|  |  |
| --- | --- |
| **Test Date** | Jul. 21-24, 2017 |
| **Author(S)** | Liyuan Zhang, GariLynn Billingsley |
| **Approval(s)** |  |
| **Specification Doc.** | LIGO-E0900041 | Specification | < 50 ppm |
| **Procedure Doc.** | LIGO-E1000863 | Mean ± Error\* | 52 ± 5 ppm |
| **Conclusion** | Qualified |

\* Error is the sum of calibration error (~2%) and stray light.

**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 0.07~0.1º (D080657), the separation of the two beam was not large enough in the measurement.**

****

**Fig. 1 ITM10 S2 AR reflection over a 160 mm diameter aperture.**