

**Compensation Plate Barrel gold coating specification**

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A gold coating is to be deposited onto the barrel of the Compensation Plate, with some areas masked off as specified below. The Compensation Plate (CP) is a cylindrical fused silica substrate, 340 mm diameter x 130 mm thick; see LIGO-D080659-v2 for the detailed drawing of the CP.

Applicable Documents

LIGO-D080659-v2 Advanced LIGO COC CP Substrate Drawing

LIGO-D0900931-v1 Compensation Plate Barrel Coating Drawing

Coating Specifications:

Side S3 (refer to D080659-v2) 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: 500 Angstroms (nominal) of inconel or other suitable material to provide adhesion.

Gold coating: 1000 Angstroms (nominal) gold.

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

Masking: Two rectangular areas are to be masked off (not coated). The size and location of these areas are defined in LIGO-D0900931.

Durability: The coating must be able to withstand soldering, using an Indium-Silver solder, at a temperature of 220-240 deg C.