



RAMANMY POLARIZATION LIDAR



Introduction

The Raman-Mie Polarization Lidar developed by Zhice Yunlian is an advanced atmospheric detection lidar. Based on the Raman scattering principle and lidar technology, it actively emits high-energy, narrow-pulse laser pulses into the atmosphere.

The receiving telescope collects atmospheric backscattering signals, which are separated into multi-channel signals via a precision spectroscopic unit. A data acquisition and processing unit transmits channel data to a terminal computer, where system analysis software automatically retrieves vertical profiles of atmospheric temperature, water vapor and aerosols.

It delivers accurate and reliable data for environmental observation, meteorological support and scientific research.



Features

1. Emits ultraviolet pulsed laser to detect atmospheric temperature and water vapor profiles day and night
2. Customization available; multi-wavelength transmitting and detection channels are optional
3. Dual data acquisition modes: photon counting and analog acquisition, offering wider signal detection range and higher measurement accuracy
4. Real-time analytical inversion, abundant data products, capable of identifying cloud particle phase state
5. User-customizable detection operation cycle

Specifications & Parameters

Transmit Wavelength	Detection Channel / Raw Data L0	Data Product L1	Data Product L2
355nm(-)	PRR(L)_N ₂ @355nm*(-)	Temperature Profile	Generated after laser detection: 1. Temperature inversion layer: zones with abnormal layered temperature; 2. Aerosol extinction & backscattering: reflects light interaction of aerosols; 3. Cloud layer information: identifies cloud height, phase state and supercooled water cloud conditions; 4. Boundary layer height: upper limit of atmospheric boundary layer; 5. Time-height distribution of all results when generating multi-type data products.
	PRR(H)N ₂ @355nm*(-)		
	ES@355nm*(-)	Water Vapor Profile	
	VRRN ₂ @355nm*(-)		
	VRRHOgas@355nm*(-)		
532nm(-)	VRRH ₂ O(liquid)@355nm*(-)	Aerosol Depolarization Profile	
	P_Aero@532nm(-)		
	S_Aero@532nm*(-)		
532nm(+)	ES@532nm*(+)		
	VRRJN ₂ @532nm*(+)		
	VRRH ₂ O(gas)@532nm*(+)		
1064nm(+)	ES@1064nm*(+)		
	P_Aero@1064nm(+)		
	SAero@1064nm*(+)		

Notes

Laser wavelengths and detection channels with white background are standard configurations.

*(-) / *(+) stand for optional removable or additional customized laser wavelengths / detection channels.

The ES channel and P_Aero / S_Aero channels of the same wavelength cannot be selected simultaneously.