

# TROLEX

## AIR XD Real-Time Dust Monitor

Highly accurate  
particulate monitoring  
for harsh environments



Mining, tunnelling, quarrying,  
aggregates, raw material  
processing, construction,  
chemicals, pigments,  
food manufacturing,  
wood processing, metals

# Lab-grade precision for harsh and hazardous applications

With 60 years' experience designing high-quality monitoring equipment for use in the world's toughest environments, we bring you a technological leap forward in the measurement of airborne particulates. The AIR XD offers unparalleled accuracy and flexibility to provide you with the real-time data necessary to protect people, processes and the environment.

- Highly accurate measurement technology that brings lab-grade precision to a field-ready unit. Up to five times more accurate than comparable technologies.
- No pumps or filters for high reliability and ultra low maintenance, allowing the unit to work continuously in the most challenging environments.
- Site-specific configuration combined with highly detailed data analytics allows users to identify in real-time the hazard from dust and other airborne particulates, giving them the opportunity to take the best preventative action to protect both people and processes.
- The AIR XD is IECEx certified for Group I hazardous locations in underground mining and we also offer a general purpose version for use in industrial locations with non-explosive atmospheres.



# 12,000

people die every year in the UK, from lung diseases related to hazardous dust in the workplace

# A new generation of dust monitor

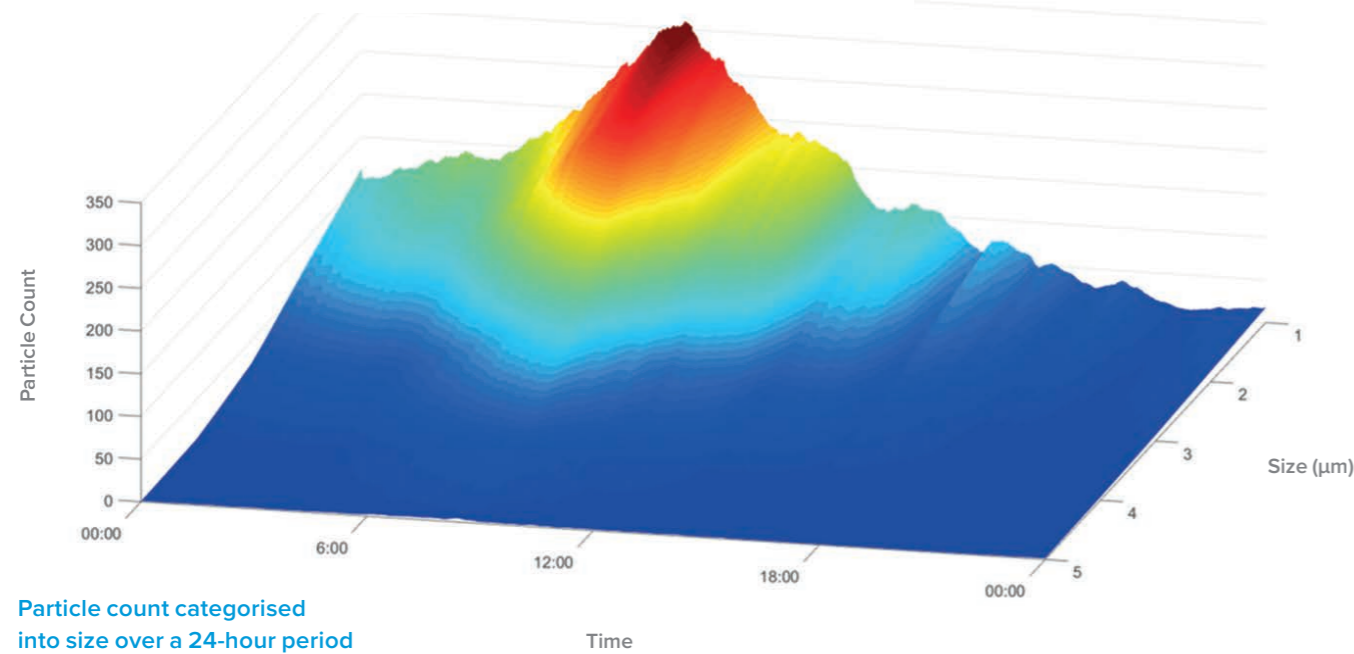
The AIR XD utilises a next-generation Optical Particle Counter (OPC) to deliver dramatically improved accuracy and repeatability of measurement over a diverse range of Particulate Matter (PM) sizes.

With its advanced design, patented algorithm, dynamic flow, and multiple scatter angles, it delivers more valuable information than any other unit of its kind and now comes with full on-device configuration to give maximum flexibility and accuracy of results.

The insights gained from this rich data set provides multiple opportunities to better protect people, processes and the environment.

Its robustness in the most demanding applications is second to none, continuously providing highly accurate real-time data of dust and other airborne particulates no matter how dirty or challenging the environment.

## PM size profile – change over time



# Plug and play

Installation of the AIR XD could not be simpler; once mounted in position and power applied, the unit is switched on and after it has completed the system check it begins reading and logging data.

The Air XD can be quickly and easily configured using the keypad on the device giving you full flexibility and allowing you to rapidly respond to changing particulate conditions.

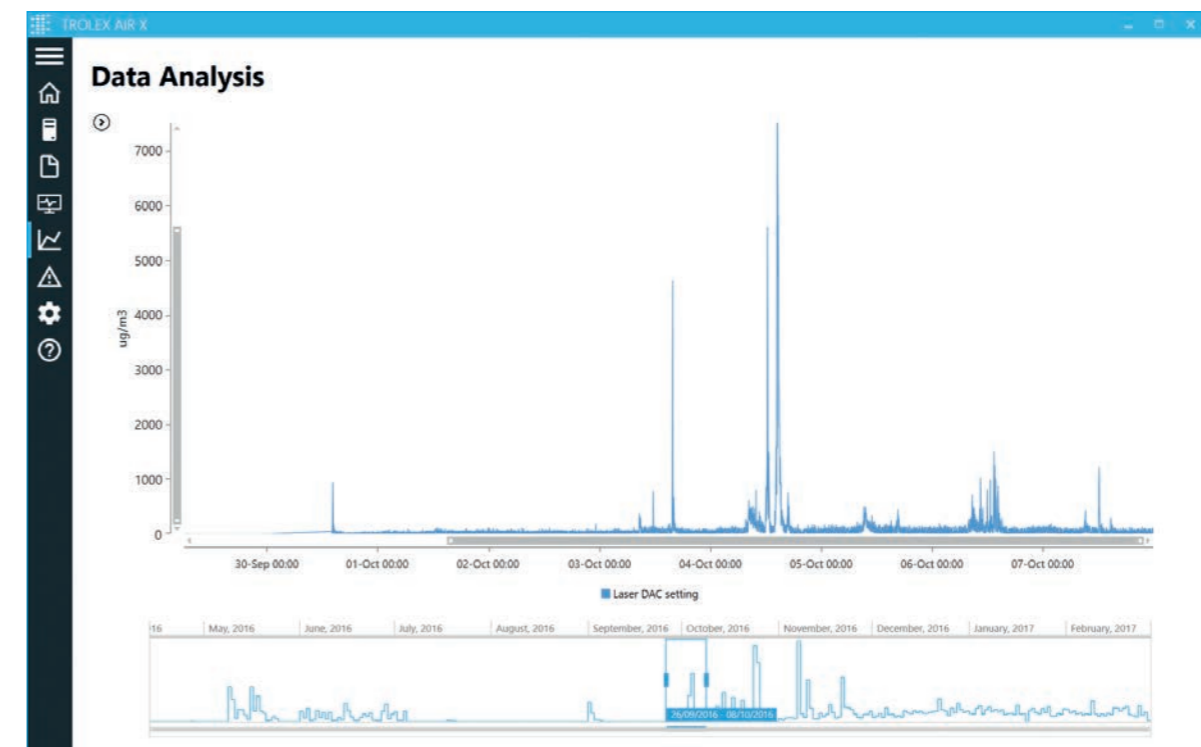
# Analysing and reporting

Collating, analysing and reporting data is essential for any instrumentation. AIR XD makes this fast and easy both on device and via simple and convenient application software.

View live readings, download historic data and output detailed graphs using the AIR XD application software. Focus on areas of concern and see the detailed PM size composition.

Spot trends and gain insights on how best to protect your people, processes and the environment. Go beyond box-ticking to improve employee health, the working environment and operational efficiency.

## Data Analysis



## Unrivalled accuracy

# Bringing lab precision to the harshest environments

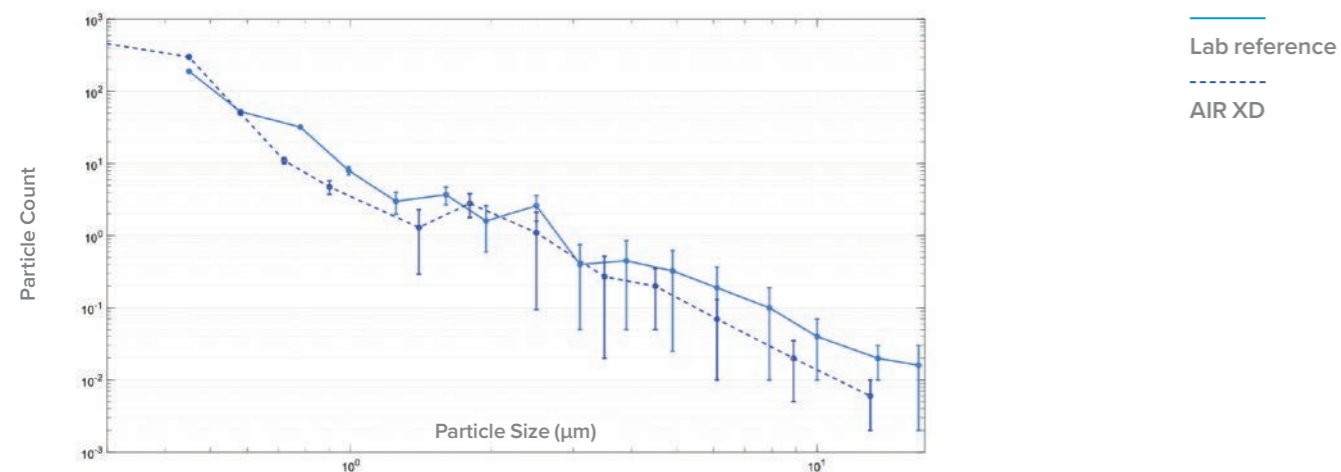
By using advanced light scattering techniques combined with patented data processing algorithms, the AIR XD is able to achieve levels of accuracy (+/-5%) normally only found in high-end lab equipment.

The combination of advanced technology and rugged engineering means that the AIR XD can operate continuously and accurately in even the harshest environments.

Using adaptive flow rates, the unit is able to dynamically adjust particulate calculations to ensure that the unit is not over or under-sampling.

Users can now have complete confidence that they are getting accurate, reliable information to allow precise management of dust levels and worker protection.

## AIR XD vs. lab-precision instrument



## No pumps, no filters

# Ultimate reliability, ultra-low maintenance

Ease of use and reliability have been improved dramatically by removing the need for pumps or filters. No longer do units require regular maintenance to guarantee accuracy of data or continuity of operation.

The AIR XD is able to run for longer in much tougher environments, giving users more confidence whilst reducing the total cost of ownership.



**By combining cutting edge research with robust design principles we've created a real-time dust monitor that can have a huge impact on worker health.**

**Chris Duerden**  
Software engineer

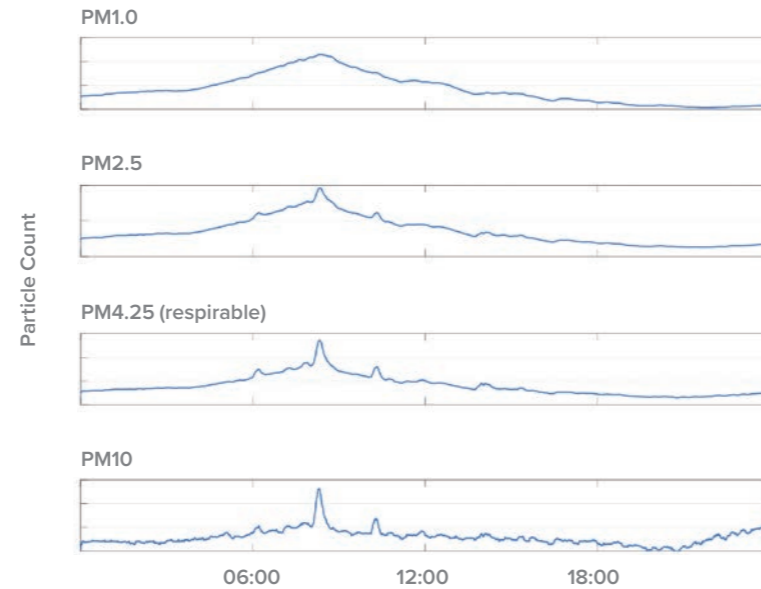
## Flexible, configurable

# Focus on one PM size or all of them. You choose.

Because the AIR XD collects data on all particulates between 0.35µm and 40µm, users can easily access detailed information about any PM size.

The Air XD unit allows simultaneous display of any combination of PM sizes required. Use of our application software allows detailed analysis of all measured particulates, offering advanced 3D graphing across the full size range.

Easily see how the composition of your dust changes over time to ensure your workforce has optimal protection.



## Particulates, personalised

# Not all particulates were created equal. Tune your monitor to your dust.

The density of airborne particulates can vary greatly dependent on the composition. The AIR XD can be quickly and simply configured to the local environment to ensure accuracy and integrity of data. Our experience and expertise means that we can offer you the right setup for your application, giving you confidence in your data.



## Specifications

# Technical Information & Dimensions

Measurement range	0.1 µg/m <sup>3</sup> up to 1500 mg/m <sup>3</sup>
PM size range	0.35 µm – 40 µm (including PM1.0, PM2.5, PM4.25, PM10, TSP)
PM density range	0.8 g/ml to 8 g/ml (default: 1.65 g/ml)
Averaging period	1 s – 24 hrs
Maximum particle count	10,000 per second
Accuracy	+/- 5%
Flow rate	Dynamic (1.2 l/m nominal)
Humidity	95% (non-condensing)
Operating temperature	-10 to 40 °C
Relay outputs	Two configurable (alarm outputs)
4-20 mA outputs	Two configurable (real-time readings)
Display	128 x 64 dot matrix display with backlight
Buttons	Five navigation (membrane keypad)
Communications	RS485 data output with MODBUS protocol Ethernet
Power	100 V to 240 V ac 50/60 Hz 9 V to 30 V dc
Weight	7.1 kg
Data storage	>10 years
Data download	USB

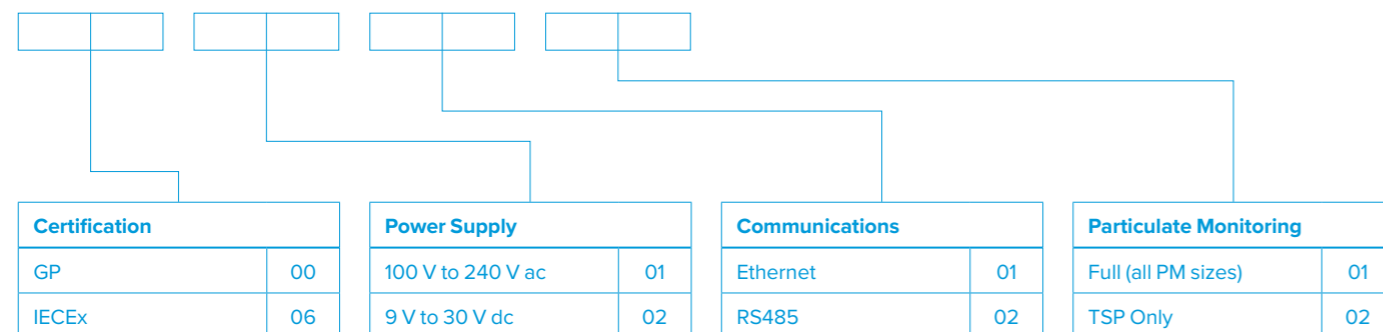


# Order reference

## AIR XD unit

Product options:

TX8005



## Advanced configuration

The AIR XD comes configured, ready to use straight out of the box. To support specific applications there are a number of advanced features and parameters that can be configured either on the device or via the accompanying application software. For further information, please refer to the user manual. To get specific advice for your application, please contact [sales@trolex.com](mailto:sales@trolex.com)

### Particulate Monitoring

The AIR XD simultaneously monitors the most important PM sizes (PM1.0, PM2.5, PM4.25 and PM10) as well as the Total Suspended Particulates (TSP). Application software allows the data to be analysed in even greater detail.

### Particulate Density

For an even higher level of accuracy, it is possible to select particulate densities to reflect site specific particulate profiles. Trolex can provide expert guidance to ensure that the data captured is optimised for each location.

### Averaging

The user can define two averaging periods. PM values will then be automatically calculated over those periods. The user can also select whether to calculate the average over a fixed or rolling timespan.

### Configurable Display

The AIR XD has a bright, graphical display that can be configured to show any combination of PM readings. The user can easily scroll through all the PM readings and can change what is shown by default.

### User Alarms

The AIR XD has two alarm channels that can easily be configured on-device and set up to drive the onboard relay outputs. The user can also change how alarms are displayed on screen.

### 4-20 mA Outputs

Live data readings can be provided via the 4-20mA outputs. Users can configure the desired full-scale range and trim both channels on device if required. Two channels allow for the output of any two PM readings.

Trolex is a progressive technology group which aims to become the leading name in health and safety technology, wherever and whenever workers operate in challenging environments. We bring to market products that are dramatically superior to our competition, providing outstanding real-world benefits to our customers.

For more information on Trolex or if you'd like to find out more about the AIR XD Real-Time Dust Monitor please contact us at:

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