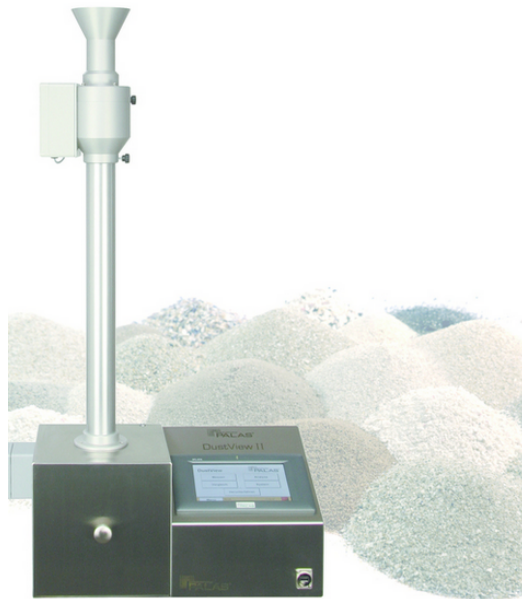




Product data sheet

Palas® DustView II



Applications

- Quality control
- Product development
- Process optimization
- Loss of production
- Occupational safety
- Occupational hygiene
- Measurement of environmental pollution
- Prevention of dust explosions

Benefits

- High information content with respect to bulk material dust behavior
- DustView II based on CIPAC MT 171
- Fully automated, reproducible measuring process
- Fully automated control and evaluation using on-board PC, no need for an external PC
- Easy and intuitive operation using the touch screen
- Rapid measuring process (40 s)
- Compact and portable device
- Comparison of multiple measurements
- Individual measurements/serial measurements
- Creation of reports as PDF, text file or printout
- Reliable function
- Self-calibrating by means of automatic offset adjustment
- Automatic internal service message
- Network-compatible
- Low maintenance

Description

Dust is generated during the production, conveyance, and filling of powders, bulk materials, granulates, pellets, etc. This dust can have negative impacts on occupational safety and the reliability of production.

In addition, dust pollutes the environment and plays a not inconsiderable role in the loss of production.

The first essential step in the prevention of undesirable dust is to measure dust formation following free fall and impact.

The DustView II fully automated dust measurement system enables rapid and precise measurement of even the smallest fractions of dust generated following free fall and impact.

Principle of operation

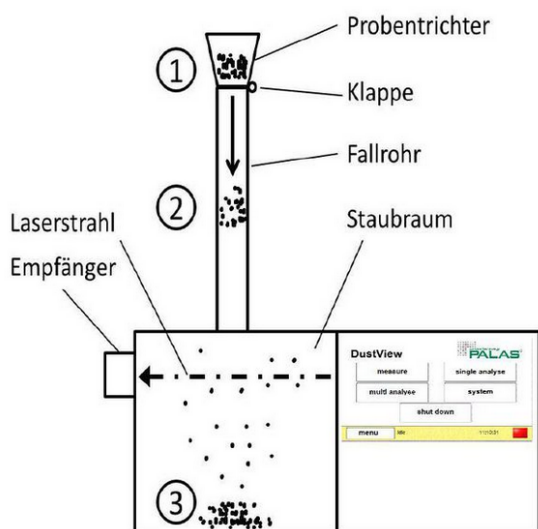


Fig. 2: Schematic design of the DustView II

Pour the sample (typically 30 g bulk material) into the sample funnel.

Start of measurement: Valve opens automatically and sample falls into dust reservoir.

Measurement begins immediately after the valve opens.

The dust is dispersed in the reservoir. The resulting dust development causes an

attenuation of the laser beam (extinction measurement). This attenuation is observed during measurement and classified as a dust value between 0 and 100 0 = No attenuation of the laser beam due to dust development, i.e. there are only minor dust fractions in the reservoir 100 = Complete attenuation of the laser beam due to dust development

The dust values change over time and indicate the attenuation of the laser beam in relation to the 0 value (= no attenuation). The 0 value is automatically determined without dust prior to each measurement (calibration).

End of measurement and automatic storage of the data

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

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

$$\text{Dust number (STZ)} = \text{Max. value} + \text{30-s value}$$

Measurement results (example)

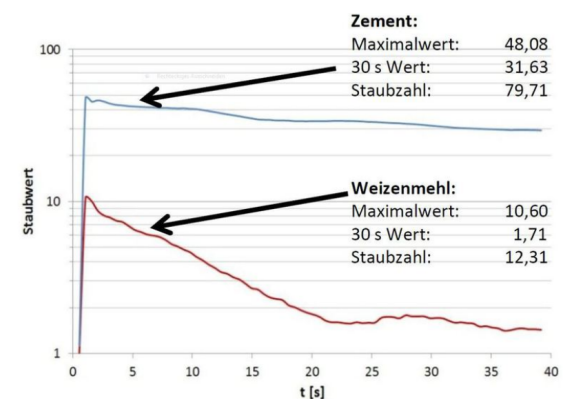


Fig. 3: Comparison of two bulk materials

Due to its finer particle size distribution and the specific characteristics of the material, the cement sample clearly generates more dust than the wheat flour sample. Wheat flour contains considerably larger particles that quickly settle to the bottom of the

reservoir, while nearly all of the finer cement particles remain suspended in the air even after 30 s. These comparisons enable a product to be easily and verifiably optimized with respect to dust behavior. The high reproducibility of these measurements enables easy and economical production controls of bulk materials.

Firmware and software

Following completion of the measurement, the results are displayed directly on the device and are shown as numerical values and in the form of a chronological sequence. Automatic storage of the results enables the analysis of earlier measurements without an additional PC.

The system provides the option to create reports as a PDF or text file. In addition, a report can be printed out immediately using a printer.

In addition to the analysis of individual measurements, the DustView II firmware also enables the comparison of up to ten different measurements. The report creation options mentioned above are also available here. Multiple measurements can also be averaged easily and quickly using the series measurement option. Evaluation software for the analysis of measurements on an external PC is also included.

Specifications

| | |
|-----------------------------|---|
| Interfaces | USB, ethernet, RS232/485, Wi-Fi |
| Measuring principle | Extinction (30 g sample weight, 750 mm drop height) |
| Data acquisition | 24 bit AD-converter |
| User interface | Touch screen, 800 • 480 pixels, 7" |
| Power supply | 115 - 230 V, 50 - 60 Hz |
| Dimensions | Approx. 515 • 220 • 220 mm |
| Weight | 16 kg |
| Operating system | Windows embedded |
| Data logger storage | 4 GB |
| Ambiente temperature | -10 - +15 °C |