

**Test Mass Barrel gold coating specification**

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A gold coating is to be deposited onto the barrel of each Test Mass, with some areas masked off as specified below. All Test Masses are cylindrical fused silica substrates, 340 mm diameter x 200 mm thick; see LIGO-D080657-v3 and LIGO-D080658-v3 for the detailed drawings of the ITM and ETM respectively.

Applicable Documents

D080657-v3 ITM Substrate
D080658-v3 ETM Substrate
D0900945-v1 Test Mass Barrel Mask

Coating Specifications:

Side S3 (refer to D080657-v3) is to be coated. Coating is to cover the full barrel (S3) of the optic (except on masked areas), extending up to the chamfer (no coating on the chamfer).

Underlayer: 30 Angstroms (nominal) of chrome or inconel or other suitable material to provide adhesion.

Gold coating: 50-100 Angstroms (to be specified) gold.

Uniformity: Coating thickness should be uniform to approximately 25%.

Masking: Three regions are to be masked off (not coated), two rectangular areas on the barrel flats and a strip all the way around the barrel. The size and location of these areas are defined in LIGO-D0900945-v1.