

DustView II

Dust measuring device for the comparison of dust formation of powders and bulk materials



During the production, the conveyance and the filling of solid particles in the form of powders, bulk materials, granulates, pellets and many other shapes, dust is generated as a rule.

This dust formation can lead to an impairment of the operational safety and the reliability of the production process.

Moreover, dust formation means environmental pollution and last but not least production loss.

The first essential step to avoid unwanted dust formation is the dust measurement after the free fall and impact of the material.

The fully automated dust measuring device DustView II provides a fast and accurate measurement of even smallest dusty parts, which are released after the free fall and impact of the material.

Particular advantages:

- High information content in terms of the dusting behavior of bulk materials
- DustView II following CIPAC MT 171
- Fully automated, reproducible measuring process
- Fully automated control and evaluation by Panel PC, no need for an external PC
- Easy and intuitive operation by touchscreen
- Quick measuring procedure (40 s)
- Compact and portable device
- Comparison between multiple measurements
- Single measurements / serial measurements
- Reports as PDF or text files, or via printer
- Reliable function
- Self-calibrating through automatic offset-alignment
- Automatic internal service notice
- Network compatible
- Low in maintenance
- Reduces your operating expenses

Application examples:

- Quality control
- Product development
- Process optimisation
- Production losses
- Operational safety
- Work hygiene
- Measurement of environmental pollution
- Precaution of dust explosion hazards

Technical parameters:

Panel-PC:	Touch display: 800 x 480 pixel Processor: Intel Atom™ 1,6 GHz Compact Flash Memory: 4 GB 24 Bit A/D converter
Weight:	16 kg
Power supply:	115/230 V, 50/60 Hz
Interface:	USB, LAN
Dimensions:	
Desktop case (LxWxH):	ca. 515 x 220 x 220 mm
Downpipe:	750 mm
Distance measuring section-base:	130 mm
Typ. duration of measurement:	40 s
Typ. weight of samples:	30 g

Accessories:

- CD with evaluation software for PC / laptop

Contact

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DustView II

Quality in detail

Function principle:

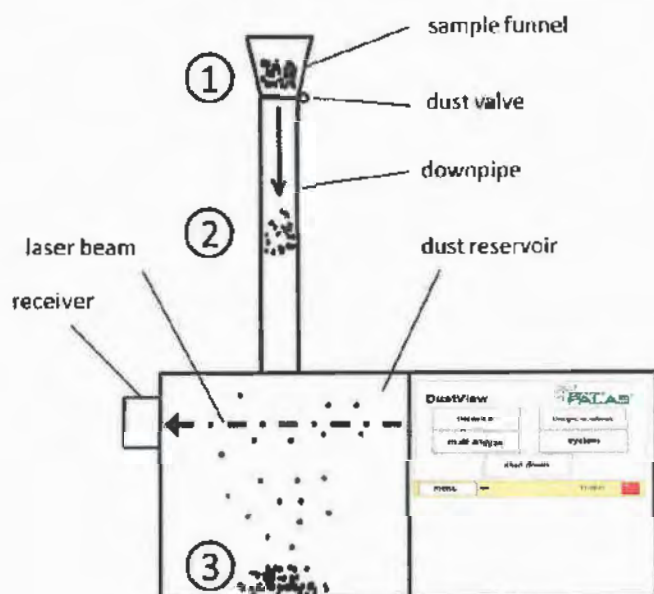


Fig.1: Schematic of the DustView II

- Feed the sample (typ. 30 g bulk material) into the sample funnel.
- Start of the measurement: the valve opens automatically and the sample falls into the dust reservoir.
- The measurement is started directly after the valve has been opened.
- The dust is dispersed in the reservoir. The resulting dust development causes an attenuation of the laser beam (extinction measurement). This attenuation is being observed during the measurement and is classified as a dust value between 0 and 100.
0 – no attenuation of the laser beam by the dust development, i.e. there are only few marginal dust particles to be found in the reservoir.
100 – complete attenuation of the laser beam by the dust development.
- The dust values are chronically changing values that indicate the attenuation of the laser beam in relation to the 0-value (= no attenuation). Before each measurement, the 0-value is determined automatically by means of a dust-free measurement (calibration!)
- End of the measurement. The data is automatically stored.

Determination of the dust number as a reference value for the dust behavior:

The dust number consists of the maximum dust value and the dust value indicated 30 seconds after the maximum dust value has been reached:

$$\text{Dust number} = \text{Max. value} + 30 \text{ sec. value}$$

The technical data on this sheet are for information only.
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Measurement results (example):

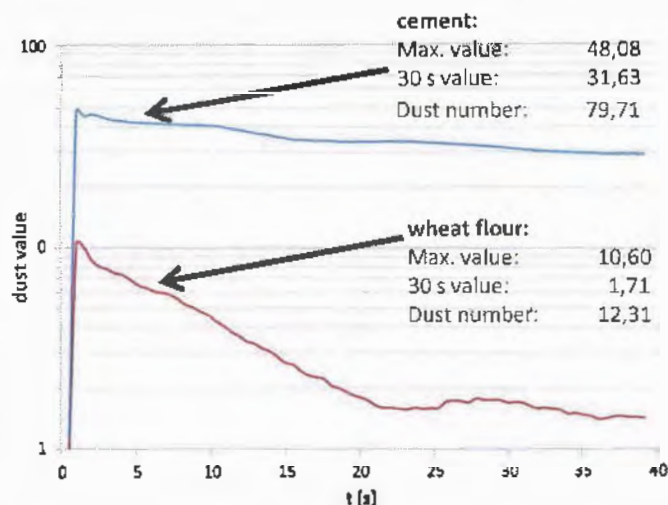


Fig.2: graphical comparison between two bulk materials

Because of the smaller particle size and the specific material characteristics, the cement sample clearly develops more dust than the wheat flour sample does. Wheat flour contains considerably bigger particles, which fall down quickly onto the bottom of the dust reservoir during the measurement, whereas almost all of the smaller cement particles remain up in the air even after 30 seconds.

With these comparative measurements, a product optimization with regard to the dust behavior can easily be proven. The highly reproducible measurements enable an easy and economical production control of bulk materials.

Firmware and software

At the end of the measuring process, the results are displayed directly on the device. On the one hand, these results are presented as numerical values; on the other hand, they appear as chronological developments in a chart.

The automatic storage of the results enables the analysis of previous measurements without an additional PC. Reports can be generated as PDF and as text files. A printer enables the direct printing of a report.

The DustView II firmware enables – besides the analysis of single measurements – also the comparison between up to 10 different measurements. The previously mentioned report options are available as well in this process. Moreover, through the option serial measurement, the averaging of multiple measurements can be carried out fast and easily.

Additional evaluation software to analyze measurements on an external PC is included in the delivery.