PROCESS SPECIFICATION

TITLE

Small Optics Cleaning Procedures

APPROVALS:		DATE	REV	DCN NO	BY	CHK	DCC	DATE
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DCC RELEASE:								

Equipment, Tools and Materials

Class 100 laminar flow bench / sink
Deionized water , 18 Megohms, filtered (0.2 micron filter) at point of use.
Dry nitrogen cylinder, 99.99% pure
Ionizing blow-off gun with 0.2 micron filter.
Crystallizing dish for washing (150mm. dia.x 75mm. ht.)
Clean, storage mirror holders.
(Holders should be cleaned with Liquinox solution and thoroughly rinsed under DI water, pat dry with Fastsorb 820 wipes and blown dry using ionizing gun and dry nitrogen.)
Hot plate
Particle free wipes Fastsorb 820, Berkshire
Nitrilite, powder free gloves 93-112, previously washed to remove surfactant, or Ansell Edmont Latex 90-576
Lens tissue “Lensx 90”, Berkshire
Liquinox solution prepared as follows:
To 2 liters of filtered DI water; add 40 ml. of Liquinox detergent.
Place beaker on a hot plate.
While stirring the solution, increase temperature to 160 degrees F; once the temperature is reached, keep stirring for at least 15 minutes.
Remove from hot plate - Solution is ready to use.
Life shelf of the solution is one week while covered.

Washing and Drying - Coated surfaces 1 and 2 -

These cleaning steps are formulated to remove heavy contamination from the optics and applies to optics without magnet assemblies.
To clean optics with magnet assemblies, eliminate the 15 min. soaking step and exercise extreme caution when wiping around the magnet assemblies.

All procedures listed under these Cleaning Procedures must be performed under a Class 100 laminar flow bench, while suited-up in clean room garments including, but not limited to: coat, booties, bonnet, gloves, facial mask. This applies to anyone handling or near any optics being cleaned.

1. Line the bottom of the Pyrex petri dish with Fastsorb 820 wiper cut to size.
   Place the mirrors to be cleaned in the dish.

TITLE

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2. Cover with Liquinox solution ensuring that the mirrors are completely immersed.

3. Warm the solution to 160 degrees F.

4. Soak the immersed parts for 15 min. (Does not apply to optics with magnet assemblies)

5. Bring the temperature down to 100 degrees F.

Clean one mirror at a time.

6. Remove one mirror from the dish and immediately place under running DI water.

Never allow any surface wetted with Liquinox to get dry!!!!

7. With a soft lens tissue, wetted with the detergent solution, wipe the edges of the optic.
   Discard the tissue.

8. Repeat the procedure wiping the bevels of both surfaces.
   Discard tissue.

9. Clean both coated surfaces under running DI water, utilizing a soft lens tissue wetted with Liquinox and scrubbing with smooth, soft strokes.

10. Rinse the parts under running DI water while scrubbing gently (smooth and soft strokes) with a fresh lens tissue

11. To final rinse, spray only deionized water over the entire part for at **least** 10 seconds.
    Stop the DI water flow.

NOTE: If the water does not sheets-off the surface at this time, repeat the process from steps 4 to 11.

12. Place the mirror, resting on its edge over several sheets of soft lens tissue.

13. With the ionizing gun, utilizing pure, dry nitrogen and low pressure (45/50 lbs / in.2), slowly blow the edges of the mirror and the coated surfaces starting from the top and working towards the bottom. Ensure that no water remains on the surfaces.

14. Place the cleaned mirrors in their appropriate storage holders.
    Keep in a clean area until ready to use.