DUST-IT

Fine Dust Sensor

UniTec
Innovation in Analysis

The fine dust sensor DUST-IT is an optical sensor for continuous measurement and control of fine dust contents. It can be integrated into several applications.

APPLICATION

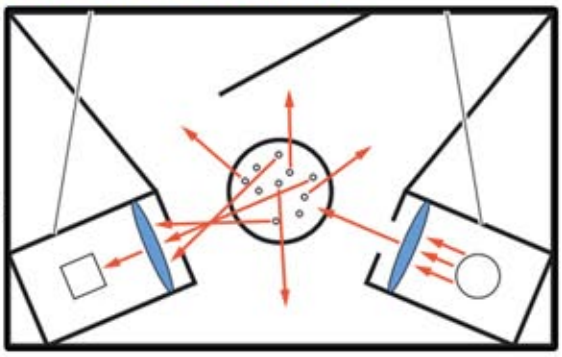
By means of the DUST-IT it is possible to determine the current fine dust loading of the environment and make out health hazards.

Application examples:

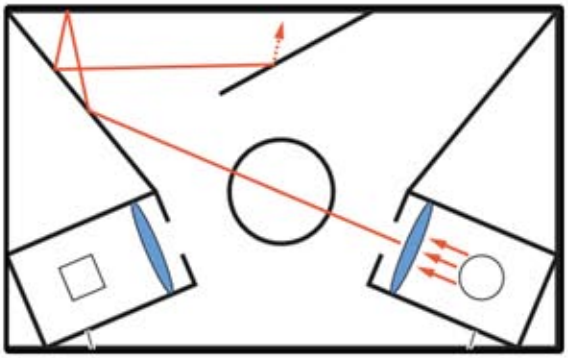
- monitoring of fine dust in the range of production (workshops, factory buildings etc.)
- monitoring of room air quality in offices and public institutions (hospitals, schools etc.) or in the private domain
- monitoring of ambient air
- upgrading of weather stations

LIGHT PATH IN THE SENSOR HOUSING

Without dust particles



With dust particles



FUNCTION

The determination of the dust content in the DUST-IT is based on the method of light scattering (LS).
The sucked air is pre-heated to 50 °C. Thereby flow enforcement takes place via the integrated fan. The velocity of the measuring gas is chosen in a way that particles are determined representatively.
For the analysis of alveolar particle fractions (PM2,5) an integrated pre-separator is used. In the DUST-IT a periodic control and correction of zero point and reference point is carried out.
By evaluation of the internal measuring signals a high zero point stability is achieved.

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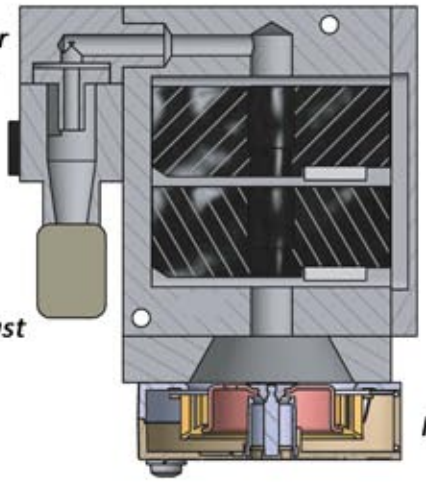
FEATURES & SPECIFICATIONS



HIGHLIGHTS

- robust design
- low-noise operation
- active suction
- long-term stability through two sensors
- cross linking of several DUST-IT
- network-compatible, WLAN
- easy installation without special tool
- low operational costs
- first-class price-performance ratio

SPECIFICATIONS

Housing	compact sensor housing made of aluminium; integrated pre-separator for measurement of fine dust (PM2,5)
Dimension	130 mm x 160 mm x 90 mm (w x h x d)
Weight	approx 2 kg.
Protection degree	IP23
Power Supply	100-240 V AC, 0.7 A, 50-60 Hz (optional 12 V DC, 2.1 A);
Ambient Temperature	-20...+50 °C
Relative Humidity	100%
Measuring method	scattered light measurement
Sensors	2 x optical sensor; separated control and signal evaluation
Flow	2 l/min
Interface	RS485 (Modbus)
Fan	for flow enforcement
Heating	for conditioning of measuring gas
Average dust contents	up to 200 µg/m³
Detection limit	3 µg/m³
Optional	WLAN module / variant without pre-separator