
NIRSPEC

UCLA Astrophysics Program

U.C. Berkeley

W.M.Keck Observatory

John Canfield

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NIRSPEC Cryomechanics Application Note 05.00 Warm Up Procedure

This procedure is for a controlled warm up from operating temperatures. It is anticipated that this will only be necessary for internal servicing matters or possibly for periodic (e.g. annual) vacuum regenerations.

C Preparation

A pumping source must be accessible to the instrument before warmup commences. Very soon after warm up starts (Approximately 30 min.) the getters let go and the internal pressure rises to unacceptable levels. An external pumping source must be employed at that point to insure that damaging deposition of materials or condensation onto optical surfaces does not occur in the still cold interior. The possibility of this should diminish as the instrument ages. As the instrument experiences more pumping cycles, internal surfaces and materials will outgas more completely.

If not already connected, connect pressure gauges as in NCAN03.00

C CCR Shutdown

The CCR's are shut down at the compressor. To turn off power throw the large white breaker switches located in the center of the back panel (see CTI manual).

C Pump

Monitor pressure. When it reaches 100 millitorr open vacuum valve to pumping source. Maintain pumping source for warm up.

C Vent LN₂ Can

When the temperature of the LN₂ can rises above 77K it can be vented with dry nitrogen gas. This will facilitate the warm up. The vacuum valve on the LN₂ tank has a NW25 quick flange fitting. The nitrogen gas source will need a suitable mate.

C Warm Up Time

If unassisted, the instrument takes approximately three days to warm up. If necessary the warm up can be facilitated by introducing a small amount of nitrogen gas into the vacuum chamber after one day of warm up. At this point all internal temperatures will be at a safe level. Increasing the internal pressure to 1-2 torr will decrease the warm up time by a day.