DEGREANE HORIZON

TR30LED type II

RVR - Runway Visual Range

The TR30LED type II transmissometer is a visibility sensor designed for aeronautical applications. It measures the transmission ability of the atmosphere (TAA) and calculates the meteorological optical range (MOR). When associated with both a luminancemeter and a runway light intensity transmitter, the TR30LED type II allows the calculation of both the runway visual range (RVR) and the aeronautical visibility (AV), as defined by the ICAO standards.

The TAA and MOR values are determined by the measurement of the dimming of a LED based white source (modulated at 30 Hz) through the atmospheric layer between the transmitter and the receiver.

The design choice and the quality of the assembly allow operating on the full range with a single base (30 m) whatever the type of the airport (CAT I to CAT III c), without interruptions and with minimal maintenance.

> Features

Data acquisition

- Every 0.5 second, the white light (no selective effects depending on the meteorological phenomena), received from the emitter, is measured using a low noise photo diode and a 24 bit converter with an auto compensated analog chain.
- The use of a LED with a life cycle exceeding 60 000 hours.

Data processing

- Filtering of erroneous data and sudden abnormal phenomena (birds...).
- Normalization with respect to the measured emitted flux, 1 to 10 minutes sliding mean of the valid data.
- Easy calibration directly from a local interface, with efficient checking of coherency of measuring conditions.

Self-diagnostic, Compensation, Auto-Calibration & Cross-Calibration

- Nonstop monitoring of every environmental condition of the measurement: power supply voltage, lamp operating conditions, temperature values, blowing systems.
- Status information (available on the local interface, also sent to the remote controller) allowing easy and quick maintenance.
- Temperature compensation.
- Auto-Calibration that compensates the drift caused by the dust.
- Cross-Calibration option using a reference MOR value (automatically collected from an existing Present Weather / Forward Scatter visibility sensor or provided by the Met Observer).

Mechanical design

- Double hood and diaphragms which prevent from the optical windows contamination caused by the precipitations and the wind. Controlled heating and blowing systems (creating an air curtain in front of the lens) for use in the harshest weather conditions (ice accumulation, flying particles...).
- Sensor alignment is easily performed using both the optical aiming and the two independent axe adjustment system with locking

Communication options

- RS232 - 1200 to 28800 Bds.
- Second RS232 port (option)
- FSK isolated modem - 1200 Bds (option).
- RS485 - 1200 to 28800 Bds (option).
- Ethernet (option).

User Interface

- Local interface (OLED display, three keys keyboard).
- SAM software.
- Both used for the settings, the display, the monitoring of data and information, for the maintenance and the calibration operations.

> Specifications

MOR measurement range	From 10 m to 70 km
Accuracy and resolution (with 30m optimum base length)	Better than ICAO DOC9328 and WMO Annex 3 recommendations for RVR and MOR (CAT I to CAT III b)
Light source	White LED lamp amplitude modulated
Base length	From 25 m to 75 m (30 m optimum)
Height of measurement	From 1.5 m to 4 m
Weight	~ 80 kg
Dimensions	~ 100 x 30 x 30 cm (head) ~ 500 x 400 mm (electronic box)
Power supply	230 V + - 10 %, 50-60 Hz, 400 VA
Electromagnetic compatibility	NF EN IEC 61000-6-3 and NF EN IEC 61000-6-1
Environmental compatibility	NF EN ISO 9227 (48 h salted fog 5 %)
Operating temperature	- 20°C to + 60 °C; -40 °C with heating option
Relative Humidity	0 % to 100 %
Wind	0 to 60 m/s
Accessories	Background luminance sensor LU320 with 0 ~ 40,000 cd/m^2 measuring range Runway light intensity transmitter

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