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| **Test Date** | Apr. 29-30, 2013 |
| **Author(S)** | Liyuan Zhang, Margot Phelps, GariLynn Billingsley |
| **Approval(s)** |  |
| **Specification Doc.** | LIGO-E0900068 | Specification | < 500 ppm |
| **Procedure Doc.** | LIGO-E1000863 | Mean ± Error\* | 230 ± 5 ppm |
| **Conclusion** | Qualified |

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

**Discussions and Comments:**

 **The scan was carried out over aperture of 160 mm in diameter with the beam and step sizes of 1 mm. The calibration is done by normalizing the AR reflection signal to the signal with a 1” HR mirror (T=70 ppm) and the variation of 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 reflection of HR. Since the wedge angle is only 0.07~0.1º (D080658), the separation of the two beam was not large enough at the measurement.**

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**Fig. 1 ETM09 S2 AR reflection over an aperture of 160 mm in diameter.**