

**Ribble Enviro**  
*...everything gas detection*

# Data Sheet

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**TROLEXX**

**ONE LIFE.  
PROTECT IT.**



**XKD1+**

**PERSONAL  
DUST  
MONITOR**



“We see real advances in real-time technology as the inevitable future for the industry and we urge the HSE to look into this in more detail.”

**UK All-Party Parliamentary Group for Respiratory Health.**

# ONE LIFE. PROTECT IT.

Most serious respiratory diseases are incurable.

Which is why we believe that simple, accurate, real-time dust monitoring should be available to every worker who needs it – without exception.

Introducing the **XKD1+** – an incredibly compact, lightweight and affordable real-time dust monitor that is changing the way we fight respiratory diseases in the workplace. No filters, no pumps, no tubes, and no replaceable parts.

Switch it on, secure it in place and off you go.

**XKD1+** gives you instant alarms for fully customisable STEL and TWA measurements for PM1, PM2.5, PM4.25 and PM10.

With an automatic self-test routine and a maintenance cycle of around 2 minutes every 3 months, you can make **XKD1+** a standard part of the PPE kit for anyone exposed to respirable dust in the workplace.

# PERSONAL DUST MONITORING FOR REAL LIFE.

We believe in keeping it simple.

**XKD1+** is designed to be used every day, in any situation or job role, whatever your level of expertise. It monitors the levels of dangerous dust and lets you know when it's time to take action.

**XKD1+** is small and lightweight enough to give you the freedom to do your job whilst making zero compromise on accuracy and reliability.

A truly wearable, easy to use, cost effective, early warning device and real-time dust monitor that can change the way you manage safety.



## TAKE BACK CONTROL.

Dust monitoring doesn't have to be complicated or time-consuming.

We all know that 8-hour averaging of dust exposure is of little use in understanding where, when and exactly how much your workers have been exposed to dangerous particulates.

With **XKD1<sup>+</sup>**, monitoring in real time is easy. Just set your preferences via **BreatheLITE** or **BreatheMOBILE** and away you go. View your data in real time or dock your device at the end of each day. Job done.



## SAVE LIVES.

Sometimes you just need people to get out of danger.

Everyone knows what to do when a fire alarm goes off. And now, with **XKD1<sup>+</sup>**, instant alarms, you can provide the same basic protection; unequivocal real-time alerts to anyone exposed to harmful levels of dust, the moment they are in danger.



## END THE GUESSWORK.

No complicated set up, usage or data analysis.

Just simple, straightforward, and accurate dust monitoring with a single-button unit. **XKD1<sup>+</sup>** is the quickest and easiest way to show you made the right decisions in your protection strategy.

Use real-time data to prove your elimination or reduction processes work – and that your people are protected.



## TAKE RESPONSIBILITY.

No two days are the same in a dusty working environment.

Which is why monthly, weekly or even daily sampling isn't good enough.

You need continuous real-time monitoring with instant alarms and comprehensive data sets to properly protect your workers.



# PERSONAL DUST MONITORING FOR EVERY WORKER AT RISK.

Over half a million people worldwide will die this year from diseases caused by inhaling dangerous dust in the workplace.

It's time to put a stop to this.

If respirable dust is a factor in your business, you need to know about it.

Affordable, real-time continuous monitoring is critical in protecting your workforce and improving the efficiency of processes and working practices; intelligently deploying dust suppression, containment and removal systems, and maximising the effectiveness of PPE.





## DUST MONITORING JUST CHANGED.

No other wearable dust monitor compares to **XKD1<sup>+</sup>** when it comes to size, weight or useability.

With no daily calibration, no filters, pumps or deteriorating sampling, **XKD1<sup>+</sup>** is built to last in heavy industrial environments.

A quick self-check is performed each time you switch on the **XKD1<sup>+</sup>**, and away you go.

Want more reassurance? Your **XKD1<sup>+</sup>** will notify you every 3 months that a compliance check is due, giving you the confidence that your **XKD1<sup>+</sup>** is functioning to the highest standard. There's no return-to-base servicing required with any of our Trolex particulates range.

Using the Trolex Compliance Pack<sup>+</sup>, a simple compliance check can be carried out via our **BreatheLITE** software in around 2 minutes.

Technology made simple.

# THIS TIME IT'S PERSONAL.

**Dawn Anderson, Business Manager.**

The battle against dangerous dust has always been a personal concern in my life. My Dad was an industrial roofer for 15 years, starting around the time I was born in the early 80s. Eventually, he started to suffer with really bad breathing problems.

His symptoms started when I was in my early 20s, which was a shock as he was only in his mid-50s. Year-by-year, it just got worse. He struggled to breathe, struggled to walk and had to have an oxygen tank with him constantly. Eventually the crazy amount of medication he was on made his legs swell up so badly that he became practically housebound.



My dad was a smoker, but during this time me and my sister said to him “this can’t just be from smoking”.

He really blamed himself and thought he had caused it. Unfortunately, in 2019, my Dad passed away. My sister and I were given the option to have an autopsy on dad and we both agreed to it; we wanted to know the truth about the cause of our dad’s death and some explanation to the years of him suffering.

We were both shown a copy of our Dad’s x-rays and discovered that the cause of his death was asbestosis. All those years of working, exposed to dangerous dusts with no protection, had caused this. We are now at the final stages of the legal proceedings and even though it won’t bring dad back, it will at least be some justice for him.



# THE BATTLE AGAINST RESPIRABLE DUST.

**Adrian Eccles, Technical Product Manager.**

For me and my family, it's a personal battle. Seeing the effect that dust can have on a family member is heart-breaking, and I wish I could turn back the clock with what I know now. My dad Eddie (or Edward if he was being told off by my mum!) worked from the 1970s to 1990s in a brick manufacturing plant, doing a variety of jobs in extremely dusty environments.

He didn't have proper protection throughout his time there, and he paid the price. All of these tasks were extremely dusty, and my dad would often say that depending on where you were working you could look like a ghost as you'd be covered in dust. However, due to attitudes and awareness in that era there was little regard to the dangers that the dust could be causing.



His retirement plans with my Mum were severely changed by the damage done to his lungs. Things carried on getting worse and worse. He was frustrated that he couldn't play football and cricket with the grandchildren, and during the last few months he would spend most of the day just sat in his chair – a walk to the kitchen would see him clutching the doorframes.

I wish I could turn back the clock and get my Dad the proper protection which all workers need so that he might still be here now. Unfortunately, I can't – but I can do everything possible to stop other families having to go through something similar.



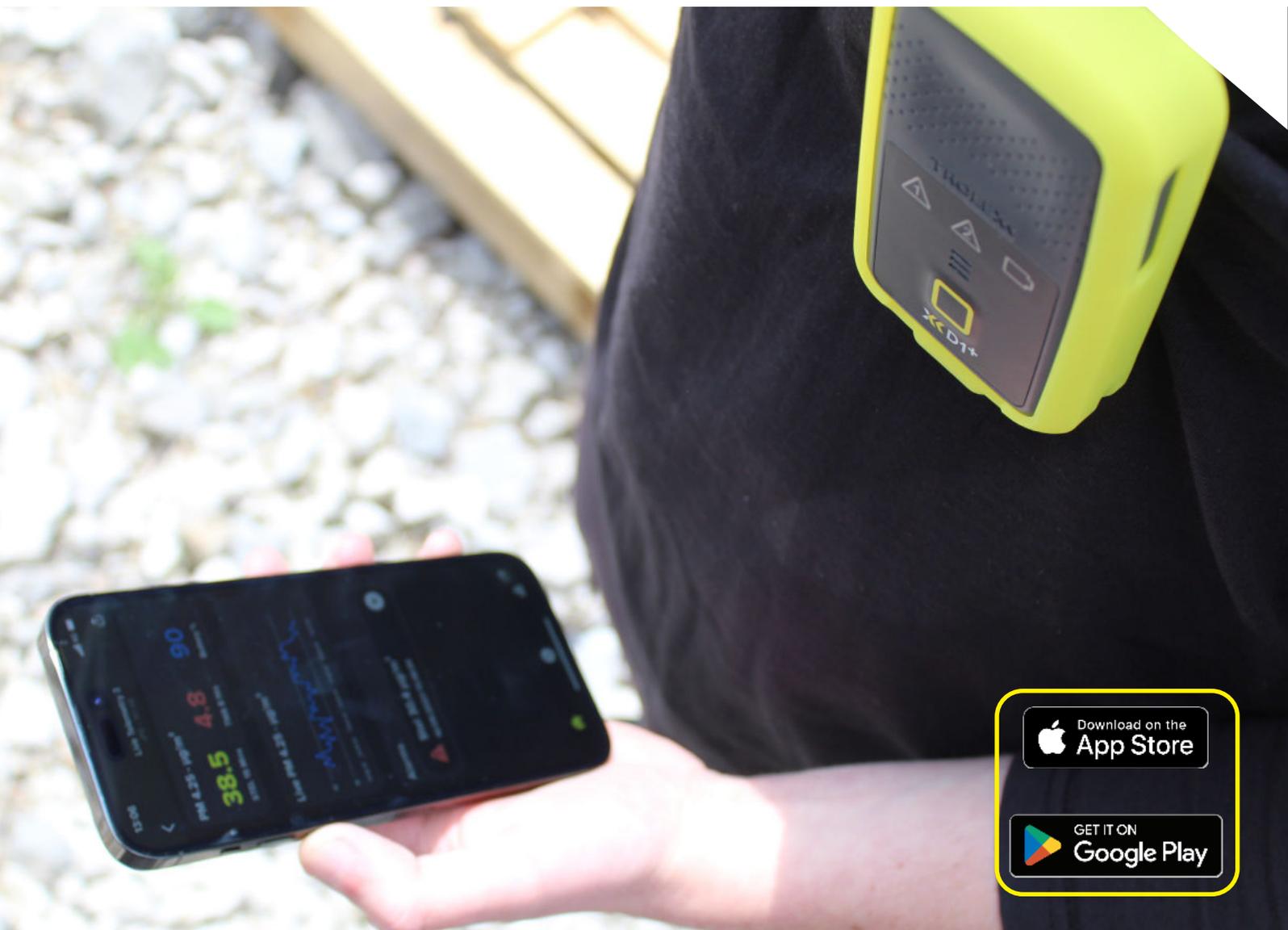
# BREATHEMOBILE APP.

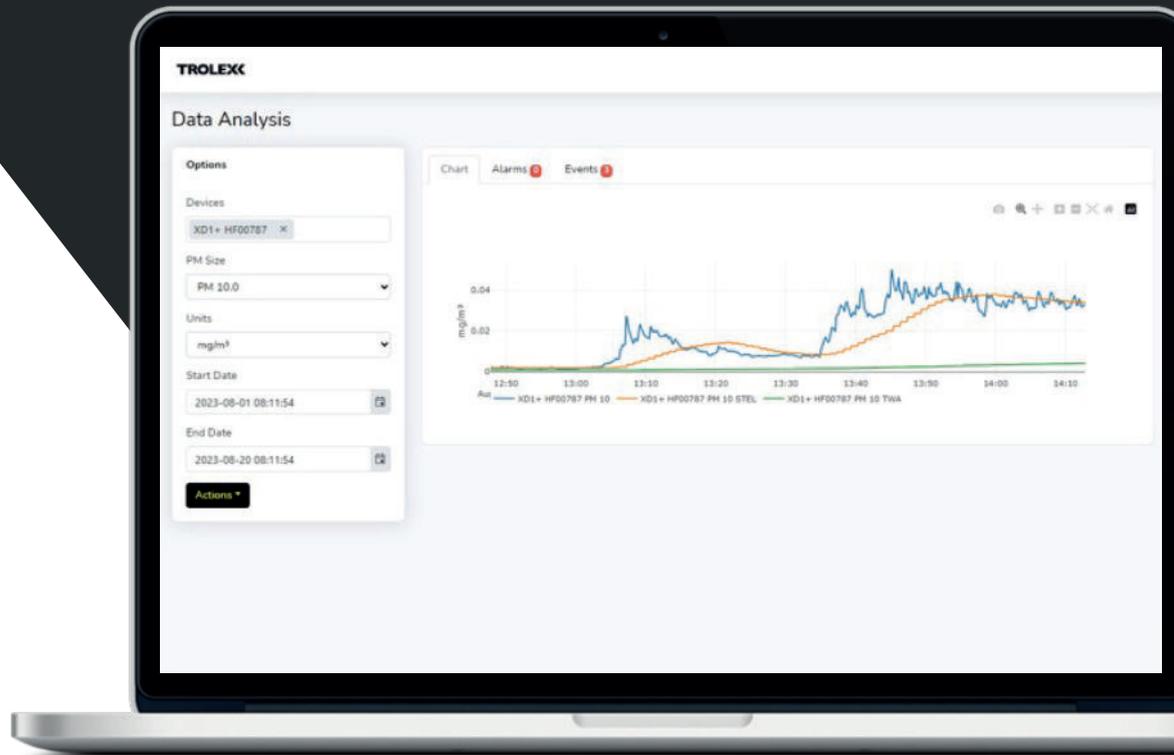
We develop products that help you make a difference and keep your workforce safe.

Want the data live on screen? Simply connect **XKD1+** using NFC technology by holding your **BreatheMOBILE** app close to your **XKD1+**.

View your live and historic data, change your threshold settings and see any alarms. "Real-time" really is in real time with **XKD1+**.

With personal real-time data delivered directly to your mobile phone, you can instantly identify the source of exposures and adjust control-measures immediately. You can provide the correct PPE to those who need it, as well as record and store who, when and where of your dust exposure scenario.





 [trolex.com/software](https://trolex.com/software)

## BREATHELITE SOFTWARE.

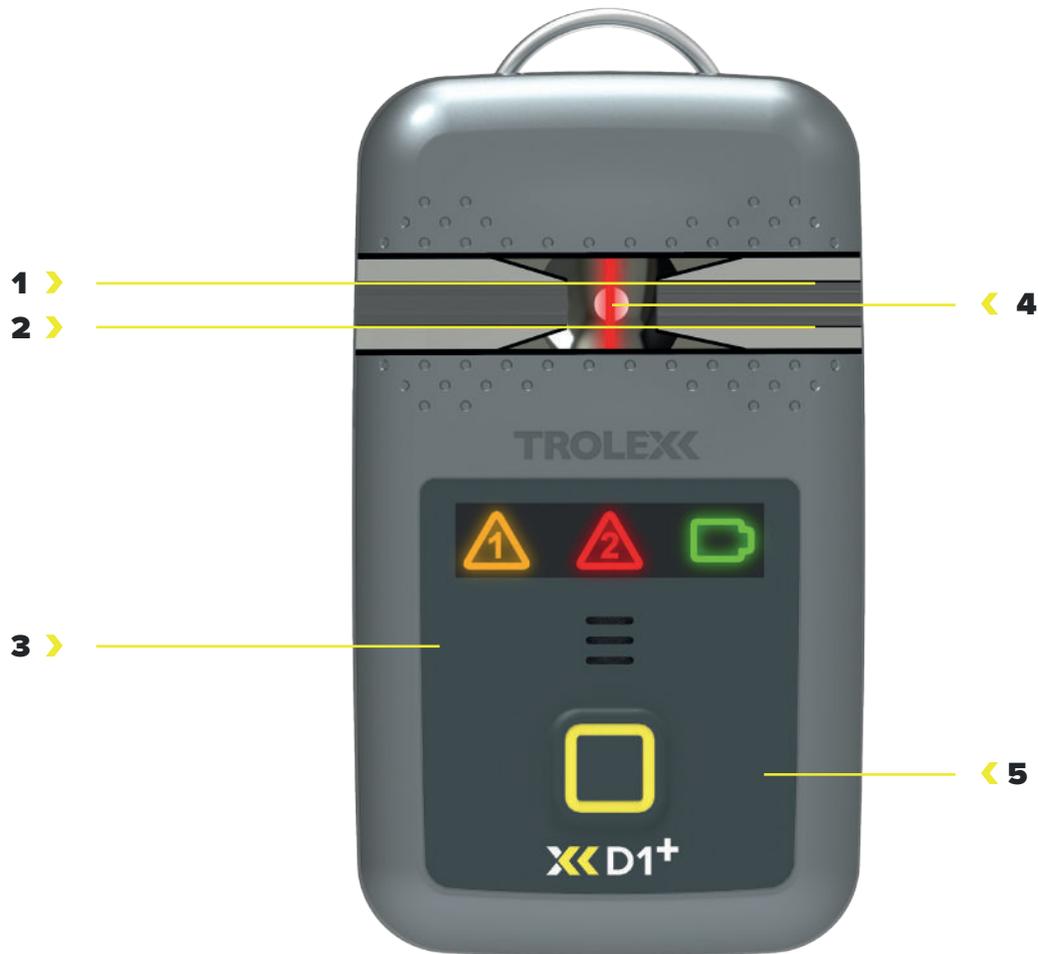
Like the **XXD1+**, **BreatheLITE** software is designed to make things simple.

**BreatheLITE** gives fast access to live and historical data. It allows you to easily configure your **XXD1+** devices, and controls the simple compliance check in around 2 minutes.

It's software the way it is meant to be. Fast, intuitive and straightforward.

Got more than one device? No problem. With the **XXD1+** data and charging dock, download the data to your PC or laptop while charging so your data is ready for you to view when it suits you.

# PIONEERING TECHNOLOGY MADE SIMPLE.



- 1 >** Open-path particulate technology allows free flow of air through the unit and gives **XCD1+** its incredible accuracy and durability; whether it's detecting microscopic but dangerous particulates or in heavy dust-loaded environments.
- 2 >** No pump, no pre-filtering, no impactor. **XCD1+** detects the real content of particulates in the space, constantly monitoring for dangerous particle sizes in real time.
- 3 >** Advanced processing algorithm, detects, counts and sizes up to 100,000 particulates a minute, providing accurate real-time information to save lives.
- 4 >** Optically refined detection chamber allows **XCD1+** to monitor every particle that flows through the unit.
- 5 >** Bluetooth connectivity and RFID pairing, and data docking make downloading and visualising your particulate data easy.

# PRODUCT SPECIFICATION.

## TECHNICAL SPECIFICATION

PLEASE REFER TO PAGES 15 AND 16 IN USER MANUAL FOR THE FULL SPECIFICATION

<b>Sensing technology</b>	OPC light-scatter photometer
<b>Particulate measurement</b>	0.1 µm to 10 µm (PM1, PM2.5, PM4.25, PM10)
<b>Particle count accuracy</b>	±10%
<b>Operating temperature</b> Optimum performance Maximum performance	10 °C to 40 °C -10 °C to 50 °C
<b>Humidity</b> Optimum performance Maximum performance	20% - 80% RH, non-condensing 0% - 95% RH, non-condensing
<b>Housing material</b>	PC/ABS polymer housing
<b>Ingress protection</b>	Main enclosure: IPX4 Particle flow path: IP4X
<b>Weight</b>	170 g
<b>Data connections</b>	USB-C connector (charging and data transfer) Bluetooth LE 5.3
<b>Connectivity</b>	<b>BreatheLITE</b> PC application <b>BreatheMOBILE</b> application
<b>User options</b>	STEL and TWA alarm setpoints Latching alarms Particulate measurement
<b>Operating range</b>	Up to ~150 mg/m <sup>3</sup>
<b>Particulate density range</b>	0.8 g/ml to 8.0 g/ml (default 1.65 g/ml)
<b>Units of measurement</b>	µg/m <sup>3</sup> – Logged on device µg/m <sup>3</sup> or mg/m <sup>3</sup> – <b>BreatheLITE</b> application
<b>Sampling interval</b>	Custom 1 second intervals (default 10 seconds)
<b>Flow rate</b>	0.1 L/min
<b>User interface/alarms</b>	Visual icon illumination (STEL, TWA, battery indication) Audible (85 dB) Vibration alert
<b>Self-test</b>	Sensor hardware, circuitry and battery test on activation 'Push to test' during operation
<b>Response test</b>	Custom particle compliance test
<b>Battery capacity</b>	8.2 Wh lithium ion
<b>Battery run time</b>	16 hours (full health at ambient)
<b>Charging temperature limits</b>	0 °C to 45 °C
<b>Charging time</b>	0% to 90%: 2 hours 0% to 100%: 3 hours
<b>Max. charge current</b>	1.5 A
<b>Memory capacity</b>	1 GB (6 months data logging at 10 second intervals)
<b>Product fixing/body mounting</b>	Personal mounting clip, Klick Fast stud options
<b>Certification</b>	UKCA and CE compliant



## XKD1<sup>+</sup> PERSONAL DUST MONITOR.

A real-time and continuous personal dust monitor. XKD1<sup>+</sup> is a lightweight and self-contained unit giving early warning based on your short term or workplace exposure limits.

### COMPLIANCE BASE\*

Combined with the supplied transparent dispersion hood, the compliance base allows simple and rapid testing of the XKD1<sup>+</sup> against a reference sample to ensure that the unit is performing to the highest standard.

\*Included with Compliance Pack<sup>+</sup>

### COMPLIANCE PACK<sup>+</sup>

A dedicated sample pack for rapid compliance testing of the XKD1<sup>+</sup>. Simply connect the unit to **BreatheLITE** software and follow the on-screen instructions for a full compliance check in around 2 minutes. Compliance testing, to check alignment with factory accuracy, should be carried out when your XKD1<sup>+</sup> warns you via the on-device message (3-month expected frequency based on typical device usage).

### BODY MOUNT KIT

The body mount kit comes with a Klick Fast stud, a belt loop and a sew-in dock attachment, giving you a variety of options for a secure and non-intrusive solution for personal mounting.

### DATA DOCK

With a busy workforce and a large fleet, it can be time-consuming to manage multiple sets of data and to ensure that devices are fully charged, ready for next use. The XKD1<sup>+</sup> data dock accommodates 5 XKD1<sup>+</sup> units, with 'plug and play' features that automatically recognise when an XKD1<sup>+</sup> is present, and downloads the latest data accordingly. Units are also charged, ready for the next use.

# ORDER REFERENCE.

## **XKD1<sup>+</sup> Personal Dust Monitor**

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**With alligator clip** TX8061.00.01



Alligator clip.

## **XKD1<sup>+</sup> Personal Dust Monitor Team Pack**

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**5 x XKD1<sup>+</sup> devices with charging and data dock** TX8061.00.10

**XKD1<sup>+</sup> Team Pack** comes with a free charging and data dock.



**XKD1<sup>+</sup>** in charging dock.

## **XKD1<sup>+</sup> Protective Case**

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**XKD1<sup>+</sup> protective case** P5650.4002



Protective case.

# ORDER REFERENCE.

## XXD1+ Charging and Data Dock

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**Data and charging dock**      **P5650.4001**

Data and charging dock only.



Charging and data dock.

## Product Mounting Kits

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The **XXD1+** mounting kits allow for Klick Fast, location and removal of the device for a range of custom mounting applications.

**Body mount kit**      **P5644.4001**

Site clothing or belt mounts.

### Body mount kit contents



Klick Fast



Belt loop dock.



Sew-on dock.

**Wall / pole mount kit**      **P5644.4002**

Direct wall mounting, poles or structures.

### Wall/pole mount kit contents



Pole mount.



Wall mount.

# ORDER REFERENCE.

## Compliance Pack<sup>+</sup>

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### Compliance Pack<sup>+</sup> P5650.4000

Annual compliance kit includes:

- 4 x dust samples
- 1 x hood
- 1 x compliance base



Trolex Compliance Pack<sup>+</sup>

## Sample Replacement Pack

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### Sample replacement pack P5644.4004

Intended for the Team Pack and / or bulk users. Contains:

- 12 x replacement compliance samples.



x 12 Trolex compliance sample.

# TROLEX REAL-TIME DUST AND SILICA MONITORING RANGE.

## AIR XKD

Game-changing, life-saving dust measurement technology.

The **AIR XKD** has been designed with one simple purpose – to monitor dust causing the industry’s biggest problem: diseases and deaths caused by harmful dust.

Accurate, real-time particulate monitoring that scans for dust in even the harshest and most hazardous working environments.

Visit [www.trox.com/product/air-xd](http://www.trox.com/product/air-xd) to find out more about the **AIR XKD Dust Monitor**.



**SCAN QR CODE FOR MORE INFORMATION.**



# AIR XKS

**AIR XKS** examines multiple detection parameters for RCS in real time, including size, symmetry, and a series of optical markers unique to RCS particles.

Our patented technology simultaneously deploys optical refraction technology with light-scatter photometry, analysing every particle sampled and classifying them by their identifiable optical properties. In this way, **AIR XKS** captures all forms of RCS whether alpha or beta quartz, cristobalite, tridymite, and all relevant sizes of particulate within the respiratory fraction.

Visit [www.trolex.com/product/air-xs](http://www.trolex.com/product/air-xs) to find out more about the **AIR XKS Silica Monitor**.



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.

For more information about Trolex, please contact us at:

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