



CHALLENGING LIGHT
FOR OUR PARTNERS

HYDRA

DUST REMOTE SENSING SYSTEM

INO has developed a simple and economical device able to measure distance to solid targets and monitor particles suspended in the air or in water in real time. Our multiple head lidar system is designed for use in numerous applications, as mentioned below.

TARGET APPLICATIONS

- . Environmental monitoring system
- . Dust detection system
- . Aerosol (pesticide) drift monitoring
- . Visibility detector
- . Liquid level sensing
- . Reservoir filling level monitoring
- . Underwater reflectometry for calibration of airborne bathymetric lidar survey



GENERAL SPECIFICATIONS

STANDARD

- . Binocular size
- . Wavelength: 905 nm
- . Remote optical head coupled with optical fiber for immunity to electromagnetic interference and explosive environment

CUSTOM

- . Smaller optical head possible for solid targets or shorter ranges
- . Larger optical head possible for increased detection sensitivity of aerosols or longer ranges
- . Other wavelengths possible (850 nm, 532 nm, etc.)
- . Integrated module (no optical fiber)
- . OEM module



COMM-100129



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DUST REMOTE SENSING SYSTEM

SPECIFICATIONS

MONITORING SYSTEM

RANGE: 5 m to 200 m for visible dust or mist (standard)

RANGE RESOLUTION: 2.5 m

SENSITIVITY:

- _ 1 droplet of 1 mm in diameter at 50 m
- _ 100 droplets of 100 μm in diameter at 50 m
- _ Down to 1 μm particles

REFRESH RATE: 1 Hz to 0.1 Hz

SCANNING AREA:

- _ Horizontal: 360°
- _ Vertical: 80°

SOLID TARGETS

RANGE: up to 1 km (standard)

RANGE RESOLUTION:

- _ Less than 5 cm over 1 km
- _ Less than 1 cm under 50 m

LEVEL MONITORING

RANGE: 3 m to 100 m or more

RANGE RESOLUTION: ≤ 2 cm

Operates on agitated liquid surfaces
and in reduced visibility conditions
(dust, fog, clouds)



Prototype lidar optical head



Hydra: multiple head lidar system

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PATENTS

- .U.S. Patent #7,388,662: Real-time measuring of the spatial distribution of sprayed aerosol particles
- .U.S. Patent #7,274,448: Short-range LIDAR apparatus having a flat spatial response