

OMC building status

- Glass components on the OMC top side (non-optic side) were glued: with gluing template. The process went well.
- PZT assembly:
PZT-glass joints by UV epoxy showed reduction of the "wet" area by $\sim 30\%$.
=> After repeated finger poking, the PZT-Prism joint was detached.
(though it was not easy)

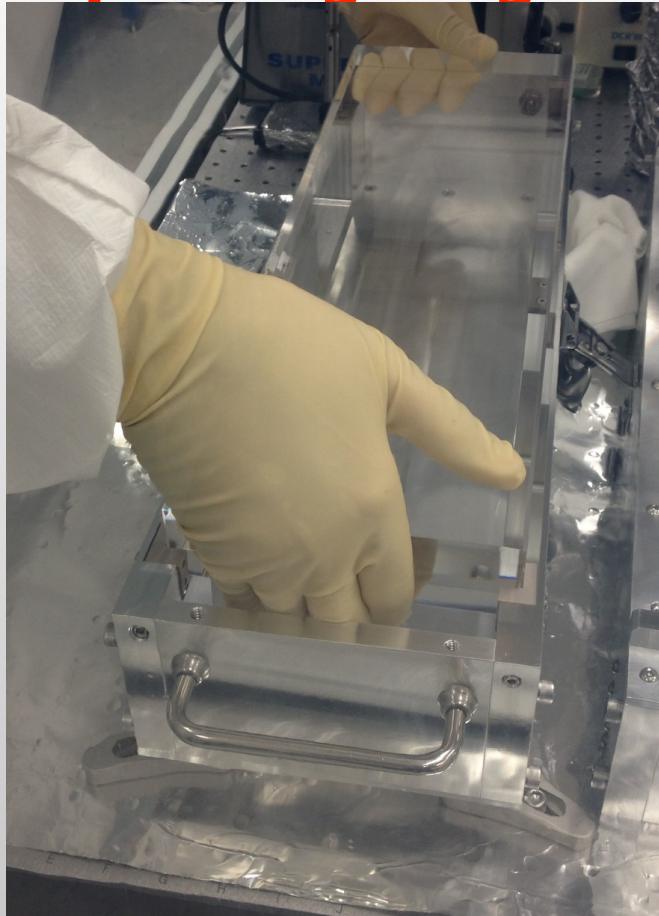
We are preparing to switch the glue to EP30-2 for the PZT-glass joints

- DCPD/QPD mount, cable harness: In the baking oven. Will come back shortly
- Black glass beam dampers: Arrived from MIT. Inspected.
- Cavity locking optics: Beam coming out from a mode cleaning fiber. Locking will be tested by a "dummy" OMC
- 13 DCPD diodes (C30665GH): Tested. Q.E. with the glass window $\approx 85\%$
9 selected => In the C&B process

OMC status update

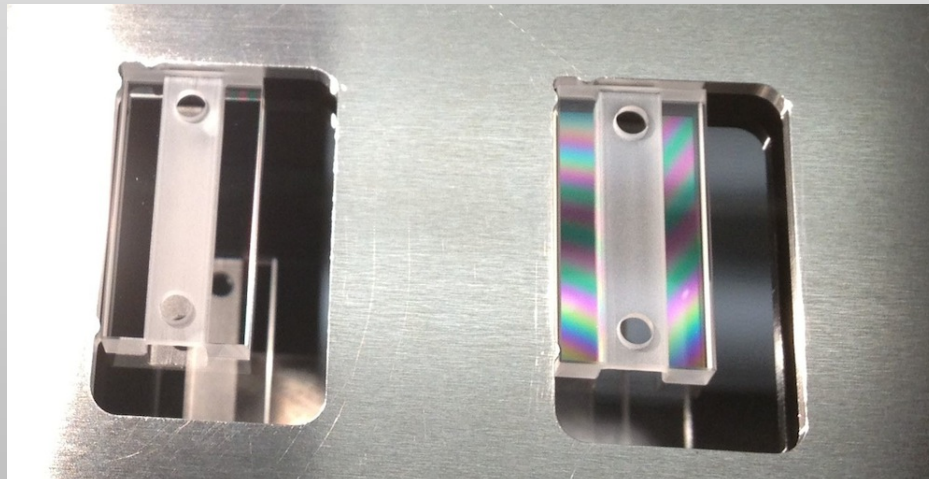
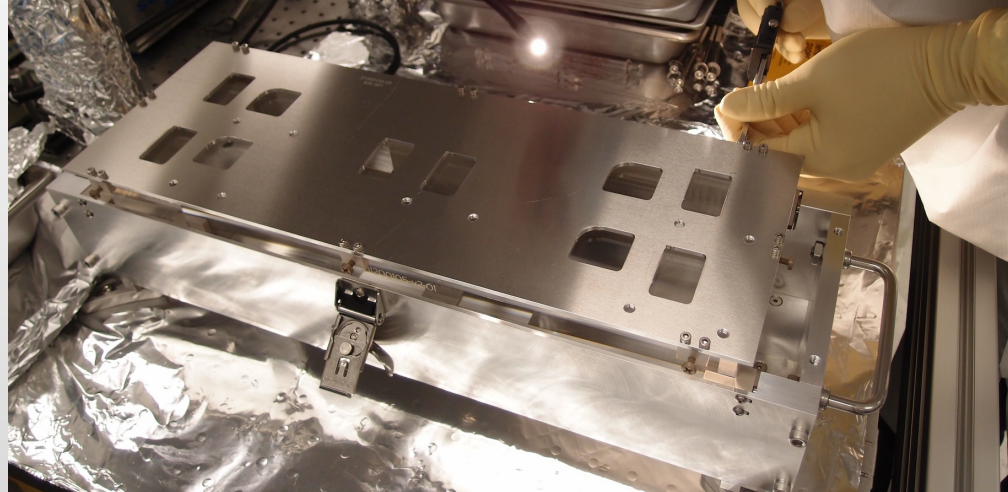
K Arai/J Lewis/W Korth/L Barsotti
Mar. 29, 2013 / LIGO-G1300405-v1 P2

Top-side gluing



^
Placing the glass
breadboard
in the transporting
(building) fixture

v top-gluing template

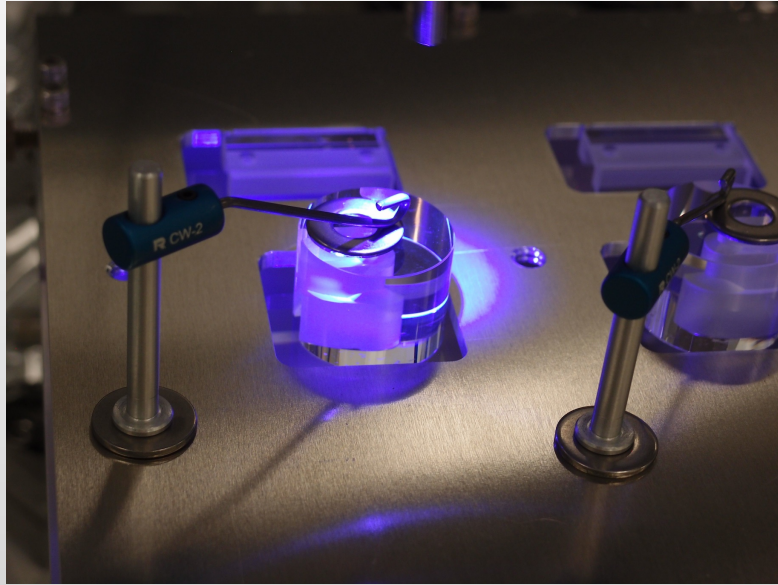


^ optics placed on the breadboard
(no UV epoxy applied yet)

OMC status update

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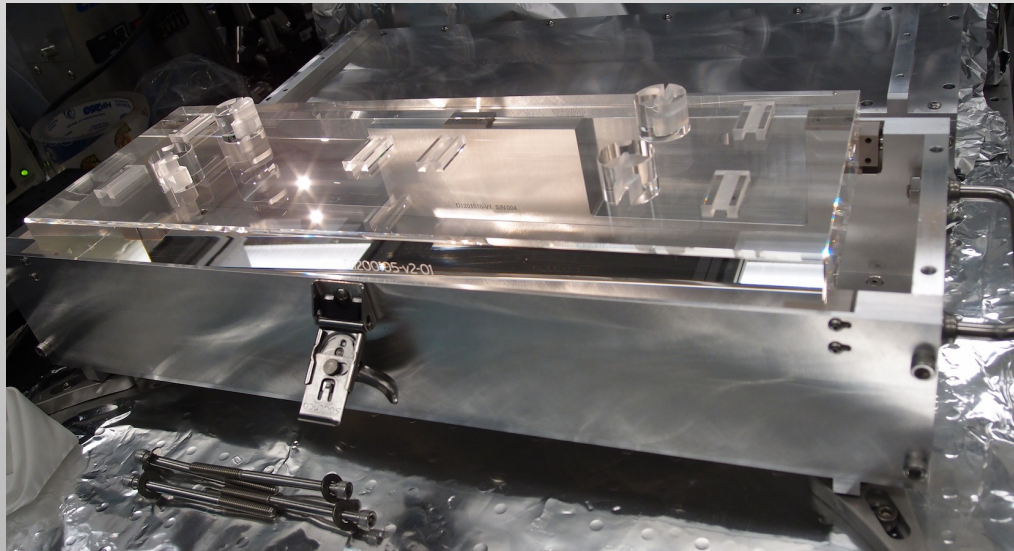
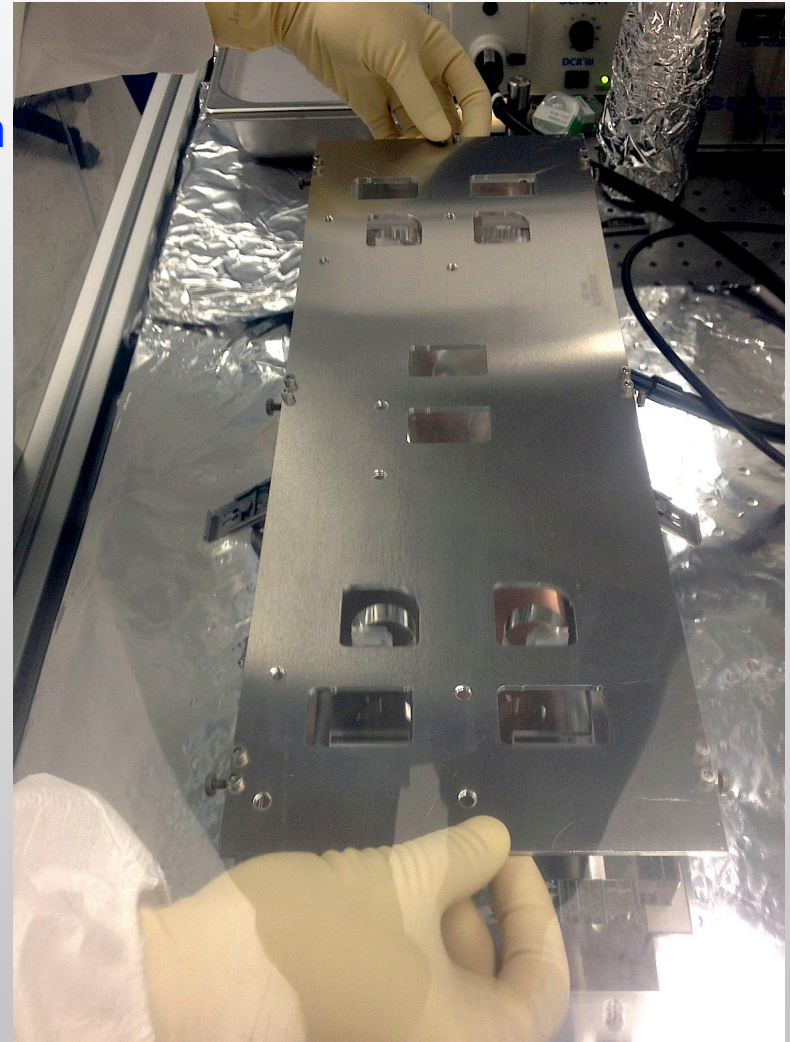
Top-side gluing 2



<-
UV illuminaiton

Removing
template ->

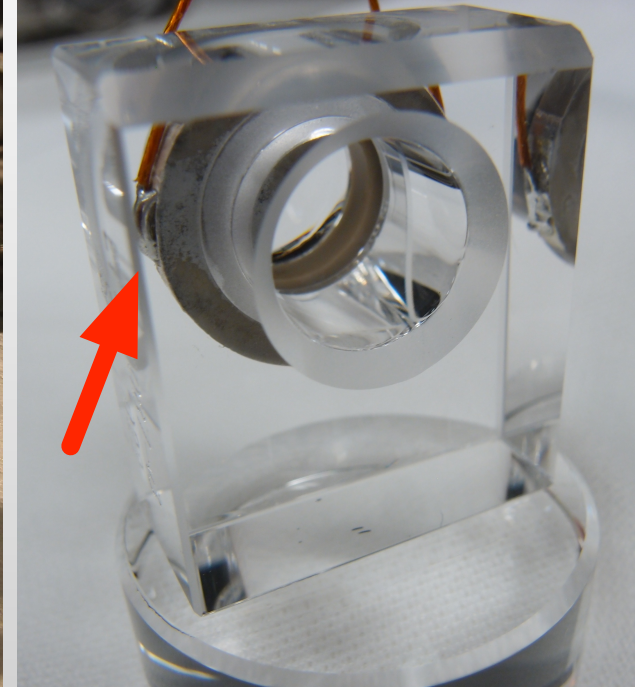
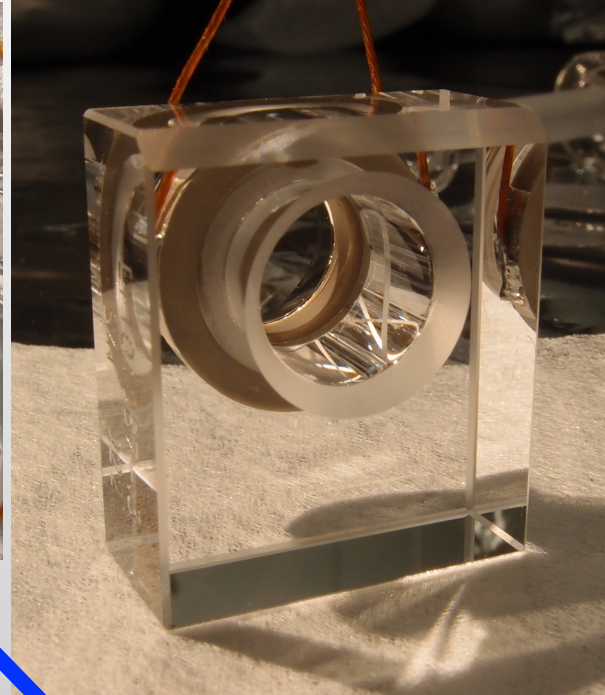
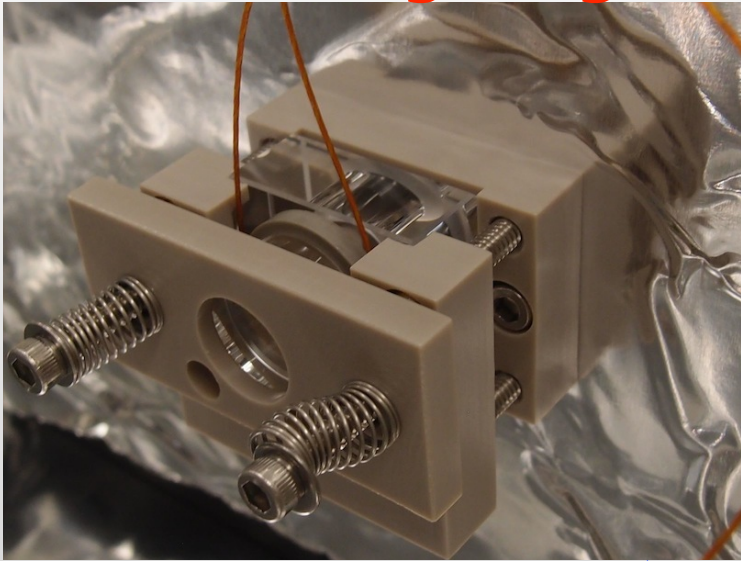
v Top side
completed!



OMC status update

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PZT-Prism gluing

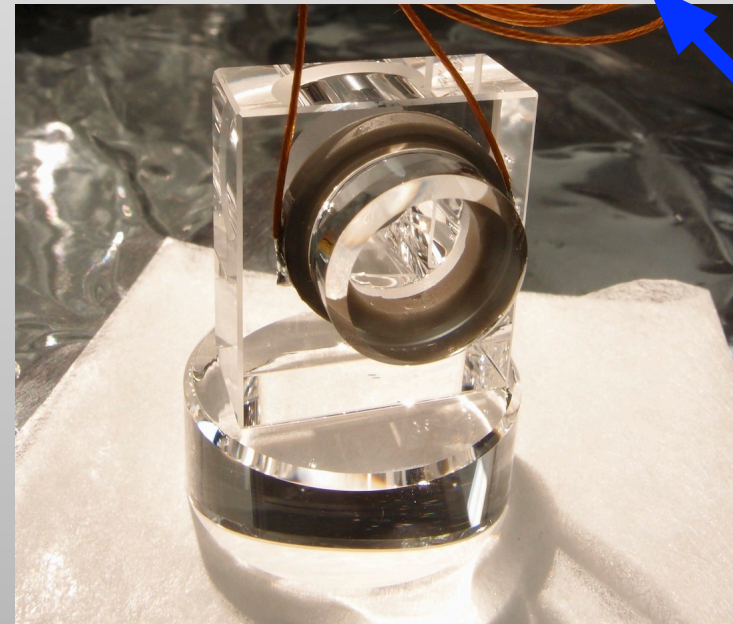


Before the bake ^

^ After the heat process
for epoxy cure
(100degC ~1 hour)

Gluing fixture

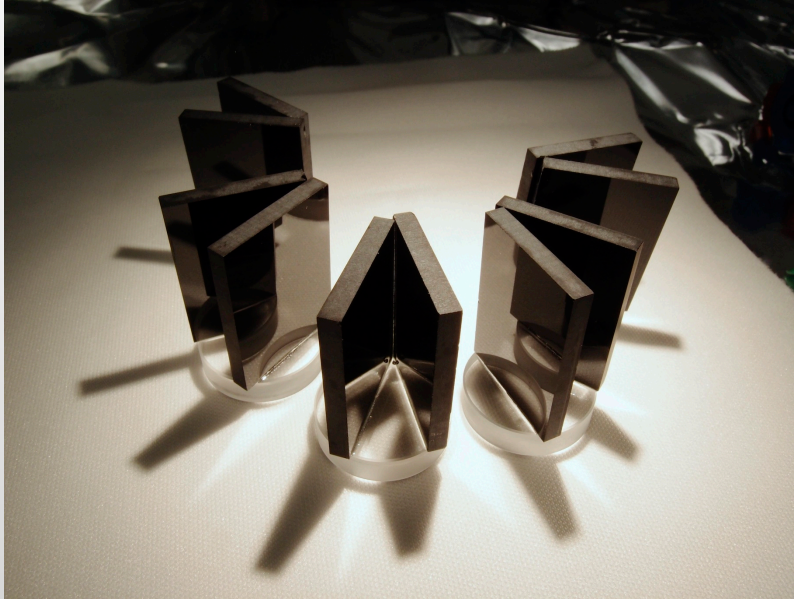
<-
glued PZT
assembly



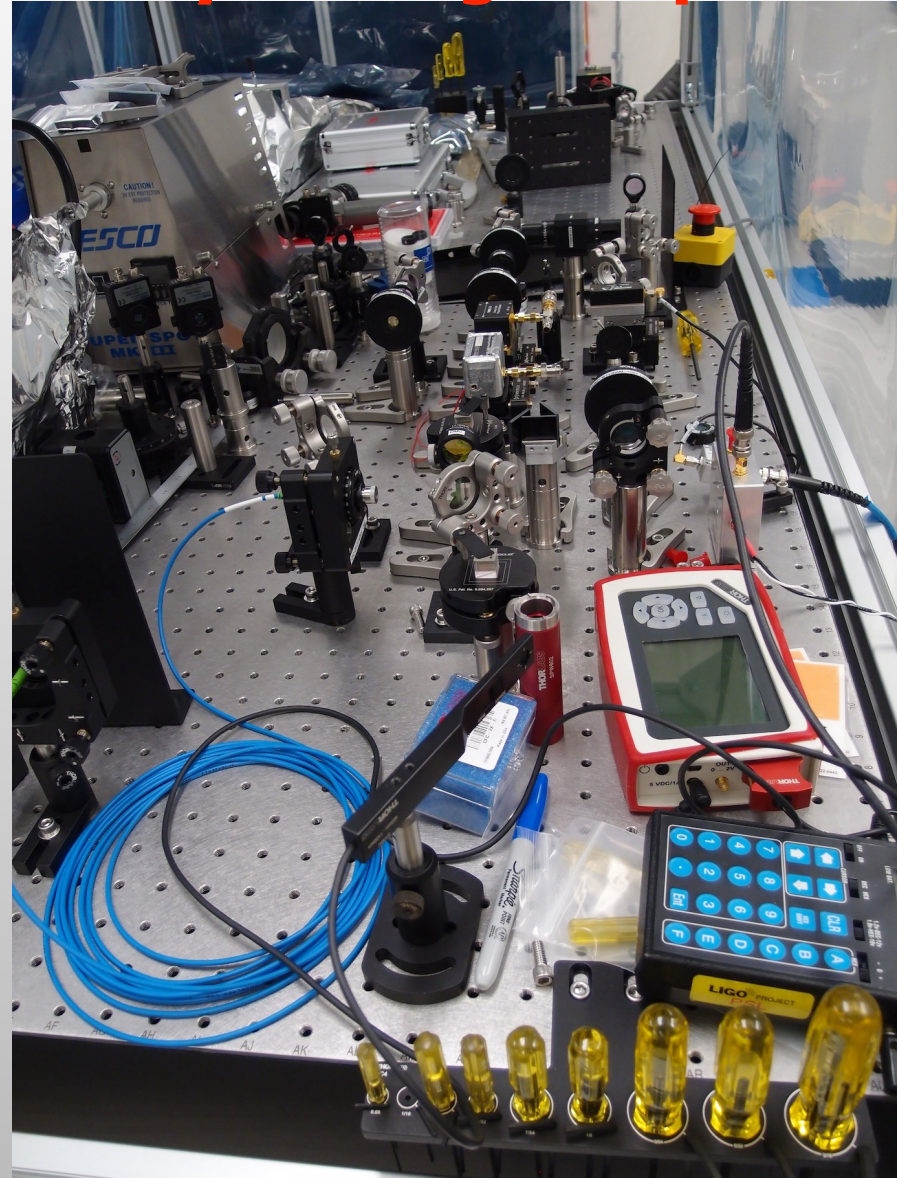
OMC status update

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Beam dump



Cavity locking setup



PD #11

Measurement Date:

Mar. 17, 2013

Impedance measured at $V_R = 15V$

Shunt Resistance (R_{SH}):

Elem1: 13.905 MOhm

Series Resistance (R_s):

Elem1: 10.0 Ohm

Junction Capacitance (C_{pd}):

Elem1: 212.9 pF

Dark Current [nA]:

Elem1: 3.48 nA

Dark Noise:

1~10Hz avg

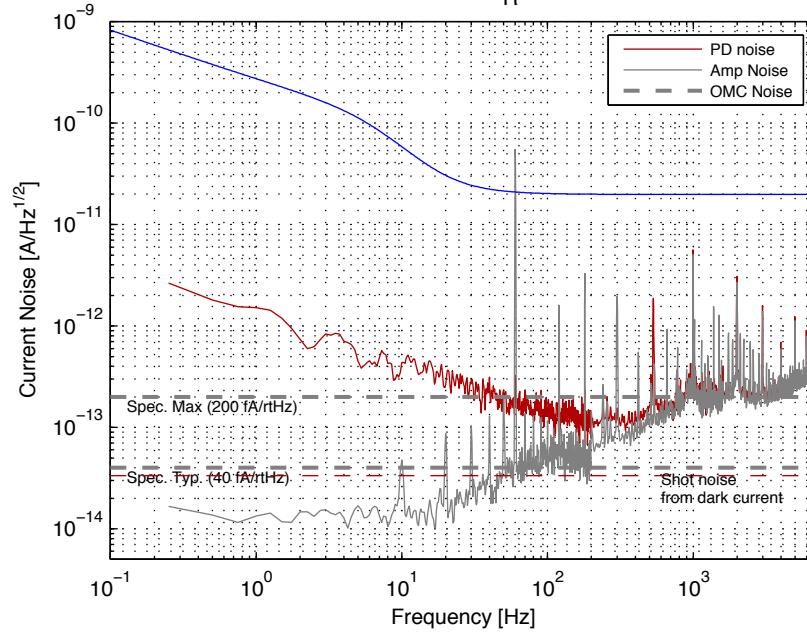
Elem1: 0.674 pA/rtHz

200~290Hz avg

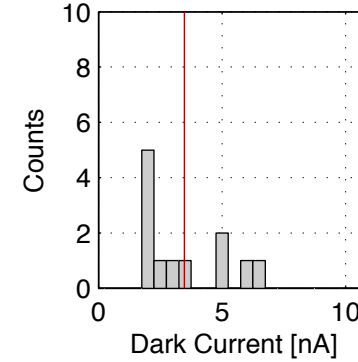
Elem1: 0.128 pA/rtHz

Total Penalty: -5

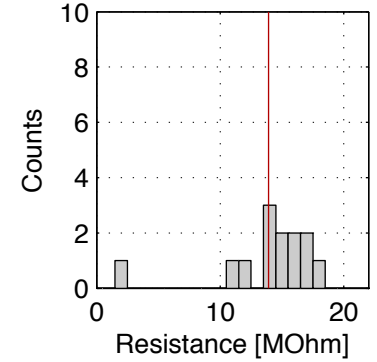
Dark noise: $V_R = 5V$



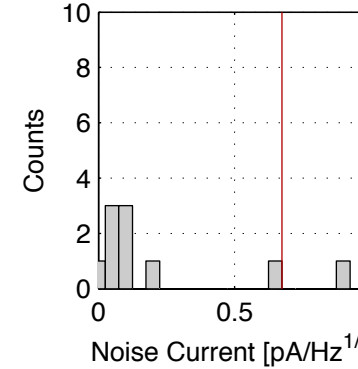
Dark Current@5V



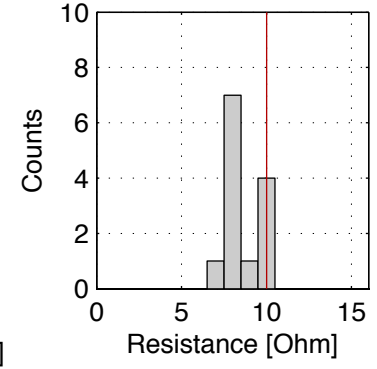
Shunt Resistance



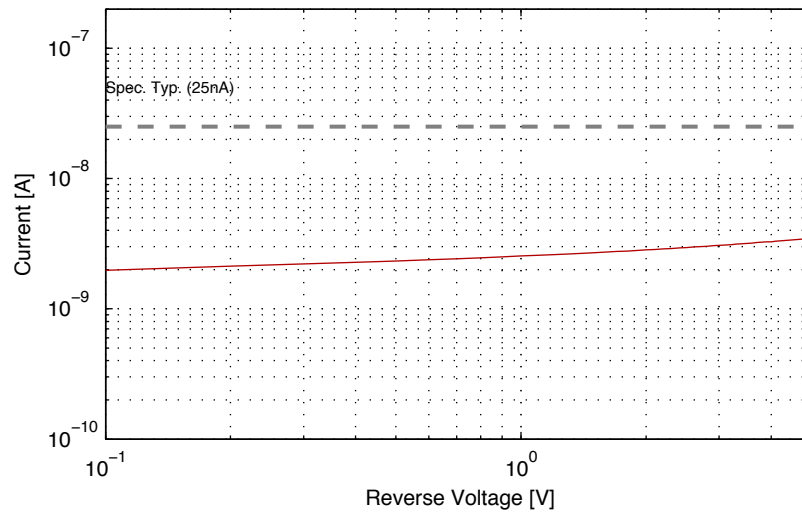
Dark current noise (1-10Hz Avg)



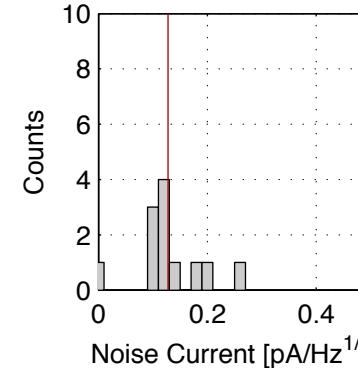
Series Resistance



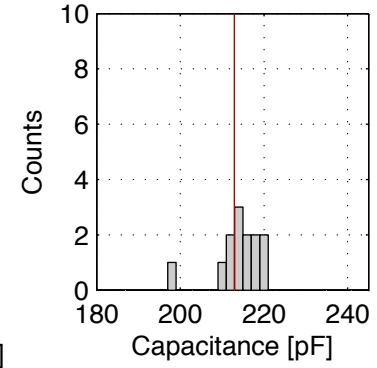
Dark current



Dark current noise (200-290Hz Avg)



Junction Capacitance



Errors / Warnings

Elem1: $i_{noise} (LF) > 180fA/rtHz$ (10nA shot)