TROLEX

ONE LIFE.
PROTECT IT.

D1+

DATA SHEET

PRODUCT FEATURES

- Personal, wearable dust monitor
- Designed to provide early warning of personal exposure to airborne particulates
- On device early warning alerts for increased particulate levels
- PM1, 2.5, 4.25 and 10 measurement ranges
- 0.1 µm to 10 µm particle sizing range
- Low-end sensor resolution, measuring down to 0.1 µm
- Custom Logging Intervals from 10 seconds to 60 seconds
- On-device Audio/Visual alarms
- Custom alarm set points
- Custom STEL and TWA period alarm thresholds
- On-device self-check routine
- Battery operated, rechargeable (16 hours+)
- On-device data logging
- Live data readout via BreatheLITE application
- Data analytics functions via BreatheLITE and BreatheMOBILE applications
- Range of personal mounting options
- Low maintenance

PRODUCT OVERVIEW

The Trolex XD1+ Personal Dust Monitor is designed to provide detailed real-time data on airborne particulate levels so that users can take appropriate actions to stay safe and ensure personnel are fully protected from particulate-related health hazards.

The XD1+ allows users to monitor respirable particulate matter values (PM) to indicate and warn of harmful personal exposure in working environments. Measurement information is displayed on device in the form of custom short-term exposure limit (STEL) or long-term exposure limit/ time-weighted average (TWA) audio visual alarms.

Precise data is collected for the selected particulate matter value, enabling detailed concentration profiling and analysis using the Trolex BreatheLITE and BreatheMOBILE application software.

PRODUCT DIMENSIONS

PRODUCT MOUNTING

The XD1^{+} is supplied with an alligator mounting clip as standard. A Klick Fast stud is available to allow the XD1^{+} to be compatible with a range of wearable, wall and pole fixing kits (see product data sheet for additional fixing kit details).

XD1^{+} with alligator clip.

PARTICULATE SENSING PARAMETERS

Sensing technology	Optical Particle Counter (OPC)
Particulate measurement	0.1 µm to +10 µm
PM measurement capability	PM1.0, PM2.5, PM4.25 and PM10
Operating range*	Up to ~150 mg/m^3
Units of measurement	$\mu g/m^3$ – logged on-device mg/m^3 or $\mu g/m^3$ – BreatheLITE / BreatheMOBILE
Sampling interval	Custom 1 second intervals (default 10 seconds)
Flow rate	0.1 L/min (typical)
Accuracy	± 10%

*The $XD1^+$ may define particulate measurement peak trends up to the quantity specified depending on operating environment.

TECHNICAL SPECIFICATION

Operating temperature	+10 °C to +40 °C (Optimum performance) -10 °C to +50 °C (Max. performance)
Humidity	20% to 80% RH, non-condensing (Optimum performance) 0% to 95% RH, non-condensing (Max. performance)
Housing material	PC/ABS polymer housing
Ingress protection	Main enclosure: IPX4 Particle flow path: IP4X
Weight	170 g
Data connections	USB-C connector (charging and data transfer) Bluetooth LE 5.3
Connectivity	BreatheLITE PC application BreatheMOBILE application
User options	STEL and TWA alarm setpoints Latching alarms Particulate measurement
User interface/alarms	Visual icon illumination (STEL, TWA, battery indication), Audible (85 dB) Vibration alert
Self-test	Sensor hardware, circuitry and battery test on activation 'Push to test' during operation
Response test	Custom particle compliance test
Battery capacity	8.2 Wh lithium ion
Battery run time	8+ hours (full health at ambient)
Charging temperature limits	0 to +45 °C
Pollution degree	2 (except for dust path)
Maximum operating altitude	2000 m
Maximum mounting height	2 m
Charging time	0% to 100%: 3 hours

Maximum charge current	1.5 A
Memory capacity	1 GB (6 months data logging at 10 second intervals)
Product fixing/body mounting	Personal mounting clip, Klick Fast stud options
Certification	CE and UKCA compliant

ORDER REFERENCE

Option	Description
TX8061.00.01	General Purpose XD1^{+}
TX8061.00.10	Team Pack (5 x XD1^{+} + Data and Charging Dock)
P5644.4001	Body Mount Kit
P5644.4002	Pole or Wall Mount Kit
P5650.4002	Protective Case
P5650.4001	Data and Charging Dock
P5628.4000	Compliance Pack^{+} (4 x Samples, 4 x Applicators + 1 x Hood)
P5644.4004	Sample Replacement Kit (12 x Samples + 12 x Applicators)
P5650.15	Replacement Sensor Assembly
-	BreatheLITE + BreatheMOBILE

18. DISPOSAL

18.1 Waste of Electrical and Electronic Equipment (WEEE) Directive (2012/19/EU)

This symbol, if marked on the product or its packaging, indicates that this product must not be disposed of with general household waste.

In the European Union and many other countries, separate collection systems have been set up to handle the recycling of electrical and electronic waste.

At the end of the product's life, do not dispose of any electronic sensor, component or instrument in the domestic waste. Contact Trolex or the distributor for disposal instructions.

DISCLAIMER

The information provided in this document contains general descriptions and technical characteristics of the performance of the product. It is not intended as a substitute for and is not to be used for determining suitability or reliability of this product for specific user applications. It is the duty of any user or installer to perform the appropriate and complete risk assessment, evaluation and testing of the products with respect to the specific application or use. Trolex shall not be responsible or liable for misuse of the information contained herein. When instruments are used for applications with technical safety requirements, the relevant instructions must be followed.

All pertinent state, regional, and local safety regulations must be observed when installing and using this instrument. For reasons of safety and to help ensure compliance with documented system data, only Trolex or its affiliates should perform repairs to components.

Trolex Ltd. reserves the right to revise and update this documentation from time to time without obligation to provide notification of such revision or change. Revised documentation may be obtainable from Trolex.

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At Trolex, we save lives.

We believe that no person should risk their life to earn a living.

We aim to become the world's leading name in health and safety technology through pioneering products that provide real-world benefits to our customers whenever workers operate in hazardous environments.

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