

2023

XD1⁺ COMPARATIVE TESTING

Indicative testing alongside TSI
DustTrak DRX using ARD

PRODUCT TESTING: PT-01-23





THE TESTS

The **XD1⁺ Personal Dust Monitor** provides instantaneous warning and detailed real-time data on airborne particulate levels so that users can take appropriate actions to stay safe and remain informed of particulate-related health hazards in a range of working environments.

Indicative testing has been repeatedly conducted on multiple **XD1⁺** sensors in which the sensors and reference devices were exposed to a range of test dusts including A1 and Nominal 0 to 10 µm Arizona Test Dust and periods of low dust, in order to give an indication of typical device performance.

Multiple **XD1⁺ Personal Dust Monitor** devices were tested alongside a TSI DustTrak DRX instrument using Arizona Road Dust (ARD) supplied by Fiotech GmbH, where testing for dust exposure on all devices were carried out in a test cube.

SUMMARY OF RESULTS

- » **XD1⁺** units show good to very good agreement with each other across a range of particle distributions and loading.
- » The **XD1⁺** units show good agreement at low baseline levels with few erroneous spikes or misreading.
- » The **XD1⁺** units show good agreement with the reference detector for a range of particle distributions and loading.

THE RESULTS

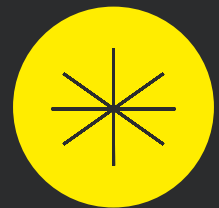


1 m³ test cube volume.



Pre-weighed test dust.

Dust was dosed centrally and dispersed by compressed air.



8 XD1⁺ units on an 8-spoke fixture.

The units were held in fixed positions equal distance from the centre



THE RESULTS (CONTINUED)



Text fixture rotated to ensure sensors were tested in equivalent positions.

Little difference was seen between positions suggesting that dust dispersal and sampling was uniform.



50 mg at 2-hour intervals 4 times.

Dust levels were allowed to settle and this was repeated the following day.



The report concentrates on PM4.25.

Data was also collected for PM1, PM2.5 and PM10 size fractions.



No additional calibration.



Pre and post-exposure tests carried out in an unoccupied space.



ARD used.

All ARD test dusts were either standard or specified grades supplied by Fiotech GmbH.

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TASK SETUP

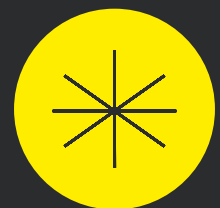


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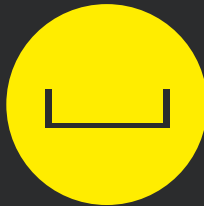


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