



**allweatherinc**

# Transmissometer Model 8400



- Innovative Dirty Window Control
- Precise Automated Alignment
- Minimal Maintenance Required
- Built Tough and Durable

## OVERVIEW

Visibility and Runway Visual Range are the most important meteorological quantities in aviation safety. At times of reduced visibility, the accurate and reliable determination of Runway Visual Range (RVR) from visibility is crucial to maximize air traffic capacity without compromising safety. Transmissometers provide accurate and reliable solutions for automatic measurement of RVR. As the sampled air volume is rather large – typically over a 30 m baseline – the accuracy of the measurement is high and stable. The Model 8400 Transmissometer represents a new generation of transmissometers. It is extremely accurate, can be installed by a single person, and requires significantly less frequent maintenance.

The Model 8400 Transmissometer has an improved alignment system, a revolutionary window contamina-

tion control solution, and it uses the latest high-quality semiconductors to guarantee the accuracy, stability, and robustness of the system.

## INNOVATIVE WINDOW CLEANING

The transmitter and receiver heads use an innovative window design, with the protective outside window built as a rotating disc of glass. When the computer automatically detects that one of the 6 sections of glass has become contaminated, a new piece of clean glass is automatically rotated into place. The solution includes a new, patented “in-line” contamination detection technique that directly measures and compensates for window contamination until a clean section of glass is needed. This way, operation is practically maintenance free for long periods of time. When the entire disc is dirty, it can be replaced with a clean disk

in seconds and the contaminated disc can be taken back to the workshop for cleaning.

## ICAO ALGORITHMS

Luminance values together with the integrated runway light intensity value are used to calculate RVR using official WMO/ICAO algorithms. The accuracy requirements meet or exceed the recommendations of ICAO Annex 3 for the entire range of RVR in airport operations, ranging from CAT I to CAT IIIC.

## CALIBRATION / ALIGNMENT

During initial auto calibration and alignment, the MOR from an accurate visibility sensor can be input to ensure accurate measurements from the Model 8400 Transmissometer. A 6498 series forward-scatter sensor can also be added for on-going calibration and alignment.

SENSORS

## SPECIFICATIONS

Parameter	Specification
MOR Range	10 – 10,000 m
Transmittance Range	0 – 100% Transmittance
RVR Accuracy	< 400 m ±10 m 400 – 800 m ±25 m >800 m ±10%
Resolution	< 400 m ±10 m 400 – 800 m ±25 m >800 m ±10%
Averaging Period	60 seconds
Lamp Transmitter Source	Xenon Flash Lamp
Measurement Principle	Pulsed Xenon transmitters and receivers measure transmissivity of the atmosphere
Lamp Life	Greater than 20,000 hours
Baseline	15 m, 30 m, 50 m or 75 m
Dual Baseline	15 m + 50 m or 15 m + 75 m
Communications	RS-232, RS-422, FSK modem, fiber optic modem, radio modem, Ethernet
Power Supply	115 / 130 / 230 / 240 VAC 50 – 60 Hz
Power Consumption	500 W with heaters (each unit)
<b>Background Luminance (8400-ALS)</b>	
Measuring Range	0 to 40,000 cd/m <sup>2</sup>
Accuracy	±7%
Viewing Angle	6° (~120 mrad)
Spectral Response	300 nm – 700 nm
Resolution	1 cd/m <sup>2</sup> or 10%, whichever is greater
<b>Environmental Conditions</b>	
Temperature Range	-40°C to +60°C
Humidity Range	0 to 100% RH
Wind Speed	150 knots (77 m/s)
Mounted Height	2.5 m
Sensor Sealing	NEMA 4X (IP66)

## ORDERING INFORMATION

Part Number	Description
8400	Transmissometer
8400-DB	Transmissometer - Dual Baseline
8400-ALS	Ambient Light Sensor



**CE CERTIFIED**



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