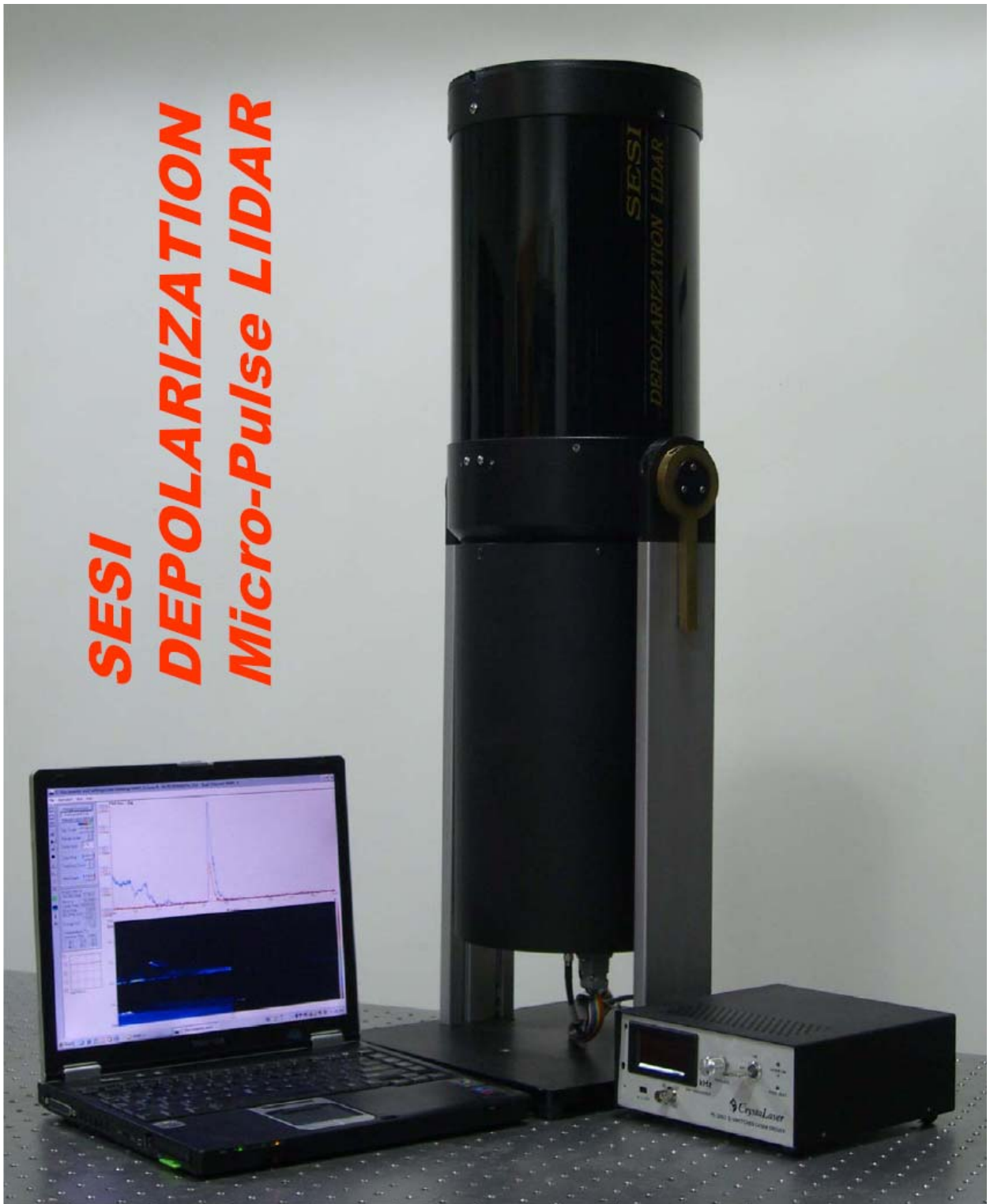


**SESI
DEPOLARIZATION
Micro-Pulse LIDAR**



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Technical Specifications of SESI Depolarization Micro-Pulse Lidar (TYPE-5) (Model MPL 1000 DP)

Transmitter :

Laser type: Diode Pumped Solid-State (DPSS) Nd:YLF, Nd:YAG, or Nd:YVO₄
(User's choice)
Wave Length: 523.5 nm (Nd:YLF), 526.5 nm (Nd:YLF), 532 nm (Nd:YAG or
Nd:YVO₄)
Laser Controller Operating Voltage: 110 ~ 230 VAC, 50~60 Hz

Transceiver :

Telescope: Schmidt-Cassegrain or Maksutov-Cassegrain telescope (User's choice)
Clear aperture: 200 mm for Schmidt-Cassegrain, 178 mm for Maksutov-Cassegrain
Focal ratio: F/10 for Schmidt-Cassegrain, F/13 for Maksutov-Cassegrain
Output pulse energy from lidar transmitter: ~7 micro joule with no hot spot over MPE
of ANSI Z136.1-2007 (Eye-Safe for
Unaided eye)
Pulse repetition rate: 2.5 KHz to 10 kHz variable
Pulse width: ~10 ns
Pulse to pulse energy variation: +/- 3 % RMS
Transmitter beam polarization: Linear
Receiver Field of view: < 100 μ rad
Back scatter measurement: [Instantaneous and Simultaneous Measurement of Co-polarization and Cross-polarization with 2 detectors for true depolarization detection, and Depolarization ratio](#)

Aft Optics & Detectors :

Filter band width: 0.2 nm, out of band optical density better than 10
Polarization ratio: 100:1 or better
Detector type: Si-APD single photon counting modules (SPCMs) from
PerkinElmer.
[Dead-time correction: 9th order polynomial](#)

Data Acquisition :

[Multichannel Scaler \(MCS\): SESI proprietary MCS](#)
[MCS location: Inside LIDAR Transceiver](#)
MCS control: Configuration setting through control computer
Range resolution: [Minimum 3.75 m, maximum 960 m, in step of 3.75 m](#)
[Synchronization: Trigger provided by computer](#)
[Communication between MCS and computer: Ethernet](#)
Data averaging time: Minimum 0.1 sec, maximum 4.37 minute, in step of 0.1 sec
Maximum range: 55 km

Control and Data processing Computer :

Computer: PC Laptop computer
Operating environment: Windows-XP

Display :

3 Traces:

Co-polarization signal, Cross-polarization signal, and Depolarization ratio

Traces Display modes:

Raw data, Background subtracted data, Background subtracted and range corrected data

2 false color presentations:

Co-polarization signal and Cross-polarization side by side

Monitored Parameters:

Laser energy, Detector temperatures, Background signals
5 Cloud Base Heights (CBH) and Planetary Boundary Layer (BL) Height on Display Screen