

Thermo Scientific Opacity Monitor, Model 445

Opacity and dust concentration monitor



Key Features

- LC measurement display (opacity, extinction, transmission)
- Optional RCU-MS remote control unit
- Optional remote diagnostics via modem
- Automatic contamination correction
- Automatic check cycle
- Automatic built-in 4 point linearity check

The Thermo Scientific Opacity Monitor, Model 445 uses optical-electronic technology to determine opacity or measure mass concentration of dust in stack effluent. The Model 445 detects and reports any deviations or exceedances from the emission limit value.

The optical and electronic elements of the Opacity Monitor, Model 445 are contained within the sender/receiver unit. A durable pulsed LED serves as the light source. An integral sighting device eases alignment of the sender/receiver and the reflector units.

To protect the optical surfaces from dust and high temperature, the sender/receiver and reflector unit are purged with air.

The connection unit contains the display, operating elements and all connections. Options include an RCU-MS remote control unit, as well as remote diagnostics via modem.

The Model 445 features automatic contamination correction, check cycle and built-in 4 point linearity check.

Typical applications include:

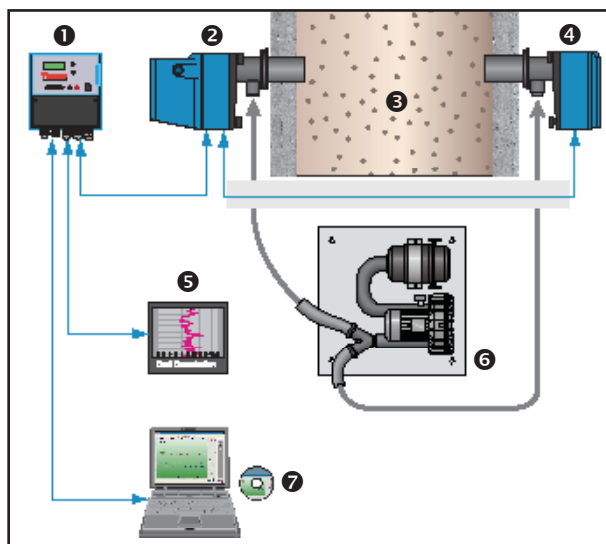
- Power plants and cement plants
- Glass, steel and paper industries
- Electrostatic precipitator control/regulation
- Special applications, such as thick channel walls and large duct diameters

Product Specifications

To maintain optimal product performance, you need immediate access to experts worldwide, as well as priority status when your air quality equipment needs repair or replacement. We offer comprehensive, flexible support solutions for all phases of the product life cycle. Through predictable, fixed-cost pricing, our services help protect the return on investment and total cost of ownership of your Thermo Scientific air quality products.

Opacity Monitor, Model 445

Measuring Range	Model 445-02	Model 445-03	Model 445-04
Opacity (max./min.)	0 - 100%/0 - 50%	0 - 100%/0 - 20%	0 - 100%/0 - 50%
Transmission (max./min.)	100 - 0%/100 - 50%	100 - 0%/100 - 80%	100 - 0%/100 - 50%
Extinction (max./min.)	0 - 2/0 - 0.3	0 - 2/0 - 0.1	0 - 2/0 - 0.3
Device data	Sender/Receiver Unit	Reflector Unit	Connection Unit
Dimensions	8.1 x 10.6 x 14.8 in. (205 x 270 x 375.5 mm)	8.1 x 10.6 x 9.9 in. (205 x 270 x 250.5 mm)	7.7 x 8.0 x 6.4 in. (196 x 203 162.5 mm)
Weight	27 lb/12 kg	17 lb/8 kg	8 lb/4 kg
Dust concentration ¹⁾	max. 0 - 4,000 mg/m ³	min. 0 - 200 mg/m ³	
Accuracy	+ 2% fullscale		
Response time	1 to 600 s, in stages from 1 s, user-selectable		
Measuring path	0.5 to 15 m		
Measuring gas temperature	above dewpoint up to 600 °C / 1,112 °F		
Ambient temperature	-20 - +55 °C / -4 - +130 °F		
Measuring gas pressure	max. +10 hPa / +4 inwc with standard purge-air unit; max. 40 hPa / +16 inwc with stronger fan ²⁾		
Class of protection	IP 65/NEMA 4X		
Power supply	90 - 260 VAC, 48 - 62 Hz; 200 W power consumption (connection unit); single phase		
Purge air unit	Contact Thermo Fisher Scientific for information		
Compliance	U.S. EPA incl. PS1, CE, TÜV (German Technical Inspection), Clean Air Act (13th Impl. Ord.), GOST		
Electronic interfaces	RS232 service interface; RS422 for optional RCU-MS remote control unit		
Signal interfaces	2 analog outputs: 0/2/4 - 20 mA; 750 W max. load, electrically isolated 4 relay outputs: 48 Vdc, 1 A, 30 W max.; 48 VAC, 1 A; cycle/maintenance, limit value ^{1, 2} , malfunction 3 digital inputs: 10-25 VAC/10-35 Vdc: floating contact (electrically isolated)		
Note	¹⁾ On 1m measuring path, depending on particle size and gravimetric comparison measurement ²⁾ On request		



- 1) Connection Unit
- 2) Sender/Receiver Unit
- 3) Duct
- 4) Reflector
- 5) Measurement Value Recording
- 6) Purge Air Inlet
- 7) MEPA Software

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This product is manufactured in a plant whose quality management system is ISO 9001 certified.

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