

PRODUCT BULLETIN

MASS CALIBRATION VERIFICATION KIT FOR TEOM[®] MONITORS

The Mass Calibration Verification Kit permits users to perform field audits of the mass transducer contained in Thermo's TEOM-based instrumentation. Using the product, users can ensure that the mass calibration of their instrument is correct. The kit contains one or more pre-weighed filters, permitting the direct verification of mass measurements using an actual mass.

In its basic form, the Mass Calibration Verification Kit (59-008298) consists of the following items:

- Prew weighed TEOM filter in a protective box.
- Quality assurance sheet showing the traceability of the filter weighing to NIST standards.
- Special-colored filter exchange tool uniquely for mass calibration verification.
- Desiccant material.
- Humidity indicator.
- Form to record the kit's usage.
- Re-sealable outer plastic bag to protect the kit's components from moisture and damage.

The five-filter version of the Mass Calibration Verification Kit (59-008298-0005) contains the same parts, but includes five verification filters instead of one.



The operating software of the TEOM Series 1400a monitor supports the calibration verification product by performing the computations necessary to determine the calibration constant, K_o , that results from a single-filter test. This value should always be within 2.5% of the factory-assigned K_o value. In the case of a multi-filter calibration verification, each of the single-filter tests should lie within 2.5% of the factory setting.

The software-supported calibration verification procedure involves the following steps:

- Stop data collection and display the Mass Calibration Verification Screen.
- Remove the TEOM filter from the mass transducer.
- Enter the mass (g), m , of the verification filter to be used.
- Allow time for the mass transducer frequency shown on the screen to stabilize, and press a button to record this frequency without a filter, f_o .
- Install the verification filter in the mass transducer using the specially-colored filter tool.
- Allow time for the mass transducer frequency shown on the screen to stabilize, and press a button to record this frequency with a filter, f_1 .
- The instrument then displays the K_o value implied by this single-filter test using the equation shown below, as well as the deviation between the single-filter K_o and the factory setting: $K_o = m / ((1/f_1^2) - (1/f_o^2))$.
- Remove the verification filter from the mass transducer, and ensure proper storage in the kit. Record the use of the verification filter on the usage form.

Single-filter refills are available as 59-008299 and five-filter refills are stocked as 59-008299-0005.

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