



Deatak Inc

4004 W Dayton St., McHenry, IL 60050-U.S.A.

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e-mail: Instruments@deatak.com

EIN # 32-0021631

SD-3 Smoke Density Chamber





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Description:

SD-3 is the most widely accepted apparatus for the measurement of the smoke produced by burning materials.

SD-3 measures specific optical density in a sealed chamber using a heater with or without the use of pilot flames. The off-gassing smoke from the specimens is measured through optical density sensors.

SD-3 can be used for the extraction of toxic gas. Ports for gas measurement are available for specific testing which require toxicity readings.

“This fire-test-response standard covers determination of the specific optical density of smoke generated by solid materials and assemblies mounted in the vertical position in thicknesses up to and including 1 in. (25.4 mm).” (ASTM E662)*

“specifies a method of measuring smoke production from the exposed surface of specimens of materials or composites. It is applicable to specimens that have an essentially flat surface and do not exceed 25 mm in thickness when placed in a horizontal orientation and subjected to specified levels of thermal irradiance in a closed cabinet with or without the application of a pilot flame. This method of test is applicable to all plastics.” (ISO 5659-2)**

*ASTM E662-17a, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials, ASTM International, West Conshohocken, PA, 2017, www.astm.org

**ISO 5659-2, Plastics -- Smoke generation -- Part 2: Determination of optical density by a single-chamber test

Features/Options:

- 208-240V 50/60Hz 20A
- Compact, all-in-one design
- Automated testing procedure
- Pilot burner mixture electronically controlled and adjusted
- Capable of remote operation and data collection
- Automatic heat flux calibration
- Easy change overpressure bottle
- Single hand operation of specimen door
- Touch screen and/or remote software operation
- Easy to use light measurement system. Automatic zero and span of optics system. Includes the ability to use neutral density filters to verify/validate light system readings
- Closed loop heater control for improved heater adjustment and stability
- The control console height and angle is adjustable to meet the users' needs



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Features/Options cont'd:

- Large access door for easy cleaning and servicing
- Specimen access door mounted on large access door and hinged on left side for easy insertion of test specimens while operating instrument
- Stainless steel test chamber coated with corrosion resistant lining
- Smoke measurement monitored and digitally displayed on control panel and in software
- Chamber pressure and temperature continuously monitored and digitally displayed on control console
- Safety pressure relief blow out panel
- Chamber wall is pre-heated for faster start-up and operation
- Powered negative pressure venting of smoke effluents after test
- Pneumatic sample positioner, pop valves, and reignition system controlled by touch screen interface or through computer software
- Removable/replaceable chamber
- Data acquisition and laptop computer with installed software to record test data and automatically calculate test results. Computer software can also be used to remotely control the Chamber
- Optional gas ports provided for the measurement of toxic gases
- Optional pneumatic pilot reignition system
- Choose between ASTM E662 or ISO 5659-2 heater assembly and controls (or both)
- Easy to change/interchangeable ASTM E 662 vertical furnace and ISO 5659-2 horizontal cone furnace configurations

Includes:

- Laptop computer with installed test software
- Multi-tip multi-angle pilot burner
- 2 specimen holders
- Calibrated heat flux transducer



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Specifications/Standards:

| | |
|-------------------------------|---|
| ASTM E 662 | ASTM F 814 |
| NFPA 258 | Boeing BSS 7238 |
| FAR Part 25 Appendix F Part V | Aircraft Materials Fire Test Handbook Chapter 6 |
| Airbus AITM 2.0007 A&B | IMO MSC.61 (67) Annex 1 Parts 1&2 |
| ISO 5659-2 | IMO FTCP Part 2 |
| BS 6401 | ABD0031 |

Smoke Toxicity Measurement:

| | |
|-----------------|--------------------|
| Boeing BSS 7239 | Airbus AITM 3.0005 |
|-----------------|--------------------|

Weight and Dimensions of Instrument (W x D x H):

Instrument 625 lbs., 59in x 32in x 72in (284kg, 150cm x 82cm x 183cm)

Approximate Shipping Weight and Dimensions of Packed Base Instrument (W x D x H):

1,175 lbs., 80in x 51in x 89in (533kg, 203cm x 130cm x 227cm)

Facility Requirements:

Overhead exhaust hood approximately 56in x 40in (143cm x 102cm) with 500-1,000 SCFM exhaust capacity

Propane supplied at 5-15 psi, 50-100 cc/min

Compressed air supplied at 80 psi, 500 cc/min max flow

One (1) Year Warranty:

Deatak warrants the SD-3 instrument to be free of defects in materials and workmanship of non-consumable parts for a period of one (1) year from date of acceptance. If the instrument malfunctions due to a defective component, the defective component will be replaced at no charge to the customer. The Deatak warranty does not apply to defects arising out of mishandling, improper operation, or accidental damage.