Optics Cleaning Specification - First Contact™

APPROVALS	DATE	REV	DCN NO.	BY	CHECK	DCC	DATE
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1. Objective

The objective of this specification is to define how to clean coated Advanced LIGO optics using First Contact™. Refer to technical information on LIGO-T070280.
First Contact™ has been thoroughly tested for absorption and scatter effects on coated optics. See LIGO-T060161.

2. Scope

The procedure will apply to optics that need to:

a) be cleaned prior to use in the interferometer

b) be stored

c) be protected through processing

3. Equipment, Tools and Materials

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

Alpha 10 wipes

Accu Tech Ultra Clean Powder free 91-300C Gloves.

6” dia. Petri dish

3”- 4” bulldog clip

First Contact™ and removal strips - 1 liter bottle from Photonic Cleaning Technology –.
608-467-5396 and by fax to 608-467-5397.

4. Procedure

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1. Place an amount of First Contact™ on a clean Petri dish. Plan on using about 1 ml First Contact™ solution for four (4) square inches of surface area treated. (1 ml per four square inches is the same as 1 ml per 26 square cm.)

2. Fold a soft lens tissue until a rectangular part of approx. 4" long by 1-1/2" wide is obtained.

3. Hold the folded tissue with a "bulldog" clip (metal clip)

4. Thoroughly wet the folded tissue with the First Contact™ solution.
5. Gently spread the solution around the optic surface; this method ensures nothing but the First Contact™ solution touches the optic's surface.

   Additional liquid may be applied directly from the tissue by spreading fresh First Contact™ onto the First Contact™ that is already on the surface. The solution must be applied generously enough to create a thick, dry film on the surface that will peel off without tearing. First Contact™ solution takes about 15 to 20 minutes to dry on a typical mirror.

6. When First Contact™ solution has dried thoroughly, the film will peel off quickly and easily using the special peel tabs provided. Scotch tape can also be used. Ensure that there is no polymer on the bevel of the optic. If any polymer is seen, cut around the bevel with a clean razor blade. Carefully remove the excess polymer.

7. Expose the sticky side of tape, place it on the film, make sure the sticky tab or Scotch tape and film are in intimate contact, wait about 15 seconds, and gently pull up. For best results, pull from an edge of the film towards the center.

8. If the film tears while removing it, the coating is probably too thin. Stop peeling, apply more First Contact™, and allow it to dry. The old, torn film and the new application will form a thicker film coating that should be easily removed without tearing. Leave the peel tab in place when applying additional solution and use it to remove the dried film. Allow the solution plenty of time to dry before attempting to remove the film a second time.

9. Methanol dissolves First Contact™.