



## ITM09 AR Reflection

Test Date	Mar 2-4, 2015		
Author(S)	Liyuan Zhang, GariLynn Billingsley		
Approval(s)			
Specification Doc.	LIGO-E0900041	Specification	< 50 ppm
Procedure Doc.	LIGO-E1000863	Mean $\pm$ Error*	99 $\pm$ 2 ppm
Conclusion			

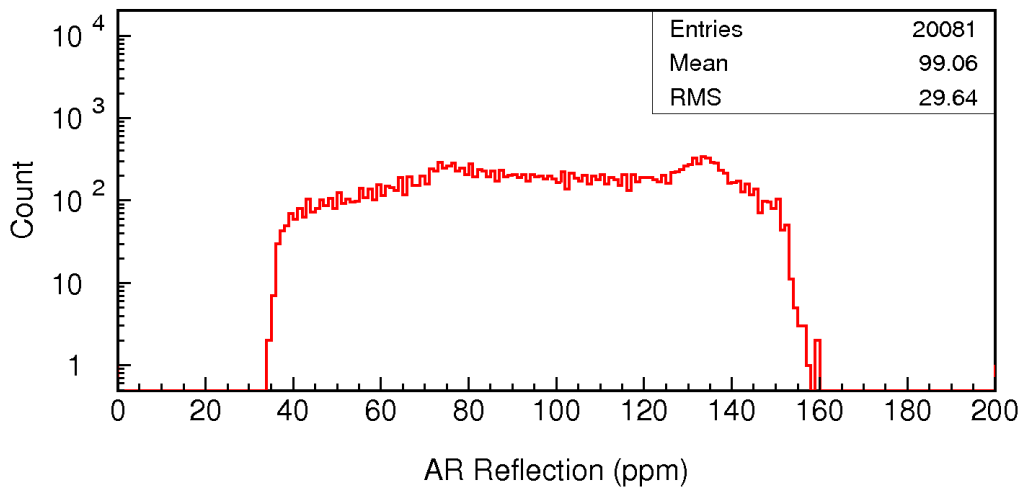
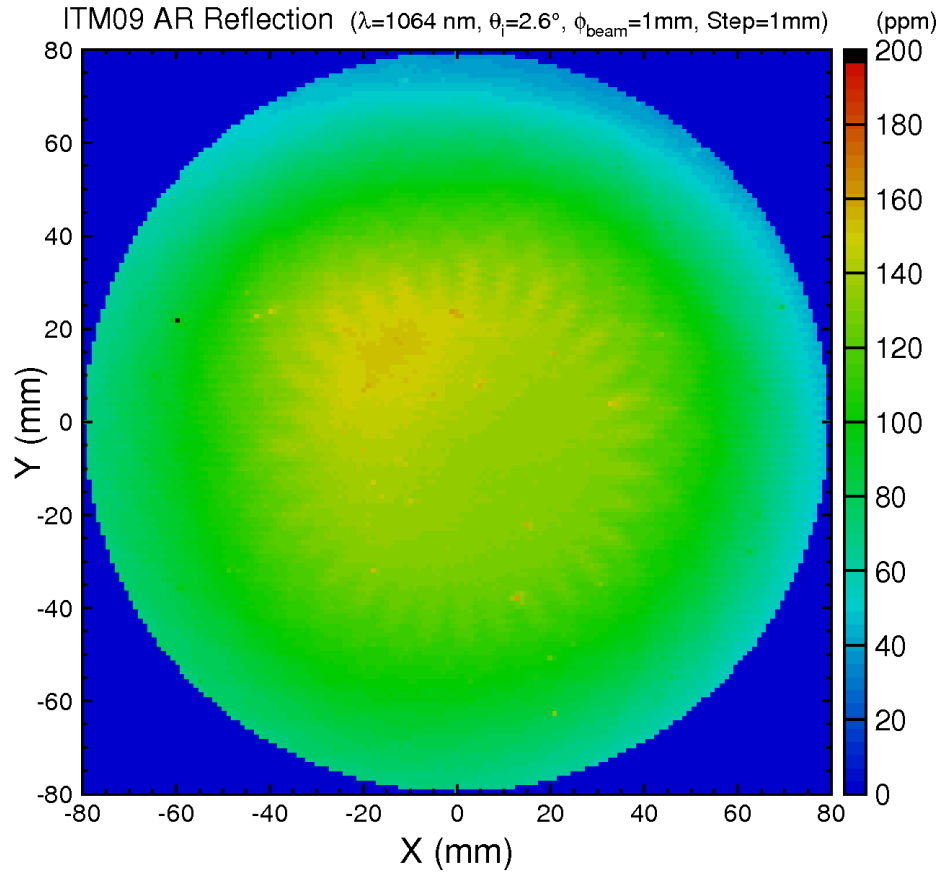
\* Error is the calibration error, which is ~2%.

### Discussions and Comments:

The scan was done over a 160 mm diameter aperture with the beam and step sizes of 1 mm while keeping the 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.



### ITM09 AR Reflection



**Fig. 1 ITM09 S2 AR reflection over a 160 mm diameter aperture.**