

4ITM05 Cleaning Procedure

| APPROVALS | DATE | REV | DCN NO. | BY | CHECK | DCC | DATE |
|----------------------------|----------|-----|---------|----|-------|-----|------|
| AUTHOR: H. Armandula | 06-07-05 | | | | | | |
| CHECKED: B. Bland / D.Cook | | | | | | | |
| APPROVED: D. Coyne | | | | | | | |
| DCC RELEASE | | | | | | | |

1 Background and Scope

This cleaning procedure is to be used on ITM05 during the “Large Optics Suspension Balancing” procedure, LIGO-E970154.

It replaces LIGO-E990035 Large Optics and COC Cleaning Procedures.

This document specifies how to clean ITM05 when cleaning of the optic is called out in: LIGO-E970154 – 5.2.1.2 – Step 1, and, 5.4.3.3 – Step 7

2 Equipment, Tools and Materials

Class 100 laminar flow bench with an ionizing bar from Terra Universal 11”L with 2 emitters –Part# 2005-05A

Mirror holding fixture

Clean plastic squirt bottles

Filtered DI water

Methanol 99.9% filtered through a 0.5micron element-VWR Catalog# MK304106

Dry nitrogen 99.995% pure, water vapor content under 1 part per million (ppm)

Ionizing blow-off gun with 0.2 micron filter

Alpha 10 wipes – 12” X 12” VWR Catalog # TWTX1012

Gloves - VWR Certi-Clean Class 100 Latex Gloves or Accu Tech Ultra Clean 91300 Gloves

3 Cleaning Procedure

1. Place the mirror in the cleaning holder. Part # ???
2. Gently blow off the entire surface of the mirror with pure nitrogen using an ionizing gun, starting at the top and working towards the bottom.
3. Wipe the bevel of the mirror with methanol at least twice.
4. Fold an Alpha 10 wipe in half, three or four consecutive times, wetting the folded edge with equal amounts of DI water and methanol. Applying a certain amount of pressure and starting at the top of the mirror, wipe down an area of the surface equal to the width of the wipe. A fresh wipe has to be used for each pass. Move quickly to step 5.
5. Swiftly repeat step 4, but, wetting the wipe with just methanol and sliding the wipe through the mirror’s surface slowly as to allow the methanol to dry the water remaining on the surface.
6. Repeat steps 4 and 5 until the entire surface has been cleaned.



4ITM05 Cleaning Procedure

7. Inspect the mirror surfaces for streaks or water marks in a dark room, over a dark background, with a high intensity light.