



## Test Monitoring Center

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1P Information Letter No. 16-1  
Sequence No. 13  
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*ASTM consensus has not yet been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.*

TO: Single Cylinder Diesel Mailing List

SUBJECT: Changes to 1P Humidity Measurement Device Calibration

During the June 8th CAT Surveillance Panel teleconference it was decided to update the specified humidity measurement device as well as the device calibration timing requirement. The device requirement has been updated to allow for chilled mirror equivalent devices to be used. The device must be calibrated during the test or within 48 hours before the start of the test.

Section 10.14 has been updated and is attached. These changes to Test Method D6681 are effective immediately.

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Attachment

c: [ftp://ftp.astmtmc.cmu.edu/docs/diesel/CAT/procedure\\_and\\_ils/1p/il16-01\\_1p.pdf](ftp://ftp.astmtmc.cmu.edu/docs/diesel/CAT/procedure_and_ils/1p/il16-01_1p.pdf)

Distribution: Email

**(Revises Test Method D6681-16)**

10.14 Humidity Calibration Requirements—The accuracy of the laboratory's primary humidity measurement system shall be within  $\pm 0.6$  g of the humidity measuring chilled mirror dew point hygrometer or equivalent. Calibrate the primary laboratory humidity measurement system within 48 h before the start of each stand calibration test or during the calibration test at each stand using a chilled mirror dew point hygrometer or equivalent with an accuracy of at least  $\pm 0.55$  °C at a dew point of 24 °C. The calibration consists of a series of paired comparison measurements between the primary system and the chilled mirror dew point hygrometer or equivalent. The comparison period lasts from 20 min to 2 h with measurements taken at 1 min to 6 min intervals, for a total of 20 paired measurements. The measurement interval should be appropriate for the time constant of the humidity measuring instruments. Ensure that the flow rate is within the equipment manufacturer's specification. Take all measurements made with the dew point hygrometer or equivalent at atmospheric pressure and correct them to standard pressure conditions (101.12 kPa). Compute the difference between each pair of measurements and calculate the mean and standard deviation of the differences. The absolute value of the mean difference shall not exceed 0.6 g and the standard deviation shall be less than or equal to 0.3 g. The primary humidity measurement system is deemed calibrated only if both of these requirements are met. If either of these requirements is not met, investigate the cause, make repairs, and recalibrate. Maintain the calibration data for a minimum of two years.