



SPECIFICATION

**LASTI
ETM Coating Specifications**

APPROVALS	DATE	REV	DCN NO.	BY	CHECK	DCC	DATE
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DCC RELEASE							

1 Applicable Documents

- LIGO-D040431-C Silica Test Mass
- LIGO-E050190-B LASTI End Test Mass Polish

2 General Coating Specifications

Surface 1 and 2

- Coating to be centered at 1064 nm
- Angle of Incidence to be 0 degrees
- Coating Uniformity: < 1nm rms – over the central 160 mm diameter
- Scatter: <15 ppm
- Absorption requirement: <1 ppm over the central 120mm
- Absorption goal: <0.5 ppm
- Zero surface electrical field

Surface Quality

To comply with E050190-B - “Scratches, Sleeks and Point Defects”

Surface 1: HR Coating at 1064 nm

- Transmission: <20 ppm
- Coating material: Ti doped Ta2O5 - Formula 5**

Surface 2: AR Coating at 1064 nm

- Reflection: < 300 ppm

NOTE:

The coating design must allow the HR and the AR surface to have a reflectivity of 5% or greater at 670 nm wavelength.

This requirement is necessary to be able to use the existing initial alignment and optical lever equipment and procedures.

Coating manufacturer to provide:

1. One (1 in.) witness plate from each coating run
2. Spectrophotometer graphs of Reflectance and Transmittance of HR coating from 500nm to 1200 nm
3. Spectrophotometer graphs of Reflectance of AR coating from 500nm to 1200 nm
4. Absorption and scatter measurements and maps from the central 120mm diameter