

**ITM04 AR Reflection**

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Approval(s)			
Specification Doc.	LIGO-E0900041	Specification	< 50 ppm
Procedure Doc.	LIGO-E1000863	Mean $\pm$ Error*	164 $\pm$ 5 ppm
Conclusion	Accepted		

\* Error is the calibration error, which is ~2%.

**Discussions and Comments:**

The scan was done over a 160 mm diameter aperture with the beam and step sizes of 1 mm and positioning arrow on barrel at Y+ direction. The calibration is done by normalizing the AR reflection signal to the signal from a 1" HR mirror (T=70 ppm) and the variation of laser power during scan is monitored and corrected, the result is summarized in Fig.1.

The shallow fringes seem to be caused by interference between the AR reflection and the tail of strong beam of HR reflection. Since the wedge angle is only 0.07~0.1° (D080657), the separation of the two beam was not large enough in the measurement.

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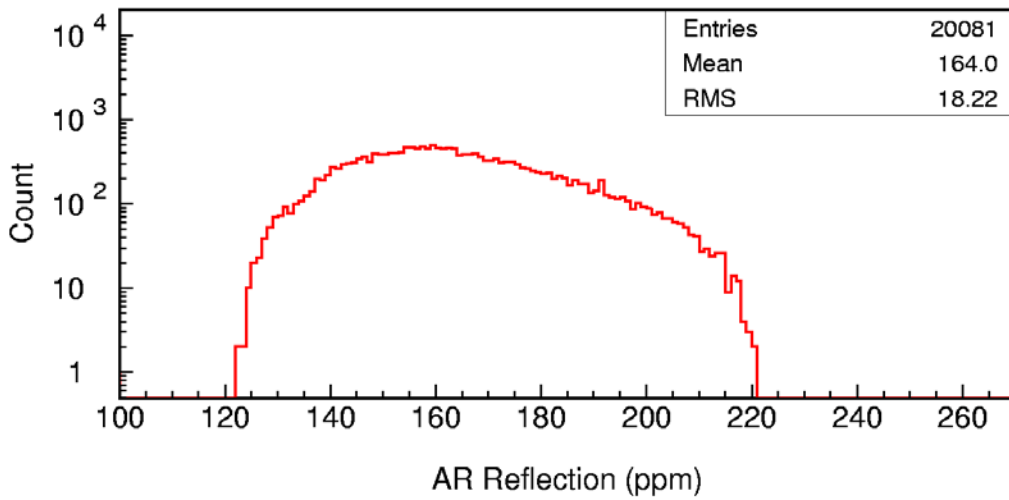
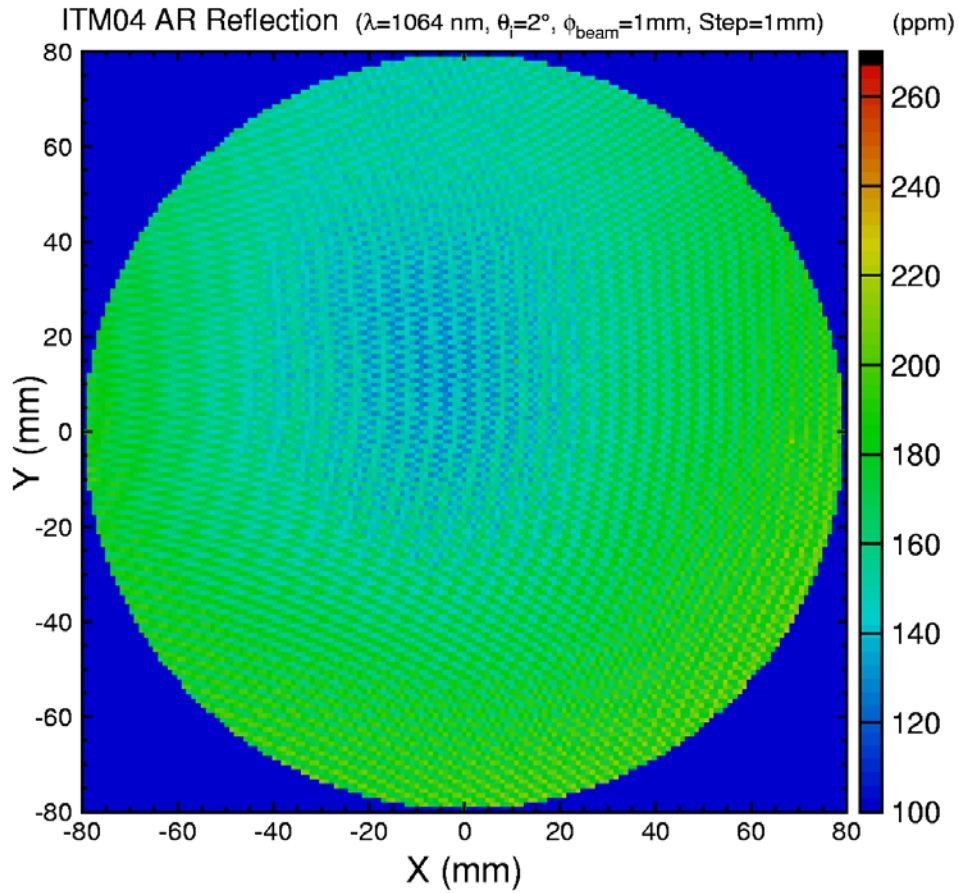


Fig. 1 ITM04 S2 AR reflection over a 160 mm diameter aperture.