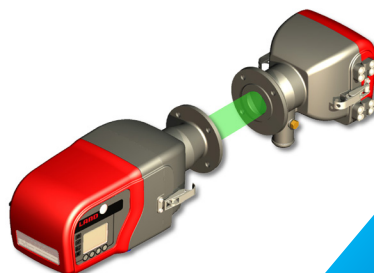


# 4400

OPACITY AND DUST MONITORING

TUVdotCOM APPROVED TO EN 15267



● Opacity · Optical Density · Dust Concentration



**LAND**  
**AMETEK**<sup>®</sup>  
PROCESS & ANALYTICAL INSTRUMENTS



QUALITY CUSTOMER SOLUTIONS

# 4400

## AMETEK LAND HAS BEEN MANUFACTURING PRECISION MEASURING EQUIPMENT SINCE 1947.

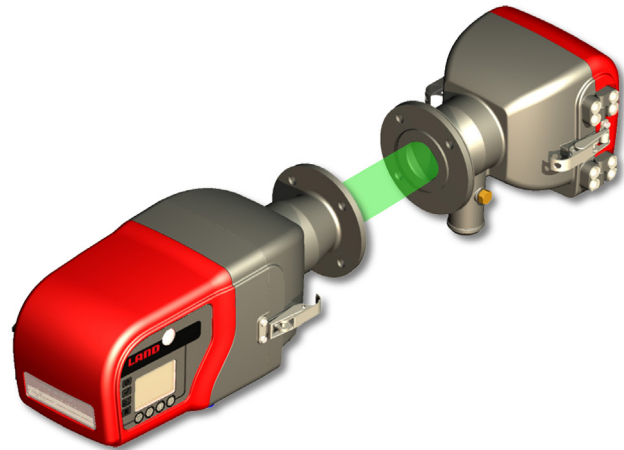
WE ARE SPECIALISTS IN NON-CONTACT TEMPERATURE MEASUREMENT AND COMBUSTION MONITORING WITH OUR PRODUCTS FINDING APPLICATIONS ACROSS DIVERSE INDUSTRIES SUCH AS STEEL AND GLASS MAKING, POWER GENERATION AND CEMENT MANUFACTURE.

As part of AMETEK Process & Analytical Instruments Division since 2006, our customers benefit from the worldwide AMETEK sales and service team.

### THE 4400 IS A ROBUST, ACCURATE AND RELIABLE OPACITY MONITOR FOR MOST TYPICAL EMISSION MONITORING APPLICATIONS.

Combining the unique features of three patented technologies, the 4400 provides a high performance and reliable operation where opacity or dust measurement is required, complying with EN 15267 Part 3.

The 4400 uses patented features to provide unrivalled stability, high levels of accuracy and low detection capability to suit a wide variety of typical combustion applications requiring dust emission monitoring to a high standard.



#### FEATURES ▼

#### BENEFITS ▼

Long lifetime LED light source	Typical lifetime . 10 years
No continuously moving parts	Highest reliability
Patented all-glass multi-prism retroreflector	Lowest possible drift Patented flood LED ensures thermal stability
Wide operating temperature range	Ambient operation -40 °C to 55 °C (-40 °F to 131 °F) as standard
Green LED light source	As required by international standards

# SPECIFICATION & DESIGN

## CALIBRATION CHECK

A simple manual calibration check allows the instrument's zero stability to be verified while the process is operating.

## CALIBRATION AUDIT

Optional calibration filters can be used to verify linearity and calibration.

## NO MOVING PARTS

The 4400 monitor has no moving parts therefore it will give years of trouble-free operation.

## USER FRIENDLY

The 4400 provides a simple easy to use menu. The user is guided through the menu with simultaneous text and icon menu prompts. The design eliminates the need to carry an operating manual or laptop to the installation location.

## INTELLIGENT COMMUNICATIONS

Modbus RTP, 4-20 mA signals and alarm relays are standard.



**STACK DIAMETERS  
FROM 0.3 M TO 10 M  
(1 FT. TO 33 FT.)**



## PURGE AIR

- The 4400 requires 60 m<sup>3</sup> / hour (36 cfm) of purge air. Consult AMETEK Land for the correct choice of purge air supply.

## APPLICATIONS

**THE 4400 CAN BE USED TO MEASURE DUST AND OPACITY IN ALL COMBUSTION PROCESSES**

- Electricity Generating Units
- Industrial Boilers
- Process Emission Stacks
- Metals Furnaces
- Cement and Lime Kilns
- Dust Collectors

# 4400

## OPACITY MONITORING

### SPECIFICATIONS

<b>Measuring Technique:</b>	Double pass transmissometry
<b>Operating Wavelength:</b>	520 ± 20 nm
<b>Light Source:</b>	Pulsed High Intensity LED
<b>Measurement Range:</b>	Opacity 0-10 % to 0-100 % ; Optical Density 0 - 0.1 to 0-3.0 ; Dust Density 0-20 to 0-1000 mg/m <sup>3</sup> (at 5 m pathlength)
<b>Calibration Error:</b>	1.5 % opacity
<b>Thermal Stability:</b>	1.0 % opacity / 22 ° C ambient change
<b>Angle of Projection:</b>	< 3 °
<b>Angle of View:</b>	< 3 °
<b>Response Time:</b>	≤10 s to 95 %
<b>Averaging:</b>	Selectable from 10 s to 24 hr (1 s increment)
<b>Pathlength:</b>	0.5 to 10 m / 20 in to 32 ft (extended)
<b>Control Panel Display:</b>	128 x 64 pixel reflective backlit LCD
<b>Control Panel Keypad:</b>	4 keys for data input
<b>Control Panel Indicators:</b>	Power, System OK, Alarm, Calibration
<b>Operating Temperature:</b>	-40 to 55 ° C / -40 to 131 ° F
<b>Max. Flue Gas Temperature:</b>	600 ° C / 1112 ° F
<b>Max. Flange Temperature:</b>	200 ° C / 392 ° F
<b>Electrical Safety:</b>	IEC / EN 61010-2
<b>EMC:</b>	EN 50 081 & EN50 082
<b>Sealing:</b>	IP65 / NEMA4X
<b>Modbus Interface:</b>	RS485; Opacity, Optical Density, Dust Density and Status information available
<b>Analog Outputs:</b>	Isolated 4 to 20 mA Configurable as Opacity, Optical Density, Dust Density
<b>Relay Outputs:</b>	System OK, Calibration, Alarm
<b>Relay Rating:</b>	1 A @ 24 Vdc
<b>Power Supply:</b>	24 Vdc nominal (18 to 30 Vdc), 0.3 A nominal (3 A start-up)
<b>Transceiver Dimensions (HxWxD):</b>	191 x 291 x 413 mm / 7.5 x 7.9 x 16.3 in
<b>Retro-reflector Dimensions (HxWxD):</b>	101 x 201 x 237 mm / 7.5 x 7.9 x 9.3 in
<b>Transceiver Weight:</b>	6 kg / 13.2 lbs.
<b>Retro-reflector Weight:</b>	3 kg / 6.6 lbs.
<b>Enclosure:</b>	Cast Aluminium, epoxy coated
<b>Approvals:</b>	EN 15267 certified by TUVdotCOM

SEE OUR OTHER PM AND OPACITY RELATED LITERATURE:



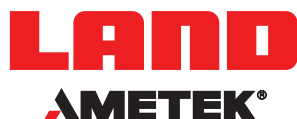
4500MkIII  
COMPLIANCE  
OPACITY MONITOR



4750 PM  
PM CEMS  
DUST MONITOR

DISCOVER HOW OUR BROAD RANGE OF NON-CONTACT TEMPERATURE MEASUREMENT AND COMBUSTION & EMISSIONS PRODUCTS OFFER A SOLUTION FOR YOUR PROCESS

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#### CONTACT US



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