



## Leice WATCL

### Multi-Wavelength Raman LiDAR

#### Product Description

Based on rotational raman and rotation-vibration raman frequency shift detection principle, the multiwavelength polarization raman lidar can realize fine detection of temperature, humidity and aerosol in boundary layer, troposphere and even bottom of stratosphere.

Equipped with high-energy pulse laser, large aperture receiving telescope, high-performance optical filtering elements and signal detection acquisition devices, the detection height can be up to 15km.

Modular design such as temperature, humidity control system and air purification system enables good performance under different climatic conditions, and provides comprehensive customized solutions and services.

#### Functional Features and Advantages

High detection accuracy: the temperature detection accuracy is  $>1K$ , the detection accuracy of water vapor mixing ratio is  $> 5\%$ , reaching  $0.01g/kg$ ;

Reliable quality: The system is compliant with the quality control and confirmation standards of the European Aerosol Research Lidar Network (EARLINET);

Long detection range: the measurement range can reach up to 15km;

High resolution: the range resolution is  $7.5m / 15m$  (user configurable). The optical properties of aerosol and cloud can be observed in seconds, and the maximum time resolution of water vapor and temperature detection can reach minute level;

Flexible deployment and transportation: the shelter design fully considers the requirements of hoisting and transferring, and the optical components of the system have high robustness, which is convenient for field station construction and transportation;

Stable and accurate operation: it can realize continuous and stable operation under harsh working environment such as plateau, desert and sea, etc.

Self-calibration and unattended: the system can conduct depolarization ratio correction regularly, realize remote network control and equipment monitoring, and realize data upload and sharing.

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### Technical specifications

Specifications	Parameter
Detection range	0.2-15km (clear sky)
Range resolution	7.5m (user configurable)
Temporal resolution	1s (user configurable)
Laser source	Nd : YAG (355nm/ 532nm)
Detector	Photomultiplier tube PMT
Telescope	Cassegrain
Data output	water vapor mixing ratio, temperature, humidity, aerosol extinction coefficient, backscattering coefficient, lidar ratio, linear particle depolarization ratio, color ratio, wavelength index, cloud height.
Detection sensitivity	temperature is better than 1K, water vapor is better than 0.01g/kg
Protection grade	IP65