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Datasheet

Dustlight is a wearable fine dust measuring device for use in crafts and industry. It measures respirable dust (A dust) as well as particle sizes PM1, PM2.5, and PM10. The integrated, visible light surfaces around the device indicate the current dust exposure via a traffic light system, high-resolution display, and acoustic warning signal. The basis for this is the material-specific dust limit value for respirable dust in accordance with locally applicable legal regulations.

AREA OF USE

Measurements taken with Dustlight should be understood as **indicative measurements**. The device is used for prevention and assists in the early detection of elevated dust concentrations. Although it is not intended for legally binding verification of occupational exposure limits, typical areas of application include:

- Continuous monitoring of the effectiveness of protective measures
- Evaluation of extraction and ventilation systems
- Analysis of concentration trends over time
- Qualitative assessment of dust-intensive work processes
- Localization of dust sources

DISPLAY AND DATA STORAGE

- Display of the current measured value and the shift average value directly on the device
- Display of the time curve on the screen
- Storage of measurement data in the device
- Synchronization and evaluation via the mobile app

MOUNTING SYSTEM

Dustlight features the modular Klick Fast® system on the back, allowing the devices to be worn securely on the body. Available systems include belt loops, chest straps, Velcro wristbands, and clothing attachments.

Latai GmbH
Agnes-Pockels-Bogen 1
80992 München

e. info@dustlight.de
w. www.dustlight.de

APP AND SOFTWARE

Dustlight can be connected to the free Dustlight app via Bluetooth:

- Measurement data is visualized and evaluated
- Device settings are adjusted
- Limit values are configured
- Data is exported (e.g., CSV)

In combination with the Business or Corporate software plans, cloud storage, PDF export, web app, exposure analysis (STEL, TWA), event logging, and advanced evaluations are also available.

ROBUSTNESS

Dustlight has several protective mechanisms to ensure long-term measurement stability:

- Filtered air curtain to protect the optical measuring unit
- Pre-separation chamber and stainless steel pre-filter
- Self-cleaning cycles to reduce deposits

These measures protect the sensor technology even in dust-intensive environments and increase the service life of the system.

MATERIAL-SPECIFIC CONFIGURATIONS

In addition to the standard configuration for general dust, material-specific configurations are available. These take into account the different optical properties and densities of the respective materials and adjust the evaluation accordingly.

Available configurations include, for example:

- Wood dust (hardwood and softwood)
- Welding fumes
- Silica
- Oil mist
- Aluminum oxide
- Diesel particulate matter (DPM)

Development is based on gravimetric and optical comparative measurements in collaboration with the Institute for Hazardous Substances Research (IGF). Individual material-specific adjustments are available upon request.

MAINTENANCE

To ensure measurement accuracy, regular maintenance is required at least every 12 months. Only devices that are serviced within the specified maintenance intervals guarantee consistent measurement accuracy over their entire service life.

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Product Name	Dustlight
Dimensions	Length x width x height: 69 x 69 x 32.5 mm without clip
Weight	149 g
Housing material	Base housing in ABS, sheathing in TPU
Power supply	Internal operating voltage: 3.7 V Rechargeable lithium-ion battery (1700 mAh), rechargeable via the included USB-to-magnet charging cable in conjunction with a 5V USB power adapter to be provided, classified as a Limited Power Source (LPS) according to the standard. The battery complies with the IEC 62133-2 standard and is approved for shipping and transport in accordance with UN/DOT 38.3.
Electrical safety	Overvoltage Category I, according to IEC 61010-1 Pollution Degree 2, gemäß IEC 60664-1
Certifications/ Approvals	CE, UKCA FCC, IC EN 61010-1
Attachment	Modular click fast attachment system on the back of the device for attachment to belt clip, Velcro/patch 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 Area	0 – 80 % RH, non-condensing
Operating Pressure Range	700 to 1100 hPa (corresponds to approx. -300 to +3000 meters above sea level)
Alerting	LED display with good visibility, LCD color display, audible signal, app notifications
Limit values	Preset to the general dust limit from TRGS 900 for respirable dust for red warning (limit value at 1250 µg/m³), yellow warning at 10% of the limit value. The limit values can be freely adjusted via the free Dustlight app.
Measurement method	Photometric (laser-based)

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Measurement interval	Depending on the selected mode from second to minute, after start up to 30s to the first stable measured value.	
Measuring range	Concentration: 0 – 10 000 µg/m³ Resolution: 1 µg/m³ Particle size: 0.3-10 µm	
Material Configurations	Standard configuration for general dust In addition, the following configurations are available, among others - Wood dust - Welding fumes - Silica dust - Oil mist - Aluminum Oxide - Diesel particulate matter (DPM) We also offer configurations tailored to your exact environment. Does that sound interesting to you? Get in touch with us. With this service, we have already been able to create several specific materials as a configuration.	
Accuracy for PM1 and PM2.5*	0-100 µg/m³:	± 5 µg/m³ AND ± 5 %
	100-5.000 µg/m³:	± 10 %
Accuracy for Respirable Dust and PM10 *	0-100 µg/m³:	± 25 µg/m³
	100-5.000 µg/m³:	± 25 %
Maintenance	Intelligent maintenance calculation depending on service life and dust concentration, but no later than every 12 months.	
Sustainability	Repair-friendly design: All modules/housing parts can be replaced.	
Production	Developed and manufactured in Germany.	

*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 the "Arizona A1" test dust.

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