

## TWO AND THREE-WAVELENGTH LIDARS

**with depolarization measurement for detection and determination of the characteristics of industrial aerosols and smoke from fires**

### Mobile lidar MW-60

*Is exploited by Belgorod University*

Powerful three-wavelength polarization lidar (with a mirror 60 sm in diameter), is used for remote control of emissions of a cement works. Range is up to 10 km.



### Two-wavelength lidar LSA-2c

*is exploited in Spain, Canary islands, in Iran, Shiraz*

Lidar of medium power (with a mirror 26 cm in diameter), allows remotely determine the mass of aerosol emissions from industrial enterprises, smoke from fires and dust aerosol transported from desert. Range is up to 6 km.



### How LIDARs work

Lidar action is based on measurement of intensity of radiation scattered by aerosol particles. The lidar sends short light pulses with different wavelengths and receives a backscattered signal.

Light scattering by industrial aerosols (for instance, cement particles) at different wavelengths and measurement of depolarization of light radiation allows to determine particle sizes and total mass.

Lidars can determine characteristics of aerosols in any direction of the top hemisphere.

### Lidars can be used for aerosol emissions control by:

- industrial enterprises (cement, metallurgical works);
- technical explosion works;
- for early detection of fires (smoke formation are registered significantly earlier than by sight).

Lidars can also be used for research of clouds, fogs, atmospheric aerosol and dust storms.

### Lidars, designed and manufactured by Photonics Technology Obninsk were delivered to:

Belgorod State University, Russia;  
Tenerife, Canary islands, Spain; Shiraz, Iran; Lisbon, Portugal;  
Suwon, South Korea, Hafez, China, Teplokluchenka, Kirhgizia.

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