



## MIP LM 3189 LASER DUST MONITOR

### LASER LIGHT SOURCE-ULTIMATE WAVELENGTH STABILITY, EXCELLENT COLLIMATION AND HIGH SENSITIVITY

- Minimum optics needed - less maintenance
- Optimal for stacks up to 20 meters (with optional 100mm lens up to 40 meters)
- No moving parts-minimal maintenance
- Large operation range ( 0 ... 90 %)
- Good stability and reliability

### ADVANTAGES OF USING A LASER LIGHT SOURCE

- Measuring path up to 20 meters possible, due to a narrow and intense laser light beam.
- Excellent beam collimation (0,04 °) - no need to use lenses or mirrors in the transmitter making the system reliable and simple
- Standard wavelength guarantees long-term accuracy and stability
- The analyser can be transferred to another location without factory calibration.
- The alignment of the beam is easy because the beam is narrow.

### PRINCIPLE OF OPERATION

The measuring system is based on the single pass principle. The light beam crosses the measuring section once only and the receiver unit measures and evaluates the light beam's weakening caused by the dust content. The optical value will be shown as optical density on analogue display and optical density related to mass value on digital display. Manual-calibration check can be done using optical filter.

### FEATURES OF THE MONITOR UNIT

- 4 operator selectable measuring ranges
- Analogue and digital display
- Settable alarm relay limit
- 0 ... 1 V DC and 4 ... 20 mA current outputs

### TYPICAL APPLICATIONS

- Power plants
- Cement factories
- Incinerators



## MEASUREMENT FUNCTIONS AND RANGES

Range switch position	D-value	Opacity %	Massrange *) mg/m <sup>3</sup> Dist. 1 meter	Massrange *) mg/m <sup>3</sup> Dist. 2,5 meter	Massrange *) mg/m <sup>3</sup> Dist. 5 meter
1	0...0.03	0...6.7	0...24	0...9,6	0...4,8
2	0...0.1	0...20	0...80	0...32	0...16
3	0...0.3	0...50	0...240	0...96	0...48
4	0...1.0	0...90	0...800	0...320	0...160
Option:	0...3.0	0...99	0...2400	0...960	0...480

(\* Depends on the size and density of the particles, values given with the size of ave. 1 µm and 1 kg/dm<sup>3</sup>)

## MONITOR UNIT

<b>Communication</b>	Analogue, Windows-based monitoring software as option available
<b>Display</b>	Analog display for optical density, 0 ... 100 % linear scale Digital display, 3-digit LCD for mg/m <sup>3</sup>
<b>Controls</b>	Range switch, calibration and alarm settings
<b>Alarms and mode indicators</b>	Relay 115 or 230 VAC, 1A max, with led indicator
<b>Outputs</b>	Current 4 ... 20 mA for real-time D-value/mg/m <sup>3</sup> Voltage 0 ... 1 V DC for real-time D-value/mg/m <sup>3</sup>
<b>Environmental</b>	Ambient temperature 0 ... 70° C, Power 115/230 VAC, 14 VA
<b>Dimensions</b>	Size: 180 x 215 x 130 mm, weight 1,5 kg

## TRANSMITTER UNIT

<b>Light type</b>	Semicond laser
<b>Wavelength</b>	655 nm, visible light
<b>Power</b>	From monitor unit
<b>Ambient temperature</b>	-20 ... +70° C
<b>Purge flow requirement</b>	Min. 10l/min
<b>Dimensions</b>	125 x 80 x 145 mm, weight 1,0 kg

## RECEIVER UNIT

<b>Detection</b>	Optically matched semicond. detector, Ø 50 mm
<b>Power</b>	From monitor unit
<b>Ambient temperature</b>	-20 ... +70° C
<b>Purge flow requirement</b>	Min. 30l/min
<b>Dimensions</b>	170 x 110 x 125 mm, weight 1,25 kg