LRO-LR Ground System Requirements

• Deliver between 1 and 10 femtoJoules per sq.cm of signal to the receiver aperture. For SLR2000 (55 microrad laser divergence) ➔ 30mJ per pulse.

• Wavelength must be 532.2 +- 0.15 nm (many ILRS stations have wavelengths in this region). At the ends of this region, LRO filter throughput is 50%.

• Laser pulsewidth =< 8ns (onboard system bandwidth is ~6ns).

• Maintain the transmitted pulse time stamp accuracy to within 100 ns of UTC.

• Measure the relative laser time of fire to better than 200 ps (1 sigma) shot-to-shot over a 10 sec period. Laser fire time must be recorded to <100 psec resolution.

• Deliver laser pulses into the LOLA earth window at least once per second. Laser fire rate cannot exceed 28 Hz because it will adversely affect LOLA threshold!

• Shot to shot measurement of the output laser energy is desired.

• Data should be delivered to CDDIS in new CRD format daily (or faster).