

LASTI Test Mass characterization and test plan

The LASTI Test Mass is designed to be an optical placeholder. The surface specifications are not stringent, merely sufficient to support a short cavity. This does represent the first effort at a final configuration coating on a full size optic. The coating specification is as would be required in Advanced LIGO.

The glass and surface specifications are:

LASTI ETM

LIGO-D030265-A Fused Silica Blank LASTI Test Mass
LIGO-E030309-A Fused Silica Blank, LASTI Test Mass, R&D
LIGO-E050191-A Shape and Polish LASTI ETM Blank
LIGO-D040431-C Quad ETM Silica Test Mass
LIGO-E050190-B Final Polish, LASTI End Test Mass (ETM)
LIGO-E070064 LASTI ETM Coating Specifications

Testing

E070150-00 (LMA, coating vendor test results)

Receive the piece from LMA, estimate mid May.

From LMA we expect to receive:

Surface phase map

Scatter map

*Absorption map

At Caltech: (total 4 weeks?)

Helena to examine with the dark field microscope (1day)

Liyuan to test for scatter, using integrating sphere. 3 days

*Change configuration 1 week

*Liyuan to test HR reflectivity - 3 days

*Liyuan to test AR reflectivity - 3 days

*Change configuration 1 week

*Liyuan to test for coating absorption - 3 days

*At MIT (*****need durations)

*Q

*Scatter

*Charge

*Polarization loss due to stress induced birefringence.