OMC fabrication & testing plan

Koji Arai / Jun. 15, 2012

Current Target:

- Deliver a first OMC for the DRMI test @LLO
  The end of 2012 ~ early 2013

Team (so far):

- KA, Eric G, Peter K, Jamie R, Zach K,
  Calum T, Jeff L, Rich A, Sam B, Peter F

OMC Facility @CIT:

- Status: Now preparing a clean environment
- Some glass parts delivered (Brackets, OMC Plates)

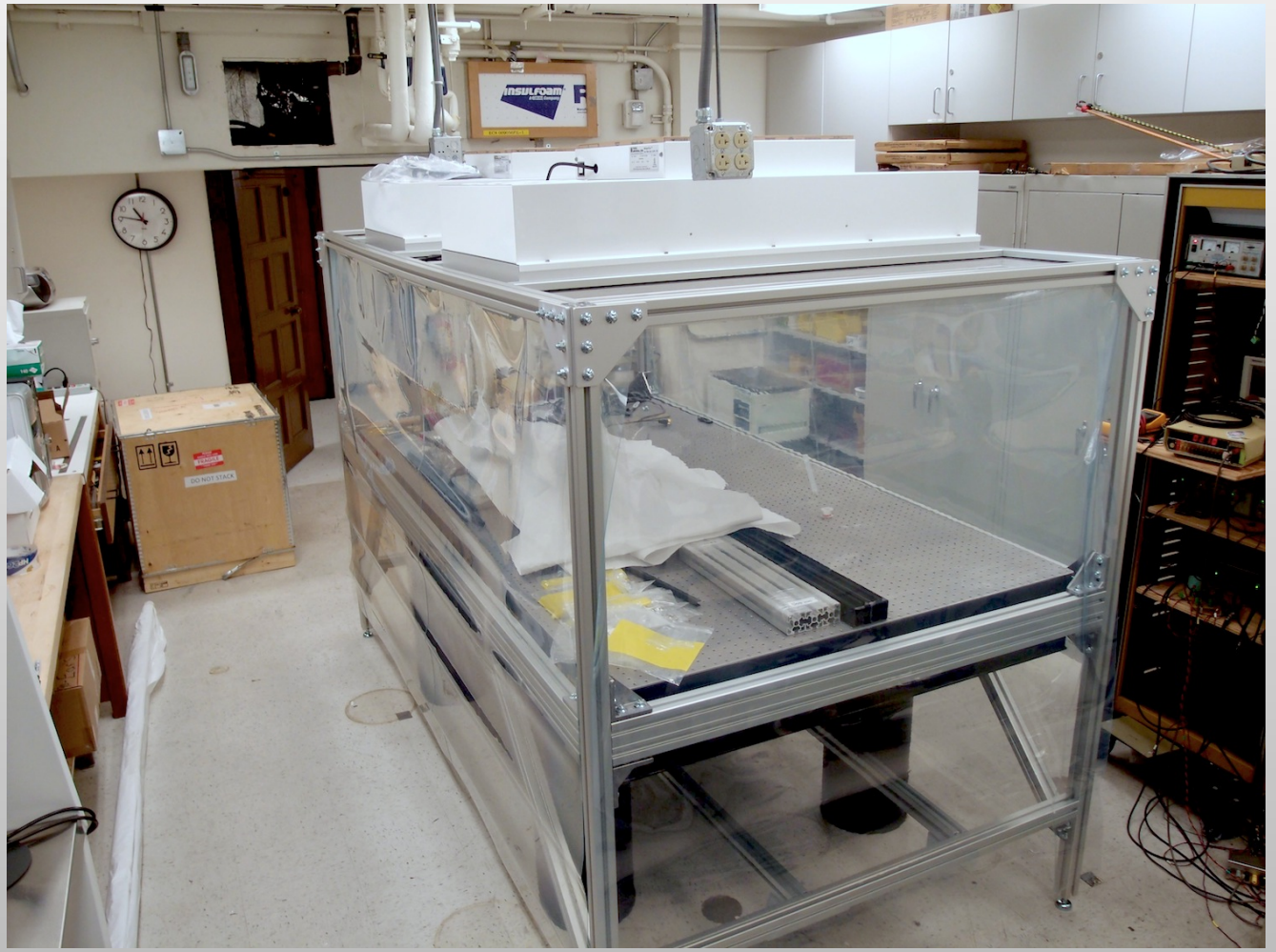
Prepatation:

- Mechanics / Optics / Electronics

Lab room renovation

To be cleaned and laser-safe

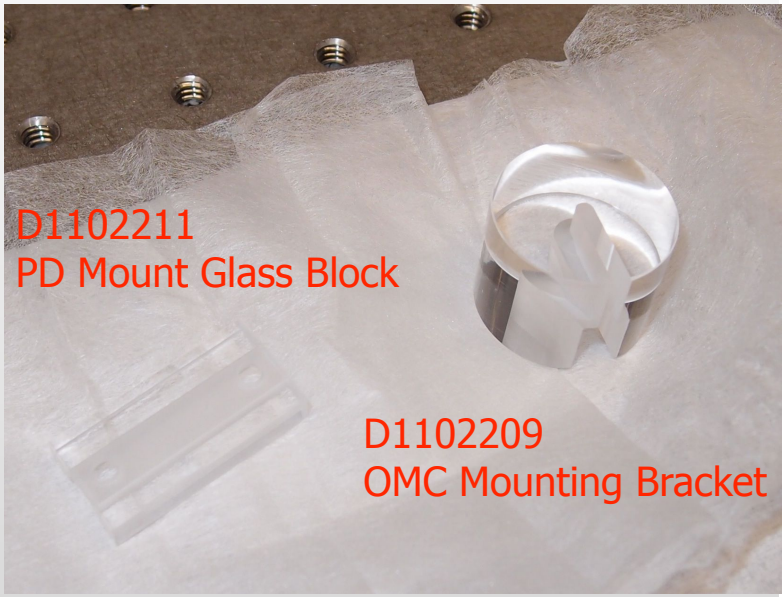
- Secondary HEPA may be placed on the optical table



Mechanics

ELIGO OMC suspensions are reused
- No need of isolation or damping tests

Things to be tested:
- New suspension scheme
  (cup & cone design)
- Weight balance of the plate



=> Suspending test with a suspension cage for a Faraday @CIT

Things to be designed:
- Wire end (cone)
- Holding structures for diodes and beam dumps
- Supporting block for the suspension cage
  (to mimic an OMC suspension)

6 Plates delivered / mirrors to be delivered ~Aug

Two designs exist

- Down selection between
  "Single output & BS" vs "Two outputs & no BS"
- Finalization of scattering paths / PD angles etc

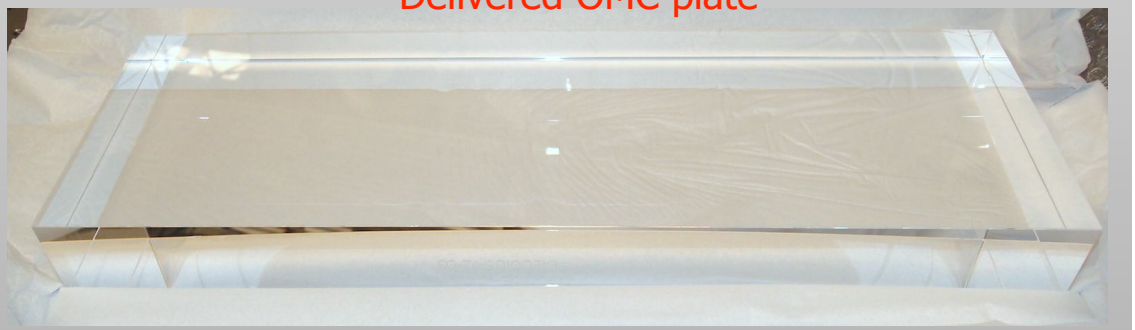
Things to be decided / confirmed:

- How to handle optics / assemblies (Talk to the prev people)
- First contact?
  (Talk to GariLynn about applicability to a short Rc of ~2.5m)
- Gluing templates to be designed (how to handle it?)

Things to be tested:

- R&T of each mirror
- Cavity ref/trans/finesse
- PD QE / incident angle

Delivered OMC plate



Electronics / CDS electronics / software

Things to be tested

- QPD/PD pre-selections (QE/noise)
- Functionality test of QPD/PD/PZT

Schedule

Jun/July

- Lab renovation
- Mechanical designs
- Gluing test / PD tests

Aug

- Suspending test only with the mounting bracket?
- Mirror delivery
- Basic optics test

Sept

- Cavity test
- Suspension balancing test

Nov~Dec

- Shipping to LLO