



Laser Ceilometer Model 8329

Description

The Model 8329 Laser Ceilometer measures cloud height up to 12,500 feet by calculating the return time of laser light pulses reflected by the cloud base. A low-power laser light transmitter utilizes a highly reliable gallium arsenide diode to transmit the pulse signal to the cloud base. The receiver is a silicon avalanche photodiode that incorporates an optical bandpass filter to prevent interference from other light sources.

Features

The measuring cycle range can be evaluated in 15, 30, or 60 second intervals in the 30 to 5,000 foot range, or 30, 60, or 120 seconds in the 30 to 12,500 foot range. Thus, tradeoffs can be made between measuring range and sample rate, with slower rates conserving energy and extending laser diode life.

The ceilometer transceiver is enclosed in a rugged weatherproof housing, which protects the unit in extreme operating conditions ranging from -55°C to $+55^{\circ}\text{C}$. Automatic sensing circuits control a high-pressure blower unit to clear rain and snow from the transceiver windows. Heaters built into the case are switched on when the internal temperature falls below 20°C . Additional sensing circuits control the laser output power and the temperature of the laser diode itself, in order to maintain the correct light wavelength.



- Status information sent at regular intervals to assure proper system operation
- Manufactured to specifications established by the FAA Automated Weather Observing System (AWOS) and NWS Automated Surface Observing System (ASOS)
- Software available for graphical and numeric display of sensor data

The 8329 Laser Ceilometer provides two outputs: a built-in modem for long distance data transmission, and RS232 output for shorter distance transmissions. Each data signal includes measurement of up to two cloud base heights. If no cloud base is detected, but conditions are obscured, the ceilometer will indicate vertical visibility to 6,500 feet (2,000 m). Status information is sent at regular intervals to assure the system is functioning properly. The ceilometer will operate reliably on a 90-day maintenance cycle.

The Model 8329 Laser Ceilometer is manufactured to specifications established by the FAA Automated Weather Observing System (AWOS) and NWS Automated Surface Observing System (ASOS).

An MS-DOS based software package is available to provide a graphical and numeric display of the sensor data.

SENSORS

Specifications

Measuring Range:	30-5,000' (10-1,500m) or 30-12,500' (10-3,800m) selectable
Resolution:	30-1,600': 16' (5m) 1,601-3,200': 32' (10m) 3,201-5,000': 48' (15m) 5,001-12,500': 96' (30m)
Measurement Cycle Length:	
30-5,000' range:	15, 30, or 60 seconds (selectable)
30-12,500' range:	30, 60, or 120 seconds (selectable)
Output Interval:	30 seconds
Output Signals:	(1) FSK, half-duplex, 1300/2100 Hz (2) RS232, 300 baud, ASCII signal code
Transmitter:	GaAs laser
Pulse Wavelength:	912 ±2 nm
Pulse Duration:	60 ns
Pulse Power:	40 watts
Transmitter Optics:	1:2/200; approx. 2 mrad field of view
Operating Temperature:	-55 to +55° C
Input Voltage:	
Model 8329-A:	110-127 Vac, 45-65 Hz
Model 8329-B:	220-240 Vac, 45-65 Hz
Power Consumption:	1800 VA
Size:	53" H x 19" W (1346 x 483 mm)
Weight:	135 lbs (61.3 kg)

Ordering Information

8329-A	Laser Ceilometer Transceiver, 115 Vac
8329-B	Laser Ceilometer Transceiver, 230 Vac



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