



Version 8.0 October 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 $1250 \mu\text{g}/\text{m}^3$. 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

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 a wireless connection. 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

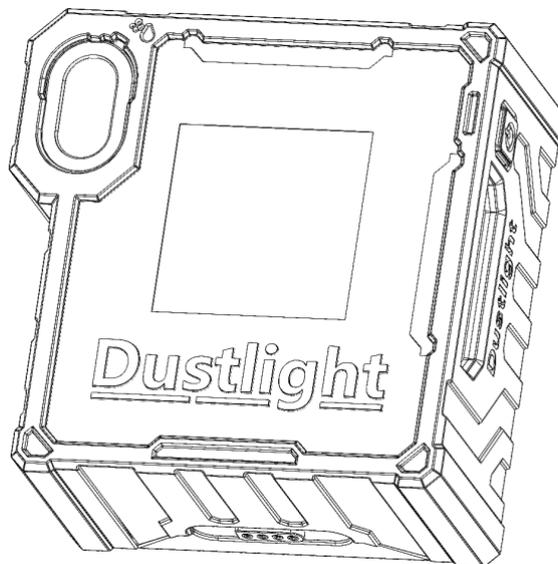
For customers needing to measure specific substances, such as silica, powders in the food industry, Dustlight offers material-specific configuration services. Our measurement engineers perform gravimetric and optical assessments of the target environment in collaboration with the Institute for Hazardous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



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 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) |

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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/m ³ Resolution: 1 µg/m ³ Particle sizes: 0.3-10 µm | |
| Material configurations | <p>Standard configuration for general dust</p> <p>Additional material specific configurations available:</p> <ul style="list-style-type: none"> - Softwood dust - Welding fumes - Silica - Oil mist - ... <p>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.</p> | |
| 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 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.