DUST DETECTION SYSTEM

LB100-D Model Dust Detector for Mines

- Fully automated to scan for high dust levels
- Allows better control of major pollution source
- Sends warnings automatically to key personnel (text, email, etc)
- Robust design - dust and weather protected

raymetrics Advanced Lidar Systems

distributed in Australia, New Zealand and Papua New Guinea by ES&S
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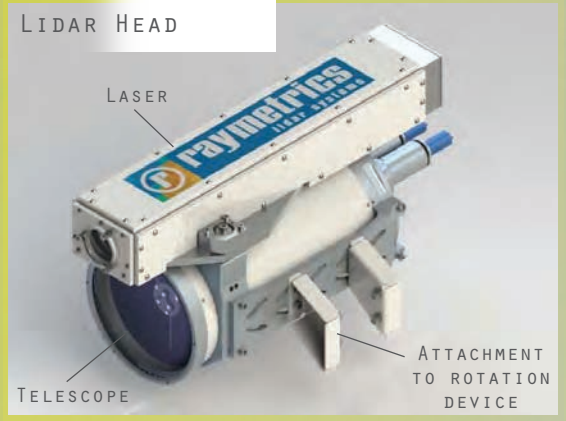
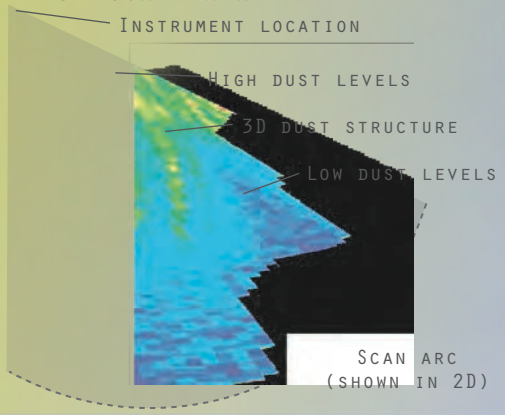
How does it work?

The system is based on LIDAR technology, which is similar to RADAR but uses light instead of radio waves. Light is emitted by a laser, which reflects off of target particles and is collected in a telescope. Distance to the target particles is then calculated from the time the light takes to return. A rotation device enables target particle groups such as dust clouds to be tracked in 3D.

Lidar Head



Example 3D Scan Data



Key Specifications

Laser	Nd:YAG
Telescope	200mm Cassegrainian
Wavelength Detected	355 nm
Laser Energy	25mJ/pulse
Raw Spatial Resolution	7.5 m
Range	10 km effective range (up to 8 km horizontal)
Temporal Resolution (minimum)	Down to 10 s for multiple signals, 1 s for single shot
Environmental Conditions	Operates outdoors between -20˚C to 45˚C (with climate control)
Remote Control	Via Ethernet Interface

Additional Equipment

The LIDAR can be augmented with a weather station and an in-situ dust monitor, providing a complete dust monitoring solution. Data from these systems can be fully integrated with the LIDAR data. Other accessories which can be provided include GPS, window wipers (if LIDAR is positioned in a dusty area), and climate control for extreme environments.

Logistics

Every mine is different. Finding the optimal location for the LIDAR is a complex and interactive process. A Raymetrics Engineer is sent to install every LIDAR. The Engineer will spend at least 3-4 days on site determining the best location for the instrument (in collaboration with Site Managers). The Engineer will also provide full training, including advanced data analysis, if required.
Note: Manuals are provided (in English - translations may be possible on request).

Robustness

Our products have undergone rigorous testing, including a trial period in a mine at high altitude in the Andes. Our LIDARs are fully sealed against water and dust. Ten years of experience providing systems for use in all environments, from high up mountains to deep in the Amazonian rainforest, has led to extremely robust products.

Key Points

Warning Alerts	Sent to key personnel so measures can be taken to reduce dust output
Reassurance	For local towns, ensuring pollution is tightly controlled
3D Tracking	System monitors where dust is going - interactive use can guide activity
Single Product	Even for large mines (up to 8km horizontal range)
Automated	LIDAR Engineer will install system and advise on best location
Mobile	Can be moved to build up a complete picture of dust pollution at each site

Company Experience

Raymetrics S.A. has been designing, manufacturing and delivering advanced LIDARs for atmospheric analysis for the past decade. Our LIDARs have been sold all over the world, including in the USA, South America, Europe, India and China. Our vast experience ensures exceptional performance and robustness. Contact us for a quotation or to discuss your LIDAR needs.

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