MMT14K04-1 – Cleaning Specifications

APPROVALS	DATE	REV	DCN NO.	BY	CHECK	DCC	DATE
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Purpose

This document is a guideline for cleaning and processing MMT14K04-1
This mirror will be evaluated throughout the assembly processes to see if these have any detrimentaleffects on the mirror's optical absorption.

Applicable Documents

LIGO-E970037-D Large Optics Suspension Balancing

1. Pre Absorption measurements

Absorption measurements will be taken at Stanford University to establish the coating absorption before any assembly processing.
Several surface points need to be measured making careful observations about the optic's orientation in order to repeat the measurements after processing as close as possible.

2. Sequence of cleaning procedures that mimic suspending and balancing procedures

2.1 Follow instructions from LIGO-E970037 except:

On Section 3.2.1 replace cleaning step 1 with the following:

1. Position the optic in the optic's inspection holder.
2. Gently blow off the coated surface to be cleaned with pure, filtered dry nitrogen utilizing an ionizing gun. The ionizing gun needs to be tested to ensure that it is working properly. Gently start blowing nitrogen close but away from the optic. This will get rid of any moisture condensed on the gas line. Get close to the top of the optic and blow only in one direction by slowly moving from side to side towards the bottom.
3. Drag wipe the surface with pure, filtered methanol using an Alpha 10 clean room wipe. Inspect for streaks in a dark room under a high intensity lamp.
4. Repeat drag wiping as necessary using a fresh wipe each time.
5. Thoroughly clean the outside diameter of the optic.

2.2 Proceed to finish the rest of the steps. All fixtures need to be used where specified, however, positioning measurements can be ignored.

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2.3 Follow procedure until Section 3.3 Optic Hanging and Balancing
Only perform step 25 of this section (25. Inspect, clean, and bake optic).

3. Post Absorption Measurements

After the optic comes out of the vacuum bake, place on a shipping holder and send to Stanford University for optical measurements
Sent to:
Dr. Roger Route
Ginzton Laboratory, Room 289
450 via Palou
Stanford University
Stanford, CA 94305-4085
tel 1-650-723-9359

Measurements need to be taken on the optic “as is” just blowing off any particles seen.
The same set up will be used and the part should be positioned for measurements as before.
If increased absorption is observed, the optic needs to be cleaned per 2.1 in this section and remeasured.