Version 6.0 July 25

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 µg/m³. 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
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 several 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.

Material-specific configuration
For customers needing to measure specific substances, such as silica, powders in the food industry, Dustlight offers material-specific configuration services. Our measurement engineers perform gravimetric and optical assessments of the target

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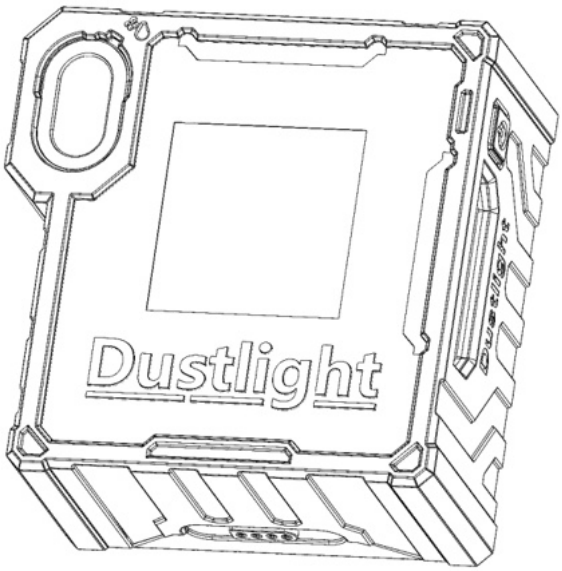
environment in collaboration with the Institute for Hazardous Substance Research (IGF in Dortmund, Germany). These assessments are used to create precise material-specific configurations.

Application-specific configuration
Dustlight also provides application-specific configurations for environments with consistent mixtures of substances. Currently available configurations include:

- **Woodworking:** Special algorithm for environments with primarily hardwood and softwood dust.
- **Welding:** Special algorithm for environments with welding fumes and metal dusts, developed using various welding processes and materials.

These configuration services ensure precise dust measurements tailored to specific substances or applications, enhancing the reliability and accuracy of Dustlight in diverse industrial settings.



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TECHNICAL DATA

Product name	Dustlight
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
Power Source	Internal Operating Voltage: 3.7 V Rechargeable lithium-ion battery (1700 mAh), charged via included USB to magnetic charging cable connected to 5V USB power adapters that qualify as Limited Power Sources (LPS). Battery has been approved for shipping and transport per UN/DOT 38.3 and has IEC 62133-2 (2nd Edition).
Electric Safety	Overvoltage Category I, according to IEC 61010-1 Pollution Degree 2, according to IEC 60664-1
Approvals	EN 61010-1, CE, FCC, IC
Mounting	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	- 10 to + 40 °C
Charging Temperature	0 to 30 °C
Operating humidity range	0 - 80 % RH, non-condensing
Operating pressure range:	700 to 1100 hPa (app. -300 to +3000 meters from sea level)
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 value 1.25 mg/m³), yellow light at 10% of this limit. Dust limits can be configured via our free Dustlight app.
Measuring method	Photometric (laser-based)

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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/m³ Resolution: 1 µg/m³ Particle sizes: 0.3-10 µm	
Material configurations	Standard configuration for general dust Additional material specific configurations available: - Softwood dust - Welding fumes - Silica - Oil mist - ... We are also offering configurations, which fit exactly your environment. Sounds interesting to you? Please **contact us** and we will inform about the next steps. With this service we could already implement several specific materials.	
Accuracy for PM1 and PM2.5 *	0-100 µg/m³:	± 5 µg/m³ AND
	100-5,000 µg/m	± 10 %
Accuracy for respirable dust and the PM10 fraction of inhalable dust *	0-100 µg/m³:	± 25 µg/m³
	100-5,000 µg/m	± 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 initial sensor calibration and accuracy definition is performed by an external laboratory using the TSI DustTrak DRX8533 and a KCl solution. The material calibrations are validated by an external laboratory using the "Grimm Model 11-D" measuring device and "Arizona A1" test dust.

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To maintain the optimal performance of your Dustlight, it is essential to service the device according to the intervals indicated on both the device itself and within the accompanying app. We can ensure measurement accuracy and sensor durability throughout the entire lifespan of the device only for Dustlights that have been serviced within the specified intervals.

Maintenance

Visual inspection and functional test of the Dustlight

Cleaning the air ducts

Maintenance, cleaning, and recalibration of the internal fine dust sensor

If necessary, replacement or cleaning of the stainless-steel pre-filters at the inlet and outlet

Update of the device software

If required: Battery replacement for a surcharge

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