

PETG OPTICS CAP CLEANING PROCEDURE

26 MARCH 2012

I. Initial Clean

The PETG lens caps should be cleaned to the following specification, in line with section 10.1 of [LIGO-E1000088-v1](#) and from http://www.empirewest.com/optics/optics_tech.htm. The steps of this procedure were successfully tested on a prototype lens cap at CIT.

1. Initial Clean (option a. or b.)

a. Large Parts Washer - Clean using Spray nozzle and rack from the Large Parts washer

b. Water Jet - Use Water jet (1500 psi) working at 6ft away on the fine spray setting (i.e. not jet setting.) A dish rack (or equivalent) should be used to mount the lens caps during this step. Safety glasses should be worn when using the water jet. This step requires 2 people.

2. Ultrasonic - Ultrasonic cleaned in small ultrasonic cleaner using just DI water for a 15 minute cycle. The sonic cleaner used in testing was a Branson 8510. It's fixed setting is 40khz at 320 watts. This or equivalent should be used.

3. CO2 gun - Use CO2 gun in a clean-room environment. The gun should be operated at least 6" away from the part. Both the front and the back should be sprayed down. The Lens Cap can be set on foil and held via the foil while spraying the gun. Safety glasses should be worn when using the snowgun. This step requires 2 people.

After cleaning, wrap lens cap in ConTec wipes, two layers of UHV foil and two layers of CPStat. Label package appropriately

II. Gas

1) For CO2 use 4 9's (99.999% to 99.998%) Research Purity

2) For [reference](#) for Nitrogen we use 6 9's (99.9999% to 99.9998%) Research Purity.

These are all available from the LLO (Gas & Supply) and LHO (Ox Arc) suppliers. Confirmation of actual LLO availability is attached. In terms of existing supplies at the sites of e.g. UHP gas, it could be used until replaced.

III. Baking

There will be no baking of these parts. No baking. No ovens.

IV. QC & FTIR

While I am not against QC on the steps above, there is no FTIR for lens caps.

V. Prior to use (or to clean up one after use)

Wipe down with 100% Iso-propanol. Soak approved clean room wipes (TX1010) with IPA and wipe down surfaces.