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HANWELL
MONITORING & CONTROL

DustBug

Prevent damage caused by dust erosion with Hanwell's DustBug

Dust is an inevitable by-product of visitor access to exhibitions and accumulates on artefacts on open display. Although dirt brought on visitors' shoes can be captured at the entrance, release of dust from visitors' clothing is less easily prevented.

How dust is controlled and removed is fundamental to the prevention of cumulative damage to artefacts. On a microscopic scale, dust includes tiny, possibly acidic or sharp mineral particles which can be damaging to materials. Consequent cleaning erodes fragile surfaces, such as textiles and gilding.

When dust is left on a surface for too long, it attracts moisture during periods of high humidity, contributing to staining, corrosion and biological growth. Accumulating dust provides food for insect pests and bacteria, and high humidity can encourage the growth of moulds.

To prevent surface wear, heritage institutions clean only when necessary, using soft natural bristle brushes and low-suction vacuum cleaners.

Hanwell's DustBug has been designed to measure the accumulation of dust so that users can optimise the intervals between cleaning, and thus maintain standards of presentation and conservation. Analysis of the data can give an understanding of the nature of dust and its distribution in heritage collections.

Typical Applications

- Museums
- Galleries
- Show cases
- Archives
- Building monitoring and control
- Systems for blind control
- Temporary exhibitions

DustBug radio transmitter with external power supply option and composite video connector

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Hanwell's DustBug is designed to lie face up on a flat surface. Like other objects in its location, the glass surface on top of the box will naturally gather dust. The integrated camera measures the percentage area of glass covered by dust and presents the data on the display screen. Measurements are normally updated every 24 hours while ambient light is close to zero.

The DustBug allows users to monitor the rate of dust coverage and determine when cleaning will be necessary. At the press of a button, remaining battery life can also be checked. Careful power management gives a battery life of up to 2 years on 2*AA Alkaline cells.

The DustBug fitted with the radio option can be easily integrated into an existing Hanwell Environmental Monitoring system and dust deposition monitored alongside other parameters including temperature and humidity.

It is also an option to directly view the video output from the camera for subsequent image analysis.

This range has been designed to comply with the RoHS and WEEE EU directives, and carries the CE mark.

This product has been developed in collaboration with the University of East Anglia, The National Trust, English Heritage and Historic Royal Palaces.

Benefits

- Reduce/monitor ongoing condition surrounding dust
- Provides ongoing record of Dust in %
- Identifies potential problem areas before permanent damage occurs
- Real-time and historical analysis of data (radio)
- Easy installation
- Non-intrusive direct assessment of damage can be made
- DustBug can be easily integrated into an existing Hanwell system

Product Code

DBUG – Basic Unit
DBUG-TV – TV Output
DBUG-xxx.xxx – Radio (e.g. DBUG-434.075)
DBUG-TV-xxx.xxx – TV output (e.g. DBUG-TV-434.075)

Note: TV option kit will include an external supply and phono lead

Instrument

- Dimensions: 175 x 125 x 70 mm
- Weight: 460 grams
- Power Supply: 2 x AA Alkaline batteries
- Battery Life (no radio): 24 months
- Battery Life (Radio): 18 months
- Case Material: ABS & PC

Dust sensor

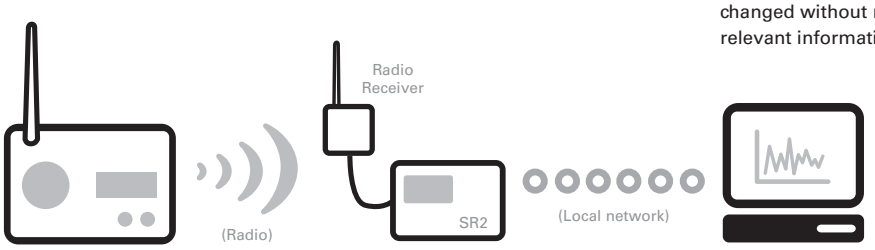
- Picture granularity (X and Y): 23 microns
- Dust display range: 0 to 9.9% coverage
- Dust display resolution: 0.1%
- Dark Threshold: 20 Lux nominal
- External Supply (Option): 5 volt DC 500MA
- Video Output (Option): NTSC Composite video

Radio

- Radio Frequency: 457.600 (US only), 434.075MHz (fixed) 433.920MHz (fixed), 433.875 – 434.650MHz in 25KHz increments (synthesised)
- Radio Power: 10 mW
- Radio Range: 3 km over open ground

Communications and Software

- PC Software: Radiolog V7 or V8
- Minimum O/S: Windows 2000



On board sensor reads dust level

Receiver and base station transfer data to local server

Graphs and historical data retrieved immediately