



Innovative Design Delivers Reliable Performance and Minimizes Maintenance

DTN's Revolver Transmissometer, developed and built by DTN, eliminates key limitations typically associated with conventional transmissometers while introducing innovative features that enhance reliability, reduce maintenance, and lower overall cost.

Patented contamination control system

The automatic contamination detection system continuously monitors the protective rotating window, compensates for contamination as needed, and rotates a clean glass segment into place. An alarm is triggered when the rotating disk requires maintenance cleaning.

Flexible integration

The DTN Revolver can be integrated with MetConsole software as a stand-alone system or as part of a fully integrated DTN AWOS.

Optimized ROI

The DTN Revolver Transmissometer delivers long-term, high-accuracy performance with significantly reduced maintenance requirements compared to traditional systems. Its modular design supports expansion and helps minimize the total cost of ownership.

Overview

- **Visibility measurement and automatic determination of RVR.**
- **Easy installation, alignment, and calibration.** High-accuracy alignment is achieved through a computer-controlled scan at the push of a button.
- **Reduced maintenance.** Direct window contamination measurement and control reduce cleaning time and costs.
- **Standard features.** Auto-diagnostic, data validation, built-in test equipment (BITE), and remote configuration and maintenance via web interface.
- **Robust design.** Self-standing protective head with wind shield and integrated heaters for reliable operation in cold climates.
- **Compliant design and operation.** RVR is calculated from extinction, background luminance, and runway light settings using ICAO/WMO algorithms. Accuracy meets or exceeds ICAO Annex 3 requirements for CAT I to CAT IIIB/C. CE compliant.
- **Multiple communication options.** Fiber optic, FSK modem, radio modem, RS-232/422 serial output, wireless, and Ethernet.
- **Proven performance.** Successfully deployed across Europe and Asia.
- **Recognized by the Australian Bureau of Meteorology.** Listed in MA8i as one of only two instruments suitable for RVR assessment.

Technical Data

Transmissometer Technical Data

| | |
|-------------------------------------|--|
| MOR range | from 10 to more than 10,000 m |
| Transmittance range | 0-100% |
| Measurement resolution | 0.005% |
| Reporting resolution | 1 m |
| Averaging period | 1 min (configurable) |
| Output rate | 5 sec (configurable) |
| Lamp transmitter source | Xenon flash lamp |
| Lamp life | 200,000+ hours |
| Measurement principle | Pulsed xenon transmitters and receivers measure the atmospheric transmissivity |
| Receiver module | Human-eye adapted photo diode |
| Base line | 10–100 m, single and double |
| RVR accuracy | According to ICAO and WMO specifications for RVR (± 10 m up to 400, ± 25 m between 400 m and 800 m, $\pm 10\%$ above 800 m) |
| Front Revolver disk | 270 mm diameter toughened glass |
| Automatic calibration and alignment | automatic alignment |
| Communication options | Ethernet (embedded web server), serial (RS-232/485/422) SHDSL, fiber, radio, and FSK modem |

Background Luminance Sensor Technical Data (Model 650)

| | |
|--------------------------|--|
| Measuring range | 0–40,000 cd/m ² |
| Accuracy | $\pm 7\%$ |
| Viewing angle | 10° |
| Environmental conditions | Temperature: –40 to +60°C Humidity: 0–100% RH Protection: IP66 |

Electrical Data

| | |
|-------------------|---|
| Power supply | 115/130/230/240 VAC, 50/60Hz $\pm 10\%$ |
| Power consumption | 500 W with heaters, per unit |

Environmental Conditions

| | |
|---------------------------|-------------|
| Ambient temperature range | 40 to +60°C |
| Relative humidity range | 0–100% RH |
| Wind speed range | 0–75 m/s |

Constructive Features

| | |
|-----------------------------------|--|
| Standard height | 2.5 m |
| Optical head | Aluminum and fiberglass |
| Centre pole | Aluminum |
| Transmitter electronics enclosure | Stainless steel and fiberglass |
| Protection | IP66 |
| Frangibility | Fuse bolts according to ICAO Doc 9157, Part 6, Paragraph 4.5.2 |
| Colour | White |

Optional

| |
|---------------------------------------|
| Double baseline receiver |
| Background luminance sensor model 650 |
| Obstruction lights for TX and RX |
| Battery backup |

Compliances

| | |
|--------------------------------------|--------------------|
| CE Certified | ENV 50204:1995 |
| EN 61000-3-2:1995 | EN 61000-3-3:2003 |
| EN 61000-4-2:1995 | EN 61000-4-3:1995 |
| EN 61000-4-4:1995 | EN 61000-4-5:1995 |
| EN 61000-4-6:1996 | EN 61000-4-11:1994 |
| AS/NZS CISPR11:2204 Group 1, Class A | |

