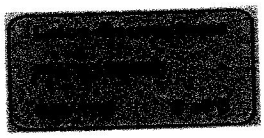
UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-

REPORT OF CALIBRATION

NIST Test No: 683/282592-12

July 2, 2012

For: Leica Geosystems Inc.
Attn: Tony Grissim
2160 Breckinridge Boulevard
Customizing Center
Building 200, Suite 225
Lawrenceville, GA 30043



Item: Leica Geosystems Twin Target Pole, Serial Number 160

The Leica Geosystems Twin Target Pole was measured in the Large-Scale Coordinate Metrology Group tape tunnel facility while kinematically supported under each target. The Twin Target Pole was measured using a wavelength compensated helium neon linear interferometer, which is traceable to the SI unit of length (the meter) through comparisons to the Iodine stabilized laser at NIST.

The measurand is the distance between the centers of the two small circular markings that are located in the nominal centers of the lower and upper targets. The distance is corrected to 20.0 °C using an assumed coefficient of thermal expansion of 0.0000245 C^{-1}.

The measurement uncertainty was evaluated following NIST Technical Note 1297, *Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results*, which is considered to be part of this Report. The expanded uncertainty U is calculated using a coverage factor $k = 2$. For a measured value of length, L, the true length is contained in the interval $[L-U, L+U]$ with a level of confidence of approximately 95%.

The value of the distance between the lower and upper target centers is 1.69974 m with an expanded uncertainty of 0.12 mm.

This Report shall not be reproduced except in full without the written approval of the Large-Scale Coordinate Metrology Group.

Measurements were made by Chris Blackburn.

For the Director,
National Institute of Standards and Technology

Dr. Theodore Doiron, Group Leader
Dimensional Metrology Group
Semiconductor and Dimensional Metrology Division
Physical Measurement Laboratory

NIST