

# HAZ-DUST IV

## Personal Monitor with Concurrent Filter Sample

- **Immediate display of particle concentration in mg/m<sup>3</sup>**
  - TWA, STEL, Max, and Min
  - Data is stored for downloading
- **New selection feature for calibration and flow rate used with interchangeable sampling heads; choose from:**
  - **Inhalable** — calibration to NIOSH Method 0500 and 2 L/min flow rate for use with IOM Sampler\* (*available separately*)
  - **Thoracic** — calibration to NIOSH 0500 and 2 L/min flow rate for use with thoracic impactor\* (*supplied with instrument*)
  - **Respirable** — calibration to NIOSH 0600 and 2.75 L/min flow rate for use with GS-3 Cyclone\* (*available separately*)
- **Operate without an impactor for total dust measurement by NIOSH 0500**
- **Internal adjustable sample pump — 1 to 3.3 L/min**
- **In-line 37-mm cassette directly behind sensor for concurrent filter sampling for gravimetric analysis**
- **Audible alarm with adjustable threshold**
- **Small and lightweight (1.5 lbs) with miniature sensor**
- **DustComm Pro Software for downloading, basic trend analysis, and comprehensive graphical reporting**
- **Run time over eight hours with rechargeable NiMH battery**
- **Highly accurate, NIST-traceable calibration**
  - ± 10% to filter gravimetric SAE fine test dust



\* Sampling heads match ACGIH-defined size-selective regions of the lungs

The HAZ-DUST IV, with new infrared detector, displays immediate breathing zone measurements and comprehensive graph reporting of aerosol and dust for industrial hygiene and environmental air investigations. Operate without a sampling head for total dust measurement (NIOSH 0500) or target specific particle fractions by installing an inhalable, thoracic, or respirable sampling head and selecting the appropriate calibration and flow rate. An in-line 37-mm cassette behind the sensor may be used to collect a concurrent filter sample for gravimetric or chemical analysis.

### Easy-to-use HAZ-DUST IV

Four simple keys and menu-driven instructions displayed on an easy-to-read LCD make HAZ-DUST IV operation easy. Simply select from the menus the desired particle type, connect the appropriate sampling head to the sensor, and use the selection switch on the monitor to apply the corresponding calibration and flow rate. Place a filter in the filter cassette behind the sensor, zero the unit, and clip the unit and sensor to a worker's clothing. Use the four-button keypad to set the threshold alarm and begin monitoring.



# HAZ-DUST IV Aerosol Monitor

Personal Monitor with Concurrent Filter Sample

## HAZ-DUST IV Sampling Heads

- **Inhalable** — SKC IOM Sampler  
Available separately as Cat. No. 770-115A
- **Thoracic** — impactor included with the HAZ-DUST IV
- **Respirable** — SKC GS-3 Cyclone  
Available separately as Cat. No. 225-103 with adapter Cat. No. 770-313



All sampling heads match ACGIH-defined size-selective regions of the lungs.

## HAZ-DUST IV with GS-3 Cyclone for real-time personal respirable silica monitoring

- The only real-time personal dust monitor with both a sensor and a cyclone/filter cassette in the breathing zone
- Concentrations over user-defined target levels can be further characterized and quantified by laboratory analysis of the filter.
- Real-time detection can also be used to determine and then mitigate peak exposures, which will lower TWA levels as well.

## Principle of Operation

HAZ-DUST IV operates on the principle of near-forward light scattering of infrared radiation. It immediately and continuously measures the concentration of airborne dust particles and displays the result in  $\text{mg}/\text{m}^3$ .

*What is near-forward light scattering? 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.*

## Applications

- Determining levels of worker respirator protection for OSHA compliance
- Reviewing compliance programs
- Evaluating work practices and controls of any dust-generating practice
- Performing safety audits
- Monitoring welding fume exposures
- Performing air quality studies in occupational health and industrial hygiene
- Performing hazmat air quality investigations and monitoring waste site remediation
- All air monitoring applications involving lung-damaging particulates
- Measuring total dust according to NIOSH 0500

## Performance Profile

|                             |   |
|-----------------------------|---|
| <b>Accuracy:</b>            | $\pm 10\%$ to filter gravimetric<br>SAE fine test dust  |
| <b>Sensing Range:</b>       | 0.01 to 200 $\text{mg}/\text{m}^3$  |
| <b>Resolution:</b>          | 0.01 $\text{mg}/\text{m}^3$   |
| <b>Particle Size Range:</b> | 0.1 to 100 $\mu\text{m}$  |
| <b>Precision:</b>           | $\pm 0.02 \text{ mg}/\text{m}^3$  |
| <b>Calibration:</b>         | <b>Respirable:</b> NIOSH 0600 gravimetric reference — NIST-traceable<br>SAE fine test dust at 2.75 L/min<br><b>Thoracic and Inhalable:</b> NIOSH 0500 gravimetric reference — NIST-traceable<br>SAE fine test dust at 2 L/min |
| <b>Sample Flow Rate:</b>    | 1.0 to 3.3 L/min  |
| <b>Power:</b>               | Rechargeable NiMH battery   |
| <b>Operating Time:</b>      | $\geq 8$ hrs  |
| <b>Charging Time:</b>       | 10 to 12 hrs  |
| <b>Data Storage:</b>        | 21,500 data points  |
| <b>Digital Output:</b>      | RS-232  |
| <b>Dimensions:</b>          | Case: 5.5 x 3.25 x 2.75 in (14 x 8.3 x 7 cm)<br>Sensor: 1.75 x 1.5 in (4.4 x 3.8 cm)  |
| <b>Weight:</b>              | 1.5 lbs (0.68 kg)   |

## Ordering Information

| Description   | Cat. No.  |
|---|-----------|
| <b>HAZ-DUST IV Monitor</b> includes monitor, thoracic impactor, in-line filter cassette, carry case, computer cable, battery charger, HAZ-DUST Media CD with instruction manual, and DustComm Pro Software  110-240 V | 770-4004  |
| <b>HAZ-DUST IV Monitor Kit</b> includes all items listed above plus GS Cyclone and adapter, IOM and adapter, calibration jar, and standard 110-240 V  | 770-4004K |
| <b>Size-selective Sampling Heads</b>  |           |
| <b>Inhalable Sampling Head and Adapter</b> , IOM Sampler, mounts on HAZ-DUST IV sensor  | 770-115A  |
| <b>Respirable Sampling Head</b> , GS-3 Cyclone, mounts on HAZ-DUST IV sensor  | 225-103   |
| <b>Adapter for Respirable Cyclone</b> , required when using GS-3 Cyclone  | 770-313   |
| <b>Accessories</b>  |           |
| <b>Calibration Standard for Monitor</b> , for verifying span and optical sensor performance   | 770-140   |
| <b>Calibration Jar</b> , for calibrating and setting pump flow when using respirable impactor   | 225-112   |
| <b>Zeroing Accessory</b> , for clean-air zeroing of HAZ-DUST IV sensor when using inhalable impactor  | 770-4202A |
| <b>Zeroing Filter</b> , for use with respirable and thoracic impactors  | 770-4102  |
| <b>Replacement Battery Pack</b> , NiMH  | 770-4105  |
| <b>Charger</b> , 110-240 V  | 770-319   |

Requires calibration with equipment sold separately, see Accessories

## 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>.

