

A photograph of the Dustlight device in a dimly lit room. The device is a hand-held instrument that projects a wide, rectangular beam of light onto the floor. The light is divided into three horizontal bands of color: green on the left, yellow in the middle, and red on the right. The room has concrete walls and a floor, and the overall atmosphere is industrial and somewhat gritty.

Dustlight

INTRODUCTION

The Dustlight is a hand-held particulate matter analyser for use in trade and industry. It measures respirable dust, the PM10 fraction of inhalable dust, as well as PM1 and PM2.5. The Dustlight has illuminated areas that are clearly visible from all sides and change colour when critical values are exceeded. This is based on the workplace limit values from TRGS 900, specifically the general dust limit for respirable dust. The illuminated areas change colour from yellow to red when the dust concentration exceeds the general dust limit value of 1250 $\mu\text{g}/\text{m}^3$. The threshold for changing from green to yellow can be configured via the app; the default setting is 10% of the dust limit value.

AREA OF APPLICATION

The use of the limit values from TRGS 900 serves to categorise the dust levels for the user. Measurements with the Dustlight are to be understood as indicative measurements; they cannot be used as proof of compliance with occupational exposure limits. In terms of prevention, the Dustlight warns users if the dust concentration in the ambient air rises unnoticed to a critical level. In terms of measurement technology, for example, it can be used to continuously monitor the effectiveness of protective measures. By observing the temporal progression of the dust concentration, qualitative statements about the release behaviour of various work processes or the localisation of dust sources are also conceivable applications.

SPECIAL FEATURES

The Dustlight has a display that shows the currently measured value and the average layer value. In addition, the measured dust concentration is stored on the device so that the progression over time can also be shown on the display. The Dustlight also features the modular Klick-Fast mounting system. This allows the device to be attached to various fastening modules, such as a belt clip, a chest strap, a wristband with a Velcro fastener or a patch on work clothing.

APP

The Dustlight can be connected to our free app via Bluetooth. The app can be used to clearly display and analyse the data stored on the device.

ROBUSTNESS

The sensor has a number of innovative protective mechanisms that prevent the measuring accuracy from being impaired by dust in the optical measuring unit. These include a filtered air curtain that shields the sensor from dusty air.

TECHNICAL DATA

Product name	Dustlight Mini
Dimensions	Length x width x height: 69 x 69 x 32, 5 mm without clip
Weight	149 g
Housing material	Housing in ABS with protective layer in TPU
Battery supply	Lithium-ion battery, 1700 mAh, runtime depends on operating mode and usage: Continuous: up to 7 hours Standard: up to 20 hours Eco: up to 40 hours
Power supply	via enclosed USB cable with dust-protected magnetic coupling
Fastening	Modular Click Fast fastening system on the back of the device for attachment to belt clip, Velcro fastener/patches on clothing, carrying strap, etc.
Storage temperature	- 20 to + 40 °C
Operating temperature range	- 10 to + 50 °C
Operating humidity range	0 - 80 % RH
Alerting	LED display with good visibility, LCD colour display, acoustic signal, app notifications
Limit values	General respirable dust limit from TRGS 900 for red warning light (limit at 1250 µg/m ³), yellow light at 10% of this limit. Dust limits can be configured via our free Dustlight app.
Measuring method	Photometric (laser-based)
Measuring interval	Depending on the selected mode from every second to every 60 seconds, after start 30s until the first stable measured value
Measuring range	Concentration: 0 - 10 000 µg/m ³ Particle sizes: 0.3-10 µm

Accuracy for PM1 and PM2.5 *	0-100 µg/m ³ :	± 5 µg/m ³ AND ± 5 %
	100-5,000 µg/m ³ :	± 10 %
Accuracy for respirable dust and the PM10 fraction of inhalable dust *	0-100 µg/m ³ :	± 25 µg/m ³
	100-5,000 µg/m ³ :	± 25 %
Maintenance	Intelligent maintenance calculation depending on usage time and dust concentration, at least every 12 months.	
Sustainability	Repair-friendly design: All modules/housing parts can be replaced.	
Production	Designed and manufactured in Germany.	

*The sensor accuracy was determined by an external institute using the "Grimm Model 11-D" measuring device and "Arizona A1" test dust.

