

WEATHER

Model 8400-eMOR

Model 8400-eMOR Transmissometer



Overview

The 8400-eMOR Transmissometer measures the atmospheric extinction coefficient, which provides a highly accurate visibility measurement suitable for aviation applications, including reporting Runway Visual Range.

The sensor heads are mounted on integrated ICAO certified frangible aluminum lattice masts, which are bolted to the foundation base plate. The optical units mount at the top of the inner mast, with the main electronics control box mounted on the side of the outer mast for easy access.

The window conditioning fan unit attached to the outer mast provides a heated air curtain for the optical unit windows. This actively maintains the transmissometer windows in a clean, dry condition during fog, rain or snow.

Features

- Meets ICAO & WMO RVR Guidelines
- Cat III-B Capabilities
- ICAO Compliant Frangible Mast
- Precise Automated Alignment
- Minimal Maintenance Required
- Built-In Test Equipment

Light Source & Sensor

The light source is an ultra high intensity LED whose output has broad spectral characteristics similar to white light. The LED is scanned every second with reports every 10 seconds.

The optoelectronics assembly containing the sensor is mounted inside a weather- proof enclosure with a glass front window and integral hood. The sensor is a high-stability silicon photodiode with a linear response over 7 orders of magnitude of light levels. A correction filter is centered at the standard CIE Photopic 555 nm.

Cat III-B Capability

Transmissometers are mounted in groups of 1, 2, 3 or 4 along each runway to support CAT III-B operations.

eMOR Technology

The Transmissometer uses a collocated forward-scatter visibility sensor on the transmitter unit to allow for higher accuracies over an extended Meteorological Optical Range. The Transmissometer accuracy drops off for visibilities above 10,000 m, and forward-scatter visibility sensor technology is more accurate at these higher visibilities. The co-location of the two sensors allows for the most accurate technology to be used to report the current visibility. The forward-scatter sensor also enables auto-calibration of the Transmissometer.

Maintenance

More than 20 system status conditions are monitored and reported. LRU modules are either mounted on DIN rails for easy removal/ replacement or are keyed to allow "plug in" replacement for error-free removal/ replacement.



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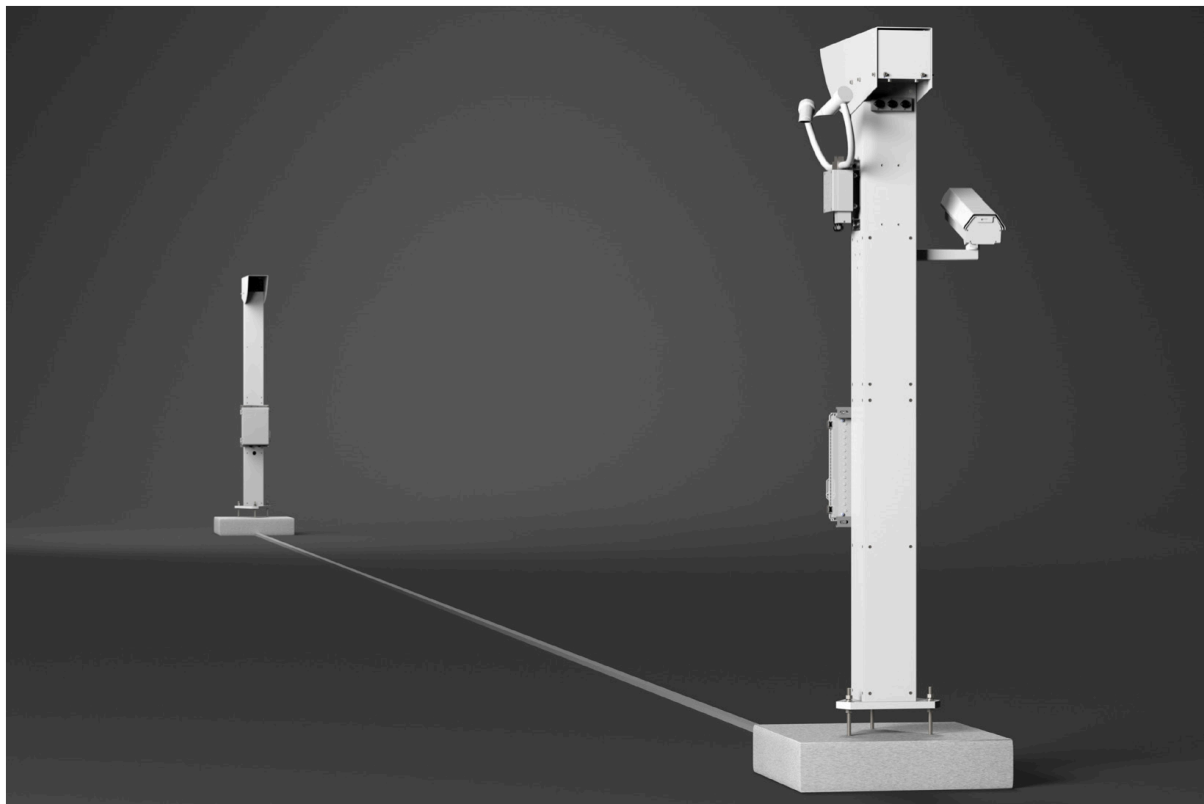
Specifications

Parameter	Specification
MOR Range	10 – 10,000 m (30 m baseline)
Transmissometer Accuracy	±1% of reading
Receiver Field of View	4°
Averaging Period	10 seconds
Lamp Transmitter Source	High-Intensity White LED
Lamp Life	Typically 4 years
Spectral Response	Center Wavelength 555 nm, Bandpass ±100 nm
Calibration	Automatic or Manual
Window Contamination Compensation	Automatic or Manual
Alignment	Automatic or Manual
Communications	RS-232, RS-485
Heater and Fan	Included
Power Supply	120 / 240 VAC 50 – 60 Hz
Power Consumption	800 W with heaters (each unit)
MTBF	33,000 h
Background Luminance Monitor	
Measuring Range	0 to 45,000 cd/m ² or more
Accuracy	10%

Parameter	Specification
Viewing Angle	6° (~120 mrad)
Spectral Response	400 nm – 700 nm (CIE 1931)
Heater and Fan	Included
Mechanical	
Baseline	30 m, 50 m or 75 m
Mounted Height	2.5 m
Mounting	Bolts to concrete foundation block; mounting kit included
Mast	Dual Aluminum Lattice Mast (ICAO certified)
Color	White, Aviation Orange/White, custom
Weight	80 kg (per mast)
Environmental Conditions	
Temperature Range	-40°C to +60°C
Humidity Range	0 to 100% RH
Max. Wind Speed	120 knots (60 m/s)
EMC	IEC/EN 61326
Electrical Safety	IEC/EN 61010

Ordering Information

Part Number	Description
8400-eMOR-120	120 VAC Transmissometer
8400-eMOR-240	240 VAC Transmissometer
M488503-00	Calibration Verification Kit



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