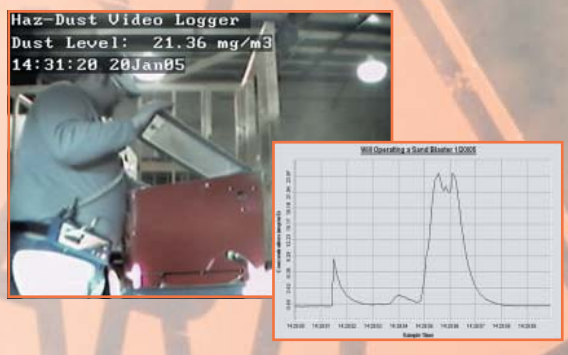
HAZ-DUST

VDM-7500 Portable Video Dust Monitoring System

Automatic Syncronization of Exposure Video and Concentration Data

- **Immediate and simultaneous real-time workplace video and display of dust measurement**
- **All-in-one video dust monitoring system**
  - Wireless video camera, portable PC with radio receiver, wireless particulate monitor, software, and hardware all packaged in a rolling carry case with handle
  - Expandable up to 4 channels to accept 4 cameras/ receivers and wireless dust monitors
- **Digital and wireless for unattended monitoring**
- **Concurrent collection of filter samples for gravimetric and chemical analysis**
  - Built-in pump provides an adjustable 1.0 to 3.3 L/min flow
  - Uses in-line 37-mm cassette
- **> 8 hours operation on one battery charge**
- **True breathing zone measurements of inhalable, thoracic, or respirable particles**
  - Easily interchange sampling heads
- **Record-to-disc feature**
  - Visual proof of exposure, concrete documentation of data

Digitally record workplace dust exposure with the HAZ-DUST VDM-7500 wireless video dust monitoring system. The VDM-7500 measures levels of lung-damaging particles while simultaneously overlaying dust concentration information onto video images. Easily clip the lightweight monitor to a worker's belt and the sensor in the breathing zone. Through wireless communication, all data is displayed in real time on the PC located in the worker's area. Record an entire workshift to obtain information on specific events that could be linked to worker exposure to airborne contaminants. The VDM-7500 automatically records and synchronizes real-time exposure concentrations and video. View, record, and store streaming video, data points, and graphical profiles of dust concentration on a PC with powerful DustComm Pro Software. Only the VDM-7500 provides you with the integration of video and particulate dust monitoring technology for a more dynamic assessment of air contamination and worker exposure – the components necessary for documentation and control.



SKC

SKC Inc. 724-941-9701 **SKC West** 714-992-2780 **SKC Gulf Coast** 281-859-8050 **SKC South** 434-352-7149

www.skcinc.com

Publication 1684 Rev 1201

HAZ-DUST VDM-7500

Automatic Syncronization of Exposure Video and Concentration Data

Principle of Operation

The particulate monitor component of the VDM-7500 system operates on the principle of near-forward light scattering of infrared radiation. This measurement technique uses an infrared light source positioned at a 90-degree angle from a photodetector. As the airborne particles enter the infrared beam, they scatter the light. The amount of light received by the photodetector is directly proportional to the aerosol concentration. Unique signal processing internally compensates for noise and drift.

NIOSH Requirements for a Video Exposure Monitoring System

NIOSH reported that a Video Exposure Monitoring (VEM) technique can be used to "associate events and exposures and to promote more effective and focused recommendations for controlling the air contaminant exposures."[1] System requirements included the following:

- A direct-reading instrument that provides a voltage output proportional to concentration
- Response time that is less than that of the events of interest
- Specificity for the contaminant of interest
- Portability

The HAZ-DUST VDM-7500 advanced technology meets these requirements and provides ease of mixing data and video and wireless communication at a much lower cost than earlier telemetry-based VEM systems.

VDM-7500 Applications

- Identifying tasks/elements that produce high exposure levels or contribute most to worker exposures
- Performing time/motion studies that correlate worker activity with resulting exposure
- Identifying sources of worker exposure and contaminant generation rate
- Determining effectiveness of ventilation systems
- Comparing worker-to-worker activity and exposure
- Performing qualitative and quantitative studies with a duration too short for integrated air sampling methods
- Demonstrating controls effectiveness
- Monitoring exposure
- Selecting respiratory protection
- Training workers
- Performing safety audits
- Reviewing compliance programs
- Supplying documentation for worker compensation issues
- Performing insurance investigations

References

[1] *Analyzing Workplace Exposures Using Direct Reading Instruments and Video Exposure Monitoring Techniques, NIOSH, No. 92-104, 1992*

Performance Profile

Personal Monitor

Accuracy:	±10% to filter gravimetric SAE fine test dust
Sensing Range:	0.01 to 200 mg/m³
Particulate Size Range:	0.1 to 100 µm
Precision:	± 0.02 mg/m³
Calibration:	NIOSH 0600 gravimetric reference - NIST-traceable SAE fine test dust
Sample Flow Rate:	1.0 to 3.3 L/min
Filter Cassette:	37 mm, disposable
Data Display:	mg/m³, TWA, Max, Min, STEL, date and time
Power:	Rechargeable NiMH battery
Operating Time:	≥ 8 hours
Charging Time:	10 to 12 hours
Data Storage:	21,500 data points
Digital Output:	RS-232
Dimensions:	Case: 5.4 x 3.3 x 2.7 in (13.7 x 8.4 x 6.8 cm) Sensor: 1.75 x 1.5 in (4.4 x 3.8 cm)
Weight:	1.5 lbs (0.7 kg)

VDM-7500 PC and Video Components

Video Camera:	Color, 2.4 GHz, NTSC to video board (8-hr rechargeable battery or AC operation)
Portable PC:	Pentium 4, 2.6 GHz, 14.1-in TFT display (110/220-V AC power supply) with CD-ROM, keyboard, mouse, and Windows XP (English/U.S.)

Total System

Weight (with case): 15 lbs (6.8 kg)
RFI/EMI Shielded: CE marked

Ordering Information

Description		Cat. No.
VDM-7500 Wireless Video Dust Monitoring System includes wireless particulate monitor, wireless video camera, customized portable PC with radio receiver, and software and hardware setup packaged in a rolling carry case with handle C!	110-240 V	**770-7500**
Sampling Heads for Personal Monitor		
Inhalable Sampling Head and Adapter, IOM Sampler, mounts on monitor sensor		**770-115A**
Thoracic Sampling Head, mounts on inlet or monitor sensor		**770-4107**
Respirable Sampling Head, GS-3 Cyclone, mounts on monitor sensor		**225-103**
Adapter for GS-3 Respirable Cyclone, *required when using GS-3 Cyclone*		**770-313**
Accessories for Personal Monitor		
Calibration Standard, for verifying span and optical sensor performance		**770-140**
Replacement Battery Pack for Personal Monitor, NiMH		**770-4105**
Chargers for Personal Monitor	110-240 V	**770-319**

C! *Requires calibration with equipment sold separately*

SKC Limited Warranty and Return Policy

SKC products are subject to the SKC Limited Warranty and Return Policy, which provides SKC's sole liability and the buyer's exclusive remedy. To view the complete SKC Limited Warranty and Return Policy, go to http://www.skcinc.com/warranty.asp.

SKC Inc. 724-941-9701 **SKC West** 714-992-2780 **SKC Gulf Coast** 281-859-8050 **SKC South** 434-352-7149
www.skcinc.com