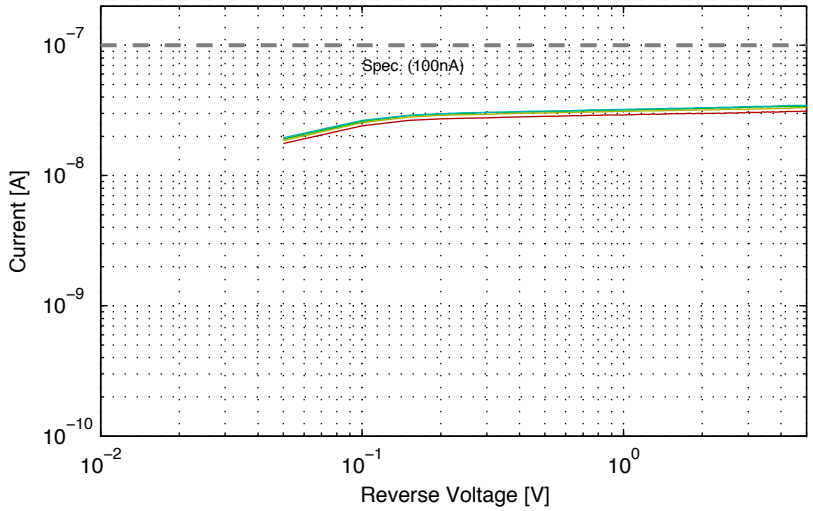
Elem1: 1.201 pA/rtHz
Elem2: 1.358 pA/rtHz
Elem3: 1.298 pA/rtHz
Elem4: 1.253 pA/rtHz

Total Penalty: –240

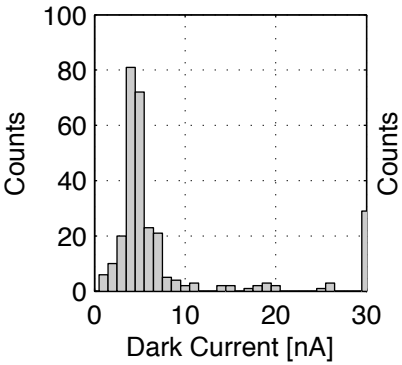
Dark noise: V_R = 5V



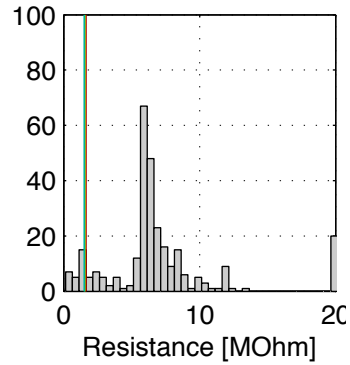
Dark current



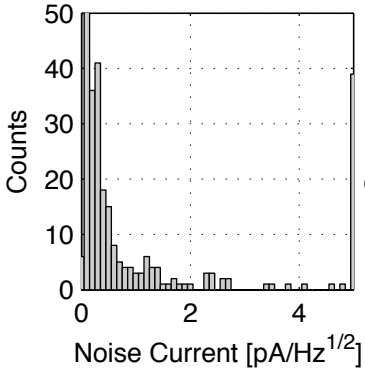
Dark Current



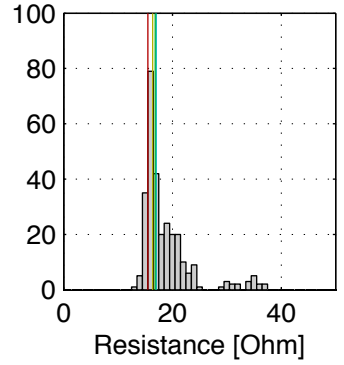
Shunt Resistance



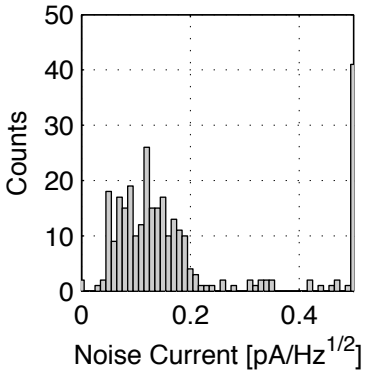
Dark current noise
(1–10Hz Avg)



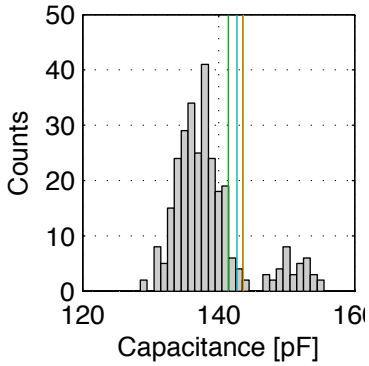
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{dark} > 10nA
Elem2: i_{dark} > 10nA
Elem3: i_{dark} > 10nA
Elem4: i_{dark} > 10nA
Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #42

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 4.204 MOhm
Elem2: 4.103 MOhm
Elem3: 3.974 MOhm
Elem4: 3.983 MOhm

Series Resistance: (R_s):

Elem1: 18.3 Ohm
Elem2: 19.1 Ohm
Elem3: 19.2 Ohm
Elem4: 19.1 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 138.4 pF
Elem2: 140.4 pF
Elem3: 136.6 pF
Elem4: 138.1 pF

Dark Current [nA]:

Elem1: 10.67 nA
Elem2: 10.84 nA
Elem3: 71.33 nA
Elem4: 11.39 nA

Dark Noise:

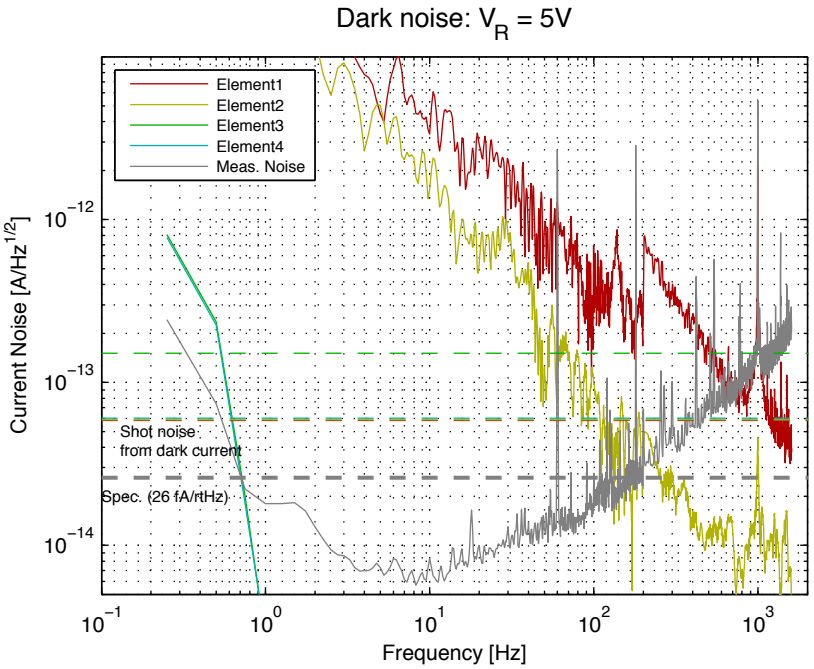
1~10Hz avg

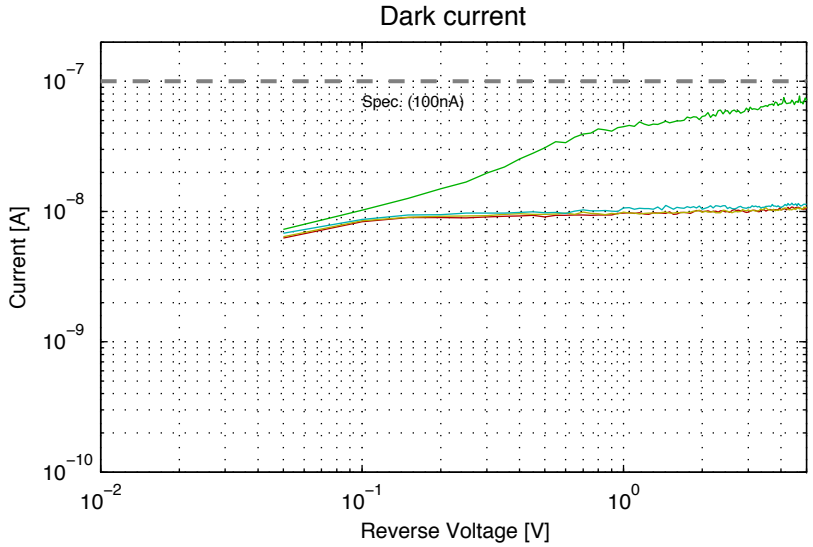
Elem1: 10.725 pA/rtHz
Elem2: 6.730 pA/rtHz
Elem3: 0.001 pA/rtHz
Elem4: 0.001 pA/rtHz

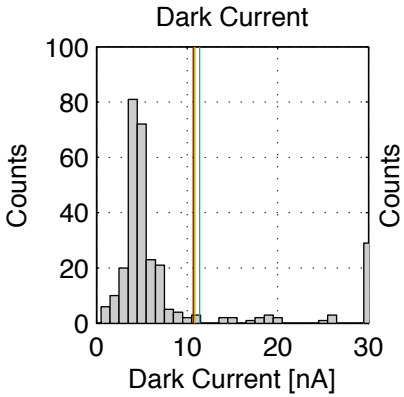
200~290Hz avg

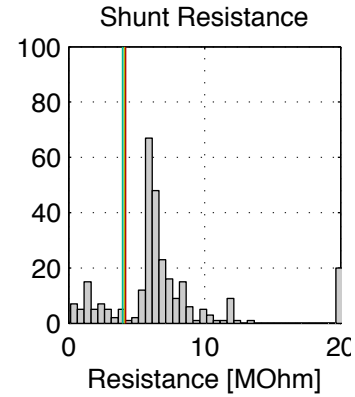
Elem1: 0.527 pA/rtHz
Elem2: 0.034 pA/rtHz
Elem3: 0.001 pA/rtHz
Elem4: 0.001 pA/rtHz

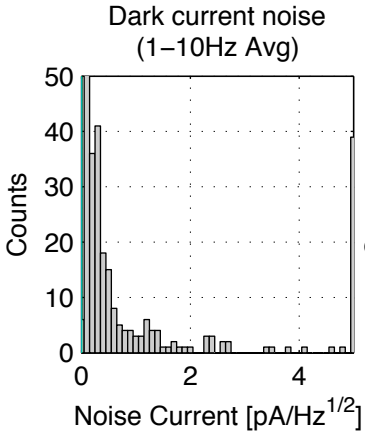
Total Penalty: –225

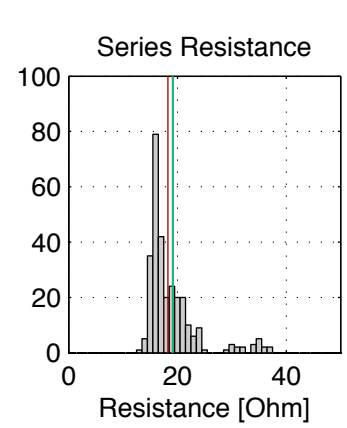


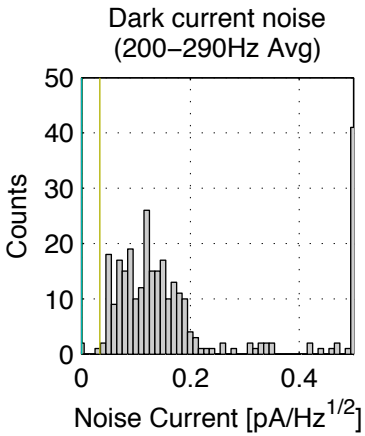


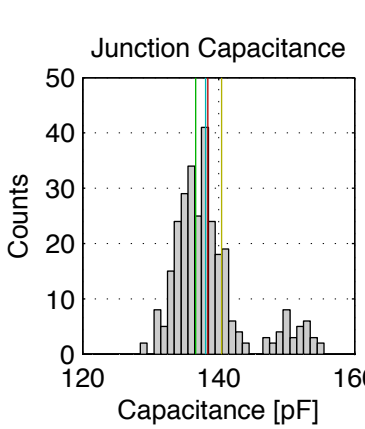












Errors / Warnings

Elem1: i_{dark} > 10nA
Elem2: i_{dark} > 10nA
Elem3: i_{dark} > 10nA
Elem4: i_{dark} > 10nA
Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF): too high dark current?
Elem4: i_{noise}(LF): too high dark current?
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #43

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 5.745 MOhm
Elem2: 5.729 MOhm
Elem3: 5.769 MOhm
Elem4: 5.759 MOhm

Series Resistance: (R_s):

Elem1: 15.1 Ohm
Elem2: 16.1 Ohm
Elem3: 17.1 Ohm
Elem4: 16.7 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 138.0 pF
Elem2: 139.5 pF
Elem3: 136.2 pF
Elem4: 138.0 pF

Dark Current [nA]:

Elem1: 4.73 nA
Elem2: 4.78 nA
Elem3: 4.77 nA
Elem4: 4.74 nA

Dark Noise:

1~10Hz avg

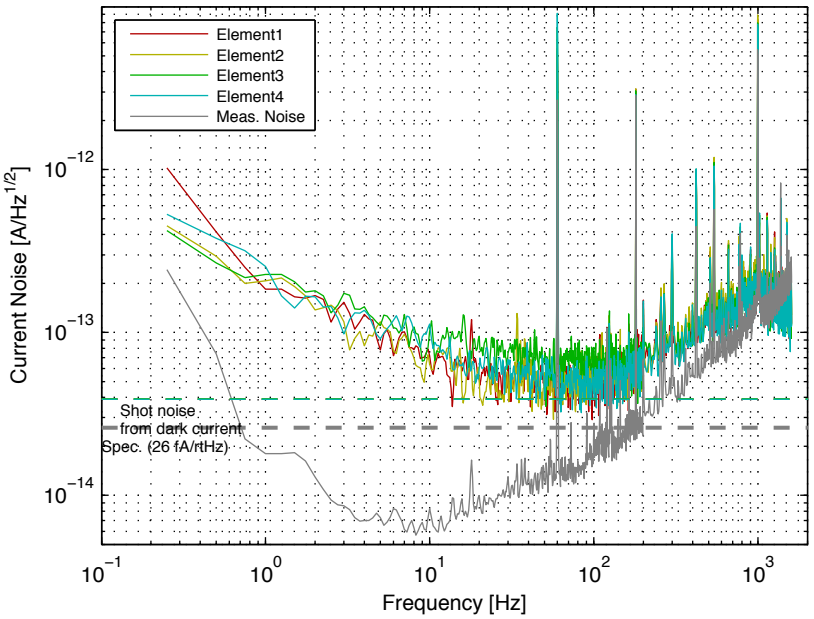
Elem1: 0.113 pA/rtHz
Elem2: 0.110 pA/rtHz
Elem3: 0.133 pA/rtHz
Elem4: 0.125 pA/rtHz

200~290Hz avg

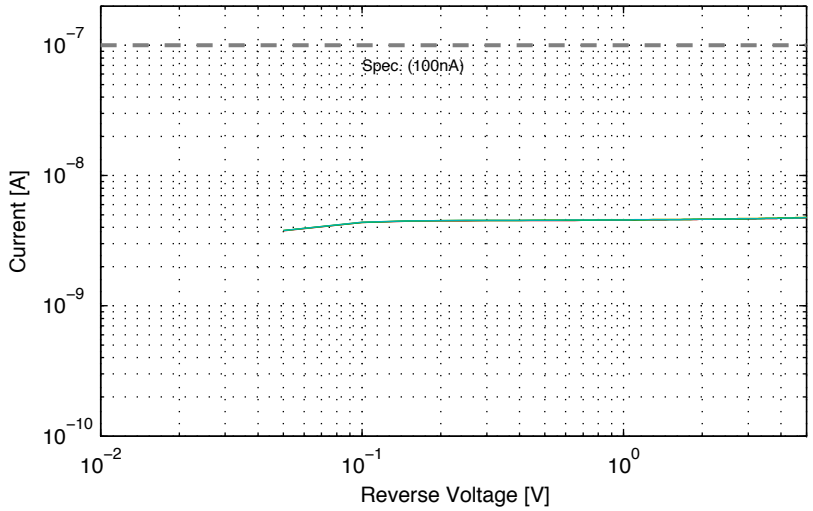
Elem1: 0.096 pA/rtHz
Elem2: 0.097 pA/rtHz
Elem3: 0.093 pA/rtHz
Elem4: 0.089 pA/rtHz

Total Penalty: 0

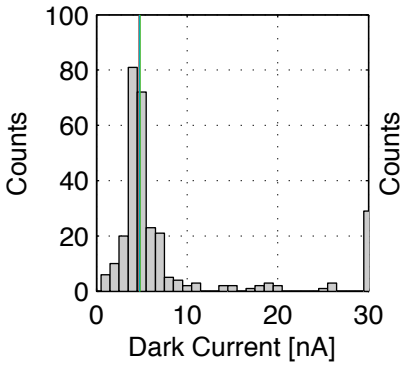
Dark noise: V_R = 5V



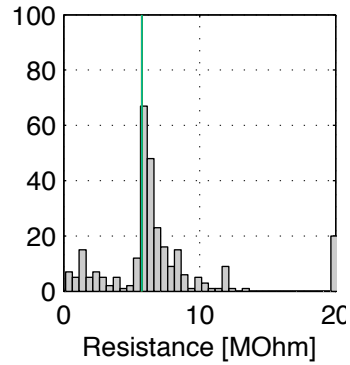
Dark current



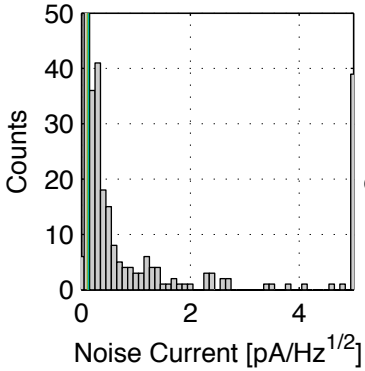
Dark Current



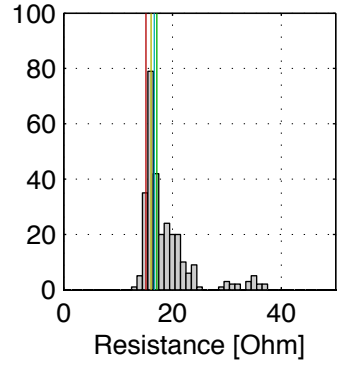
Shunt Resistance



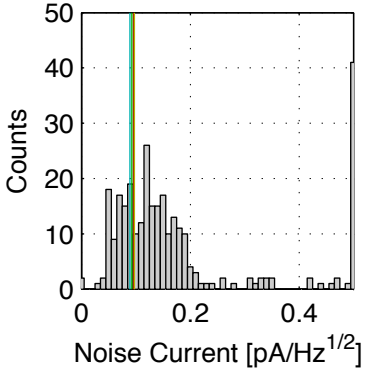
Dark current noise
(1–10Hz Avg)



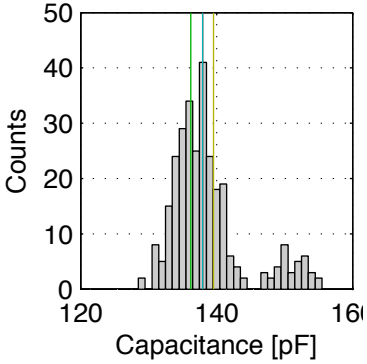
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

QPD #44

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 7.620 MOhm
Elem2: 7.363 MOhm
Elem3: 7.186 MOhm
Elem4: 7.064 MOhm

Series Resistance: (R_s):

Elem1: 18.0 Ohm
Elem2: 19.5 Ohm
Elem3: 20.0 Ohm
Elem4: 19.9 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 138.6 pF
Elem2: 139.0 pF
Elem3: 136.3 pF
Elem4: 138.7 pF

Dark Current [nA]:

Elem1: 4.33 nA
Elem2: 4.21 nA
Elem3: 4.56 nA
Elem4: 4.68 nA

Dark Noise:

1~10Hz avg

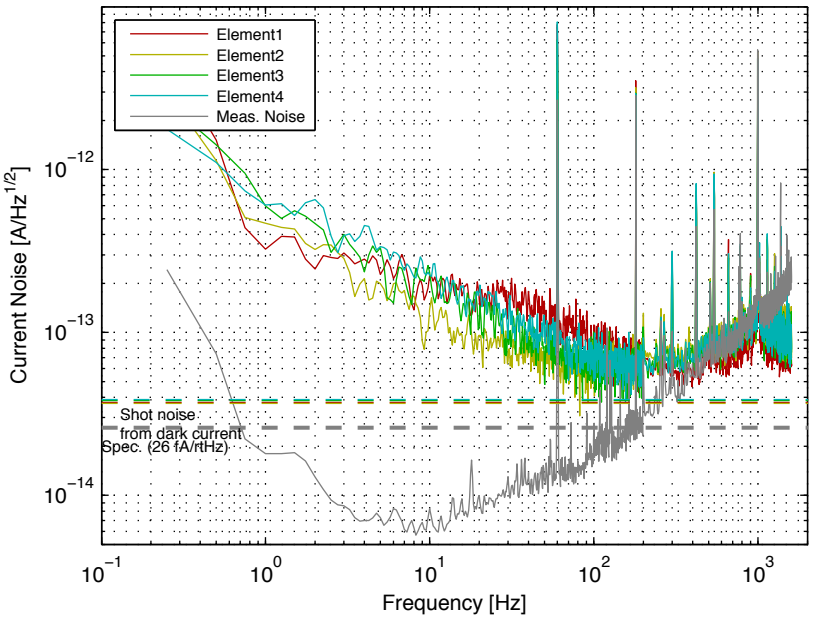
Elem1: 0.257 pA/rtHz
Elem2: 0.234 pA/rtHz
Elem3: 0.314 pA/rtHz
Elem4: 0.375 pA/rtHz

200~290Hz avg

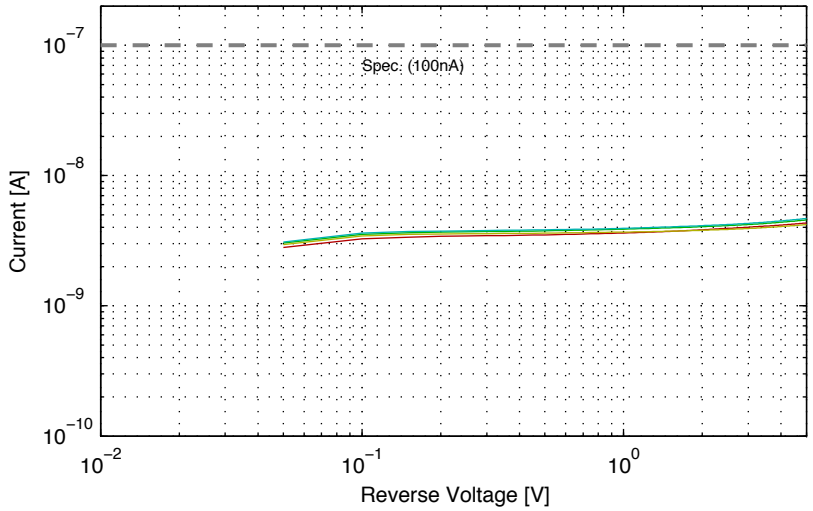
Elem1: 0.064 pA/rtHz
Elem2: 0.082 pA/rtHz
Elem3: 0.073 pA/rtHz
Elem4: 0.074 pA/rtHz

Total Penalty: –20

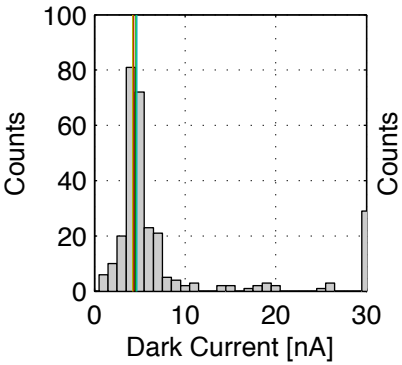
Dark noise: V_R = 5V



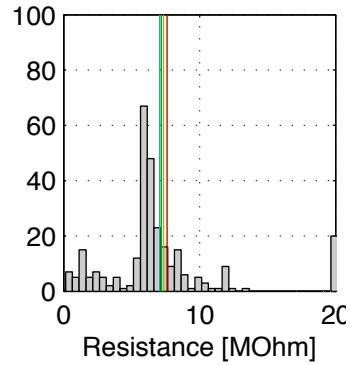
Dark current



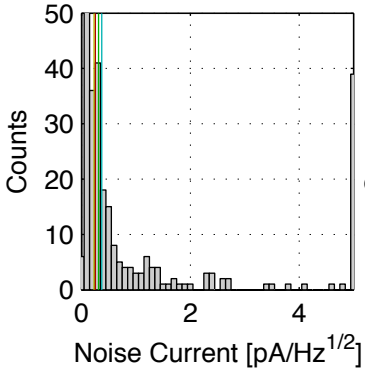
Dark Current



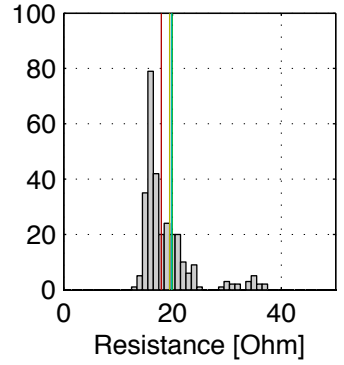
Shunt Resistance



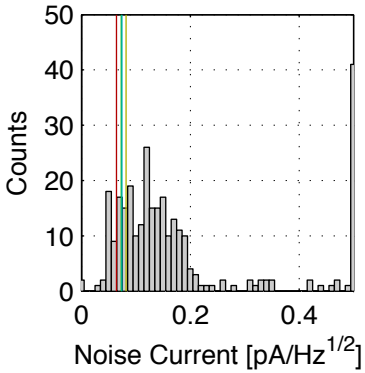
Dark current noise (1–10Hz Avg)



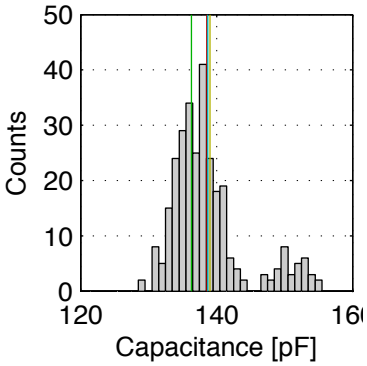
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #45

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.093 MOhm
Elem2: 5.956 MOhm
Elem3: 5.955 MOhm
Elem4: 5.916 MOhm

Series Resistance: (R_s):

Elem1: 15.5 Ohm
Elem2: 16.2 Ohm
Elem3: 16.8 Ohm
Elem4: 16.6 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 137.9 pF
Elem2: 139.3 pF
Elem3: 136.0 pF
Elem4: 137.8 pF

Dark Current [nA]:

Elem1: 4.43 nA
Elem2: 4.51 nA
Elem3: 4.55 nA
Elem4: 4.54 nA

Dark Noise:

1~10Hz avg

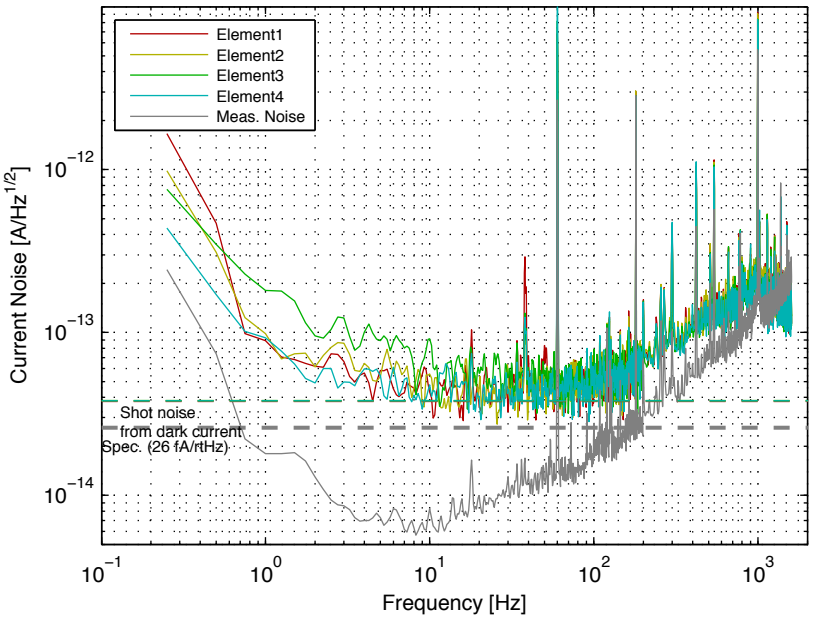
Elem1: 0.056 pA/rtHz
Elem2: 0.063 pA/rtHz
Elem3: 0.098 pA/rtHz
Elem4: 0.052 pA/rtHz

200~290Hz avg

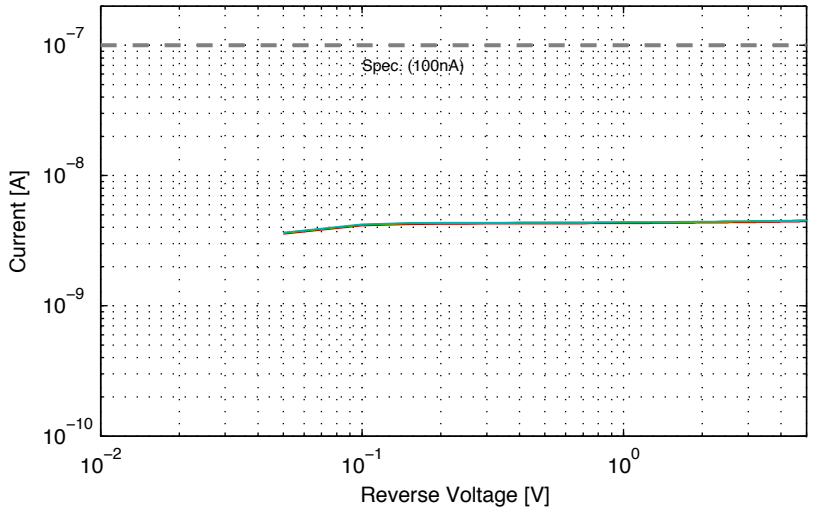
Elem1: 0.099 pA/rtHz
Elem2: 0.099 pA/rtHz
Elem3: 0.096 pA/rtHz
Elem4: 0.096 pA/rtHz

Total Penalty: 0

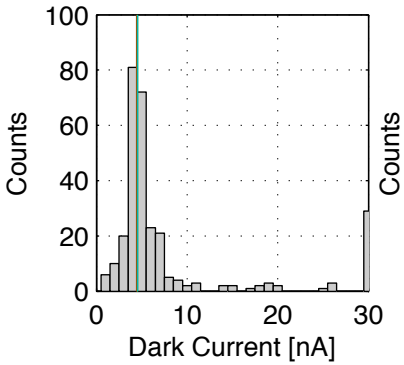
Dark noise: V_R = 5V



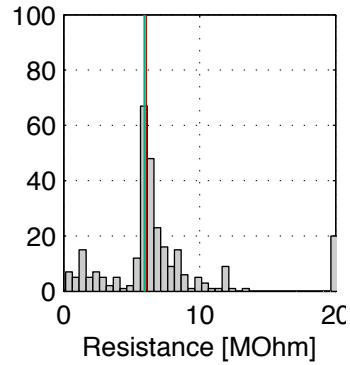
Dark current



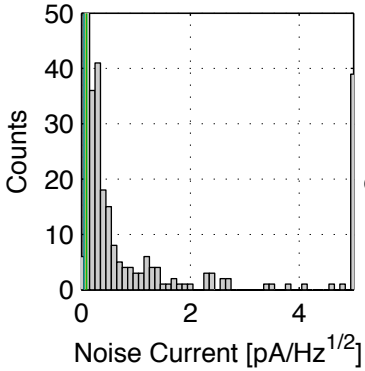
Dark Current



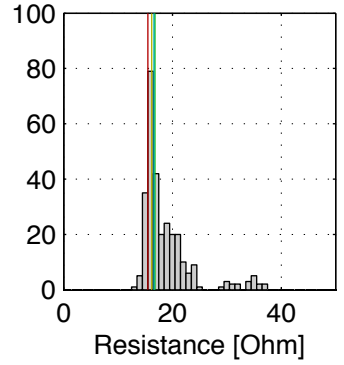
Shunt Resistance



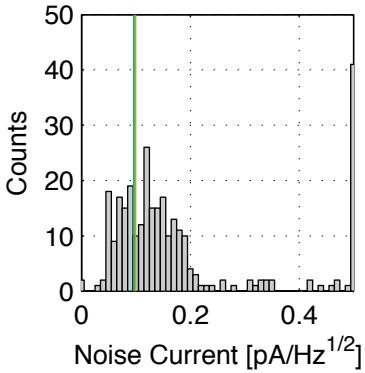
Dark current noise (1–10Hz Avg)



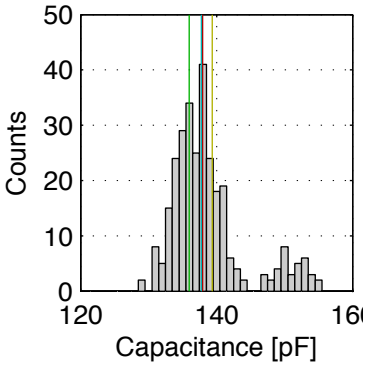
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

QPD #46

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.451 MOhm
Elem2: 6.181 MOhm
Elem3: 6.071 MOhm
Elem4: 5.978 MOhm

Series Resistance: (R_s):

Elem1: 15.2 Ohm
Elem2: 15.8 Ohm
Elem3: 16.1 Ohm
Elem4: 16.0 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 137.7 pF
Elem2: 139.4 pF
Elem3: 135.9 pF
Elem4: 137.6 pF

Dark Current [nA]:

Elem1: 4.30 nA
Elem2: 4.50 nA
Elem3: 4.63 nA
Elem4: 4.75 nA

Dark Noise:

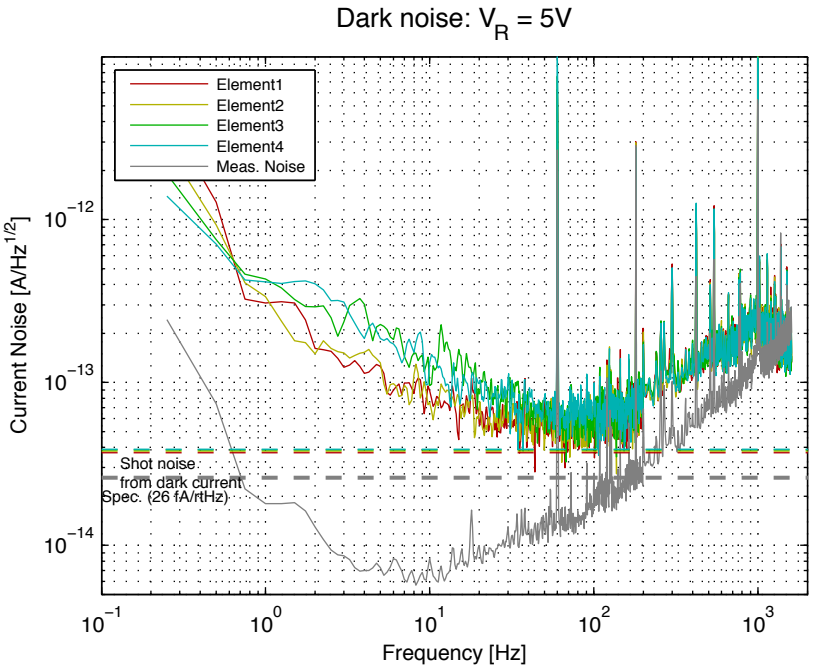
1~10Hz avg

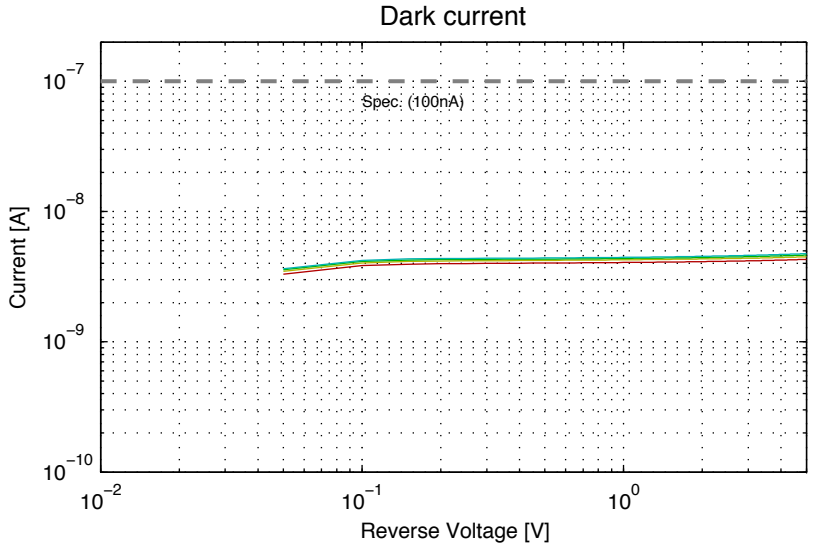
Elem1: 0.143 pA/rtHz
Elem2: 0.138 pA/rtHz
Elem3: 0.229 pA/rtHz
Elem4: 0.243 pA/rtHz

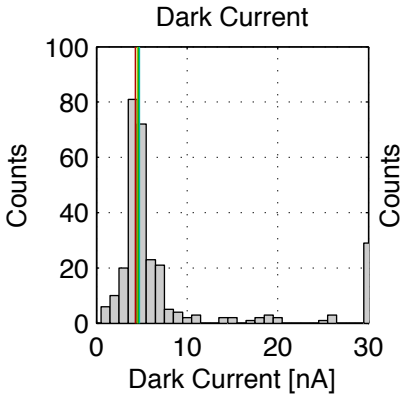
200~290Hz avg

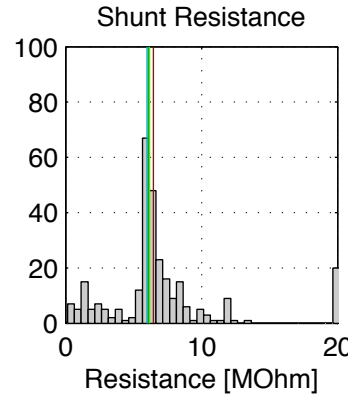
Elem1: 0.123 pA/rtHz
Elem2: 0.119 pA/rtHz
Elem3: 0.125 pA/rtHz
Elem4: 0.119 pA/rtHz

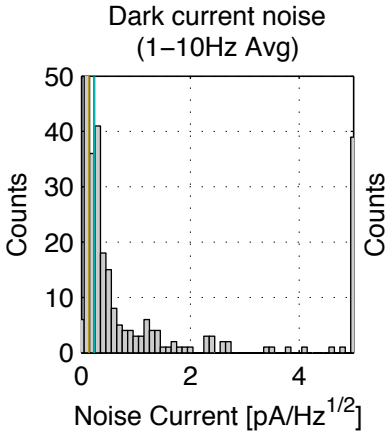
Total Penalty: −10

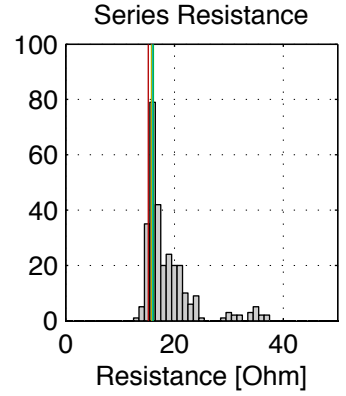


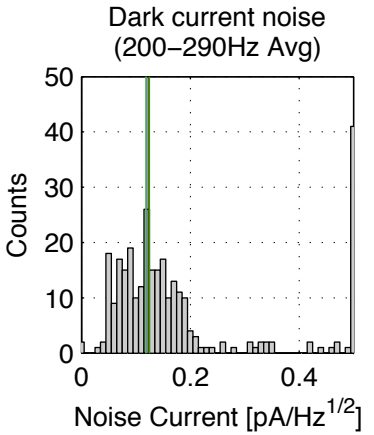


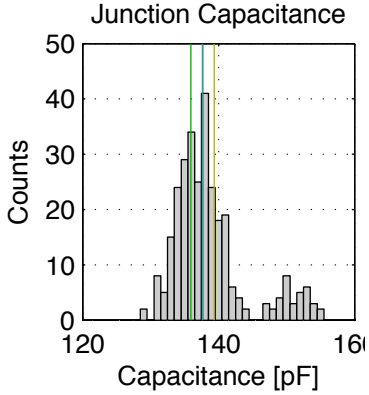












Errors / Warnings

Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #47

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 7.387 MOhm
Elem2: 7.010 MOhm
Elem3: 6.854 MOhm
Elem4: 6.718 MOhm

Series Resistance: (R_s):

Elem1: 17.3 Ohm
Elem2: 18.1 Ohm
Elem3: 18.5 Ohm
Elem4: 18.7 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 137.8 pF
Elem2: 139.2 pF
Elem3: 136.0 pF
Elem4: 138.2 pF

Dark Current [nA]:

Elem1: 4.46 nA
Elem2: 4.70 nA
Elem3: 4.89 nA
Elem4: 5.49 nA

Dark Noise:

1~10Hz avg

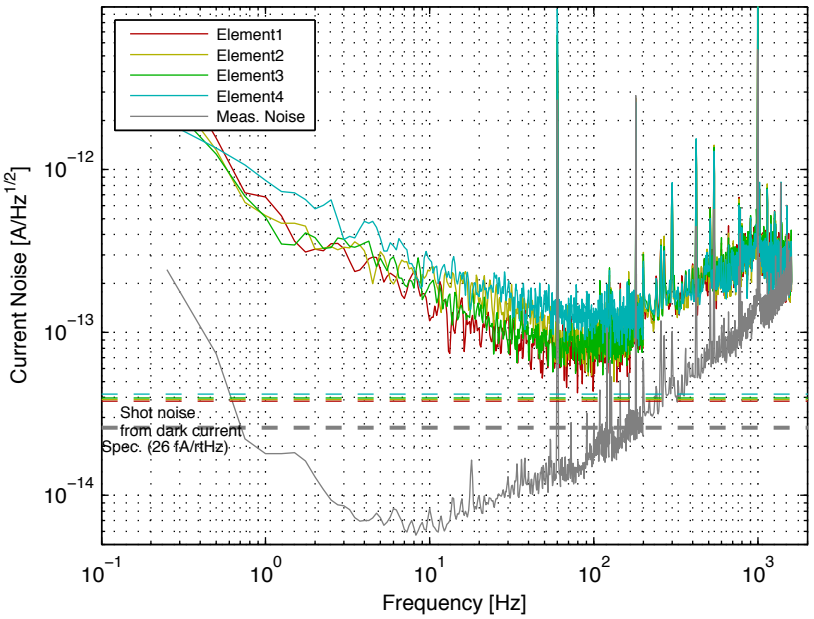
Elem1: 0.277 pA/rtHz
Elem2: 0.300 pA/rtHz
Elem3: 0.292 pA/rtHz
Elem4: 0.434 pA/rtHz

200~290Hz avg

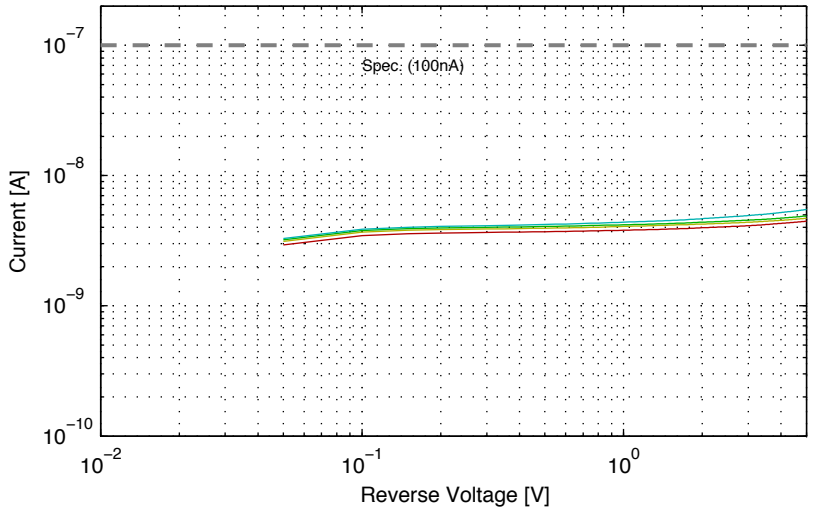
Elem1: 0.185 pA/rtHz
Elem2: 0.184 pA/rtHz
Elem3: 0.182 pA/rtHz
Elem4: 0.180 pA/rtHz

Total Penalty: –35

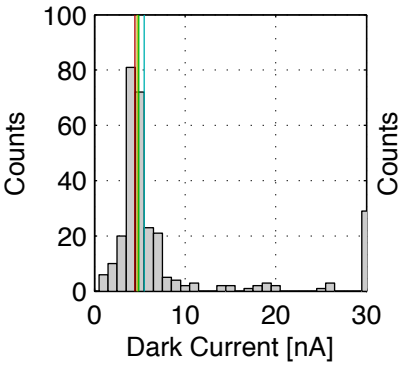
Dark noise: V_R = 5V



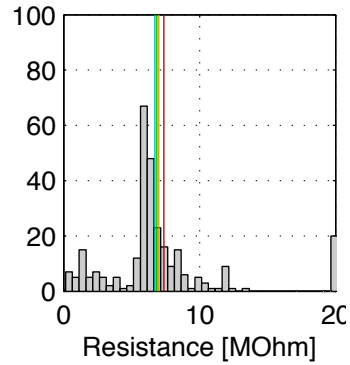
Dark current



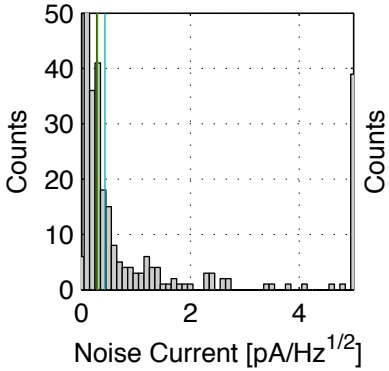
Dark Current



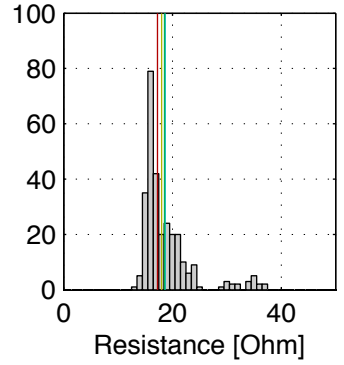
Shunt Resistance



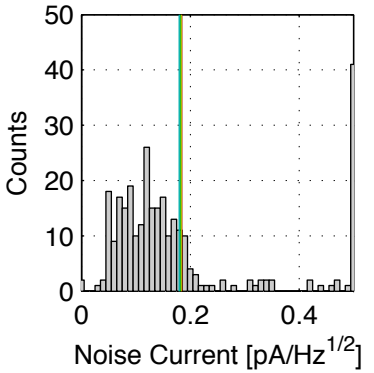
Dark current noise
(1–10Hz Avg)



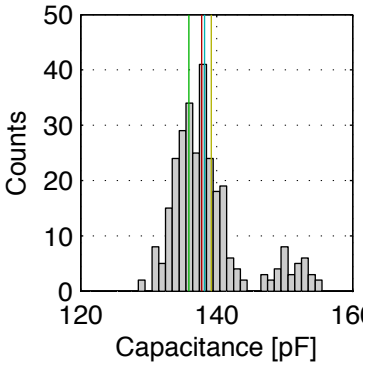
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #48

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 5.452 MOhm
Elem2: 5.201 MOhm
Elem3: 5.118 MOhm
Elem4: 5.075 MOhm

Series Resistance: (R_s):

Elem1: 21.1 Ohm
Elem2: 21.7 Ohm
Elem3: 22.1 Ohm
Elem4: 22.1 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 134.9 pF
Elem2: 136.7 pF
Elem3: 132.7 pF
Elem4: 134.8 pF

Dark Current [nA]:

Elem1: 7.45 nA
Elem2: 9.46 nA
Elem3: 9.45 nA
Elem4: 8.01 nA

Dark Noise:

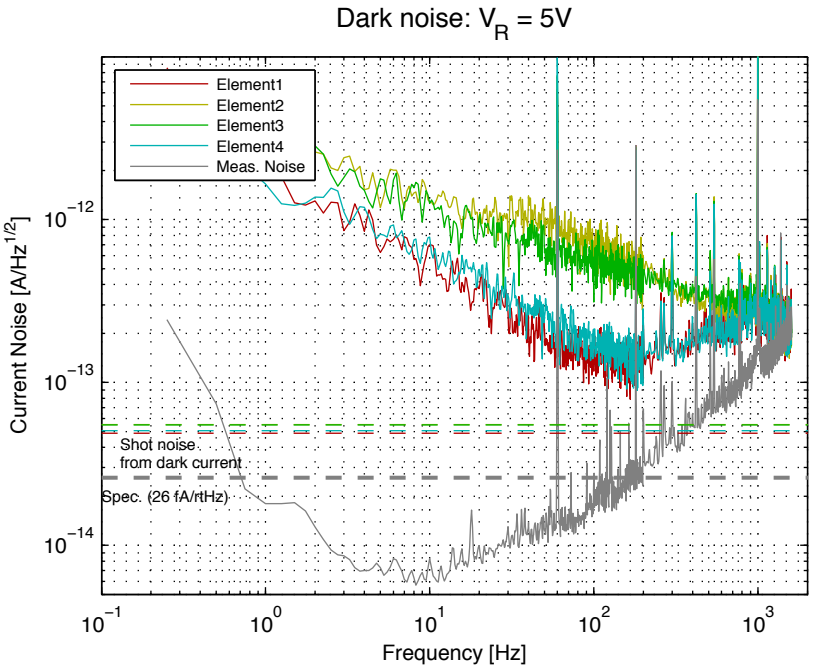
1~10Hz avg

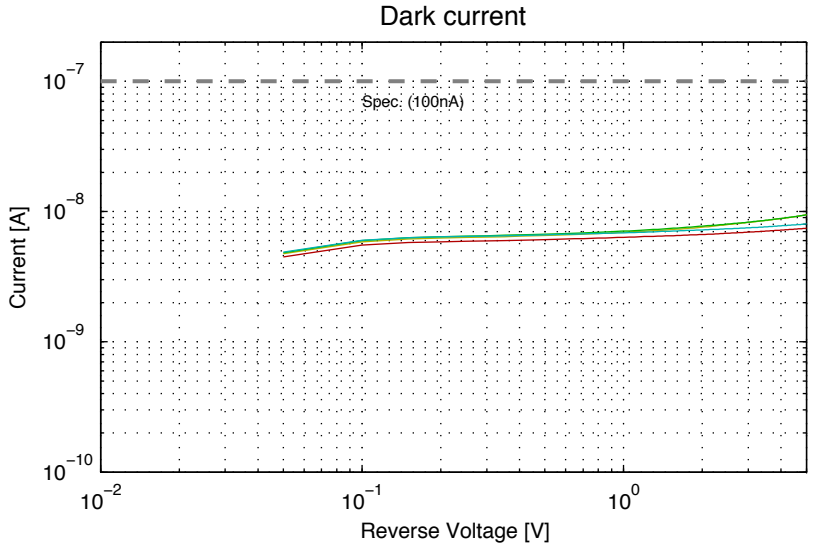
Elem1: 0.977 pA/rtHz
Elem2: 1.867 pA/rtHz
Elem3: 1.757 pA/rtHz
Elem4: 0.988 pA/rtHz

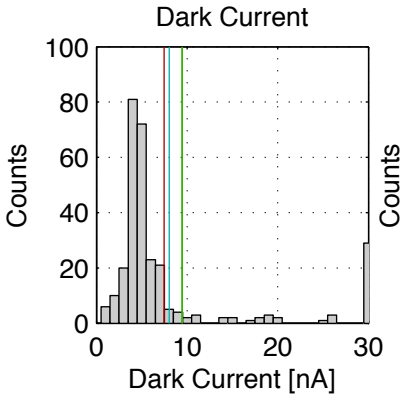
200~290Hz avg

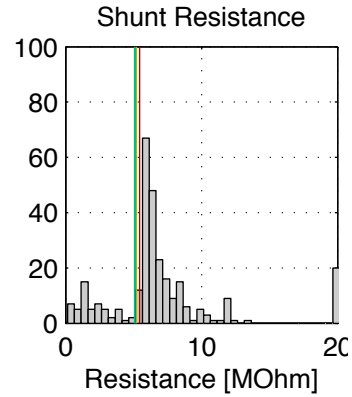
Elem1: 0.179 pA/rtHz
Elem2: 0.469 pA/rtHz
Elem3: 0.435 pA/rtHz
Elem4: 0.178 pA/rtHz

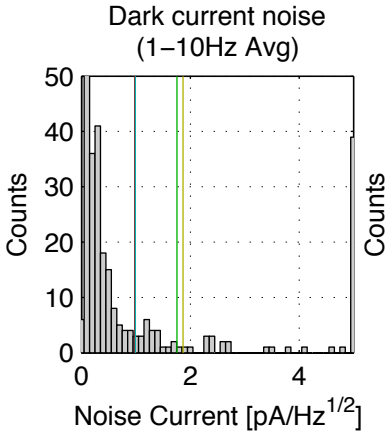
Total Penalty: −75

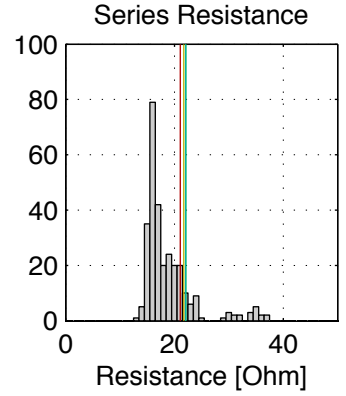


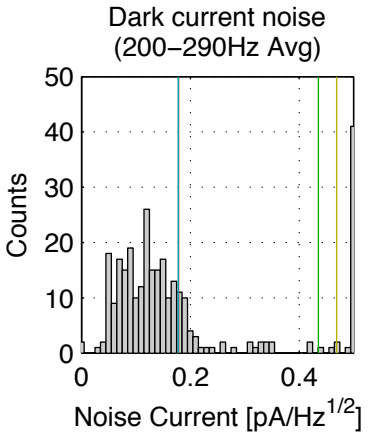


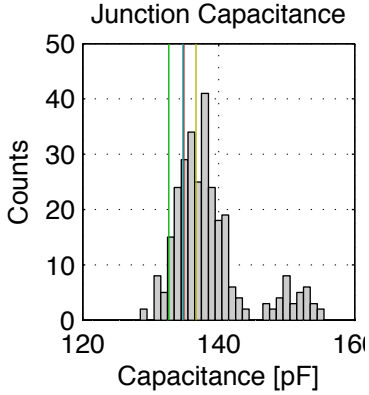












Errors / Warnings

Elem1: i_{noise} (LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise} (LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise} (LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise} (LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise} (HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise} (HF) > 180fA/rtHz (100nA shot)

QPD #49

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 3.083 MOhm
Elem2: 2.892 MOhm
Elem3: 2.773 MOhm
Elem4: 2.693 MOhm

Series Resistance: (R_s):

Elem1: 19.0 Ohm
Elem2: 19.6 Ohm
Elem3: 20.4 Ohm
Elem4: 20.3 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 135.7 pF
Elem2: 136.4 pF
Elem3: 133.5 pF
Elem4: 134.2 pF

Dark Current [nA]:

Elem1: 13.78 nA
Elem2: 15.04 nA
Elem3: 14.47 nA
Elem4: 15.43 nA

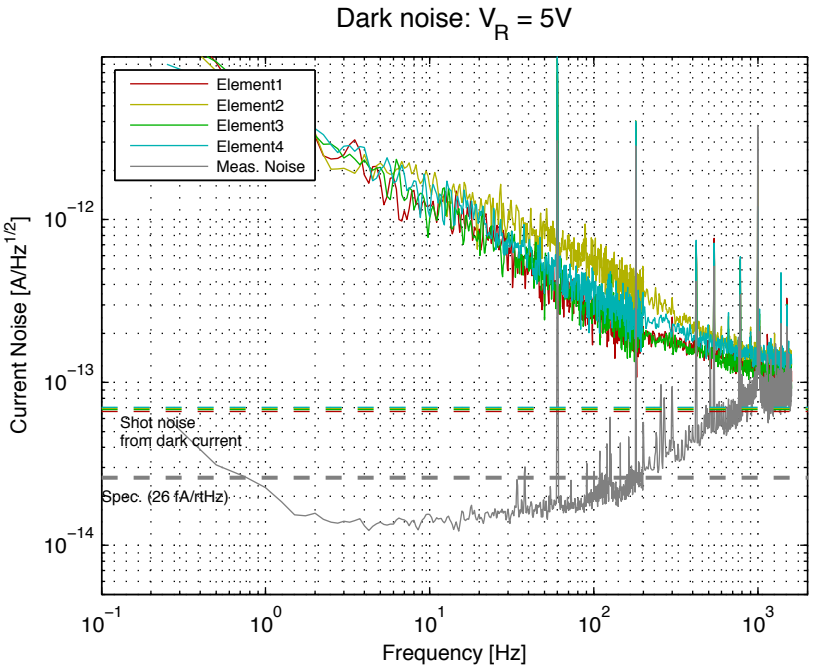
Dark Noise:
1~10Hz avg

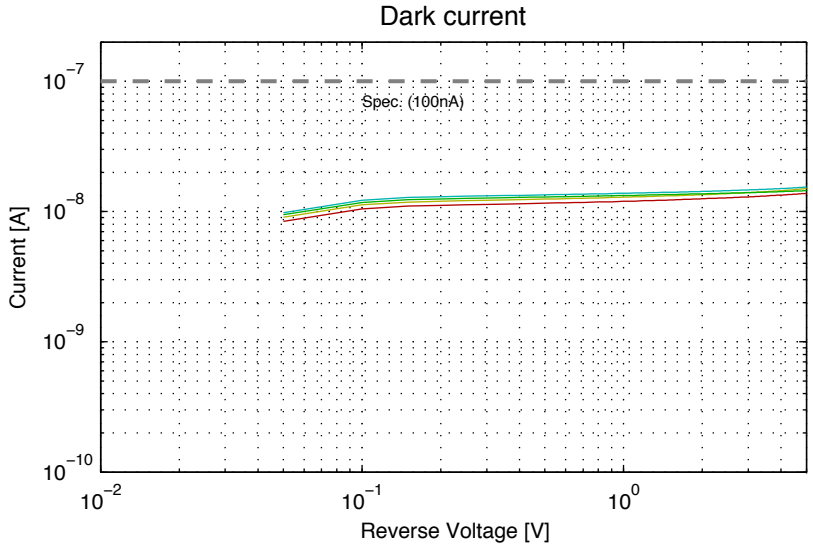
Elem1: 2.264 pA/rtHz
Elem2: 2.380 pA/rtHz
Elem3: 2.341 pA/rtHz
Elem4: 2.394 pA/rtHz

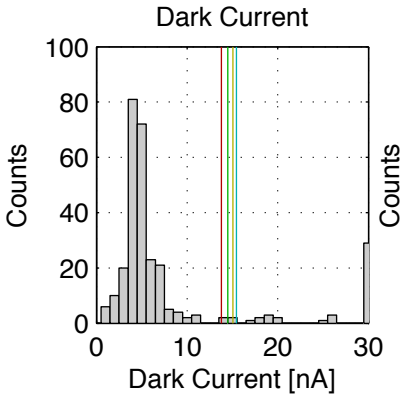
200~290Hz avg

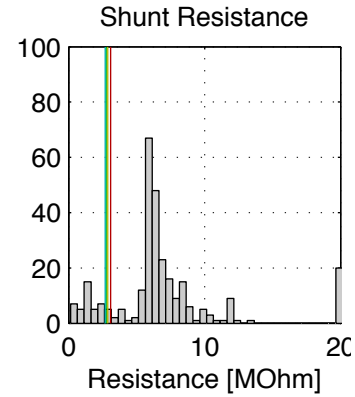
Elem1: 0.189 pA/rtHz
Elem2: 0.313 pA/rtHz
Elem3: 0.186 pA/rtHz
Elem4: 0.242 pA/rtHz

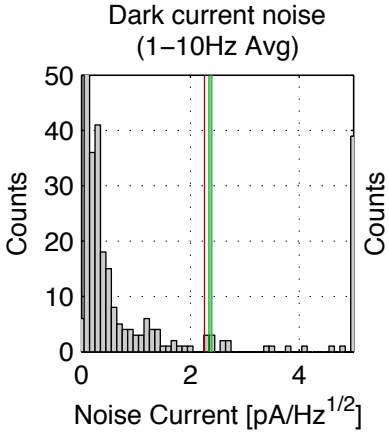
Total Penalty: –240

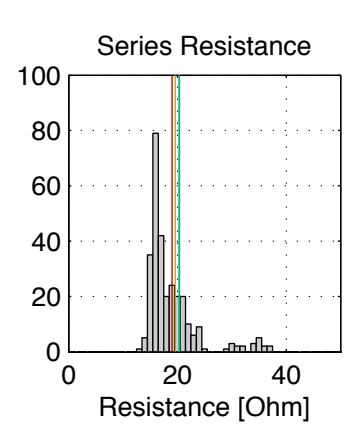


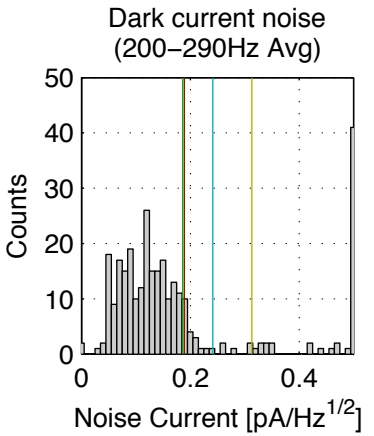


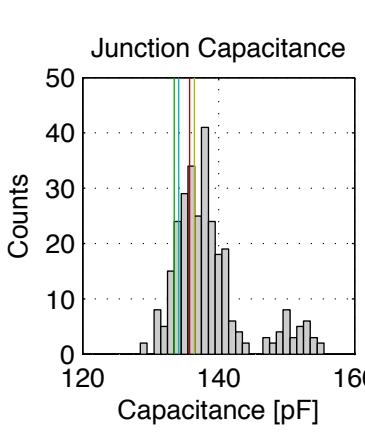












Errors / Warnings

Elem1: i_{dark} > 10nA
Elem2: i_{dark} > 10nA
Elem3: i_{dark} > 10nA
Elem4: i_{dark} > 10nA
Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #50

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.536 MOhm
Elem2: 6.408 MOhm
Elem3: 6.361 MOhm
Elem4: 6.272 MOhm

Series Resistance: (R_s):

Elem1: 15.5 Ohm
Elem2: 16.3 Ohm
Elem3: 16.9 Ohm
Elem4: 16.8 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 141.0 pF
Elem2: 142.1 pF
Elem3: 138.8 pF
Elem4: 141.1 pF

Dark Current [nA]:

Elem1: 4.36 nA
Elem2: 4.49 nA
Elem3: 4.58 nA
Elem4: 4.59 nA

Dark Noise:

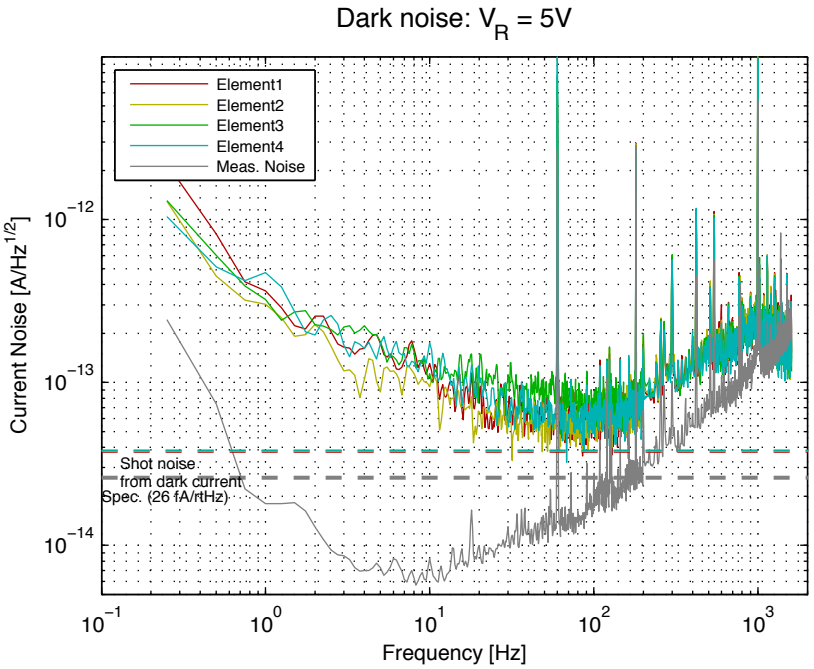
1~10Hz avg

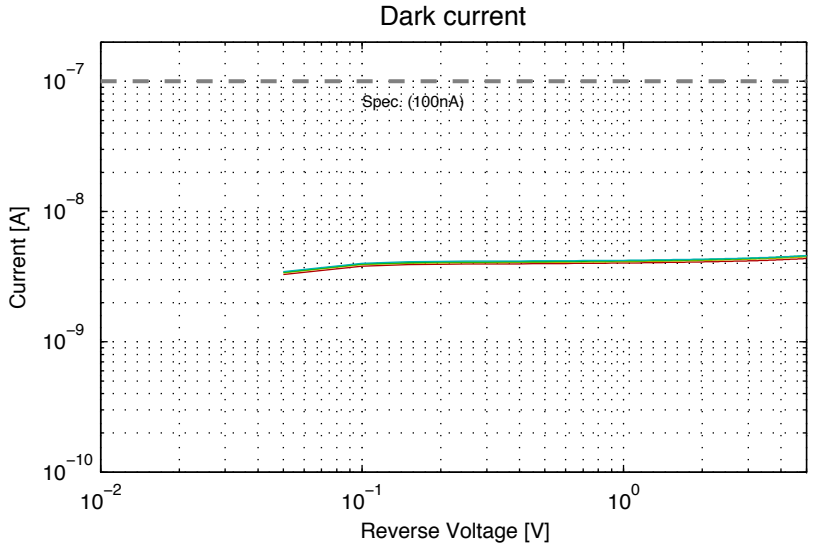
Elem1: 0.178 pA/rtHz
Elem2: 0.140 pA/rtHz
Elem3: 0.186 pA/rtHz
Elem4: 0.193 pA/rtHz

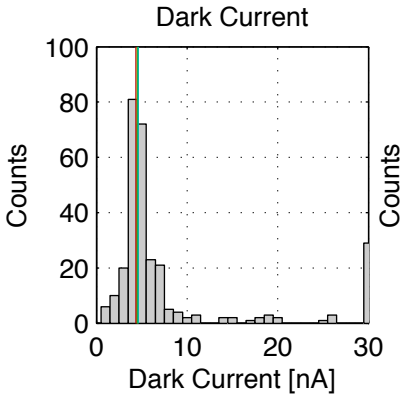
200~290Hz avg

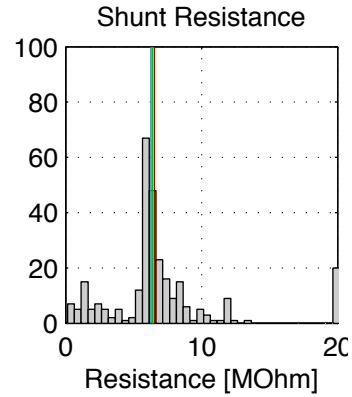
Elem1: 0.119 pA/rtHz
Elem2: 0.124 pA/rtHz
Elem3: 0.127 pA/rtHz
Elem4: 0.118 pA/rtHz

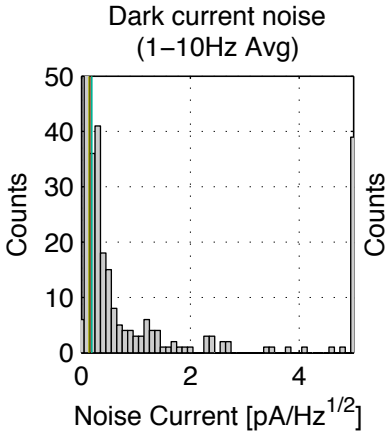
Total Penalty: −10

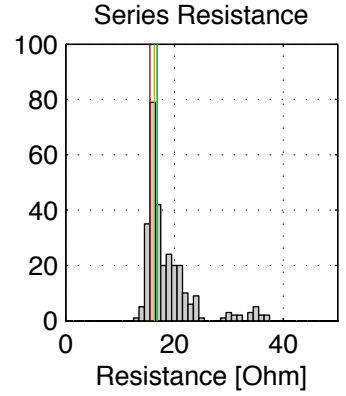


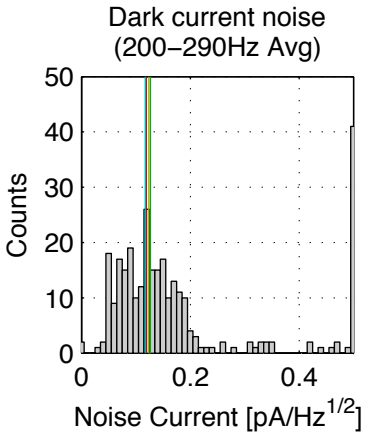


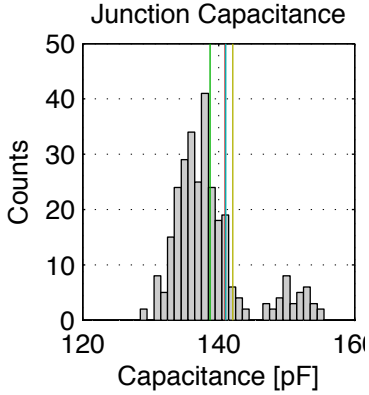












Errors / Warnings

Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #51

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 10.121 MOhm
Elem2: 9.156 MOhm
Elem3: 8.727 MOhm
Elem4: 8.305 MOhm

Series Resistance: (R_s):

Elem1: 21.0 Ohm
Elem2: 20.9 Ohm
Elem3: 21.5 Ohm
Elem4: 21.6 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 132.9 pF
Elem2: 134.9 pF
Elem3: 131.1 pF
Elem4: 133.0 pF

Dark Current [nA]:

Elem1: 3.70 nA
Elem2: 3.80 nA
Elem3: 4.12 nA
Elem4: 4.35 nA

Dark Noise:

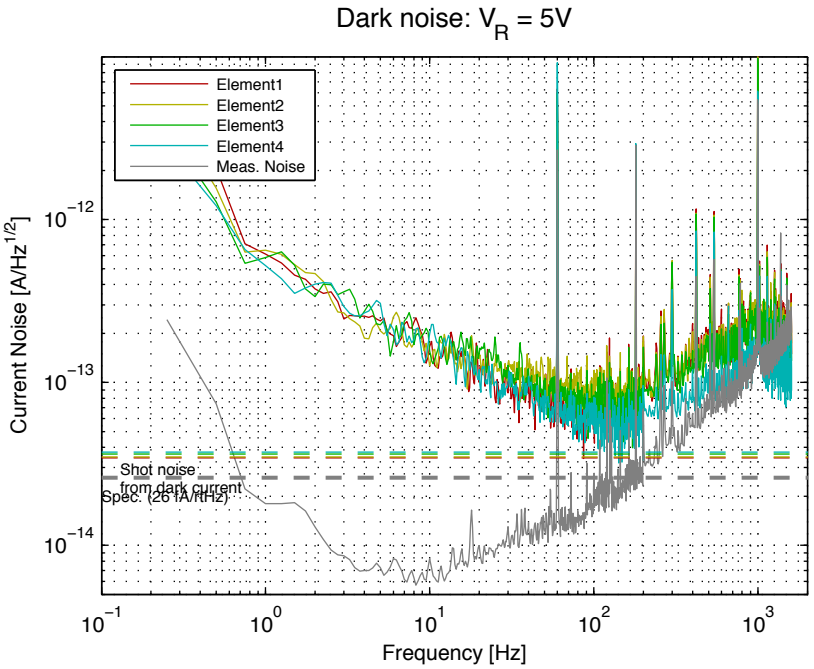
1~10Hz avg

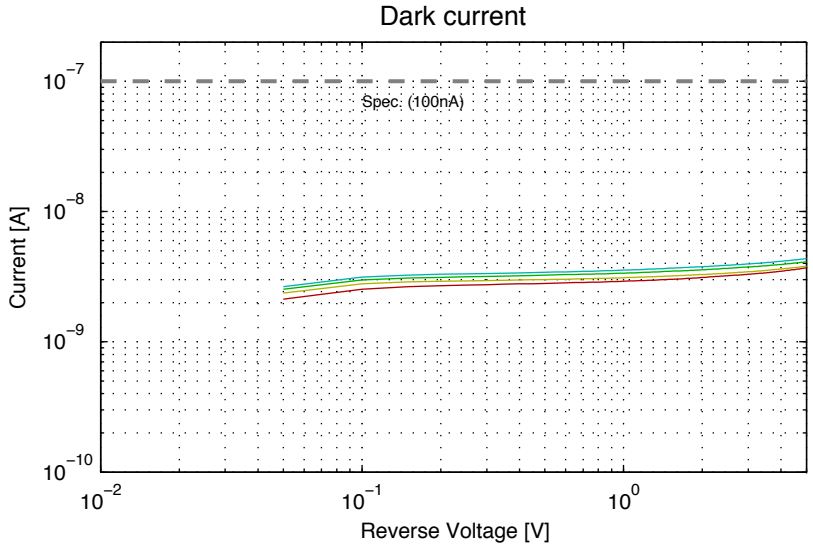
Elem1: 0.282 pA/rtHz
Elem2: 0.289 pA/rtHz
Elem3: 0.301 pA/rtHz
Elem4: 0.275 pA/rtHz

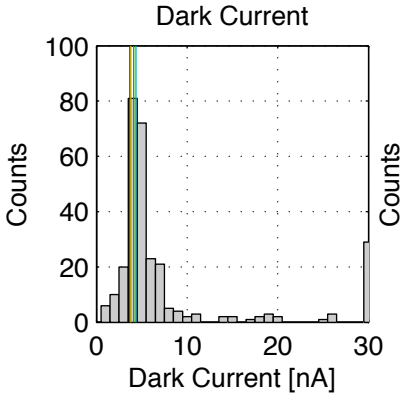
200~290Hz avg

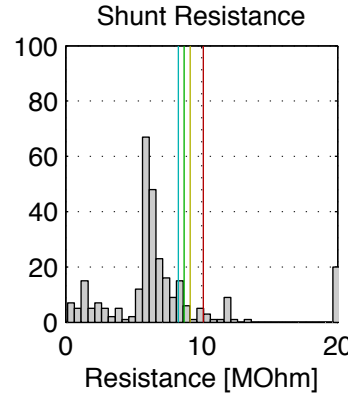
Elem1: 0.135 pA/rtHz
Elem2: 0.135 pA/rtHz
Elem3: 0.120 pA/rtHz
Elem4: 0.081 pA/rtHz

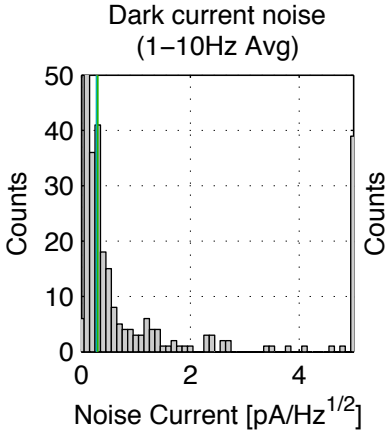
Total Penalty: –20

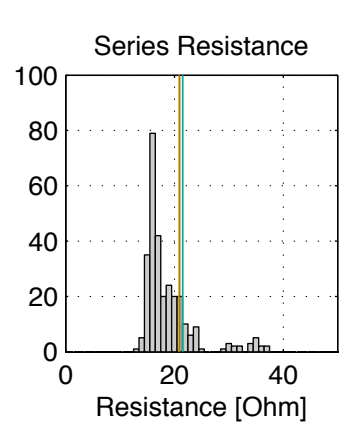


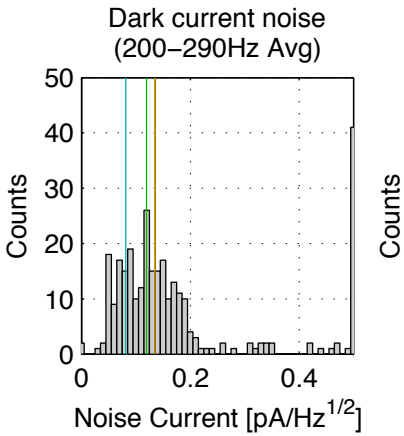


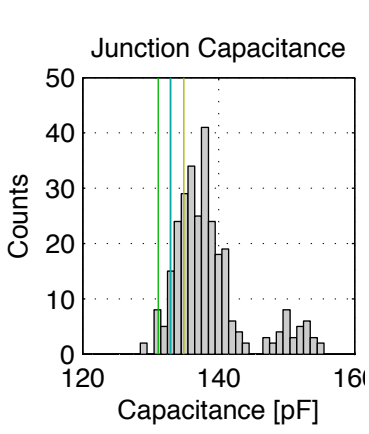












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #52

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.233 MOhm
Elem2: 6.001 MOhm
Elem3: 5.906 MOhm
Elem4: 5.810 MOhm

Series Resistance: (R_s):

Elem1: 15.1 Ohm
Elem2: 15.7 Ohm
Elem3: 16.2 Ohm
Elem4: 16.2 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 133.6 pF
Elem2: 134.9 pF
Elem3: 131.5 pF
Elem4: 133.2 pF

Dark Current [nA]:

Elem1: 4.58 nA
Elem2: 4.93 nA
Elem3: 4.79 nA
Elem4: 4.91 nA

Dark Noise:

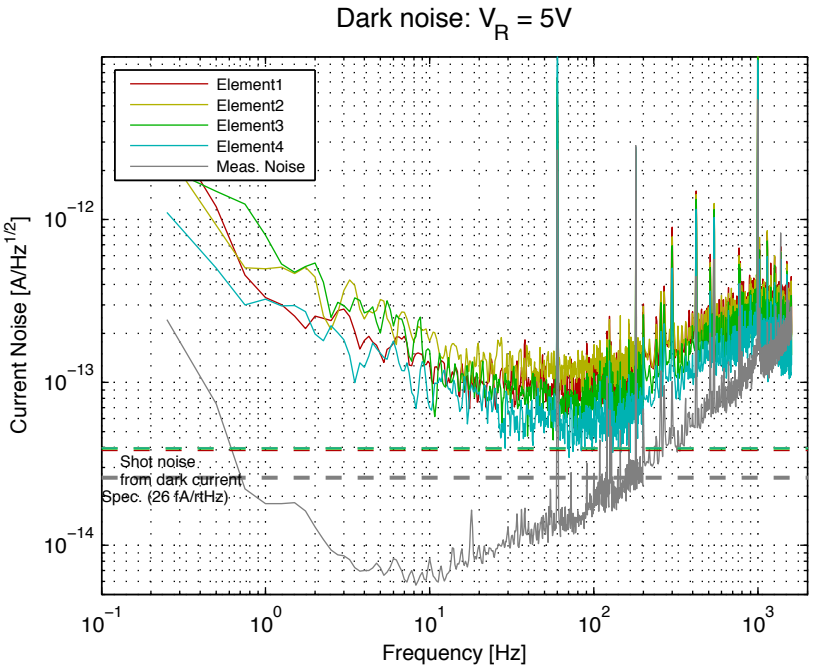
1~10Hz avg

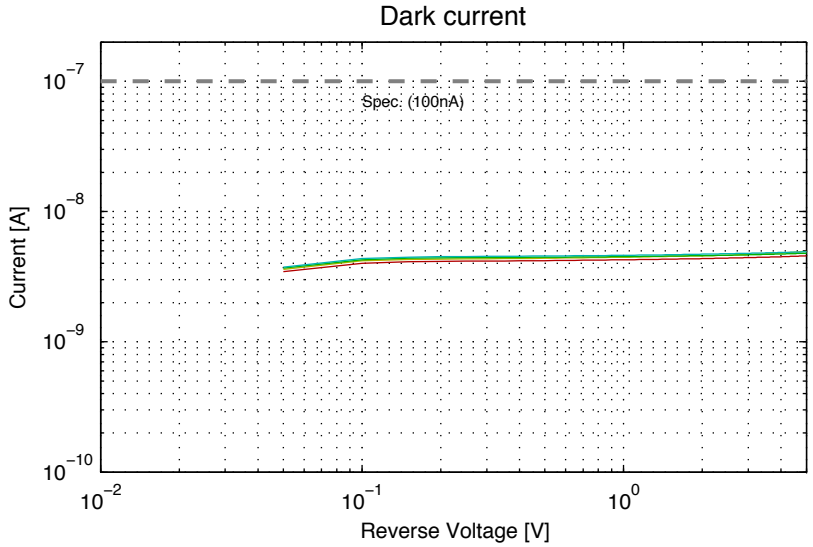
Elem1: 0.196 pA/rtHz
Elem2: 0.299 pA/rtHz
Elem3: 0.314 pA/rtHz
Elem4: 0.165 pA/rtHz

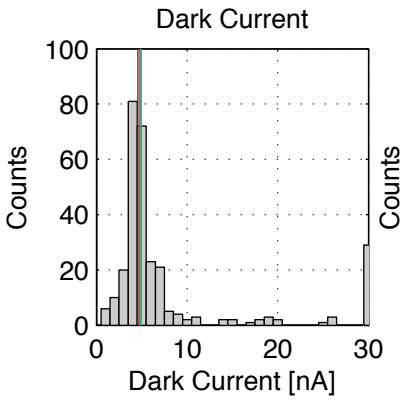
200~290Hz avg

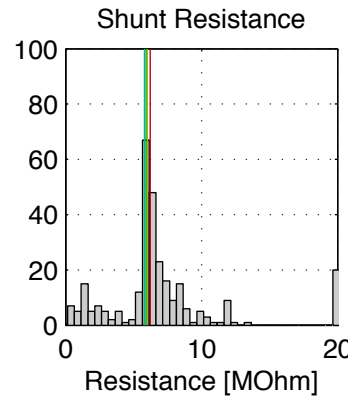
Elem1: 0.193 pA/rtHz
Elem2: 0.196 pA/rtHz
Elem3: 0.154 pA/rtHz
Elem4: 0.113 pA/rtHz

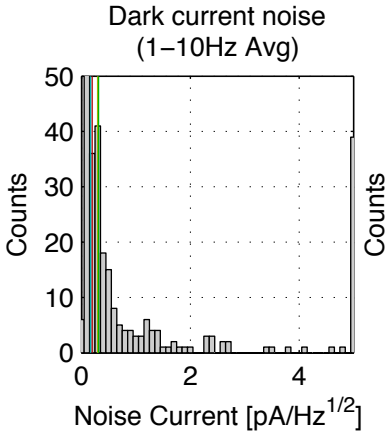
Total Penalty: –25

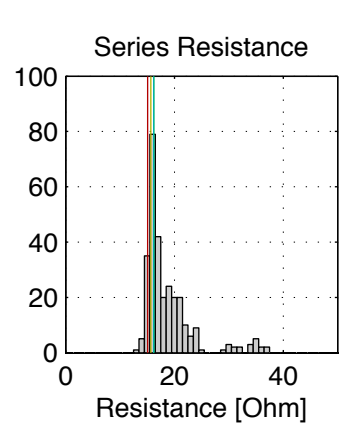


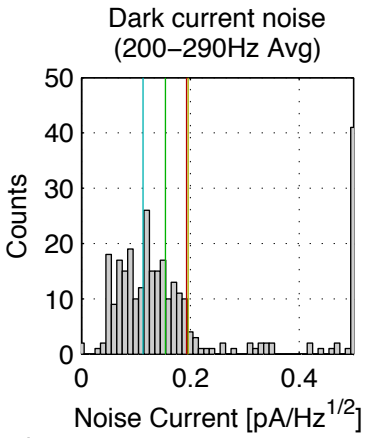


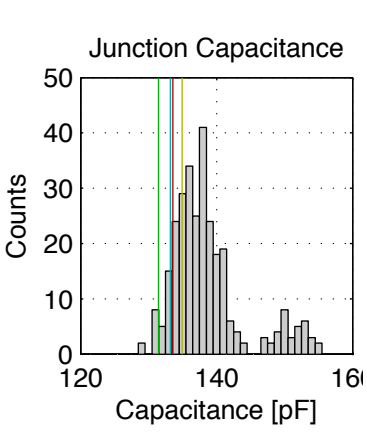












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #53

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.607 MOhm
Elem2: 6.162 MOhm
Elem3: 5.953 MOhm
Elem4: 5.789 MOhm

Series Resistance: (R_s):

Elem1: 15.9 Ohm
Elem2: 16.0 Ohm
Elem3: 16.9 Ohm
Elem4: 16.4 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 137.1 pF
Elem2: 137.6 pF
Elem3: 134.7 pF
Elem4: 136.3 pF

Dark Current [nA]:

Elem1: 4.08 nA
Elem2: 4.63 nA
Elem3: 4.61 nA
Elem4: 4.71 nA

Dark Noise:

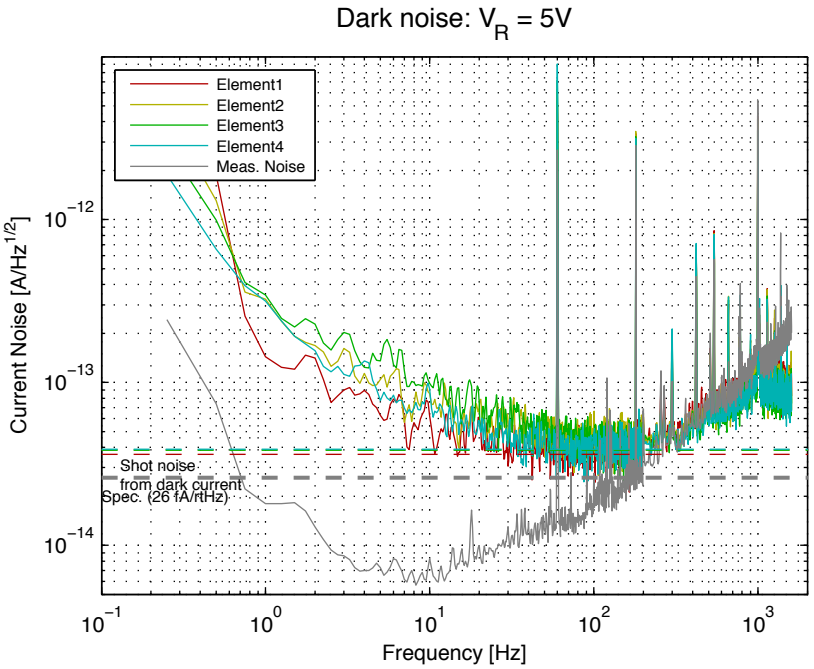
1~10Hz avg

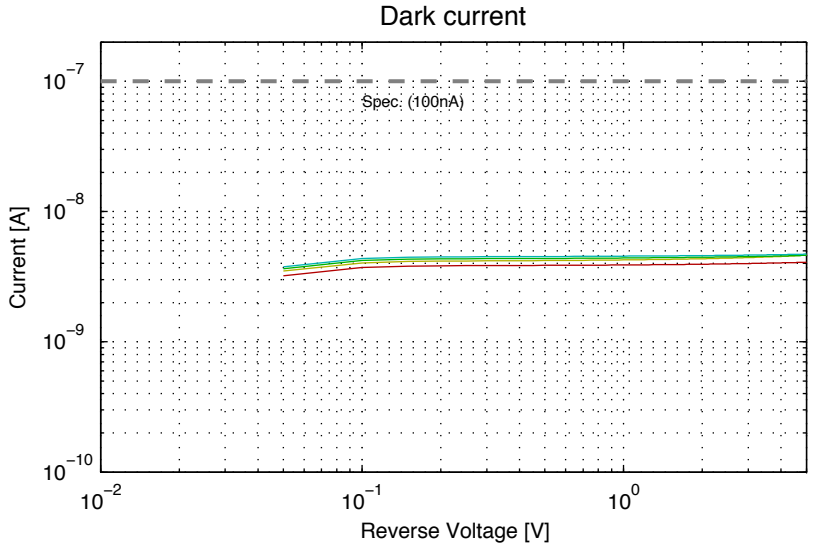
Elem1: 0.084 pA/rtHz
Elem2: 0.128 pA/rtHz
Elem3: 0.160 pA/rtHz
Elem4: 0.120 pA/rtHz

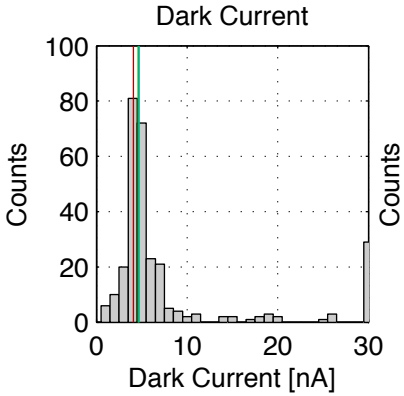
200~290Hz avg

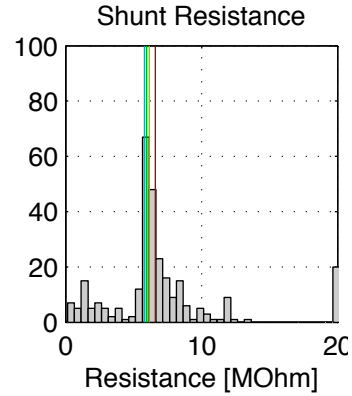
Elem1: 0.053 pA/rtHz
Elem2: 0.051 pA/rtHz
Elem3: 0.047 pA/rtHz
Elem4: 0.048 pA/rtHz

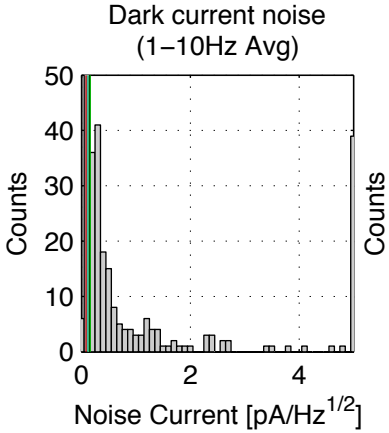
Total Penalty: 0

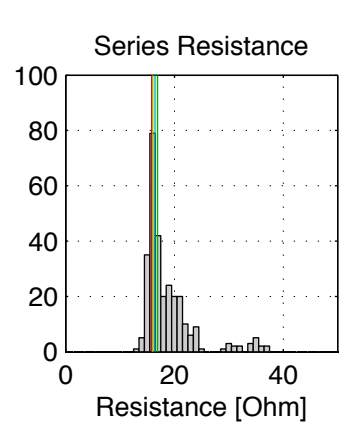


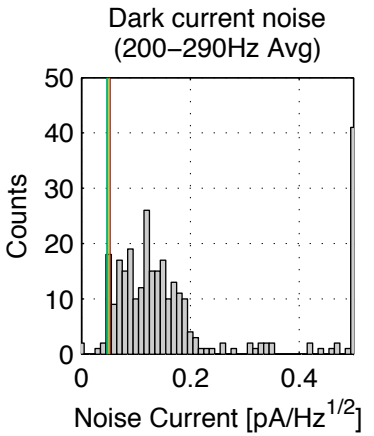


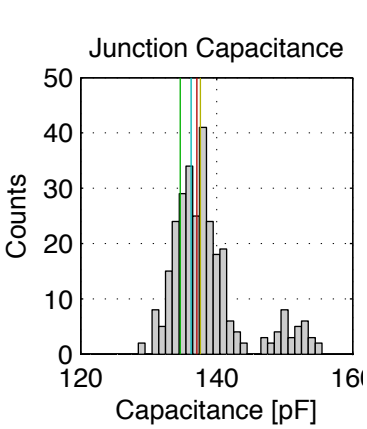












Errors / Warnings

QPD #54

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 8.641 MOhm
Elem2: 8.259 MOhm
Elem3: 8.149 MOhm
Elem4: 7.985 MOhm

Series Resistance: (R_s):

Elem1: 21.8 Ohm
Elem2: 21.8 Ohm
Elem3: 22.6 Ohm
Elem4: 22.3 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 134.2 pF
Elem2: 134.8 pF
Elem3: 131.1 pF
Elem4: 132.7 pF

Dark Current [nA]:

Elem1: 4.40 nA
Elem2: 4.48 nA
Elem3: 4.57 nA
Elem4: 4.64 nA

Dark Noise:

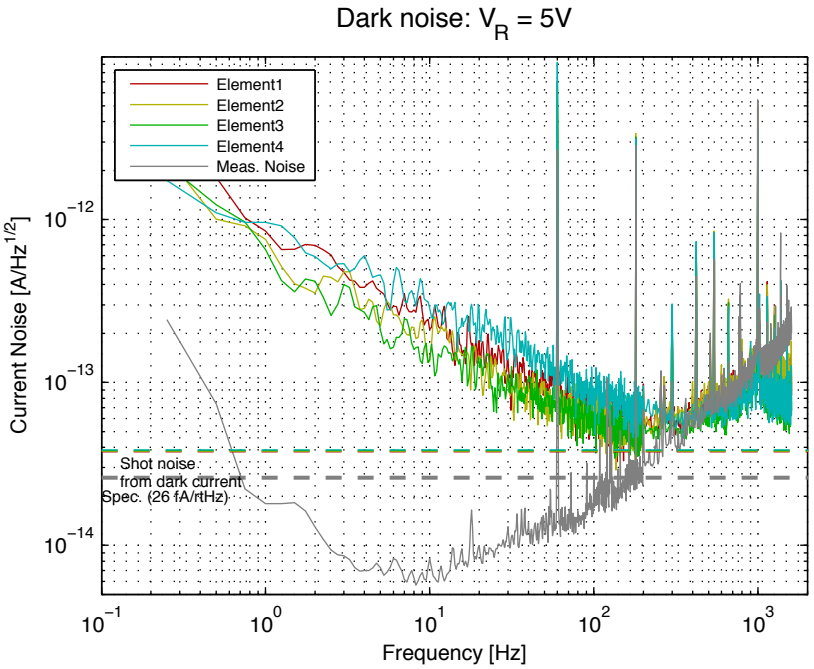
1~10Hz avg

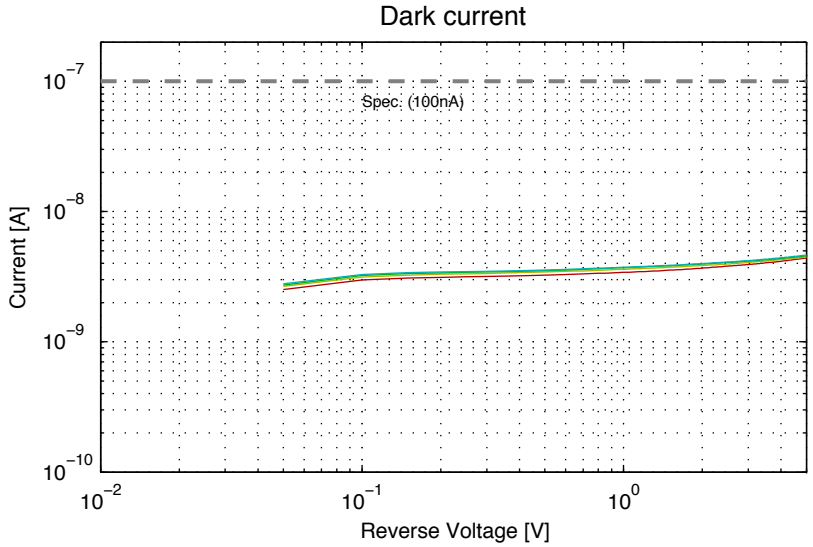
Elem1: 0.427 pA/rtHz
Elem2: 0.326 pA/rtHz
Elem3: 0.276 pA/rtHz
Elem4: 0.491 pA/rtHz

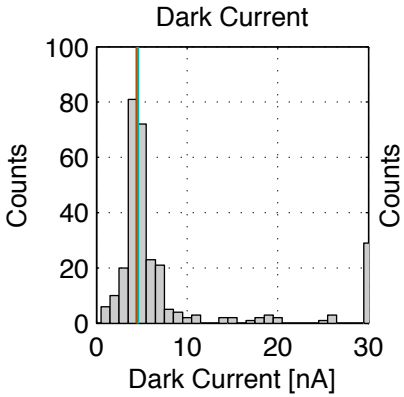
200~290Hz avg

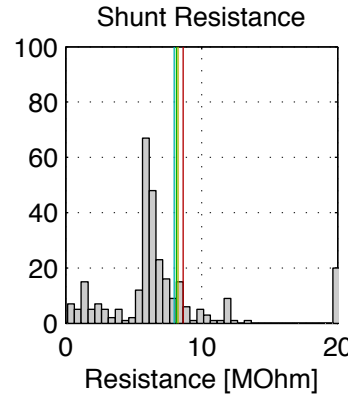
Elem1: 0.066 pA/rtHz
Elem2: 0.065 pA/rtHz
Elem3: 0.054 pA/rtHz
Elem4: 0.070 pA/rtHz

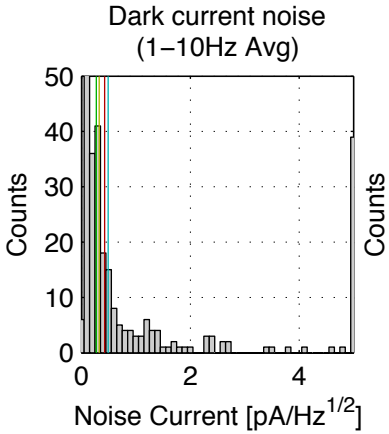
Total Penalty: –20

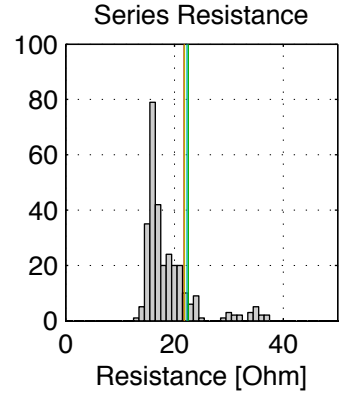


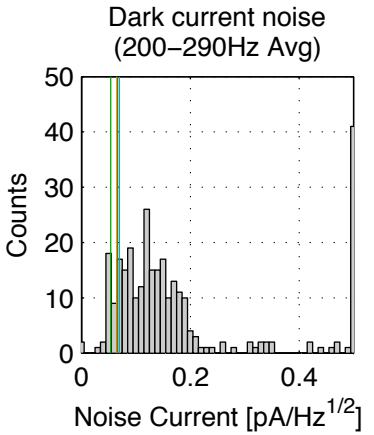


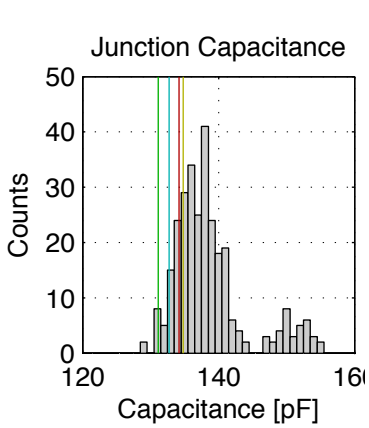












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #55

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.379 MOhm
Elem2: 6.047 MOhm
Elem3: 5.911 MOhm
Elem4: 5.812 MOhm

Series Resistance: (R_s):

Elem1: 15.9 Ohm
Elem2: 16.4 Ohm
Elem3: 16.9 Ohm
Elem4: 16.7 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 137.5 pF
Elem2: 136.8 pF
Elem3: 134.5 pF
Elem4: 136.0 pF

Dark Current [nA]:

Elem1: 4.36 nA
Elem2: 4.55 nA
Elem3: 4.64 nA
Elem4: 4.76 nA

Dark Noise:

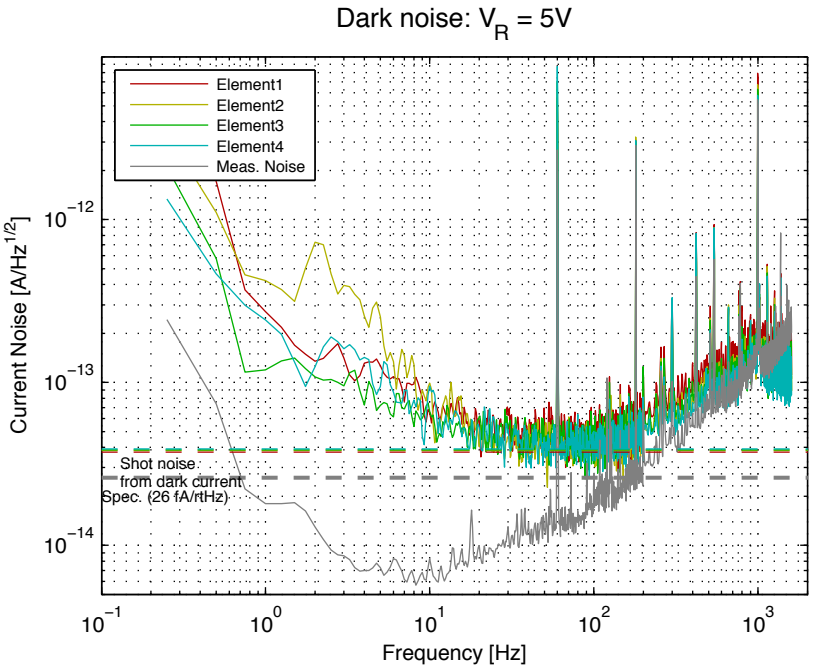
1~10Hz avg

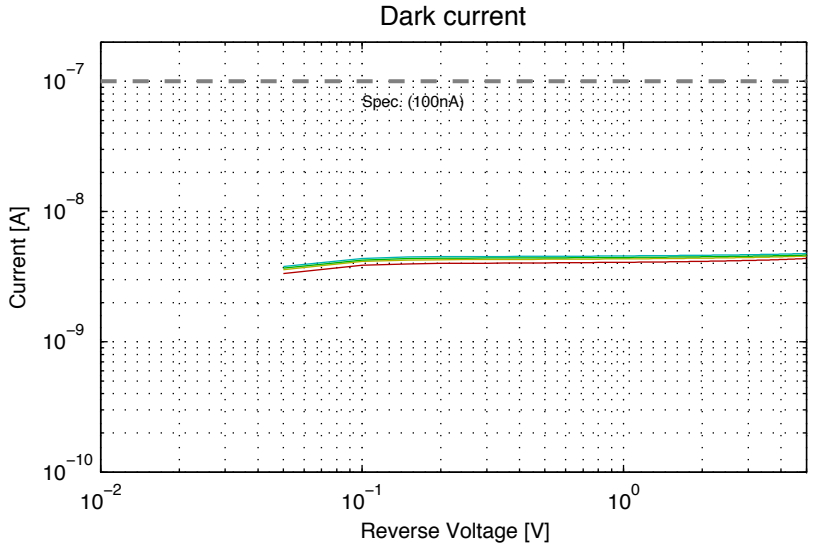
Elem1: 0.125 pA/rtHz
Elem2: 0.294 pA/rtHz
Elem3: 0.088 pA/rtHz
Elem4: 0.121 pA/rtHz

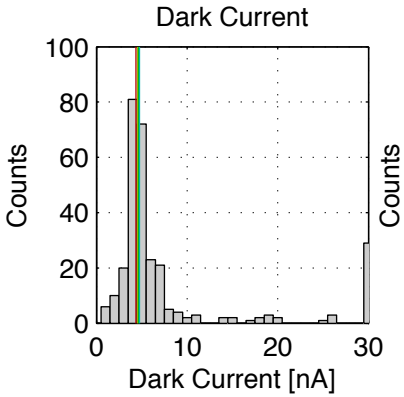
200~290Hz avg

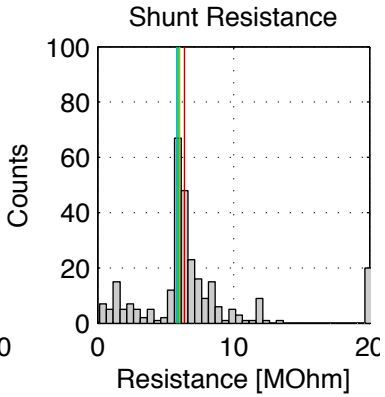
Elem1: 0.086 pA/rtHz
Elem2: 0.073 pA/rtHz
Elem3: 0.073 pA/rtHz
Elem4: 0.064 pA/rtHz

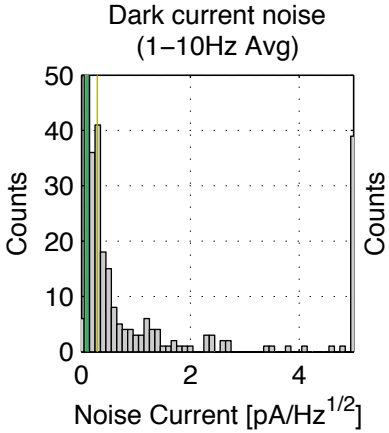
Total Penalty: −5

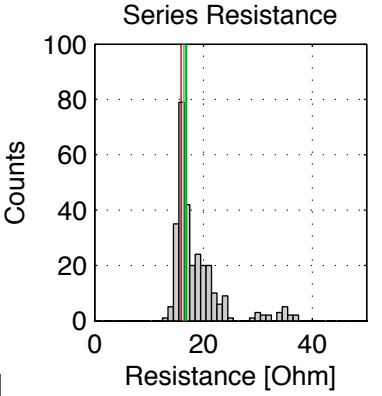


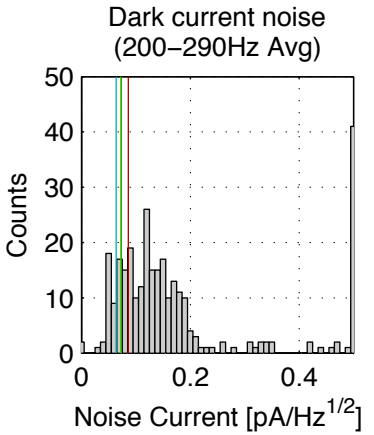


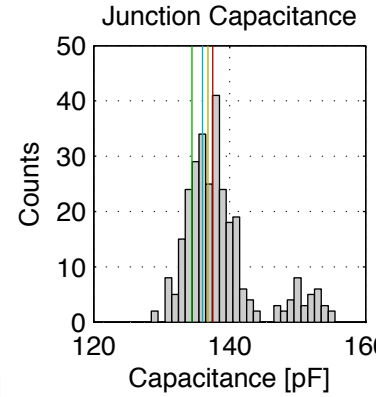












Errors / Warnings

Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #56

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 8.891 MOhm
Elem2: 8.395 MOhm
Elem3: 8.237 MOhm
Elem4: 8.022 MOhm

Series Resistance: (R_s):

Elem1: 20.7 Ohm
Elem2: 21.0 Ohm
Elem3: 22.0 Ohm
Elem4: 21.3 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 135.4 pF
Elem2: 136.2 pF
Elem3: 132.6 pF
Elem4: 134.1 pF

Dark Current [nA]:

Elem1: 3.68 nA
Elem2: 3.96 nA
Elem3: 4.08 nA
Elem4: 4.17 nA

Dark Noise:

1~10Hz avg

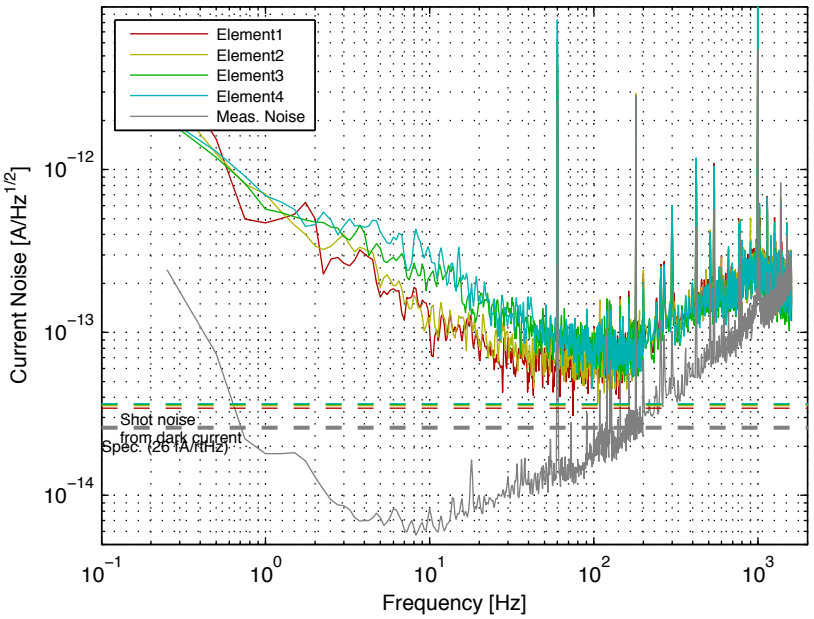
Elem1: 0.274 pA/rtHz
Elem2: 0.288 pA/rtHz
Elem3: 0.348 pA/rtHz
Elem4: 0.422 pA/rtHz

200~290Hz avg

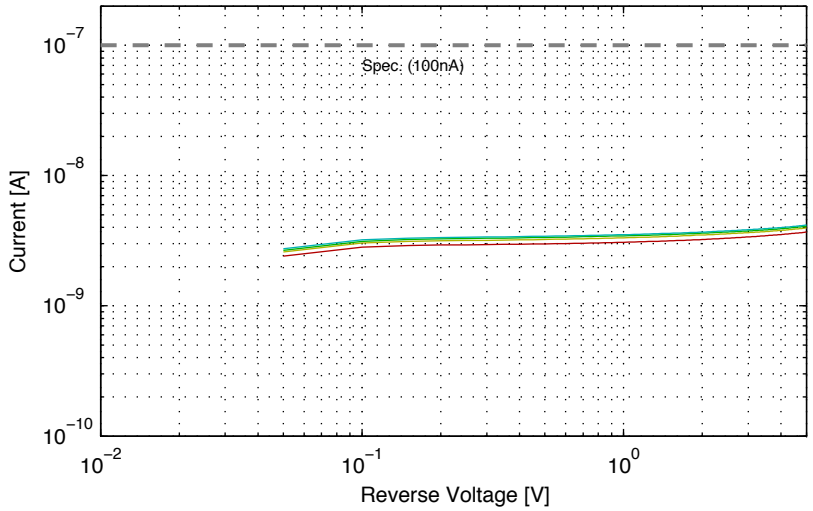
Elem1: 0.136 pA/rtHz
Elem2: 0.135 pA/rtHz
Elem3: 0.121 pA/rtHz
Elem4: 0.131 pA/rtHz

Total Penalty: –20

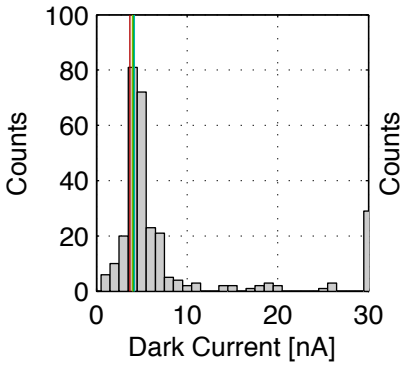
Dark noise: V_R = 5V



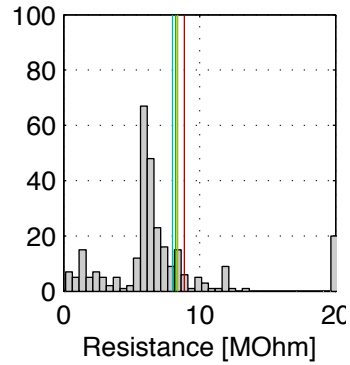
Dark current



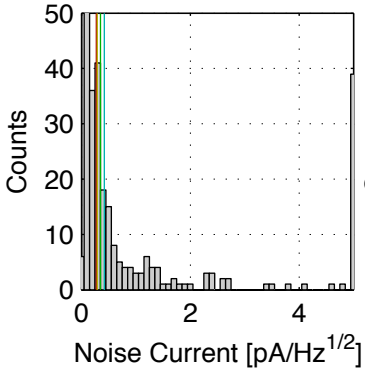
Dark Current



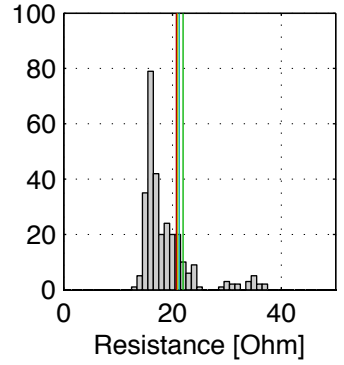
Shunt Resistance



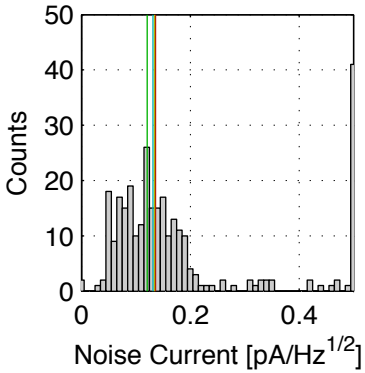
Dark current noise (1–10Hz Avg)



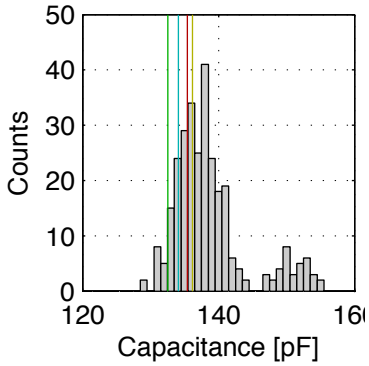
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #57

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.962 MOhm
Elem2: 6.540 MOhm
Elem3: 6.357 MOhm
Elem4: 6.208 MOhm

Series Resistance: (R_s):

Elem1: 16.0 Ohm
Elem2: 16.7 Ohm
Elem3: 17.0 Ohm
Elem4: 17.0 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 140.7 pF
Elem2: 141.1 pF
Elem3: 138.2 pF
Elem4: 140.4 pF

Dark Current [nA]:

Elem1: 3.97 nA
Elem2: 4.26 nA
Elem3: 4.37 nA
Elem4: 4.48 nA

Dark Noise:

1~10Hz avg

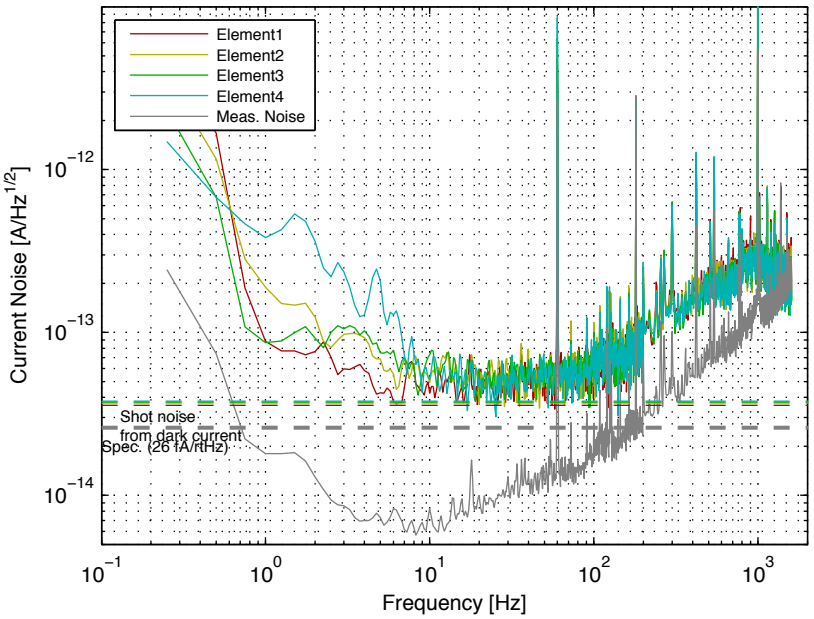
Elem1: 0.057 pA/rtHz
Elem2: 0.087 pA/rtHz
Elem3: 0.081 pA/rtHz
Elem4: 0.211 pA/rtHz

200~290Hz avg

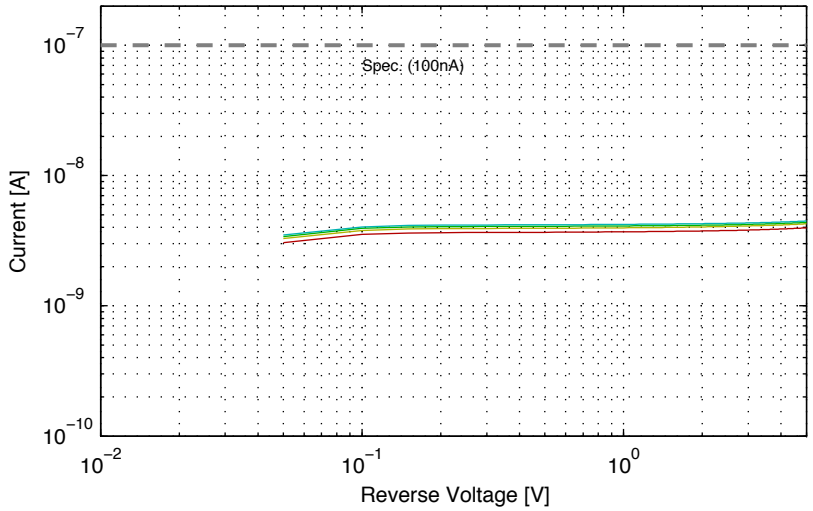
Elem1: 0.153 pA/rtHz
Elem2: 0.149 pA/rtHz
Elem3: 0.148 pA/rtHz
Elem4: 0.147 pA/rtHz

Total Penalty: −5

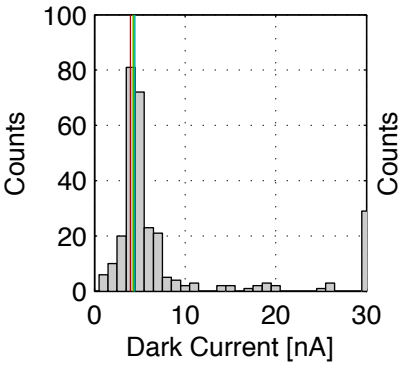
Dark noise: V_R = 5V



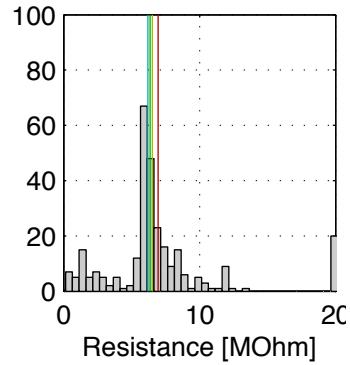
Dark current



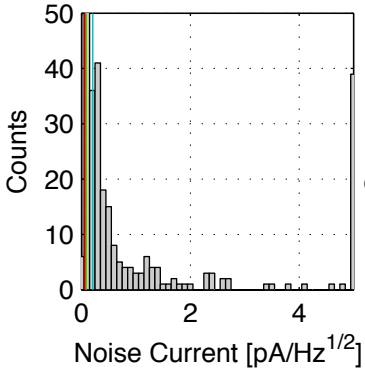
Dark Current



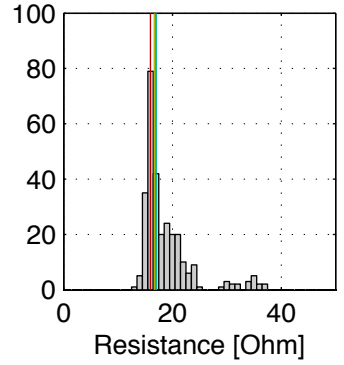
Shunt Resistance



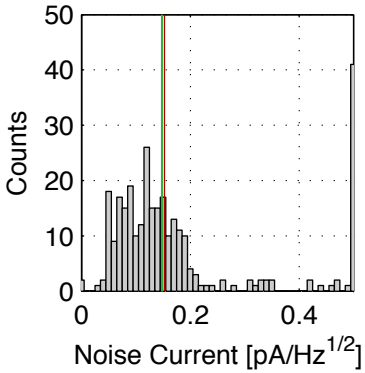
Dark current noise (1–10Hz Avg)



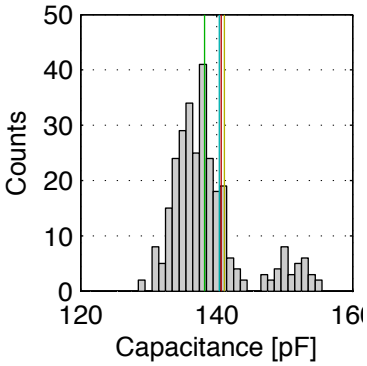
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #58

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.629 MOhm
Elem2: 6.392 MOhm
Elem3: 6.277 MOhm
Elem4: 6.169 MOhm

Series Resistance: (R_s):

Elem1: 15.2 Ohm
Elem2: 15.8 Ohm
Elem3: 16.2 Ohm
Elem4: 16.2 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 140.7 pF
Elem2: 141.8 pF
Elem3: 138.1 pF
Elem4: 140.6 pF

Dark Current [nA]:

Elem1: 4.13 nA
Elem2: 4.28 nA
Elem3: 4.37 nA
Elem4: 4.47 nA

Dark Noise:

1~10Hz avg

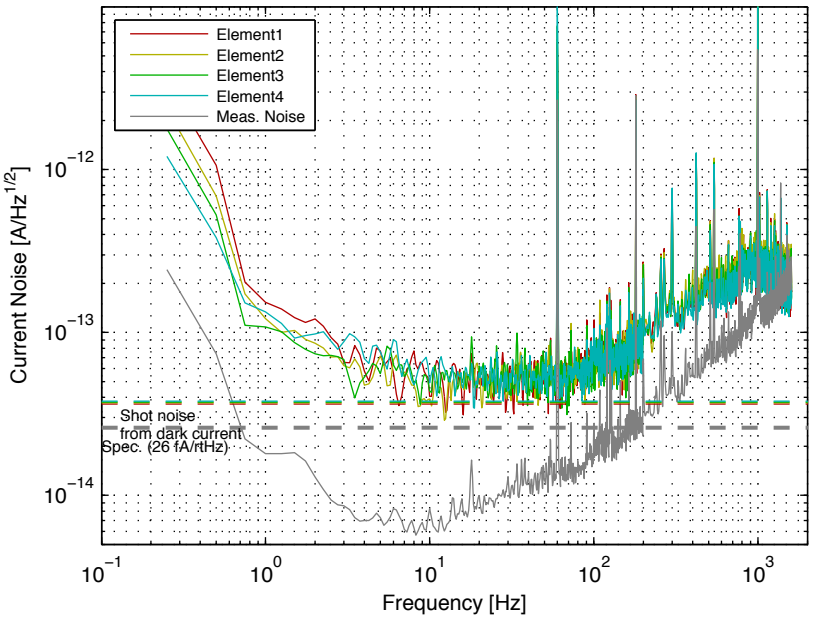
Elem1: 0.078 pA/rtHz
Elem2: 0.064 pA/rtHz
Elem3: 0.064 pA/rtHz
Elem4: 0.079 pA/rtHz

200~290Hz avg

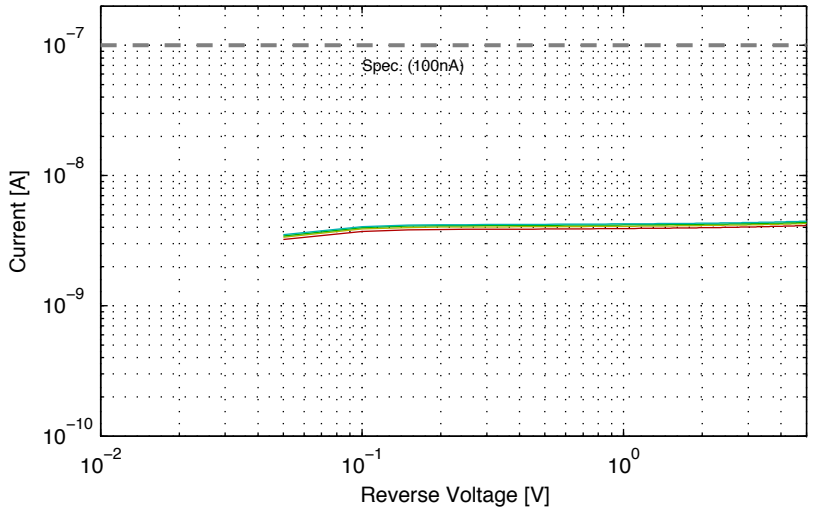
Elem1: 0.153 pA/rtHz
Elem2: 0.155 pA/rtHz
Elem3: 0.149 pA/rtHz
Elem4: 0.143 pA/rtHz

Total Penalty: 0

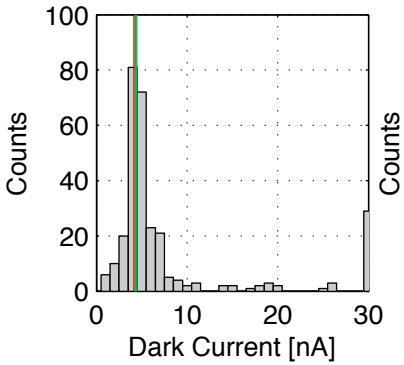
Dark noise: V_R = 5V



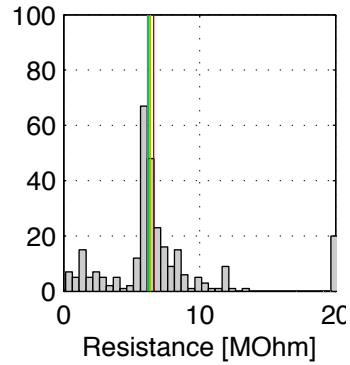
Dark current



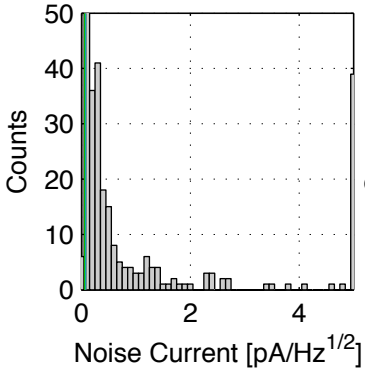
Dark Current



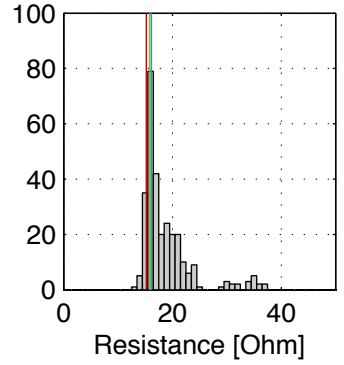
Shunt Resistance



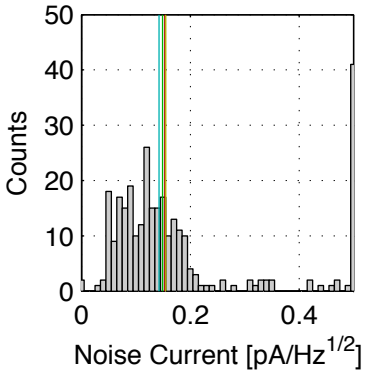
Dark current noise
(1–10Hz Avg)



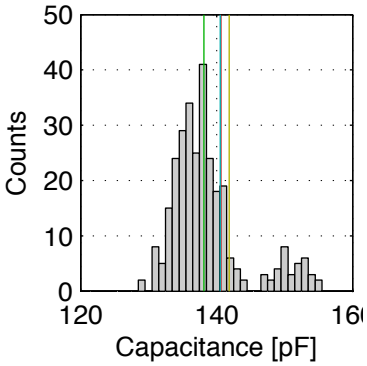
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

QPD #59

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 1.425 MOhm
Elem2: 1.323 MOhm
Elem3: 1.266 MOhm
Elem4: 1.235 MOhm

Series Resistance: (R_s):

Elem1: 16.1 Ohm
Elem2: 16.8 Ohm
Elem3: 17.4 Ohm
Elem4: 17.4 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 140.8 pF
Elem2: 141.3 pF
Elem3: 139.5 pF
Elem4: 140.1 pF

Dark Current [nA]:

Elem1: 45.43 nA
Elem2: 43.03 nA
Elem3: 45.48 nA
Elem4: 46.66 nA

Dark Noise:

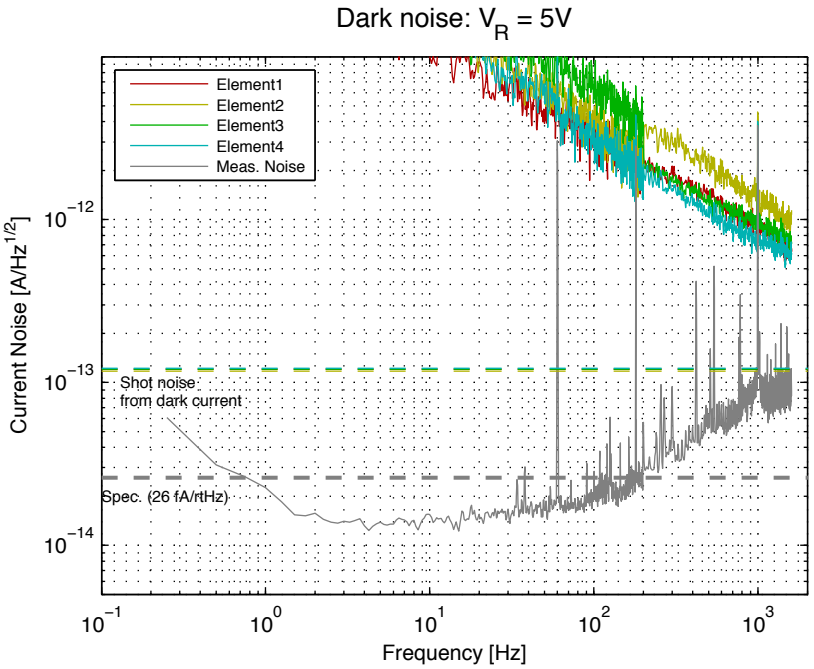
1~10Hz avg

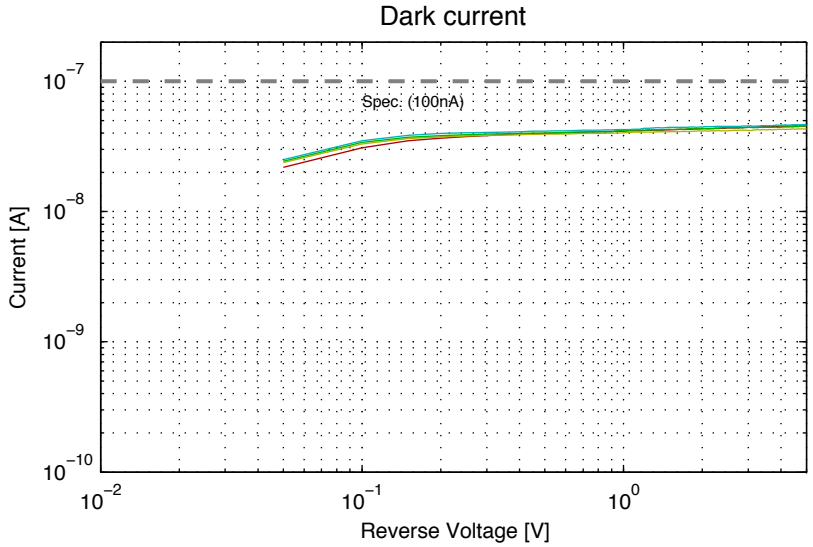
Elem1: 20.050 pA/rtHz
Elem2: 28.501 pA/rtHz
Elem3: 31.068 pA/rtHz
Elem4: 24.733 pA/rtHz

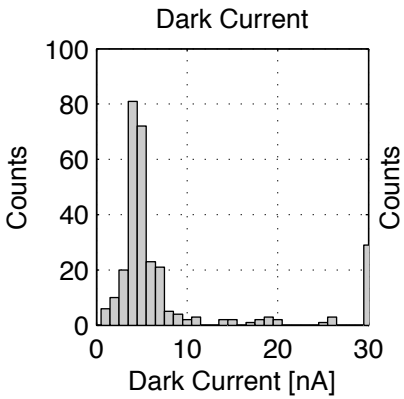
200~290Hz avg

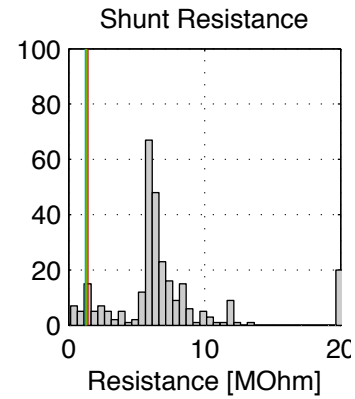
Elem1: 1.990 pA/rtHz
Elem2: 3.312 pA/rtHz
Elem3: 1.997 pA/rtHz
Elem4: 1.746 pA/rtHz

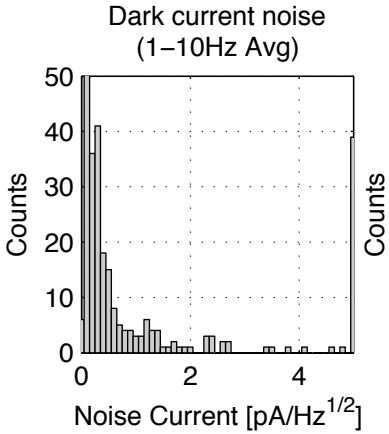
Total Penalty: –375

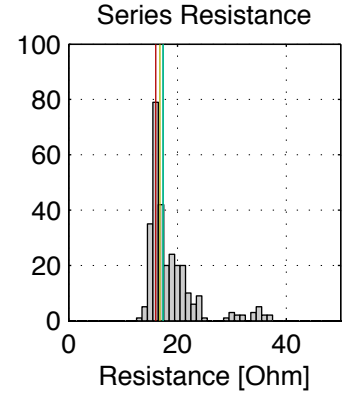


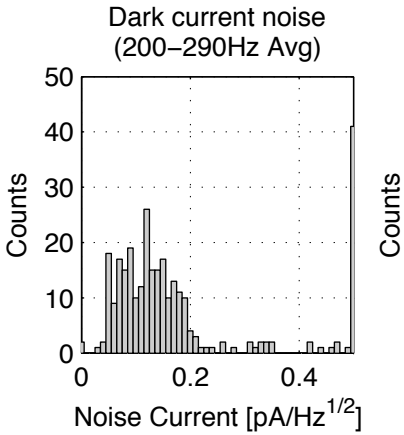


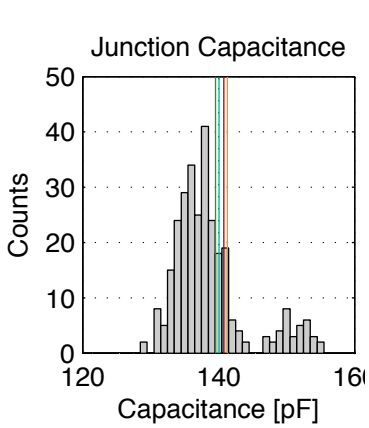












Errors / Warnings

Elem1: i_{dark} > 10nA
Elem2: i_{dark} > 10nA
Elem3: i_{dark} > 10nA
Elem4: i_{dark} > 10nA
Elem1: i_{noise} (LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise} (LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise} (LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise} (LF) > 1.8pA/rtHz (10uA shot)
Elem1: i_{noise} (HF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise} (HF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise} (HF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise} (HF) > 180fA/rtHz (100nA shot)

QPD #60

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 0.685 MOhm
Elem2: 0.621 MOhm
Elem3: 0.599 MOhm
Elem4: 0.597 MOhm

Series Resistance: (R_s):

Elem1: 18.3 Ohm
Elem2: 19.1 Ohm
Elem3: 19.5 Ohm
Elem4: 19.6 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 136.0 pF
Elem2: 136.9 pF
Elem3: 134.2 pF
Elem4: 134.8 pF

Dark Current [nA]:

Elem1: 79.85 nA
Elem2: 90.33 nA
Elem3: 93.94 nA
Elem4: 92.96 nA

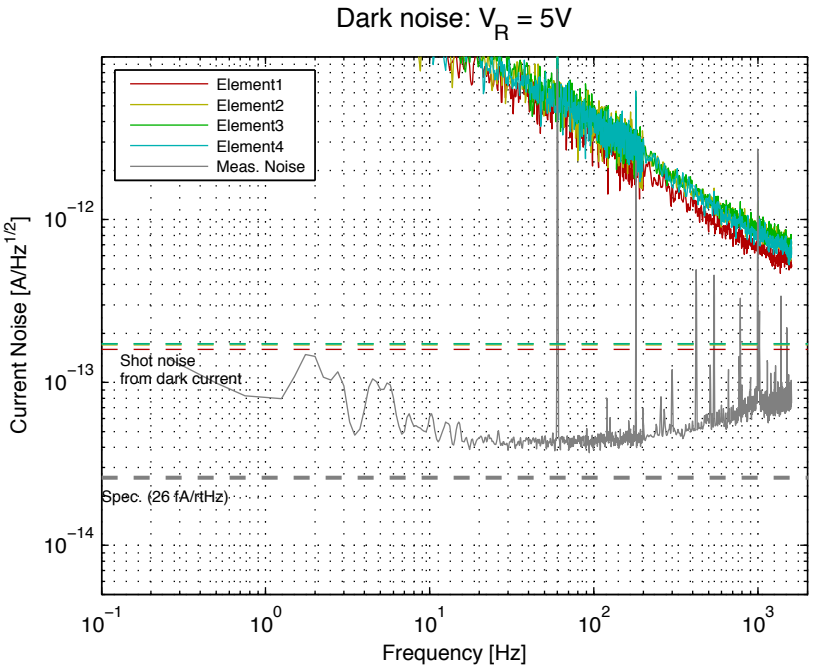
Dark Noise:
1~10Hz avg

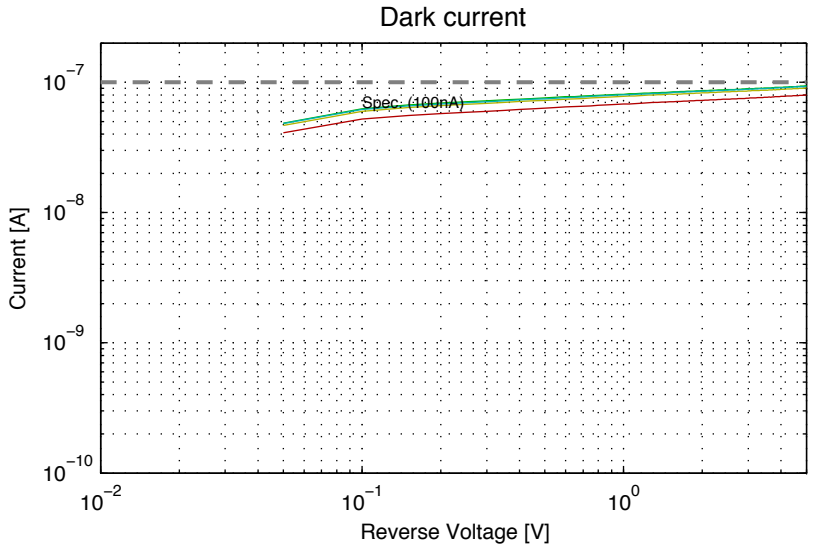
Elem1: 18.245 pA/rtHz
Elem2: 22.910 pA/rtHz
Elem3: 25.431 pA/rtHz
Elem4: 24.473 pA/rtHz

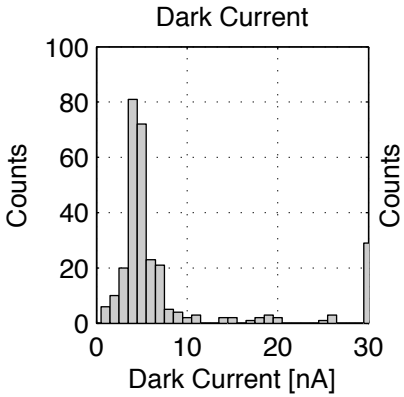
200~290Hz avg

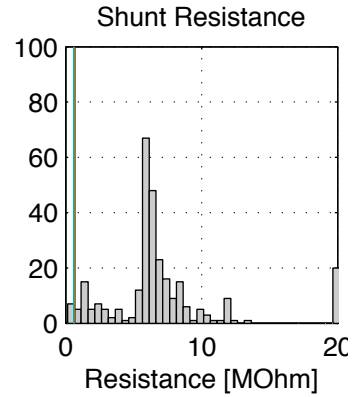
Elem1: 1.808 pA/rtHz
Elem2: 2.235 pA/rtHz
Elem3: 2.211 pA/rtHz
Elem4: 2.222 pA/rtHz

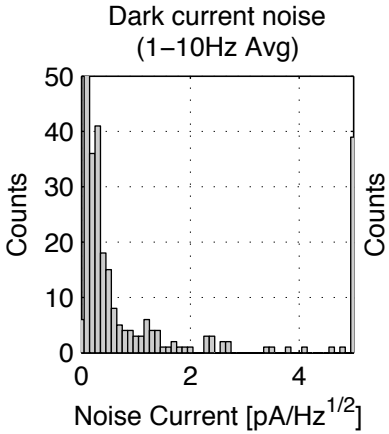
Total Penalty: –420

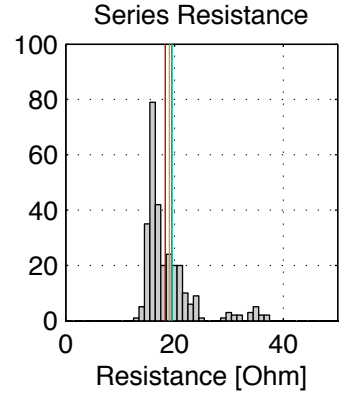


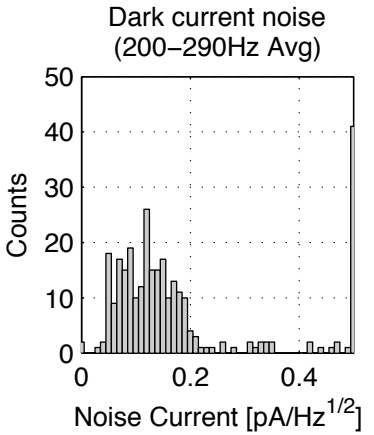


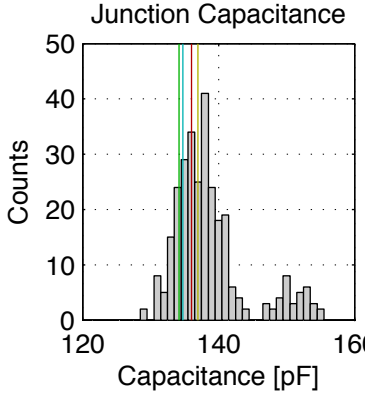












Errors / Warnings

Elem1: i_{dark} > 10nA
Elem2: i_{dark} > 10nA
Elem3: i_{dark} > 10nA
Elem4: i_{dark} > 10nA
Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem1: i_{noise}(HF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(HF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(HF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(HF) > 1.8pA/rtHz (10uA shot)

QPD #61

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 1.481 MOhm
Elem2: 1.399 MOhm
Elem3: 1.350 MOhm
Elem4: 1.323 MOhm

Series Resistance: (R_s):

Elem1: 14.7 Ohm
Elem2: 15.5 Ohm
Elem3: 16.0 Ohm
Elem4: 16.0 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 135.6 pF
Elem2: 135.6 pF
Elem3: 133.3 pF
Elem4: 133.7 pF

Dark Current [nA]:

Elem1: 42.12 nA
Elem2: 44.97 nA
Elem3: 47.28 nA
Elem4: 47.35 nA

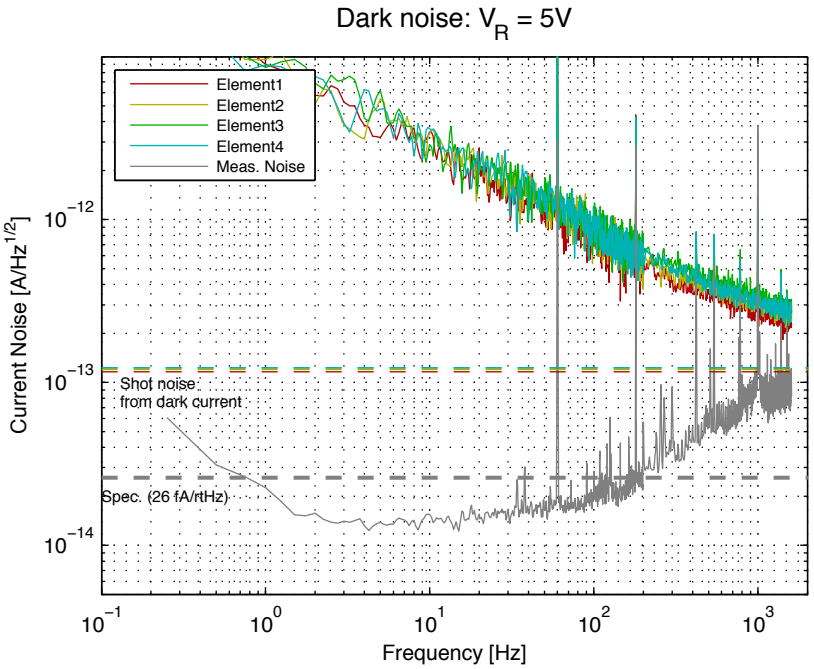
Dark Noise:
1~10Hz avg

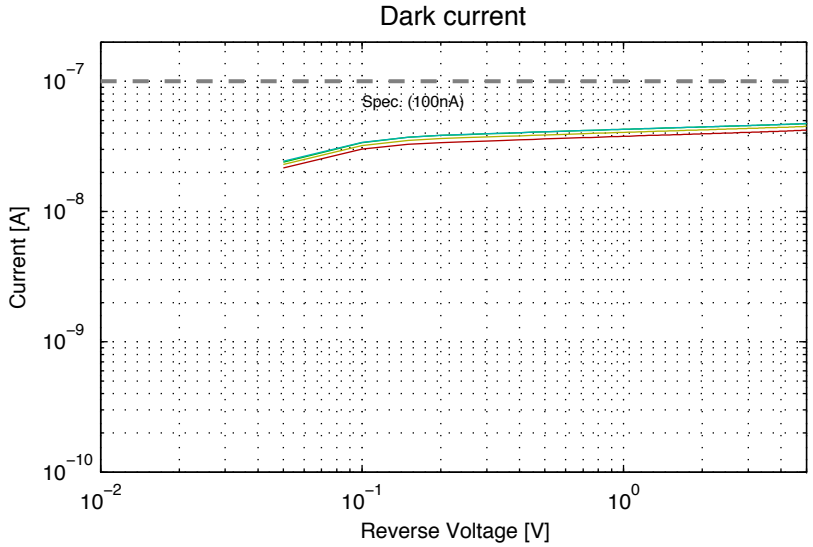
Elem1: 4.555 pA/rtHz
Elem2: 4.750 pA/rtHz
Elem3: 5.495 pA/rtHz
Elem4: 4.956 pA/rtHz

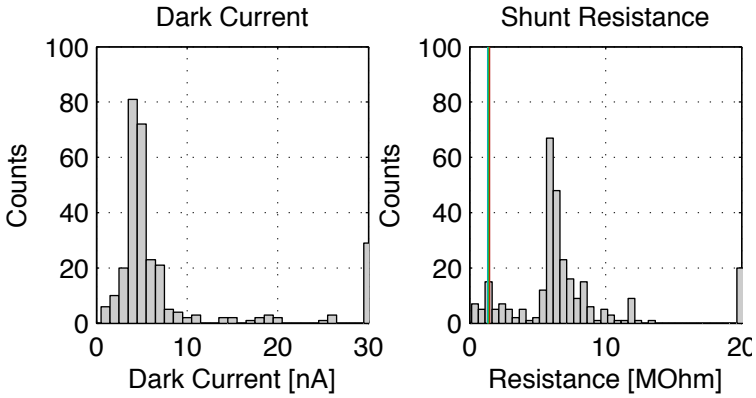
200~290Hz avg

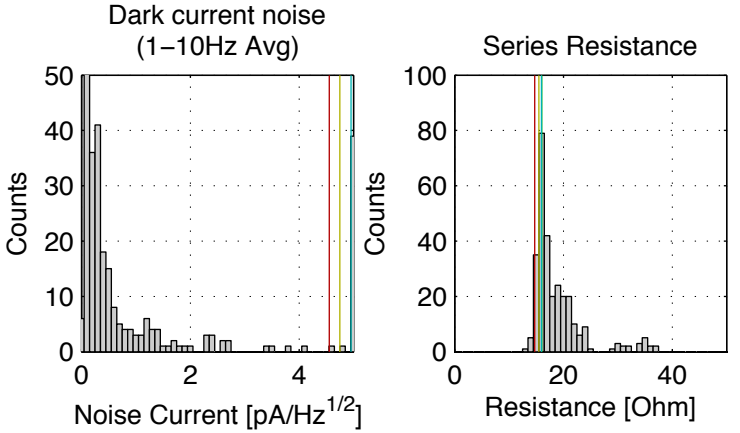
Elem1: 0.486 pA/rtHz
Elem2: 0.518 pA/rtHz
Elem3: 0.589 pA/rtHz
Elem4: 0.572 pA/rtHz

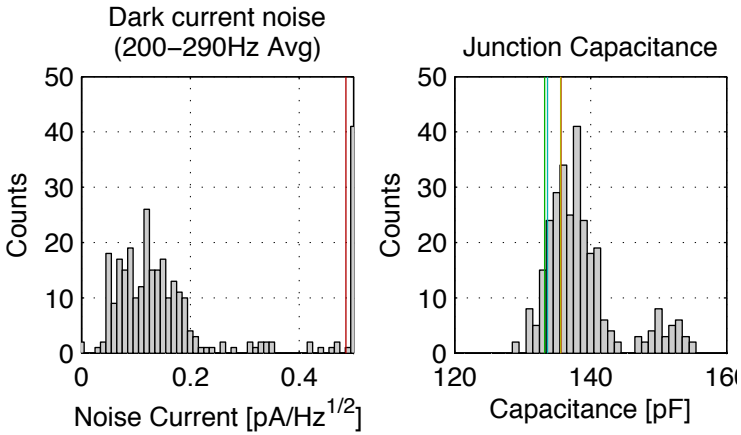
Total Penalty: –240











Errors / Warnings

Elem1: i_{dark} > 10nA
Elem2: i_{dark} > 10nA
Elem3: i_{dark} > 10nA
Elem4: i_{dark} > 10nA
Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #62

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.279 MOhm
Elem2: 5.940 MOhm
Elem3: 5.761 MOhm
Elem4: 5.599 MOhm

Series Resistance: (R_s):

Elem1: 15.2 Ohm
Elem2: 15.7 Ohm
Elem3: 16.3 Ohm
Elem4: 16.4 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 135.6 pF
Elem2: 137.7 pF
Elem3: 133.9 pF
Elem4: 135.2 pF

Dark Current [nA]:

Elem1: 6.15 nA
Elem2: 6.51 nA
Elem3: 6.59 nA
Elem4: 6.76 nA

Dark Noise:

1~10Hz avg

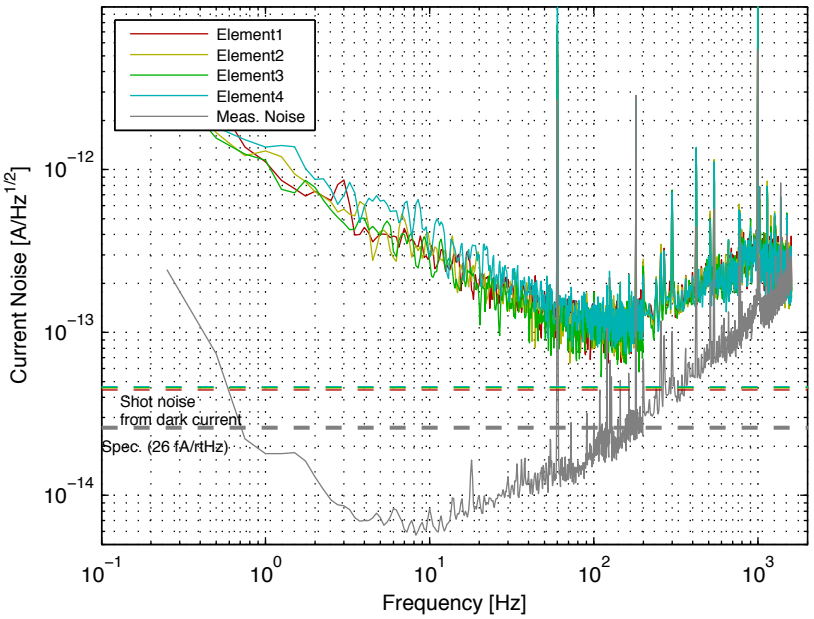
Elem1: 0.519 pA/rtHz
Elem2: 0.556 pA/rtHz
Elem3: 0.498 pA/rtHz
Elem4: 0.714 pA/rtHz

200~290Hz avg

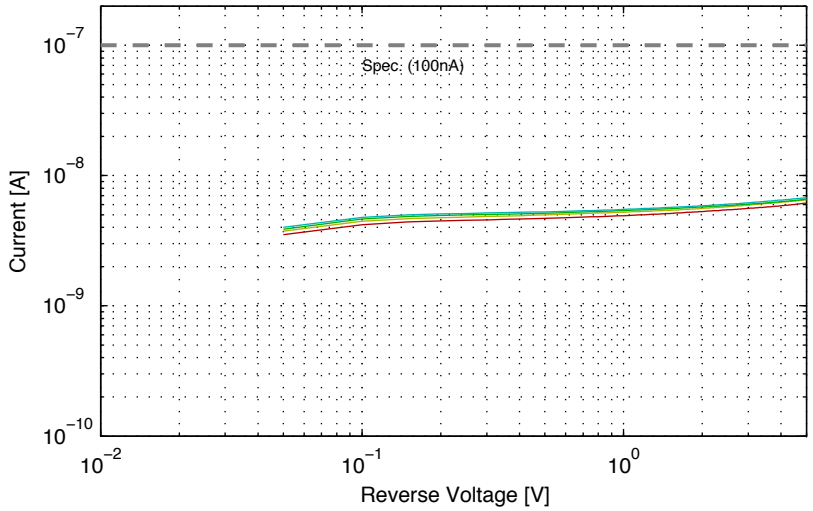
Elem1: 0.174 pA/rtHz
Elem2: 0.175 pA/rtHz
Elem3: 0.162 pA/rtHz
Elem4: 0.169 pA/rtHz

Total Penalty: –20

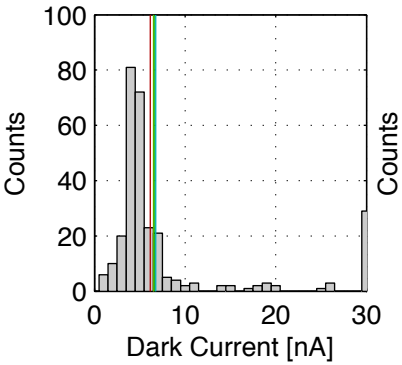
Dark noise: V_R = 5V



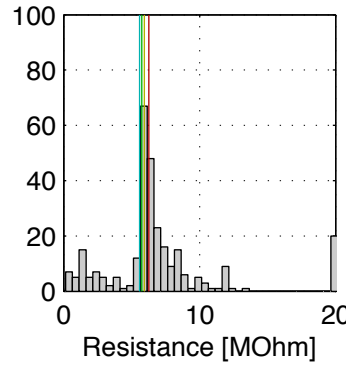
Dark current



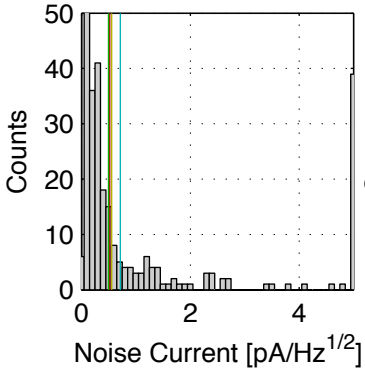
Dark Current



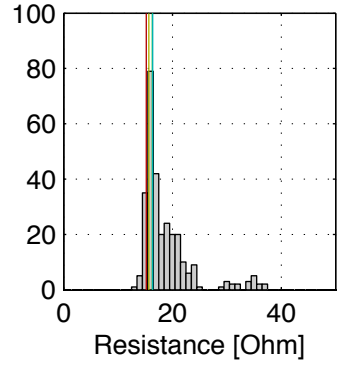
Shunt Resistance



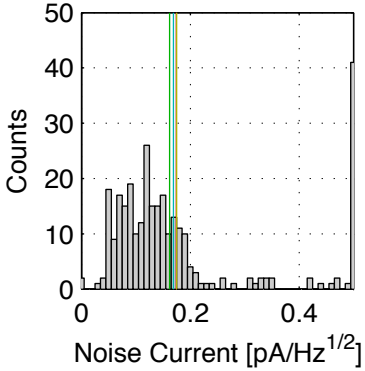
Dark current noise
(1–10Hz Avg)



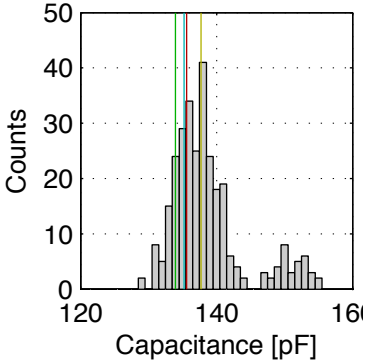
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #63

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 7.468 MOhm
Elem2: 6.657 MOhm
Elem3: 6.232 MOhm
Elem4: 5.929 MOhm

Series Resistance: (R_s):

Elem1: 14.7 Ohm
Elem2: 15.6 Ohm
Elem3: 16.2 Ohm
Elem4: 15.9 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 136.0 pF
Elem2: 136.8 pF
Elem3: 134.0 pF
Elem4: 135.2 pF

Dark Current [nA]:

Elem1: 4.12 nA
Elem2: 4.50 nA
Elem3: 5.10 nA
Elem4: 5.15 nA

Dark Noise:

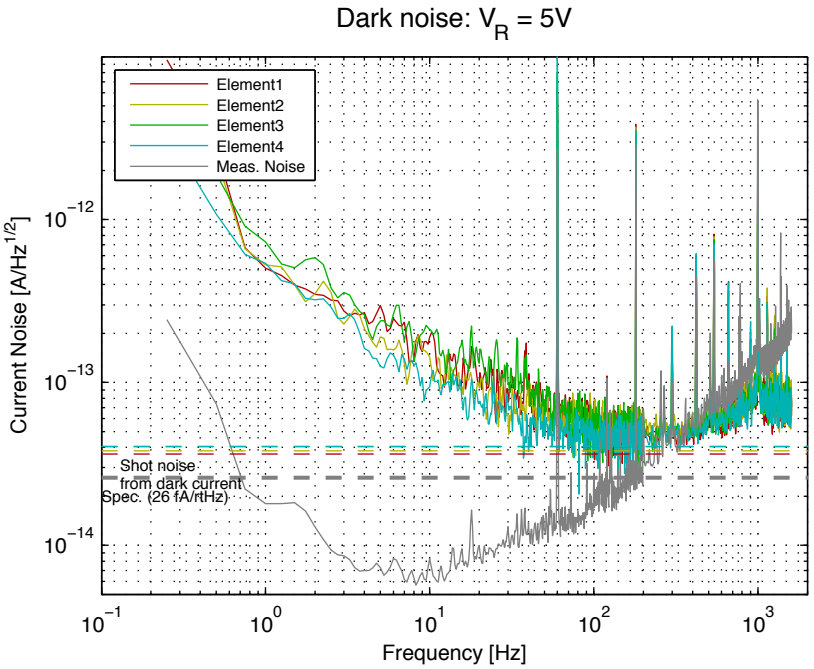
1~10Hz avg

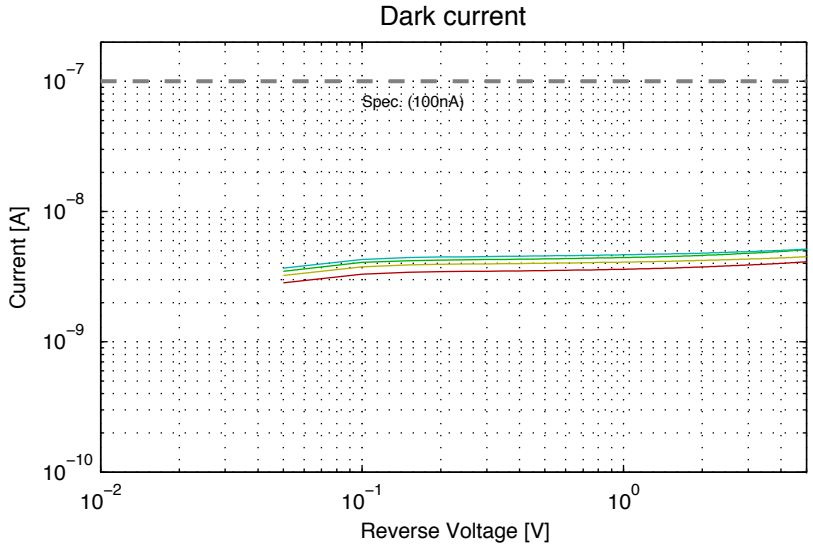
Elem1: 0.264 pA/rtHz
Elem2: 0.246 pA/rtHz
Elem3: 0.324 pA/rtHz
Elem4: 0.217 pA/rtHz

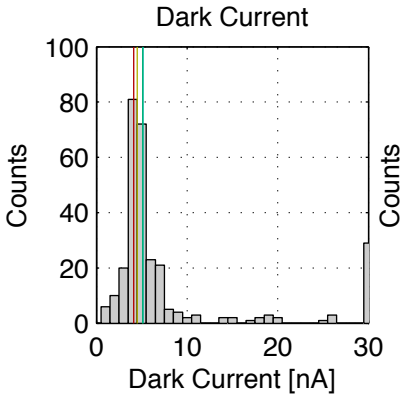
200~290Hz avg

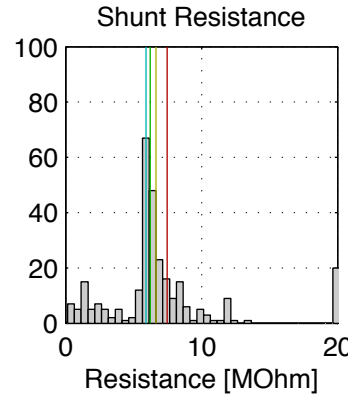
Elem1: 0.050 pA/rtHz
Elem2: 0.054 pA/rtHz
Elem3: 0.050 pA/rtHz
Elem4: 0.048 pA/rtHz

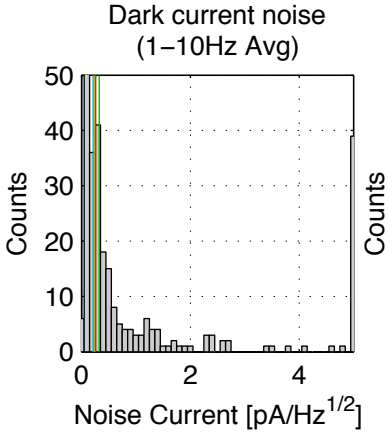
Total Penalty: –20

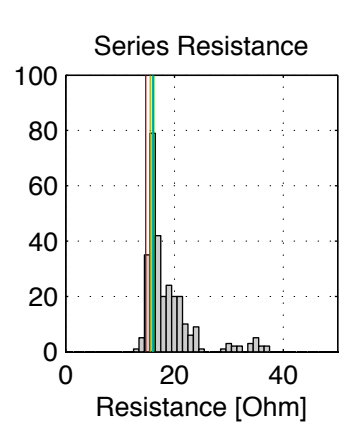


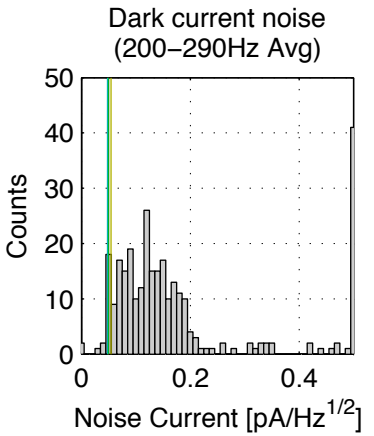


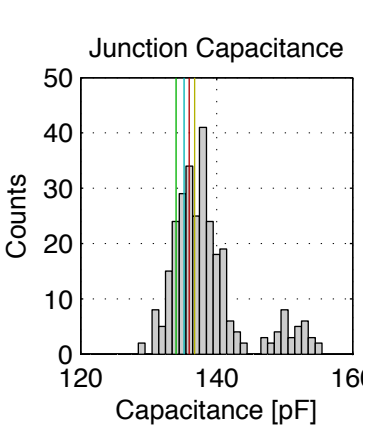












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #64

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 7.547 MOhm
Elem2: 6.849 MOhm
Elem3: 6.468 MOhm
Elem4: 6.191 MOhm

Series Resistance: (R_s):

Elem1: 15.4 Ohm
Elem2: 16.1 Ohm
Elem3: 16.6 Ohm
Elem4: 16.4 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 140.2 pF
Elem2: 141.3 pF
Elem3: 138.3 pF
Elem4: 140.6 pF

Dark Current [nA]:

Elem1: 3.75 nA
Elem2: 5.01 nA
Elem3: 4.43 nA
Elem4: 4.62 nA

Dark Noise:

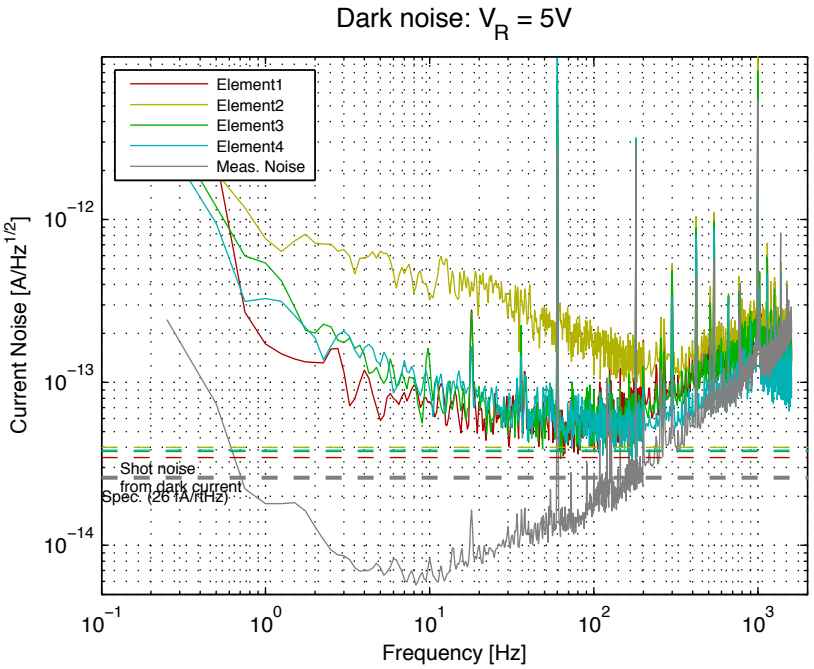
1~10Hz avg

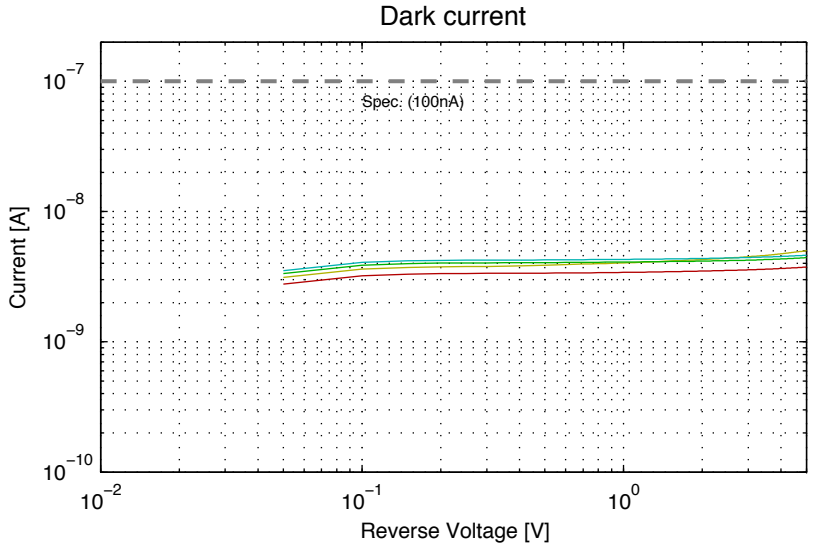
Elem1: 0.102 pA/rtHz
Elem2: 0.561 pA/rtHz
Elem3: 0.180 pA/rtHz
Elem4: 0.159 pA/rtHz

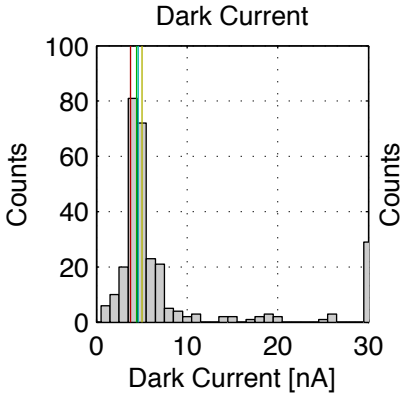
200~290Hz avg

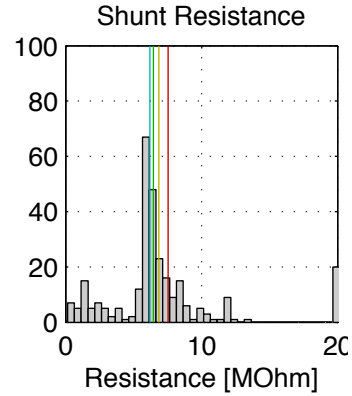
Elem1: 0.102 pA/rtHz
Elem2: 0.149 pA/rtHz
Elem3: 0.089 pA/rtHz
Elem4: 0.066 pA/rtHz

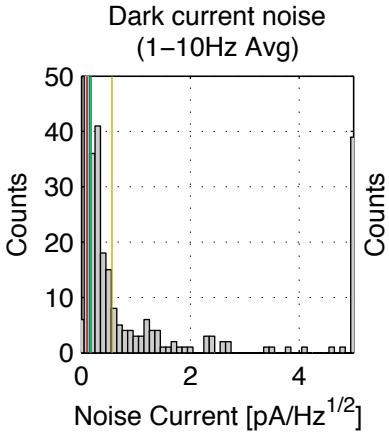
Total Penalty: −5

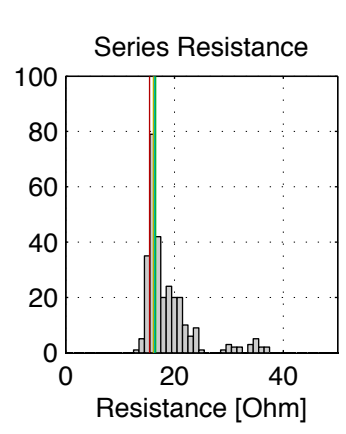


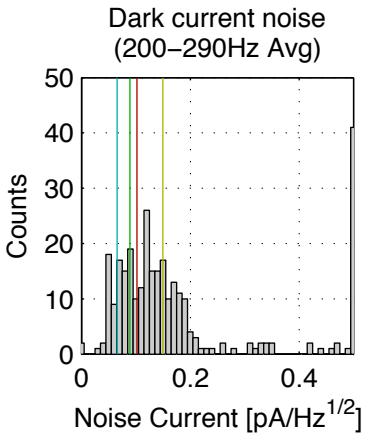


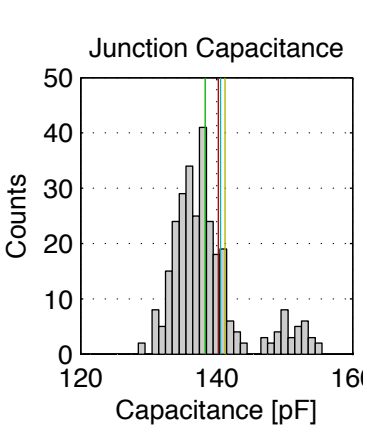












Errors / Warnings

Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #65

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 8.414 MOhm
Elem2: 7.577 MOhm
Elem3: 7.253 MOhm
Elem4: 7.000 MOhm

Series Resistance: (R_s):

Elem1: 17.3 Ohm
Elem2: 17.7 Ohm
Elem3: 18.3 Ohm
Elem4: 18.3 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 139.4 pF
Elem2: 140.8 pF
Elem3: 137.2 pF
Elem4: 138.3 pF

Dark Current [nA]:

Elem1: 5.05 nA
Elem2: 4.39 nA
Elem3: 4.32 nA
Elem4: 4.34 nA

Dark Noise:

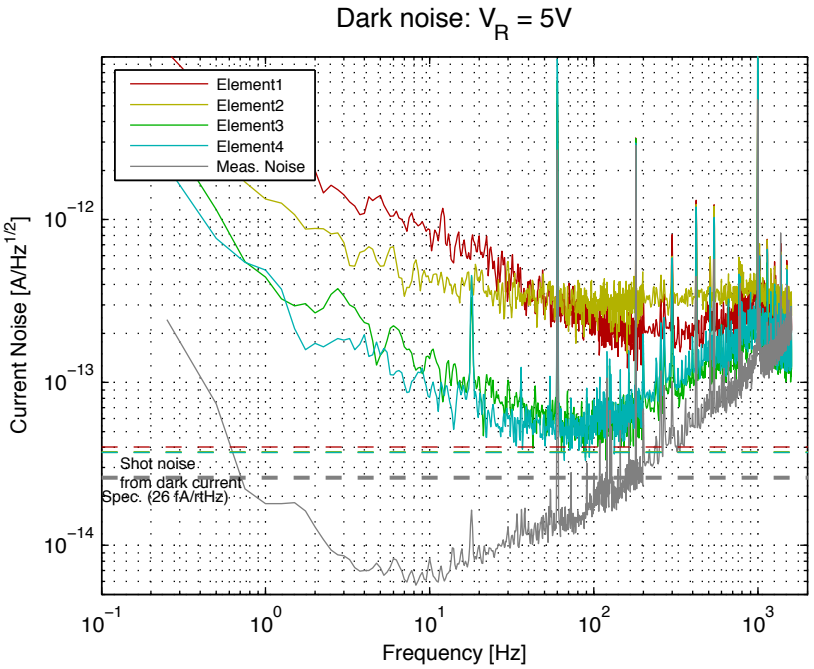
1~10Hz avg

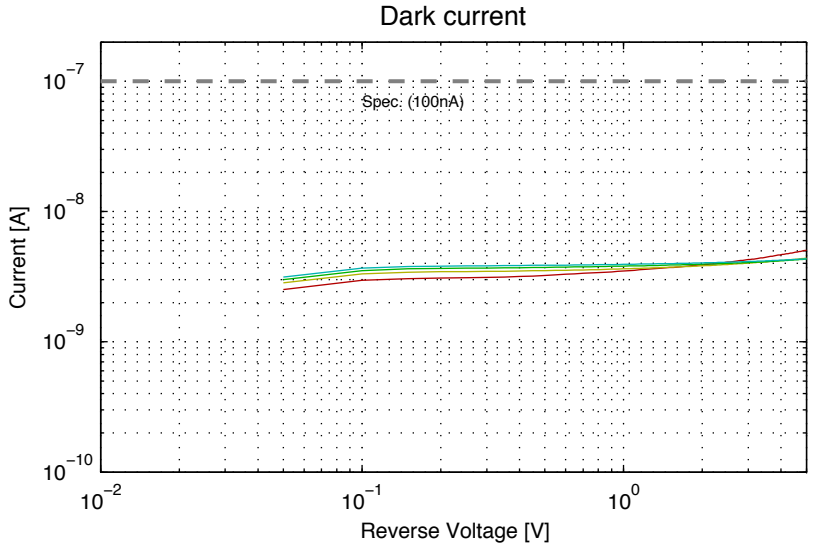
Elem1: 1.399 pA/rtHz
Elem2: 0.665 pA/rtHz
Elem3: 0.230 pA/rtHz
Elem4: 0.171 pA/rtHz

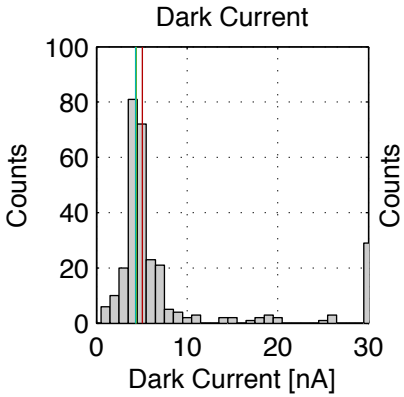
200~290Hz avg

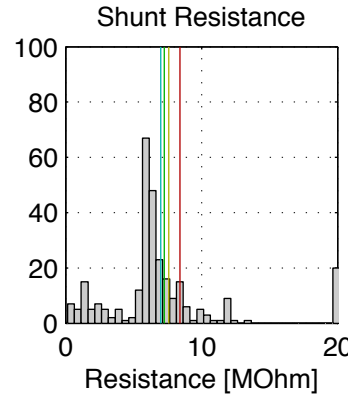
Elem1: 0.230 pA/rtHz
Elem2: 0.336 pA/rtHz
Elem3: 0.095 pA/rtHz
Elem4: 0.119 pA/rtHz

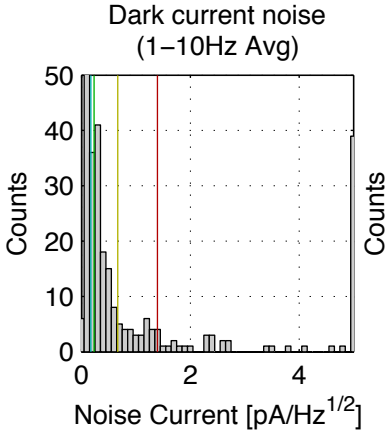
Total Penalty: –25

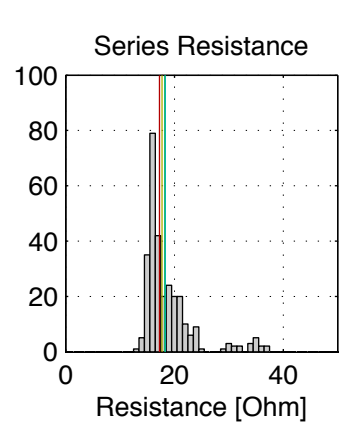


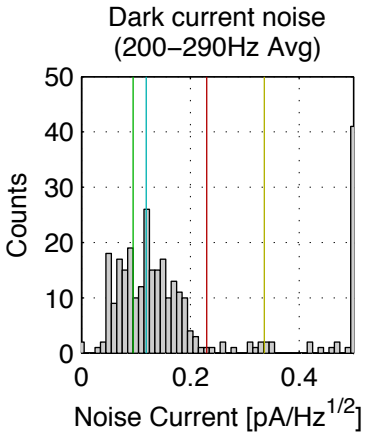


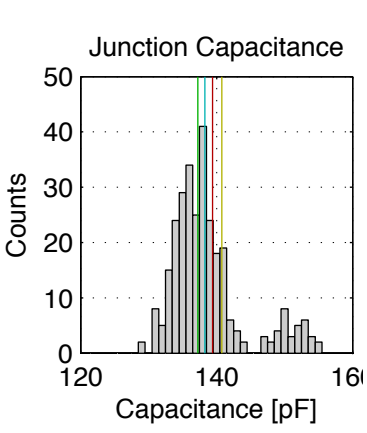












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #66

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 8.667 MOhm
Elem2: 7.907 MOhm
Elem3: 7.549 MOhm
Elem4: 7.234 MOhm

Series Resistance: (R_s):

Elem1: 18.3 Ohm
Elem2: 18.7 Ohm
Elem3: 19.4 Ohm
Elem4: 19.3 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 135.7 pF
Elem2: 137.2 pF
Elem3: 133.7 pF
Elem4: 134.9 pF

Dark Current [nA]:

Elem1: 3.37 nA
Elem2: 3.74 nA
Elem3: 3.82 nA
Elem4: 3.99 nA

Dark Noise:

1~10Hz avg

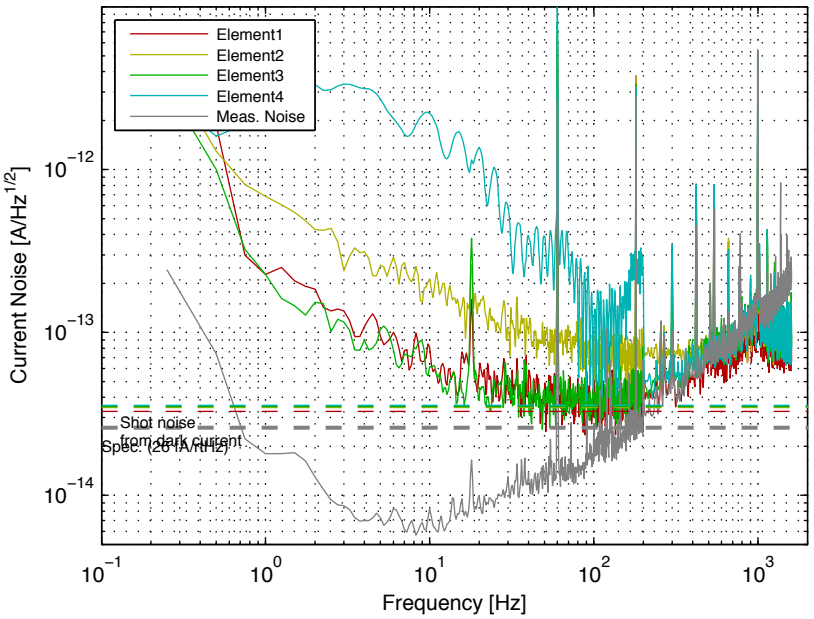
Elem1: 0.120 pA/rtHz
Elem2: 0.319 pA/rtHz
Elem3: 0.102 pA/rtHz
Elem4: 2.590 pA/rtHz

200~290Hz avg

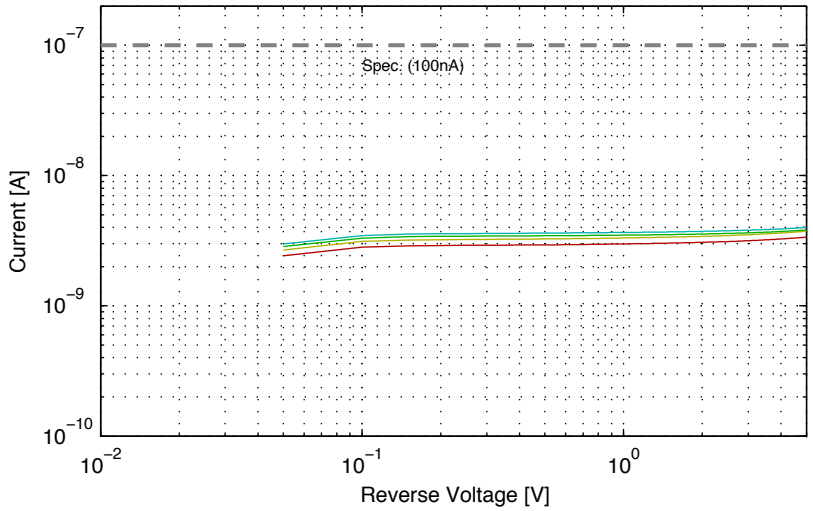
Elem1: 0.048 pA/rtHz
Elem2: 0.079 pA/rtHz
Elem3: 0.058 pA/rtHz
Elem4: 0.066 pA/rtHz

Total Penalty: −55

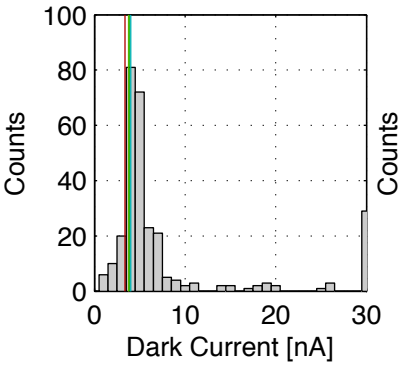
Dark noise: V_R = 5V



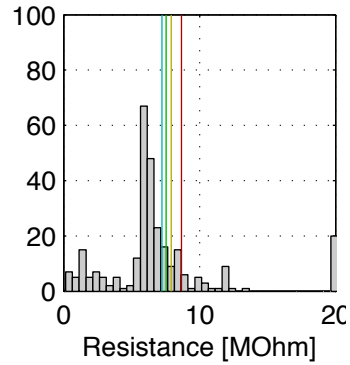
Dark current



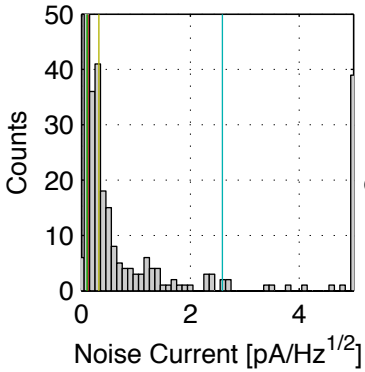
Dark Current



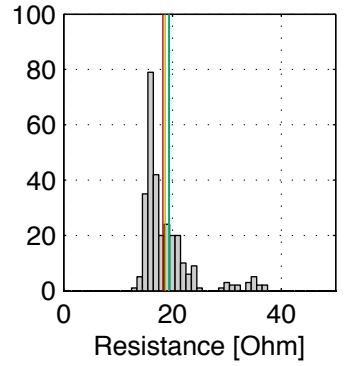
Shunt Resistance



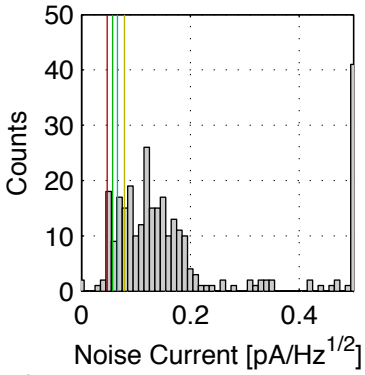
Dark current noise (1–10Hz Avg)



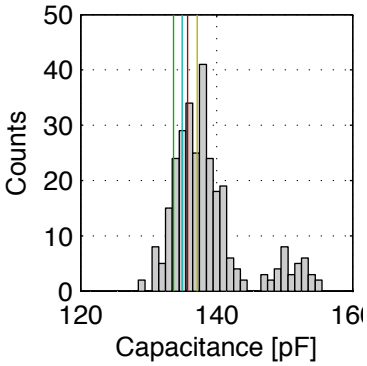
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)

QPD #67

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 2.523 MOhm
Elem2: 2.375 MOhm
Elem3: 2.275 MOhm
Elem4: 2.225 MOhm

Series Resistance: (R_s):

Elem1: 16.3 Ohm
Elem2: 16.9 Ohm
Elem3: 17.7 Ohm
Elem4: 17.5 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 139.4 pF
Elem2: 139.2 pF
Elem3: 137.2 pF
Elem4: 138.0 pF

Dark Current [nA]:

Elem1: 17.35 nA
Elem2: 18.48 nA
Elem3: 19.92 nA
Elem4: 19.93 nA

Dark Noise:

1~10Hz avg

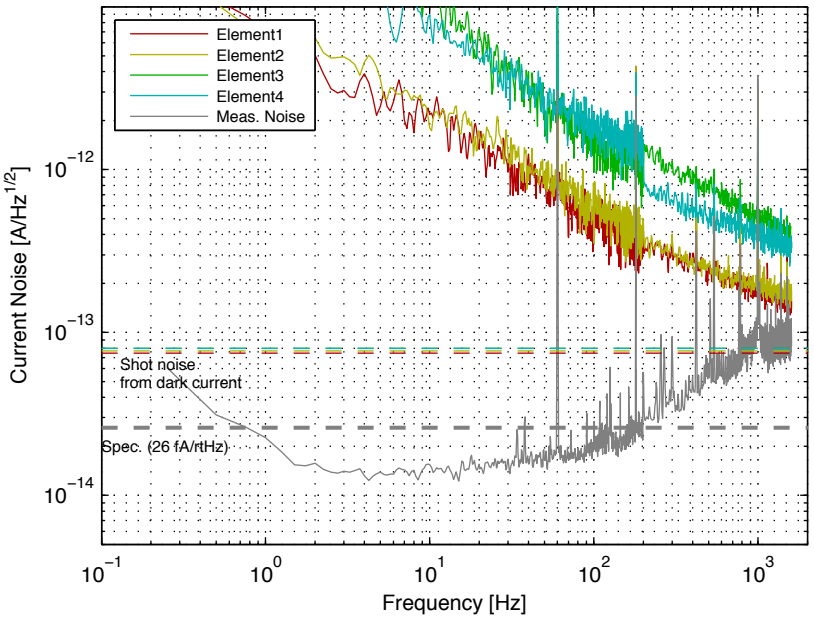
Elem1: 3.535 pA/rtHz
Elem2: 4.090 pA/rtHz
Elem3: 58.400 pA/rtHz
Elem4: 15.304 pA/rtHz

200~290Hz avg

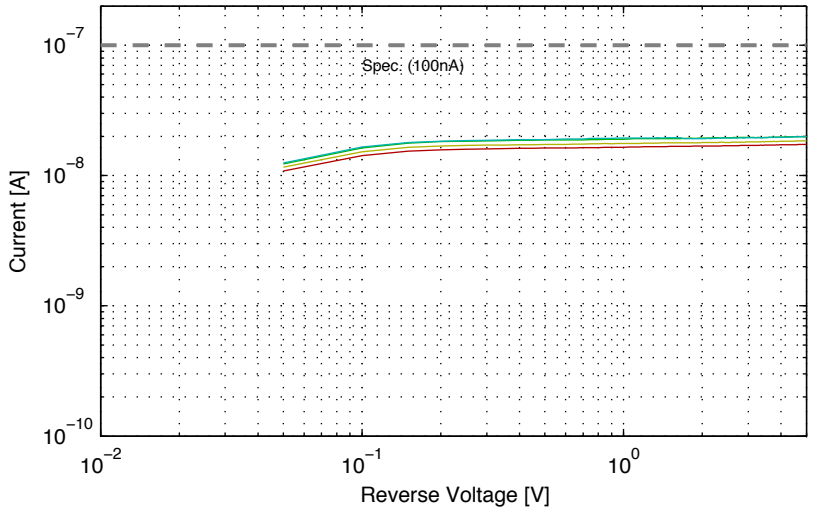
Elem1: 0.327 pA/rtHz
Elem2: 0.340 pA/rtHz
Elem3: 1.175 pA/rtHz
Elem4: 0.735 pA/rtHz

Total Penalty: –240

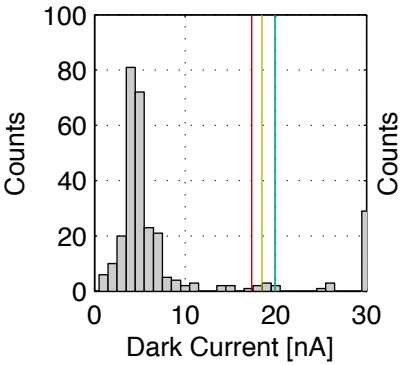
Dark noise: V_R = 5V



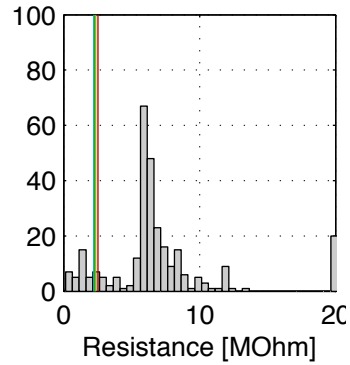
Dark current



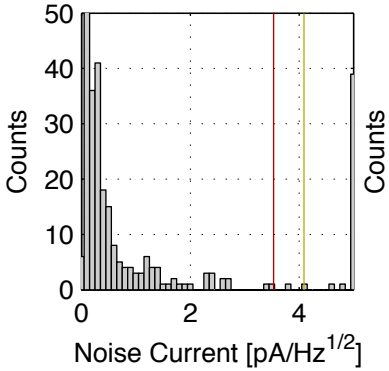
Dark Current



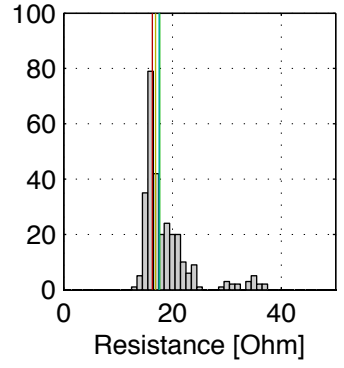
Shunt Resistance



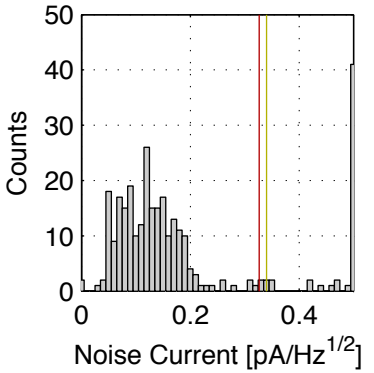
Dark current noise
(1–10Hz Avg)



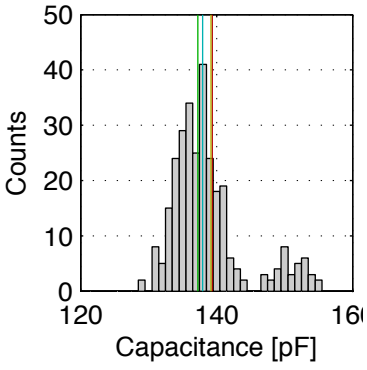
Series Resistance



Dark current noise
(200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{dark} > 10nA
Elem2: i_{dark} > 10nA
Elem3: i_{dark} > 10nA
Elem4: i_{dark} > 10nA
Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem1: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #68

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 9.112 MOhm
Elem2: 8.688 MOhm
Elem3: 8.548 MOhm
Elem4: 8.333 MOhm

Series Resistance: (R_s):

Elem1: 20.2 Ohm
Elem2: 21.0 Ohm
Elem3: 21.8 Ohm
Elem4: 21.5 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 135.4 pF
Elem2: 137.0 pF
Elem3: 133.5 pF
Elem4: 135.1 pF

Dark Current [nA]:

Elem1: 3.64 nA
Elem2: 4.13 nA
Elem3: 4.45 nA
Elem4: 4.02 nA

Dark Noise:

1~10Hz avg

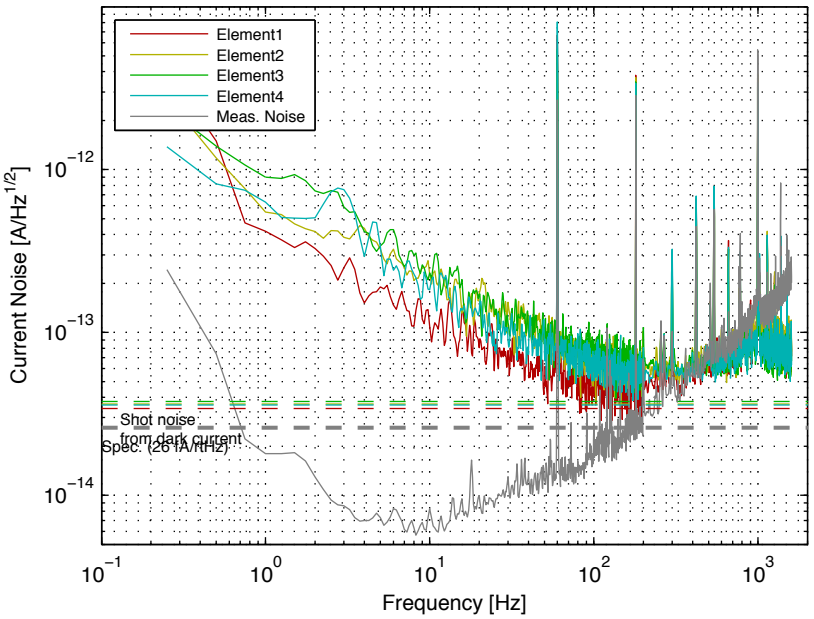
Elem1: 0.213 pA/rtHz
Elem2: 0.343 pA/rtHz
Elem3: 0.495 pA/rtHz
Elem4: 0.410 pA/rtHz

200~290Hz avg

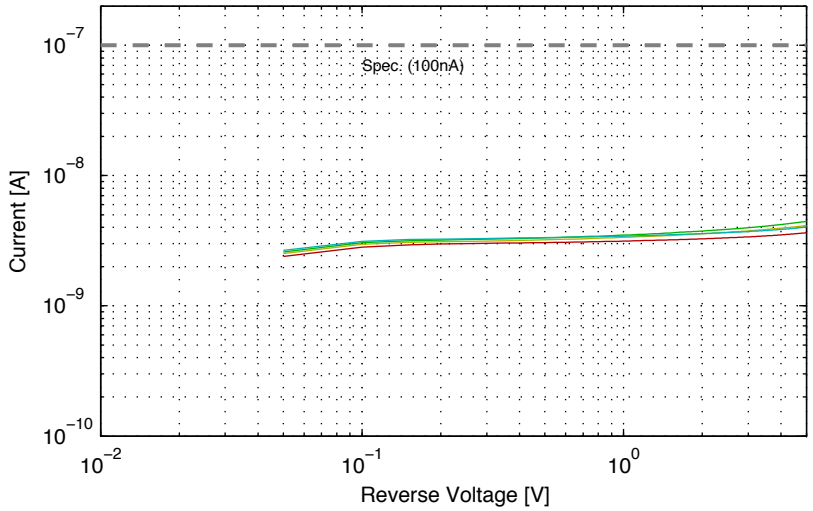
Elem1: 0.054 pA/rtHz
Elem2: 0.067 pA/rtHz
Elem3: 0.069 pA/rtHz
Elem4: 0.062 pA/rtHz

Total Penalty: –20

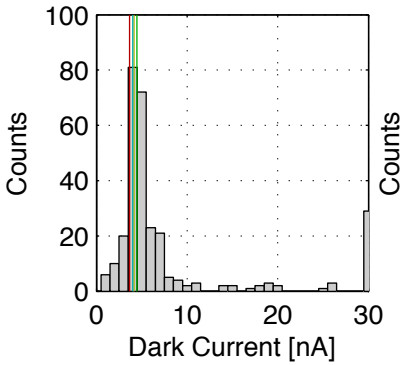
Dark noise: V_R = 5V



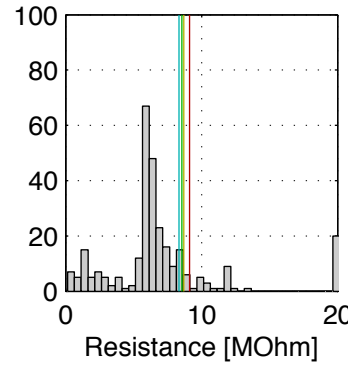
Dark current



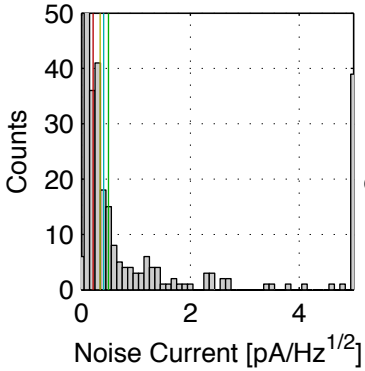
Dark Current



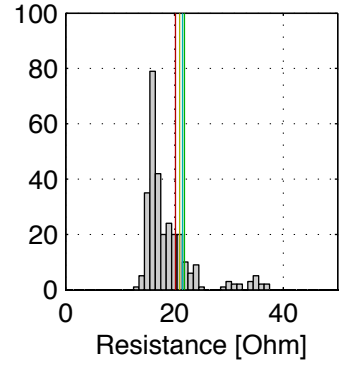
Shunt Resistance



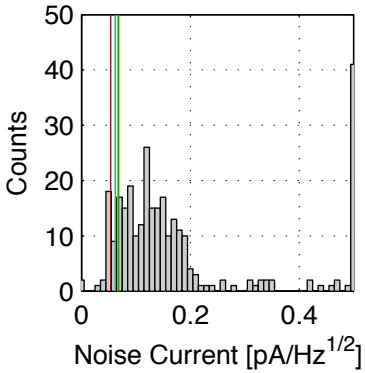
Dark current noise (1–10Hz Avg)



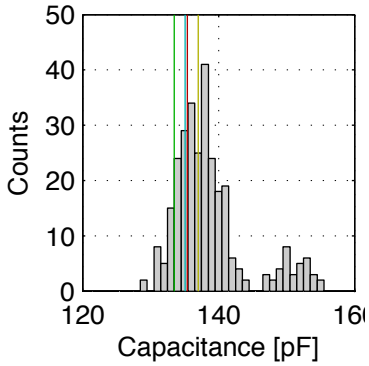
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #70

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.466 MOhm
Elem2: 5.956 MOhm
Elem3: 5.694 MOhm
Elem4: 5.504 MOhm

Series Resistance: (R_s):

Elem1: 15.6 Ohm
Elem2: 16.0 Ohm
Elem3: 16.6 Ohm
Elem4: 16.5 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 134.7 pF
Elem2: 136.9 pF
Elem3: 133.5 pF
Elem4: 134.5 pF

Dark Current [nA]:

Elem1: 6.35 nA
Elem2: 6.58 nA
Elem3: 6.83 nA
Elem4: 7.17 nA

Dark Noise:

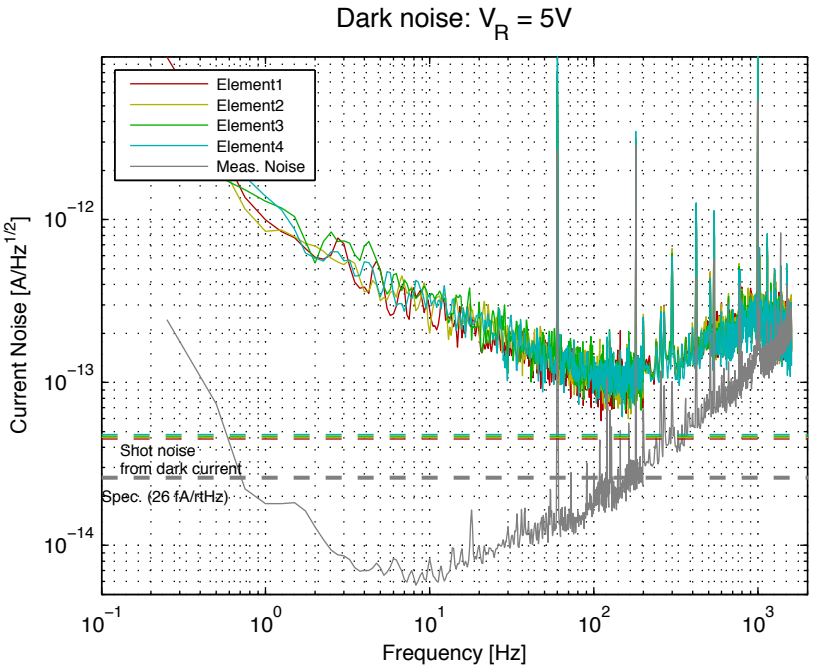
1~10Hz avg

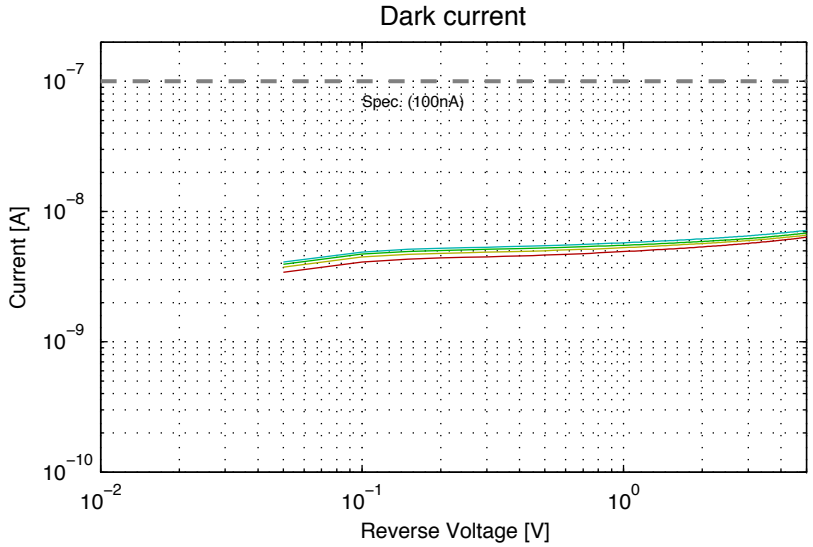
Elem1: 0.483 pA/rtHz
Elem2: 0.474 pA/rtHz
Elem3: 0.602 pA/rtHz
Elem4: 0.535 pA/rtHz

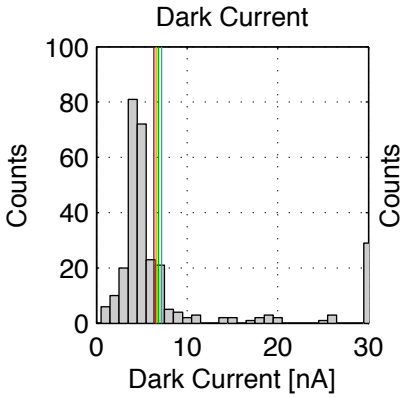
200~290Hz avg

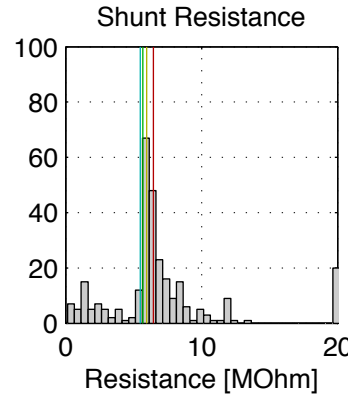
Elem1: 0.158 pA/rtHz
Elem2: 0.156 pA/rtHz
Elem3: 0.152 pA/rtHz
Elem4: 0.146 pA/rtHz

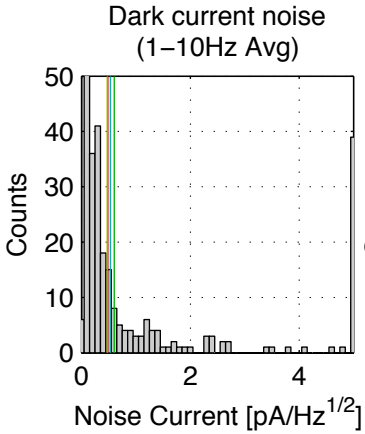
Total Penalty: –20

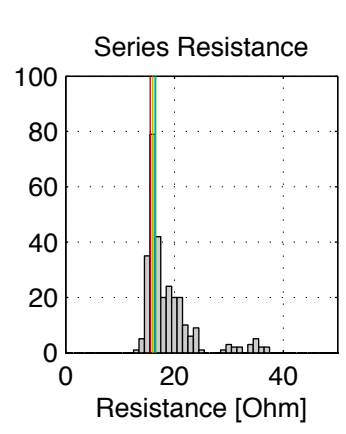


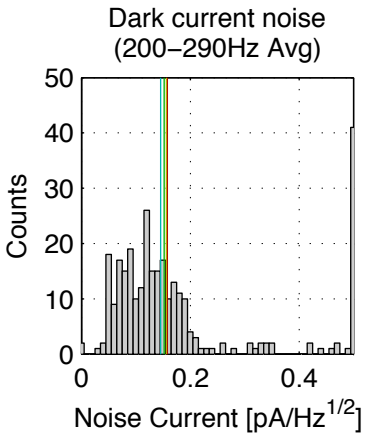


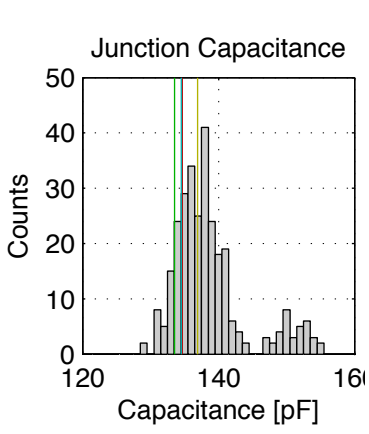












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #71

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 7.697 MOhm
Elem2: 6.764 MOhm
Elem3: 6.258 MOhm
Elem4: 5.928 MOhm

Series Resistance: (R_s):

Elem1: 15.0 Ohm
Elem2: 15.5 Ohm
Elem3: 16.1 Ohm
Elem4: 16.1 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 138.4 pF
Elem2: 139.9 pF
Elem3: 136.4 pF
Elem4: 138.2 pF

Dark Current [nA]:

Elem1: 3.88 nA
Elem2: 6.63 nA
Elem3: 7.59 nA
Elem4: 5.03 nA

Dark Noise:

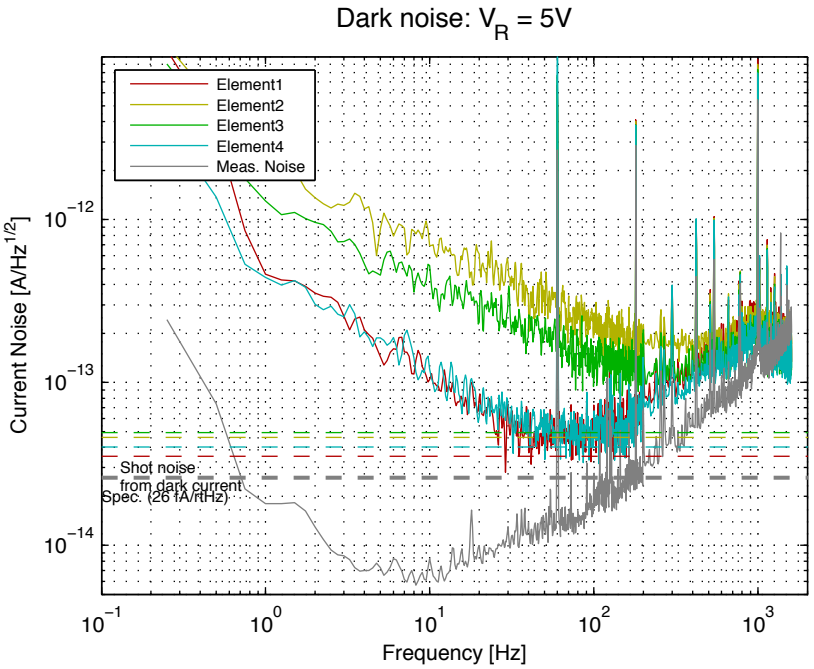
1~10Hz avg

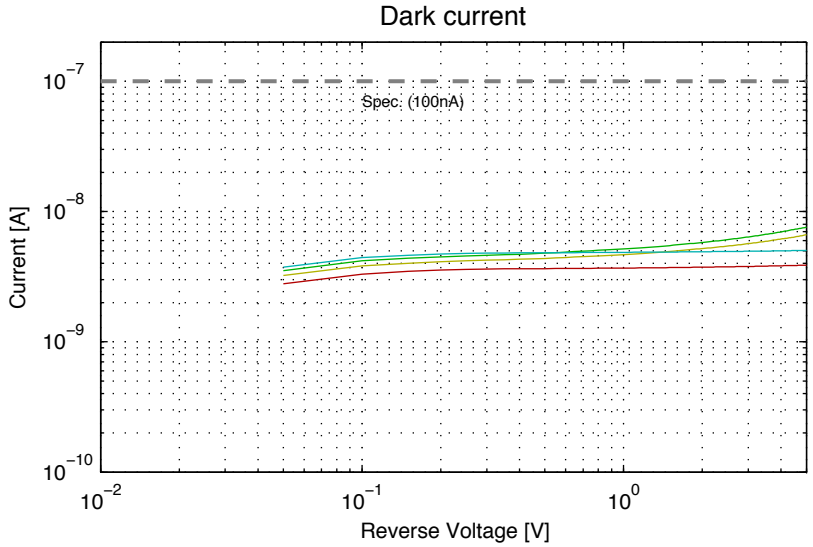
Elem1: 0.231 pA/rtHz
Elem2: 1.148 pA/rtHz
Elem3: 0.663 pA/rtHz
Elem4: 0.227 pA/rtHz

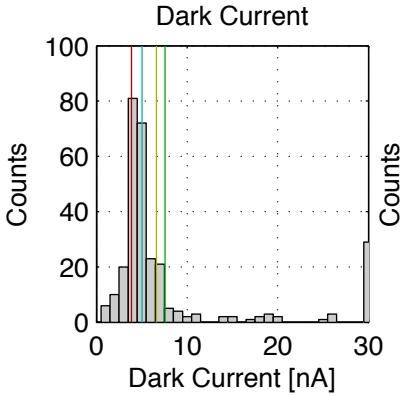
200~290Hz avg

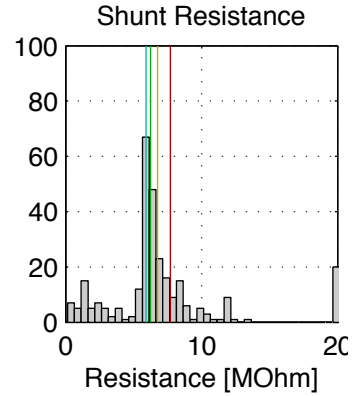
Elem1: 0.112 pA/rtHz
Elem2: 0.188 pA/rtHz
Elem3: 0.127 pA/rtHz
Elem4: 0.091 pA/rtHz

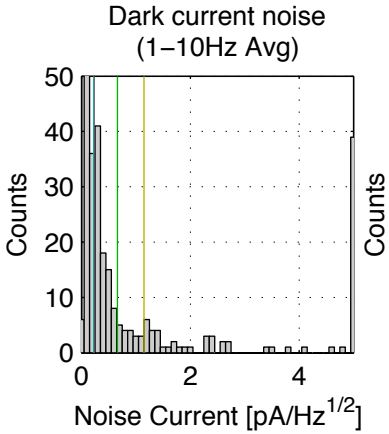
Total Penalty: –25

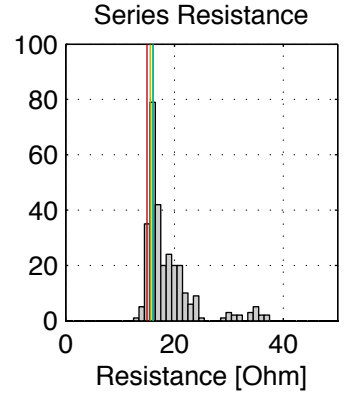


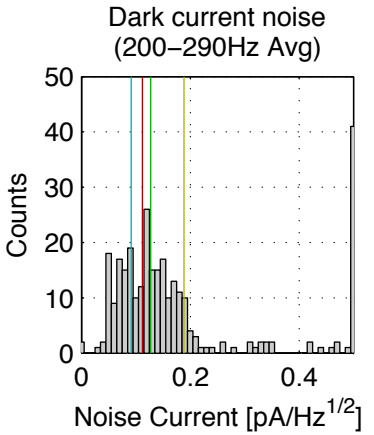


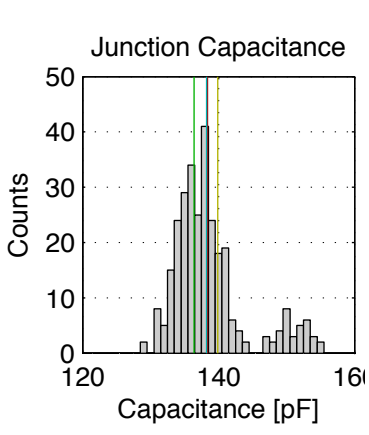












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #72

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 5.608 MOhm
Elem2: 5.639 MOhm
Elem3: 5.677 MOhm
Elem4: 5.670 MOhm

Series Resistance: (R_s):

Elem1: 15.6 Ohm
Elem2: 16.1 Ohm
Elem3: 16.4 Ohm
Elem4: 16.6 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 135.4 pF
Elem2: 137.3 pF
Elem3: 133.8 pF
Elem4: 135.0 pF

Dark Current [nA]:

Elem1: 6.42 nA
Elem2: 6.64 nA
Elem3: 6.52 nA
Elem4: 6.44 nA

Dark Noise:

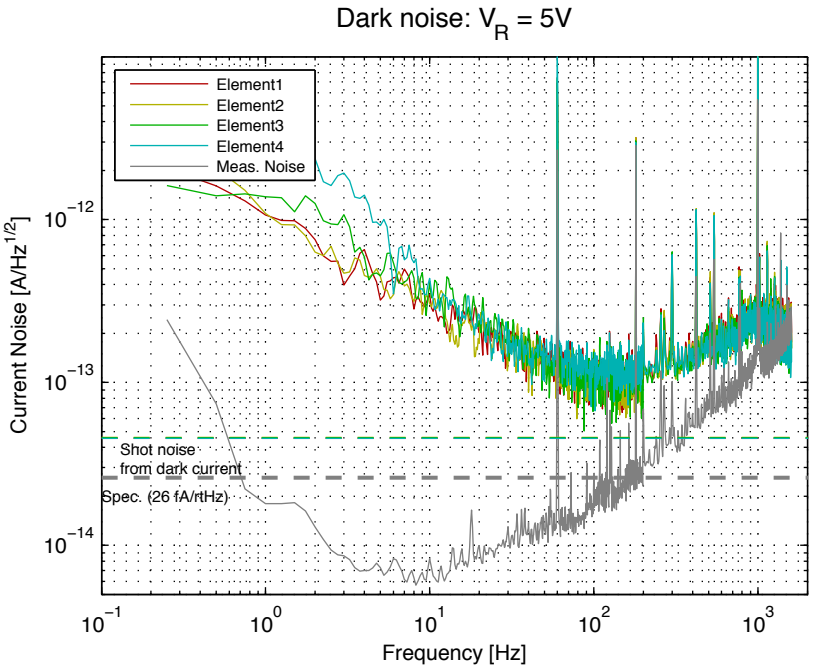
1~10Hz avg

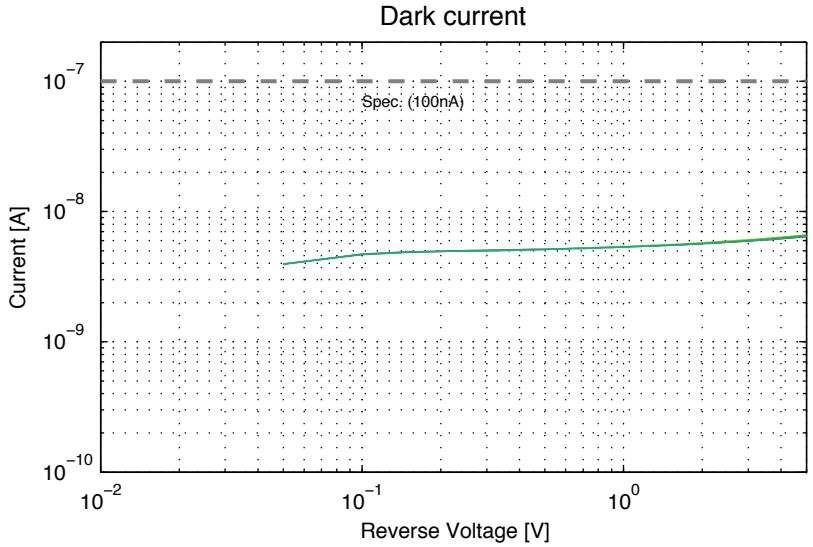
Elem1: 0.533 pA/rtHz
Elem2: 0.520 pA/rtHz
Elem3: 0.720 pA/rtHz
Elem4: 1.237 pA/rtHz

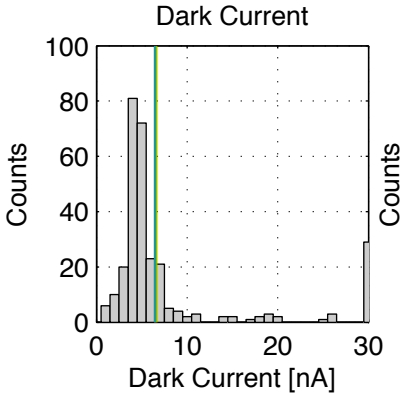
200~290Hz avg

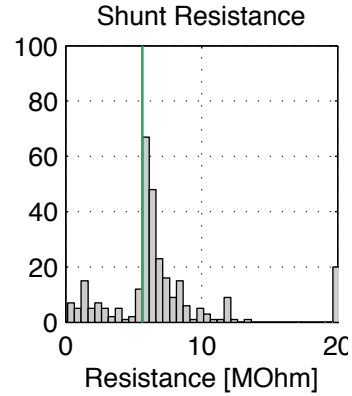
Elem1: 0.152 pA/rtHz
Elem2: 0.144 pA/rtHz
Elem3: 0.144 pA/rtHz
Elem4: 0.141 pA/rtHz

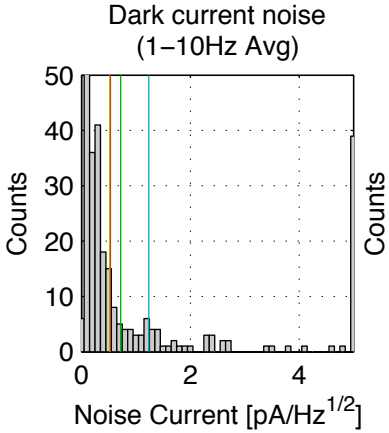
Total Penalty: –20

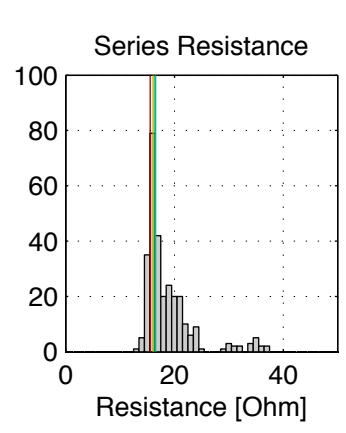


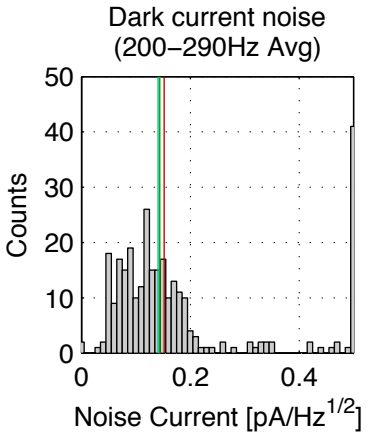


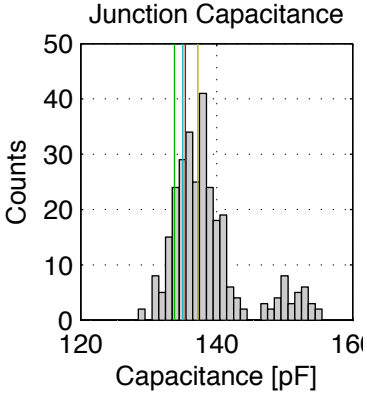












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #73

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.112 MOhm
Elem2: 5.889 MOhm
Elem3: 5.803 MOhm
Elem4: 5.713 MOhm

Series Resistance: (R_s):

Elem1: 14.2 Ohm
Elem2: 15.0 Ohm
Elem3: 15.5 Ohm
Elem4: 15.4 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 140.2 pF
Elem2: 140.3 pF
Elem3: 137.3 pF
Elem4: 139.0 pF

Dark Current [nA]:

Elem1: 4.81 nA
Elem2: 4.82 nA
Elem3: 4.94 nA
Elem4: 5.15 nA

Dark Noise:

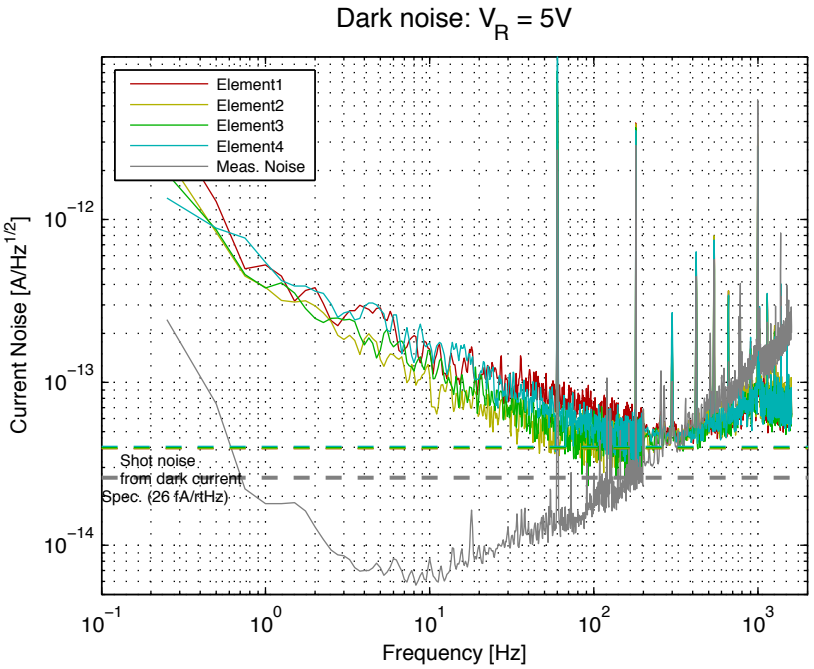
1~10Hz avg

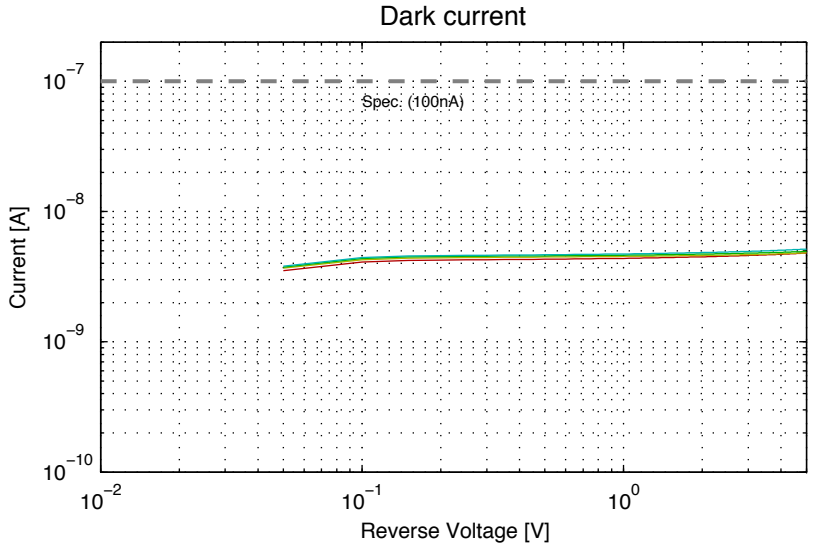
Elem1: 0.258 pA/rtHz
Elem2: 0.187 pA/rtHz
Elem3: 0.208 pA/rtHz
Elem4: 0.269 pA/rtHz

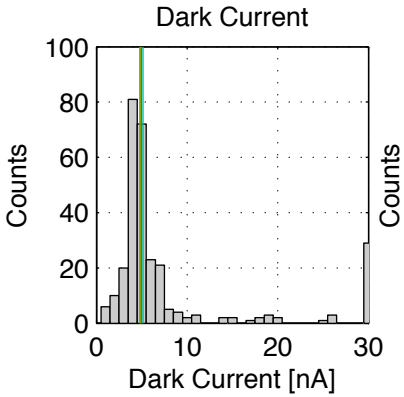
200~290Hz avg

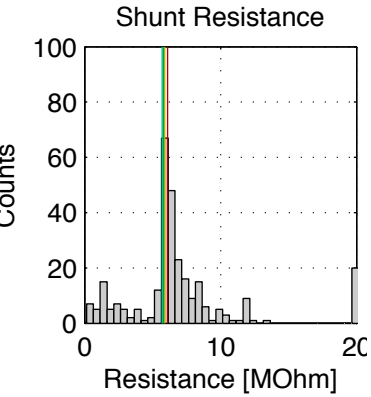
Elem1: 0.051 pA/rtHz
Elem2: 0.047 pA/rtHz
Elem3: 0.046 pA/rtHz
Elem4: 0.050 pA/rtHz

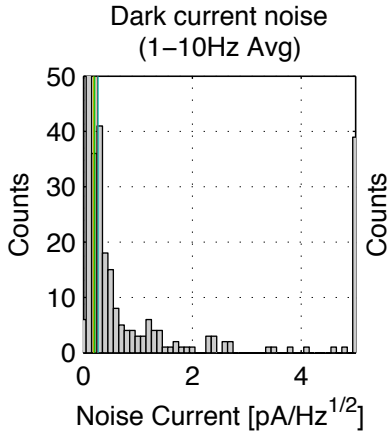
Total Penalty: –20

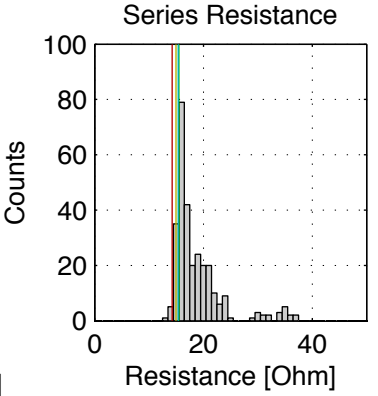


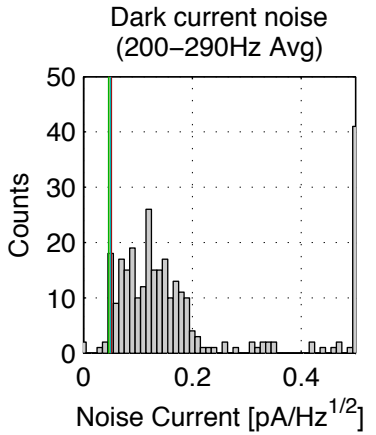


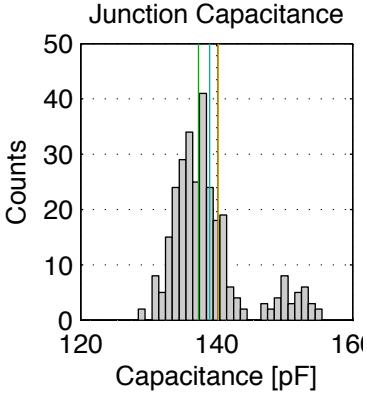












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #74

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.587 MOhm
Elem2: 6.273 MOhm
Elem3: 6.142 MOhm
Elem4: 6.013 MOhm

Series Resistance: (R_s):

Elem1: 15.7 Ohm
Elem2: 16.3 Ohm
Elem3: 16.8 Ohm
Elem4: 16.9 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 139.5 pF
Elem2: 140.5 pF
Elem3: 137.1 pF
Elem4: 138.6 pF

Dark Current [nA]:

Elem1: 4.95 nA
Elem2: 5.86 nA
Elem3: 5.03 nA
Elem4: 5.22 nA

Dark Noise:

1~10Hz avg

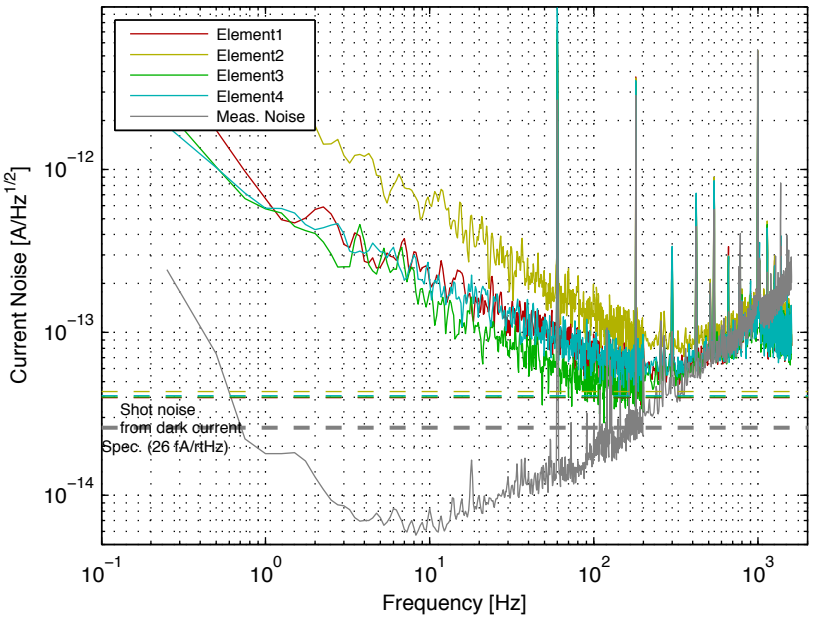
Elem1: 0.362 pA/rtHz
Elem2: 1.225 pA/rtHz
Elem3: 0.303 pA/rtHz
Elem4: 0.341 pA/rtHz

200~290Hz avg

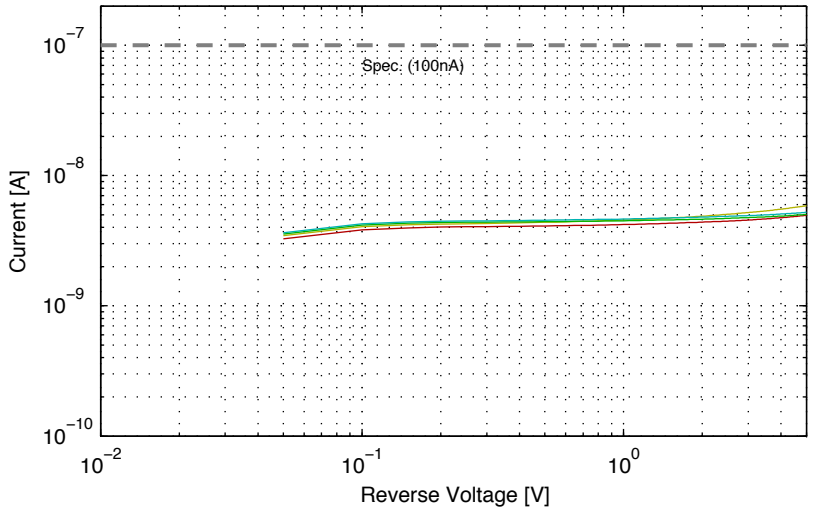
Elem1: 0.063 pA/rtHz
Elem2: 0.094 pA/rtHz
Elem3: 0.061 pA/rtHz
Elem4: 0.067 pA/rtHz

Total Penalty: –20

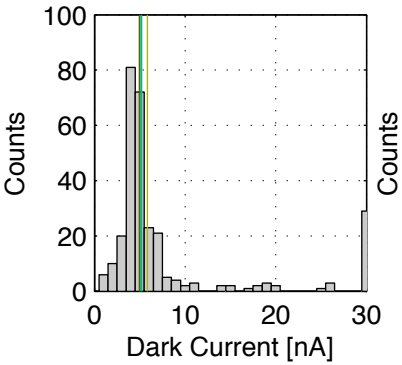
Dark noise: V_R = 5V



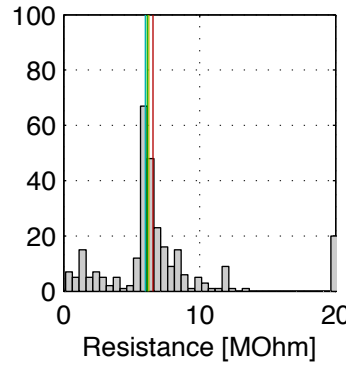
Dark current



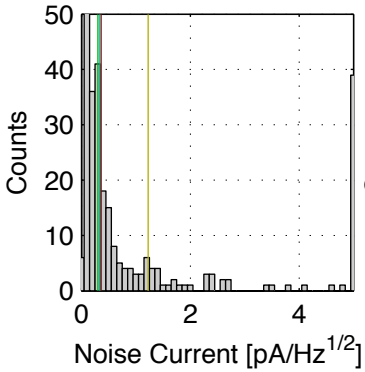
Dark Current



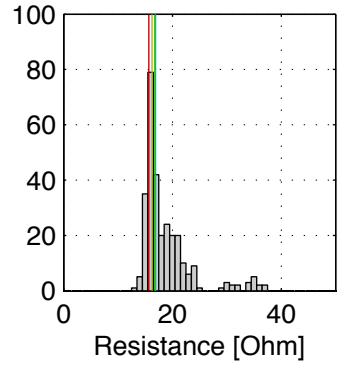
Shunt Resistance



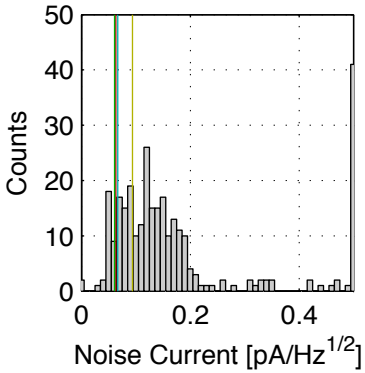
Dark current noise (1–10Hz Avg)



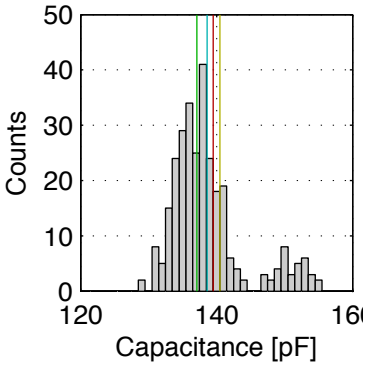
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #75

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 5.810 MOhm
Elem2: 5.637 MOhm
Elem3: 5.553 MOhm
Elem4: 5.461 MOhm

Series Resistance: (R_s):

Elem1: 14.8 Ohm
Elem2: 15.6 Ohm
Elem3: 16.4 Ohm
Elem4: 16.3 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 137.3 pF
Elem2: 137.5 pF
Elem3: 134.0 pF
Elem4: 136.3 pF

Dark Current [nA]:

Elem1: 5.58 nA
Elem2: 5.65 nA
Elem3: 5.83 nA
Elem4: 6.09 nA

Dark Noise:

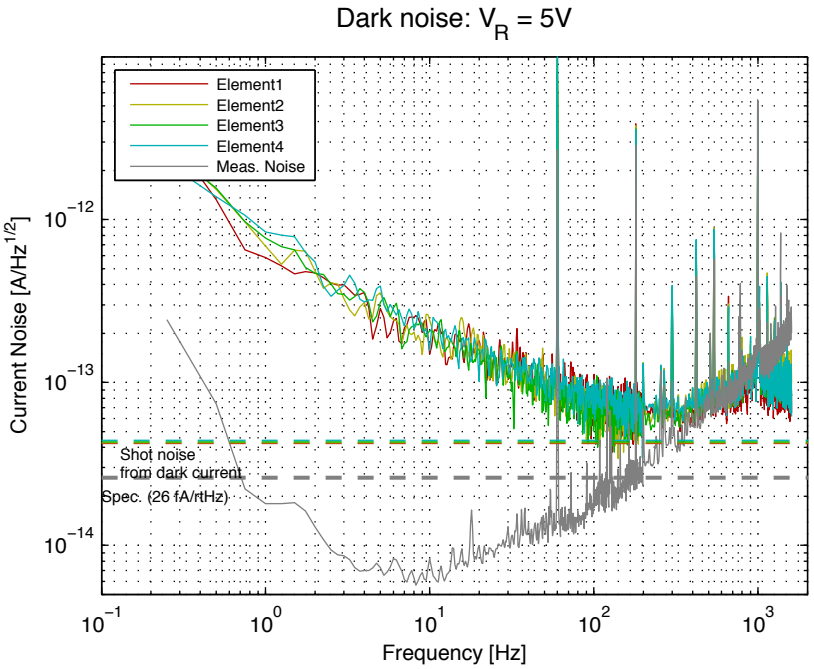
1~10Hz avg

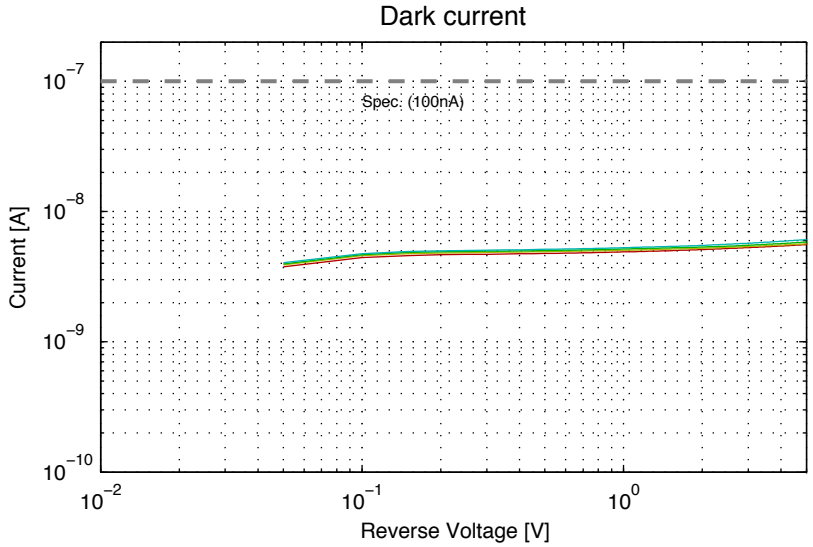
Elem1: 0.316 pA/rtHz
Elem2: 0.333 pA/rtHz
Elem3: 0.348 pA/rtHz
Elem4: 0.386 pA/rtHz

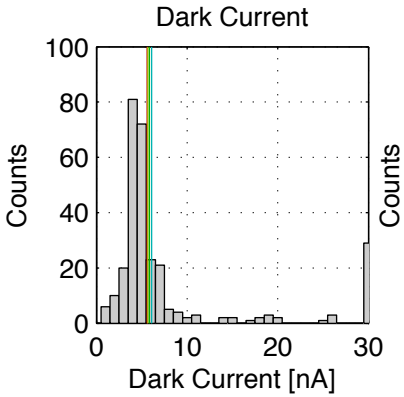
200~290Hz avg

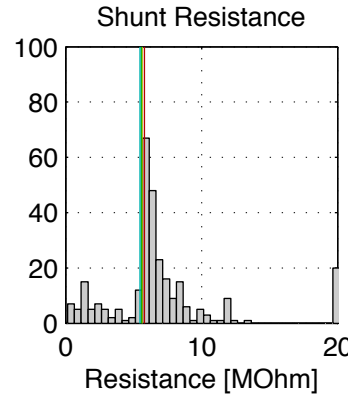
Elem1: 0.069 pA/rtHz
Elem2: 0.074 pA/rtHz
Elem3: 0.069 pA/rtHz
Elem4: 0.079 pA/rtHz

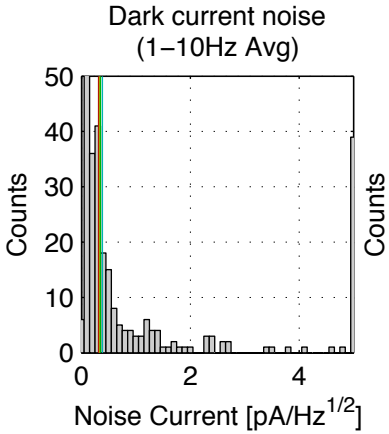
Total Penalty: –20

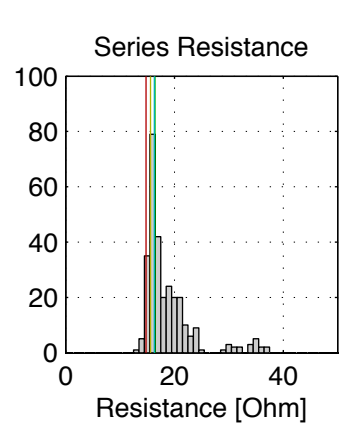


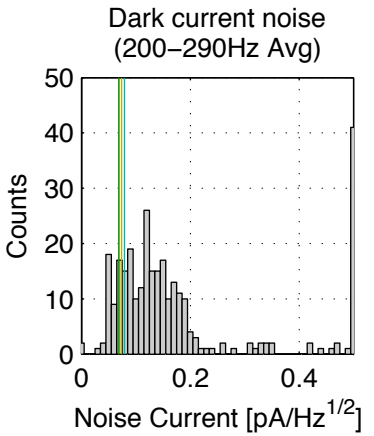


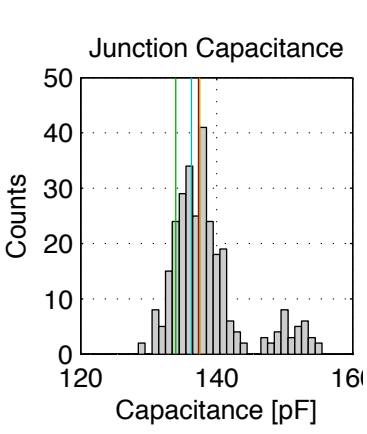












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #76

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.407 MOhm
Elem2: 6.082 MOhm
Elem3: 5.942 MOhm
Elem4: 5.825 MOhm

Series Resistance: (R_s):

Elem1: 14.7 Ohm
Elem2: 15.4 Ohm
Elem3: 16.0 Ohm
Elem4: 15.8 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 138.2 pF
Elem2: 139.3 pF
Elem3: 136.0 pF
Elem4: 138.0 pF

Dark Current [nA]:

Elem1: 4.25 nA
Elem2: 4.48 nA
Elem3: 4.61 nA
Elem4: 4.68 nA

Dark Noise:

1~10Hz avg

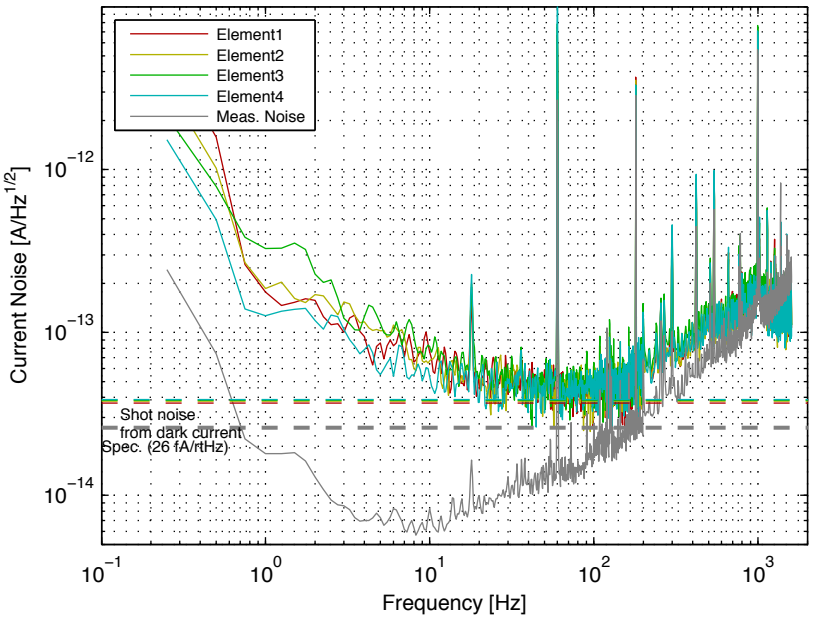
Elem1: 0.103 pA/rtHz
Elem2: 0.115 pA/rtHz
Elem3: 0.158 pA/rtHz
Elem4: 0.084 pA/rtHz

200~290Hz avg

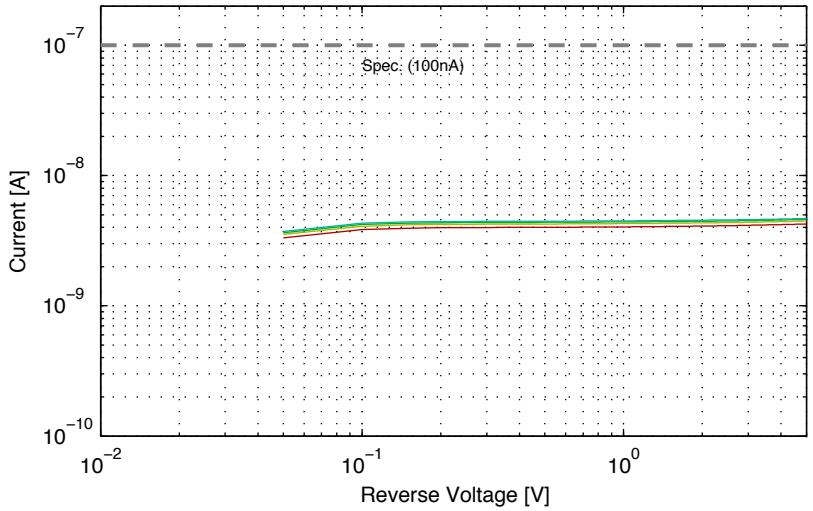
Elem1: 0.080 pA/rtHz
Elem2: 0.077 pA/rtHz
Elem3: 0.092 pA/rtHz
Elem4: 0.082 pA/rtHz

Total Penalty: 0

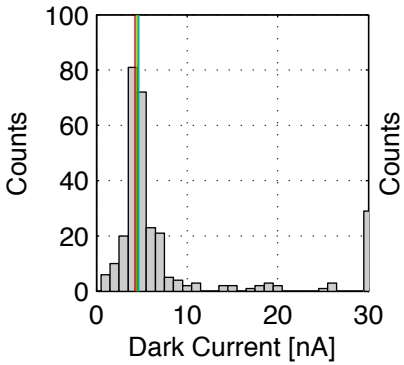
Dark noise: V_R = 5V



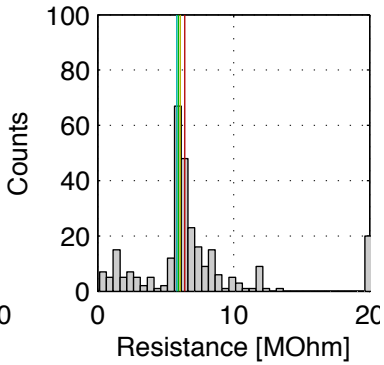
Dark current



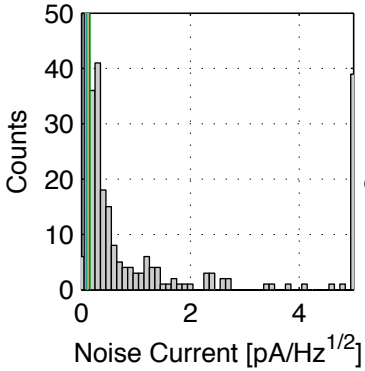
Dark Current



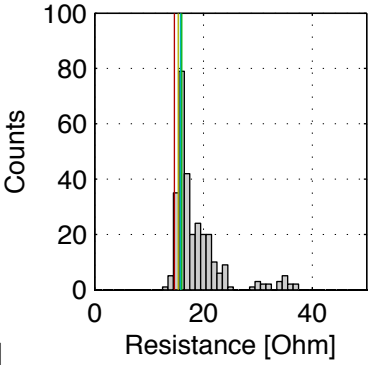
Shunt Resistance



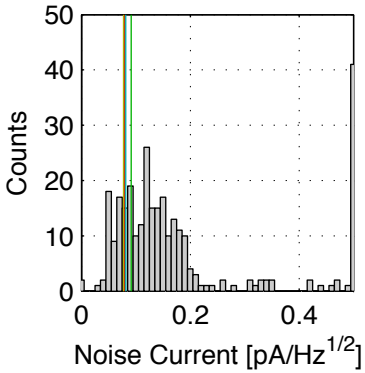
Dark current noise (1–10Hz Avg)



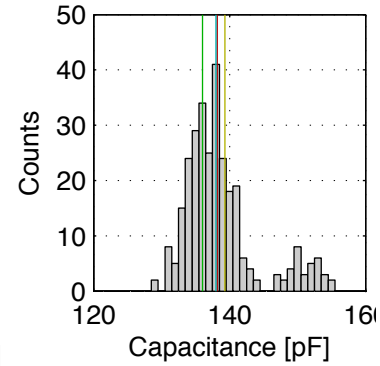
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

QPD #77

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.109 MOhm
Elem2: 6.079 MOhm
Elem3: 6.124 MOhm
Elem4: 6.098 MOhm

Series Resistance: (R_s):

Elem1: 16.3 Ohm
Elem2: 16.6 Ohm
Elem3: 17.2 Ohm
Elem4: 17.1 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 130.5 pF
Elem2: 132.4 pF
Elem3: 129.2 pF
Elem4: 130.6 pF

Dark Current [nA]:

Elem1: 5.48 nA
Elem2: 7.21 nA
Elem3: 6.37 nA
Elem4: 5.53 nA

Dark Noise:

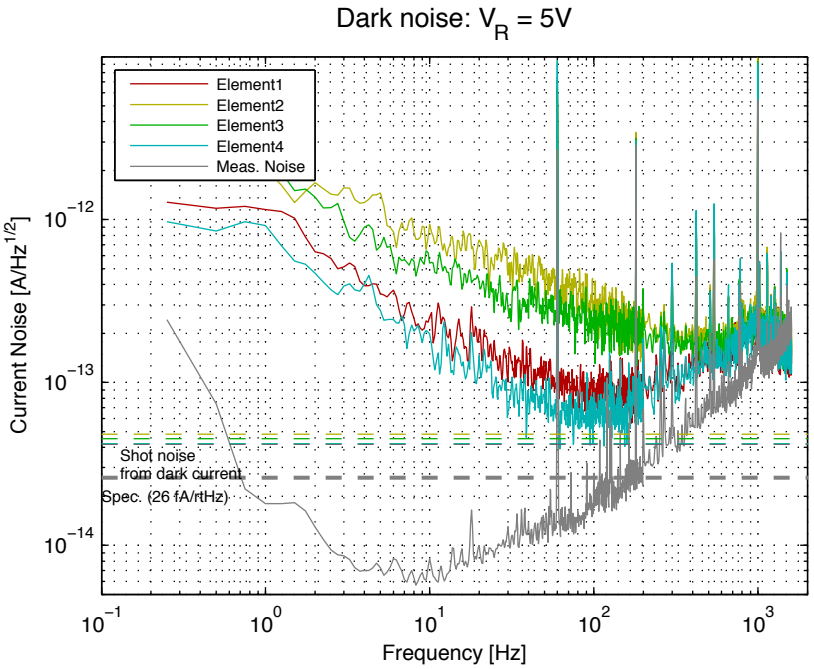
1~10Hz avg

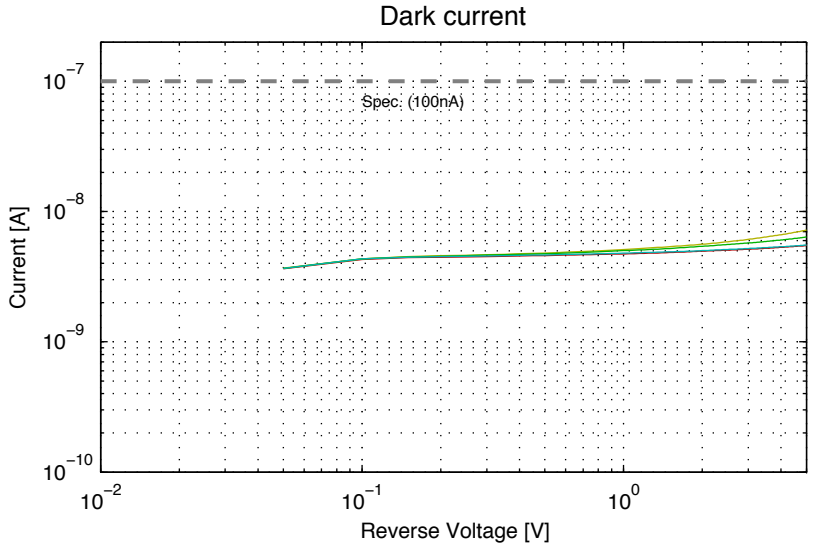
Elem1: 0.491 pA/rtHz
Elem2: 1.200 pA/rtHz
Elem3: 0.978 pA/rtHz
Elem4: 0.360 pA/rtHz

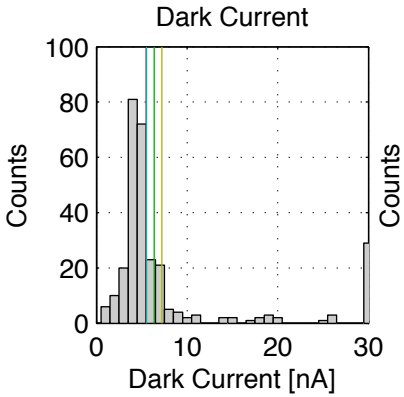
200~290Hz avg

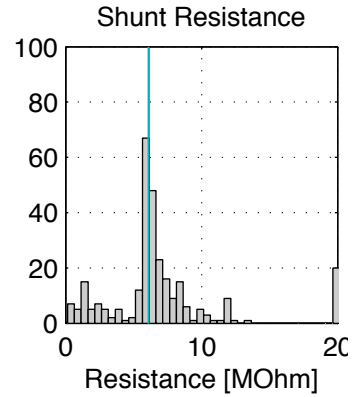
Elem1: 0.123 pA/rtHz
Elem2: 0.224 pA/rtHz
Elem3: 0.197 pA/rtHz
Elem4: 0.113 pA/rtHz

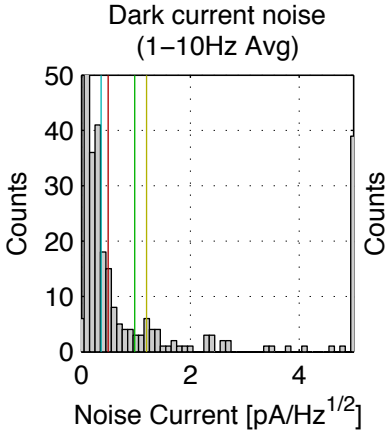
Total Penalty: –30

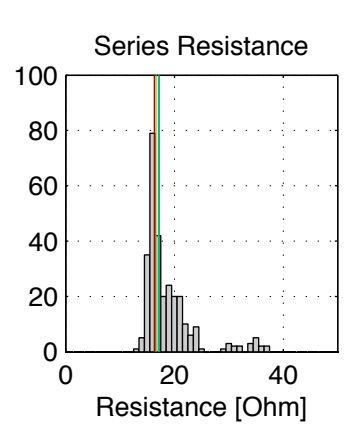


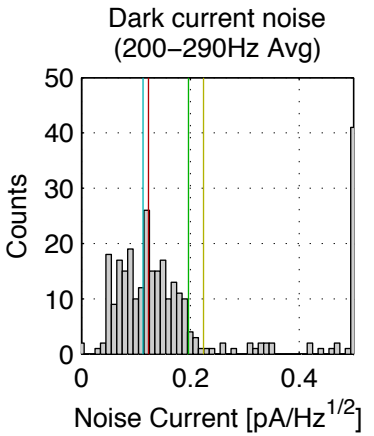


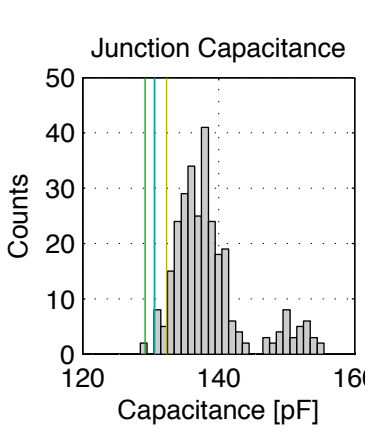












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(HF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(HF) > 180fA/rtHz (100nA shot)

QPD #78

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 0.925 MOhm
Elem2: 0.875 MOhm
Elem3: 0.843 MOhm
Elem4: 0.813 MOhm

Series Resistance: (R_s):

Elem1: 16.8 Ohm
Elem2: 17.9 Ohm
Elem3: 18.5 Ohm
Elem4: 18.1 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 139.5 pF
Elem2: 140.2 pF
Elem3: 137.9 pF
Elem4: 139.2 pF

Dark Current [nA]:

Elem1: 69.03 nA
Elem2: 72.28 nA
Elem3: 78.09 nA
Elem4: 80.45 nA

Dark Noise:

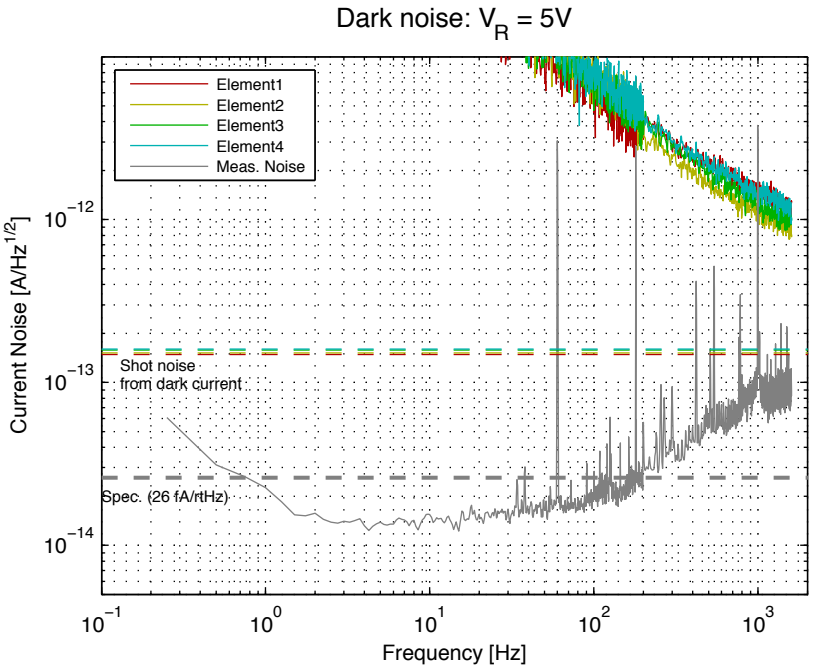
1~10Hz avg

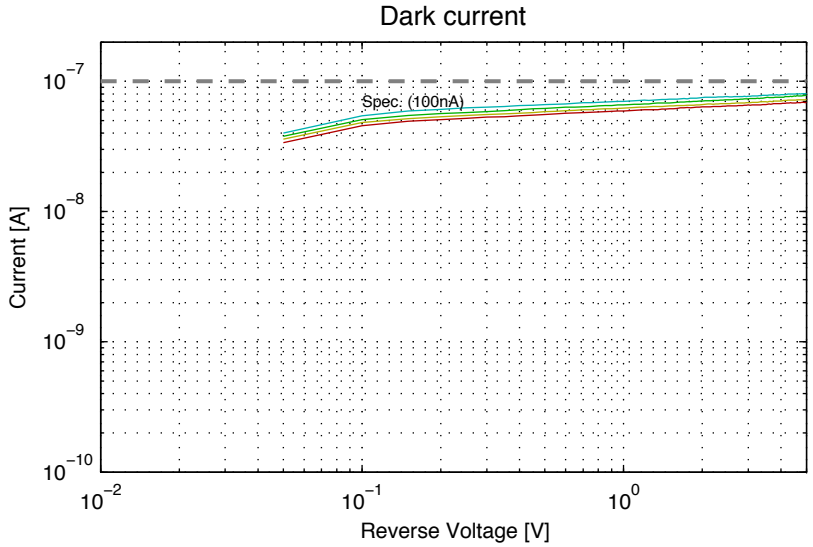
Elem1: 37.269 pA/rtHz
Elem2: 61.699 pA/rtHz
Elem3: 47.398 pA/rtHz
Elem4: 55.958 pA/rtHz

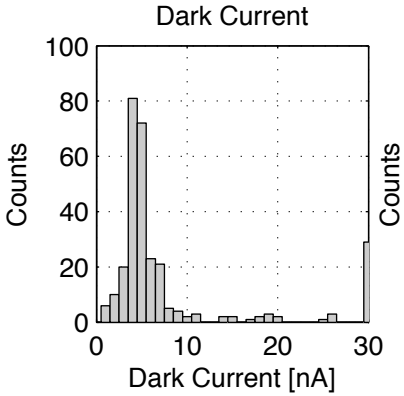
200~290Hz avg

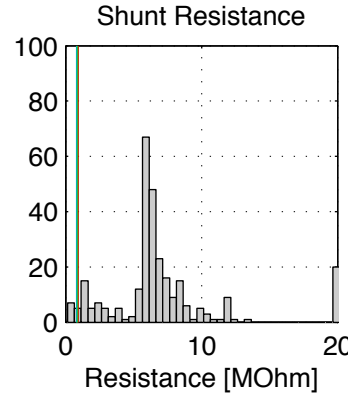
Elem1: 3.633 pA/rtHz
Elem2: 2.904 pA/rtHz
Elem3: 3.487 pA/rtHz
Elem4: 3.686 pA/rtHz

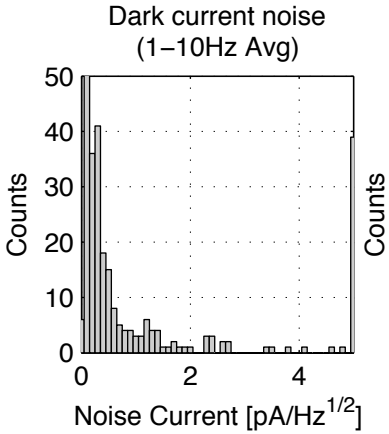
Total Penalty: –420

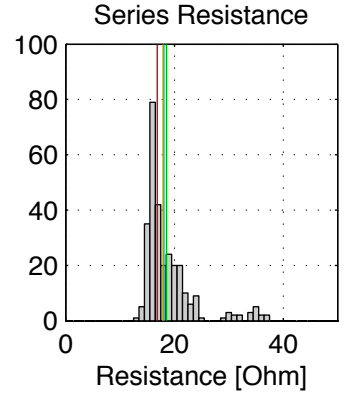


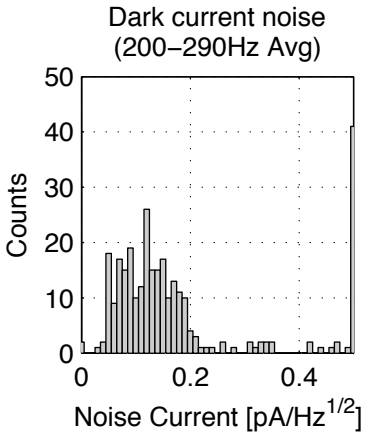


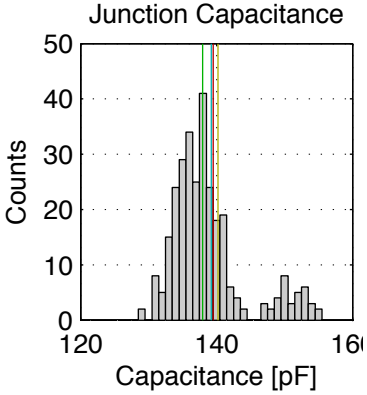












Errors / Warnings

Elem1: i_{dark} > 10nA
Elem2: i_{dark} > 10nA
Elem3: i_{dark} > 10nA
Elem4: i_{dark} > 10nA
Elem1: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(LF) > 1.8pA/rtHz (10uA shot)
Elem1: i_{noise}(HF) > 1.8pA/rtHz (10uA shot)
Elem2: i_{noise}(HF) > 1.8pA/rtHz (10uA shot)
Elem3: i_{noise}(HF) > 1.8pA/rtHz (10uA shot)
Elem4: i_{noise}(HF) > 1.8pA/rtHz (10uA shot)

QPD #79

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.181 MOhm
Elem2: 5.887 MOhm
Elem3: 5.755 MOhm
Elem4: 5.656 MOhm

Series Resistance: (R_s):

Elem1: 15.3 Ohm
Elem2: 15.9 Ohm
Elem3: 16.5 Ohm
Elem4: 16.2 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 134.8 pF
Elem2: 135.6 pF
Elem3: 132.5 pF
Elem4: 134.6 pF

Dark Current [nA]:

Elem1: 5.94 nA
Elem2: 6.03 nA
Elem3: 6.36 nA
Elem4: 6.84 nA

Dark Noise:

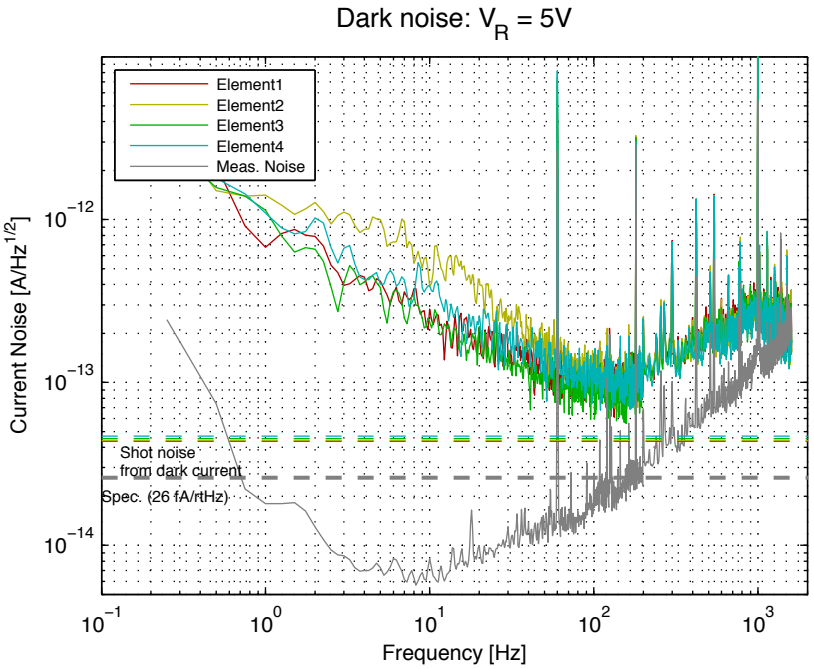
1~10Hz avg

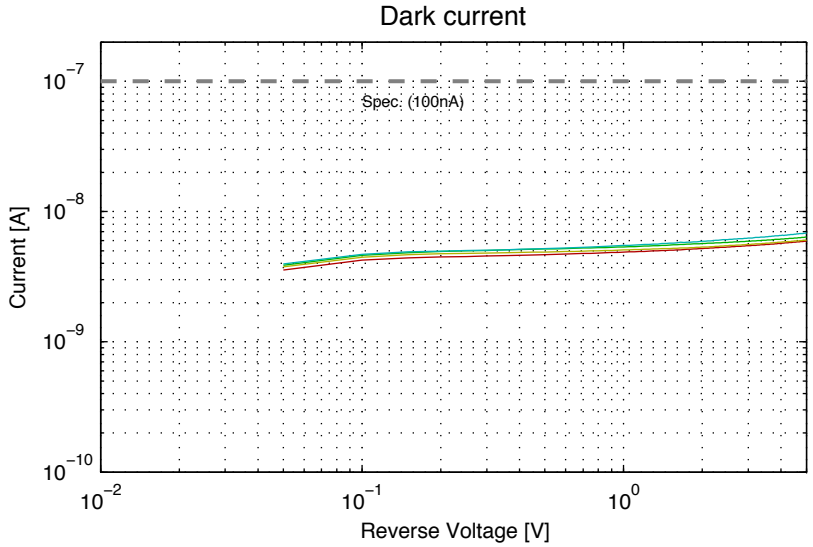
Elem1: 0.457 pA/rtHz
Elem2: 0.887 pA/rtHz
Elem3: 0.439 pA/rtHz
Elem4: 0.566 pA/rtHz

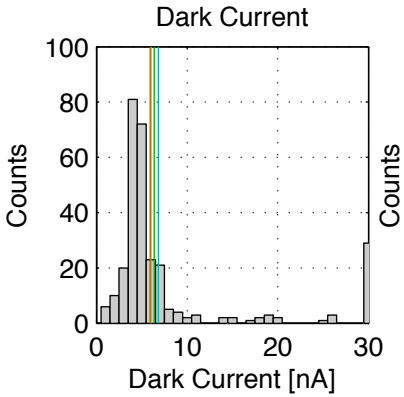
200~290Hz avg

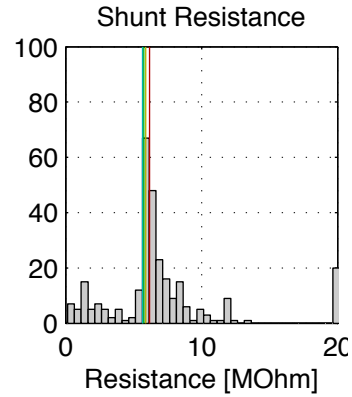
Elem1: 0.165 pA/rtHz
Elem2: 0.170 pA/rtHz
Elem3: 0.154 pA/rtHz
Elem4: 0.159 pA/rtHz

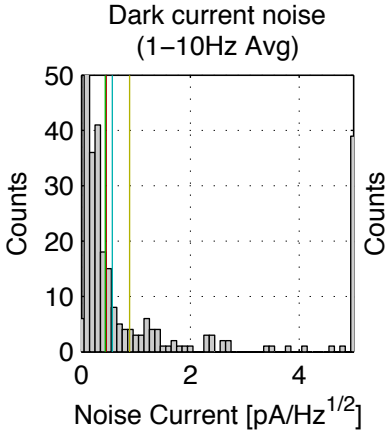
Total Penalty: –20

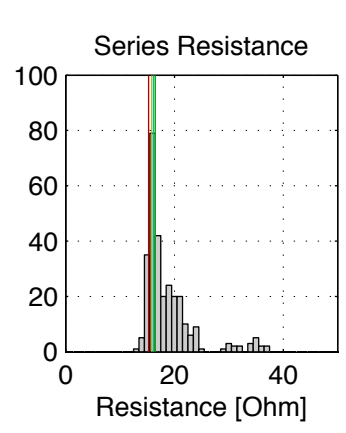


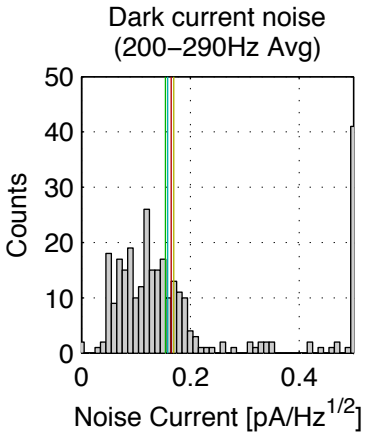


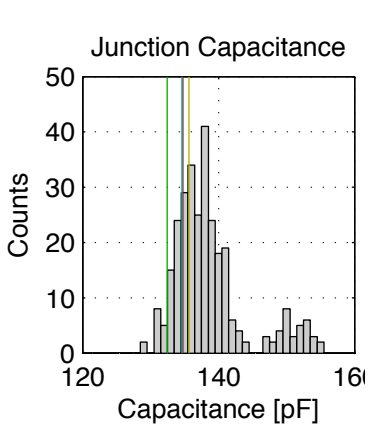












Errors / Warnings

Elem1: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem2: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)
Elem4: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #80

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 6.753 MOhm
Elem2: 6.297 MOhm
Elem3: 6.065 MOhm
Elem4: 5.900 MOhm

Series Resistance: (R_s):

Elem1: 14.6 Ohm
Elem2: 15.1 Ohm
Elem3: 15.9 Ohm
Elem4: 15.8 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 136.8 pF
Elem2: 138.2 pF
Elem3: 134.9 pF
Elem4: 136.2 pF

Dark Current [nA]:

Elem1: 3.96 nA
Elem2: 4.26 nA
Elem3: 4.44 nA
Elem4: 4.57 nA

Dark Noise:

1~10Hz avg

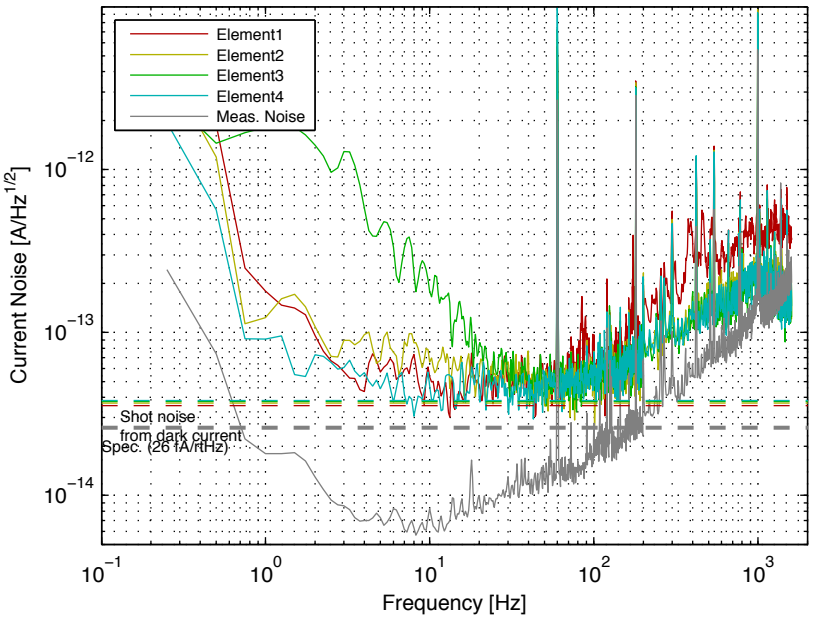
Elem1: 0.075 pA/rtHz
Elem2: 0.092 pA/rtHz
Elem3: 0.843 pA/rtHz
Elem4: 0.054 pA/rtHz

200~290Hz avg

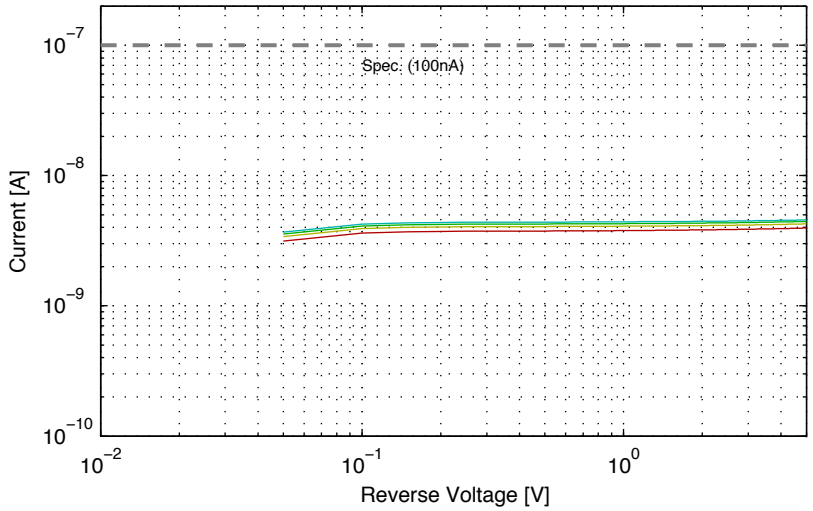
Elem1: 0.167 pA/rtHz
Elem2: 0.110 pA/rtHz
Elem3: 0.108 pA/rtHz
Elem4: 0.114 pA/rtHz

Total Penalty: −5

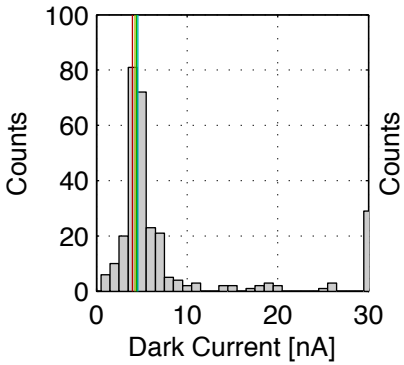
Dark noise: V_R = 5V



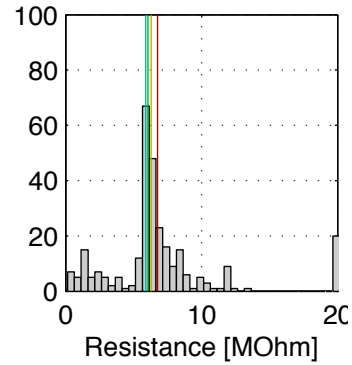
Dark current



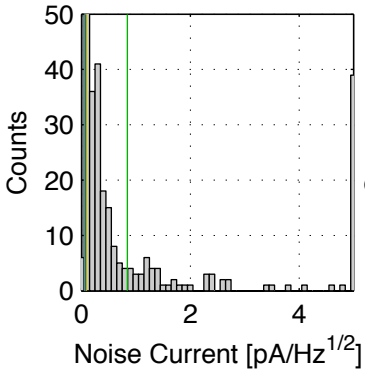
Dark Current



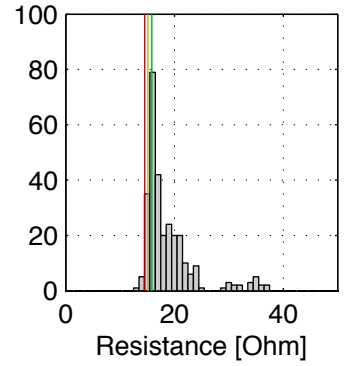
Shunt Resistance



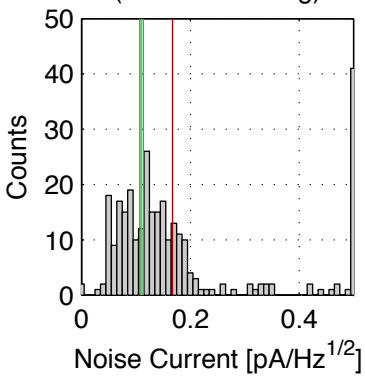
Dark current noise (1–10Hz Avg)



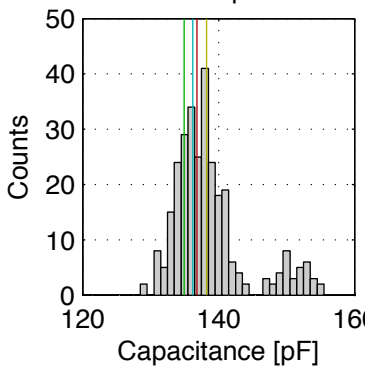
Series Resistance



Dark current noise (200–290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem3: i_{noise}(LF) > 180fA/rtHz (100nA shot)

QPD #99

Measurement Date:
Sept. 1, 2011

Shunt Resistance (R_{SH}):

Elem1: 393.431 MOhm
Elem2: 393.431 MOhm
Elem3: 393.431 MOhm
Elem4: 393.431 MOhm

Series Resistance: (R_s):

Elem1: 4312.2 Ohm
Elem2: 4312.2 Ohm
Elem3: 4312.2 Ohm
Elem4: 4312.2 Ohm

Junction Capacitance: (C_{pd}):

Elem1: 1.0 pF
Elem2: 1.0 pF
Elem3: 1.0 pF
Elem4: 1.0 pF

Dark Current [nA]:

Elem1: 0.01 nA
Elem2: 0.01 nA
Elem3: 0.01 nA
Elem4: 0.01 nA

Dark Noise:

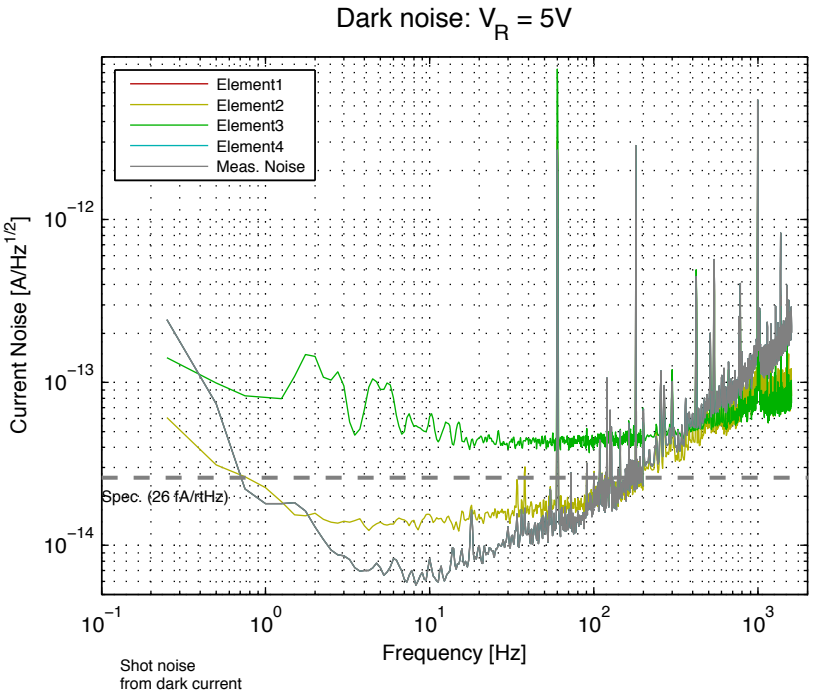
1~10Hz avg

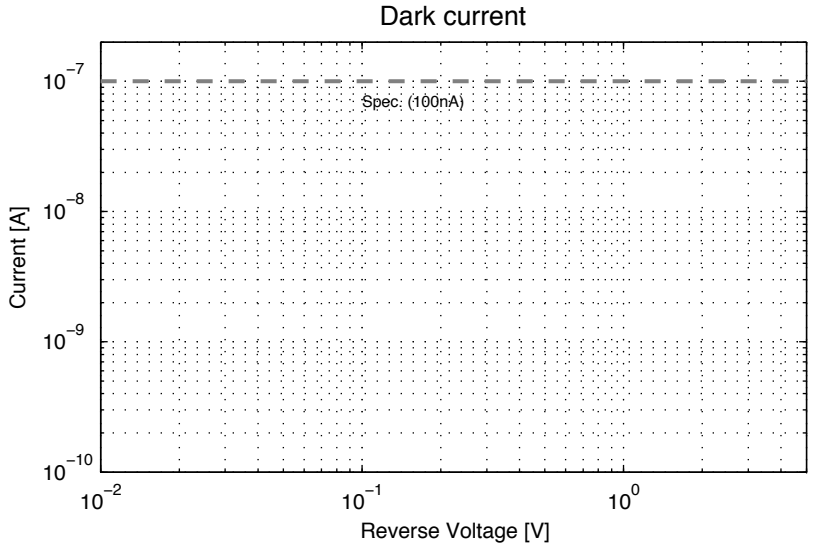
Elem1: 0.008 pA/rtHz
Elem2: 0.008 pA/rtHz
Elem3: 0.008 pA/rtHz
Elem4: 0.008 pA/rtHz

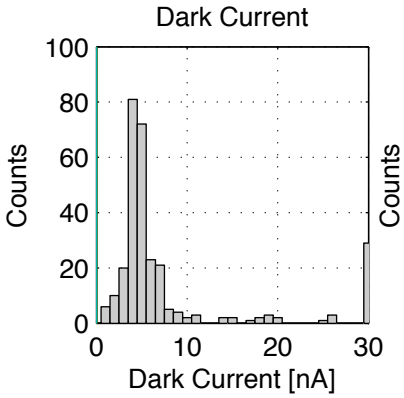
200~290Hz avg

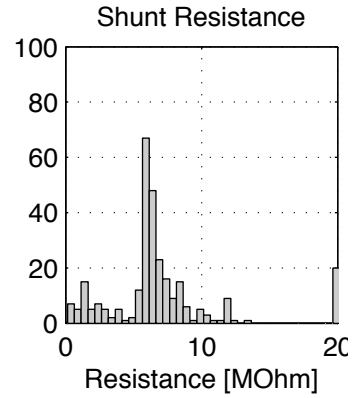
Elem1: 0.041 pA/rtHz
Elem2: 0.041 pA/rtHz
Elem3: 0.041 pA/rtHz
Elem4: 0.041 pA/rtHz

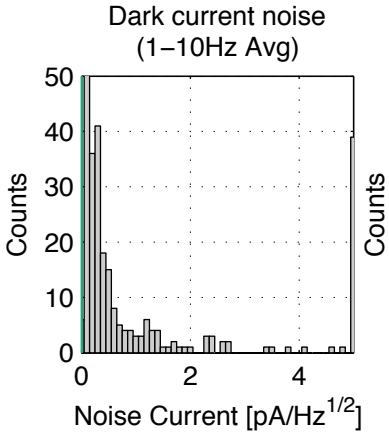
Total Penalty: –400

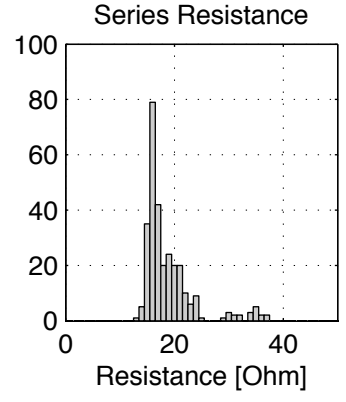


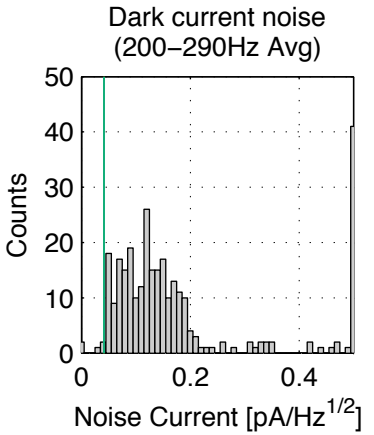


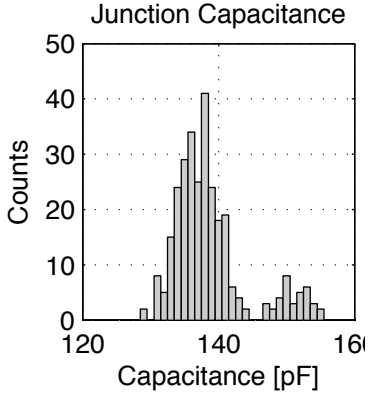












Errors / Warnings

Elem1: R_s > 50 Ohm
Elem2: R_s > 50 Ohm
Elem3: R_s > 50 Ohm
Elem4: R_s > 50 Ohm
Elem1: i_{noise}(LF): too high dark current?
Elem2: i_{noise}(LF): too high dark current?
Elem3: i_{noise}(LF): too high dark current?
Elem4: i_{noise}(LF): too high dark current?