



## TR30LED

- The TR30LED 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 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. The TR30LED integrates an automatic calibration in order to compensate the drift caused by the dust. A remote digital display shows the measurement data.



## ● Features

### Data Acquisition :

- Every 0.5 seconds, 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 bits converter with an auto compensated analog chain.
- The use of a white LED insures a life cycle exceeding 100 000h.

### Data processing :

- Elimination of erroneous data (median) and sudden abnormal variations (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 :

- Continuous checking of all the environmental conditions of the measurement: power supply voltage, lamp operating conditions, temperatures, blowing systems...
- Status information (available on the local interface and sent to the remote controller) allows easy and quick maintenance.

### Bi-directional data transmission :

- Local area point to point: RS232 - 1200 to 9600 Bds.
- Large area point to point (CIBUS standard) (1) : FSK isolated modem - 1200 Bds (option).
- Local/large area multi-unit : isolated RS485 (2 wires) - 1200 to 9600 Bds (option).
- Local/large area multi-unit : Ethernet (with IRD option).

### User Interface:

- User friendly local interface (16 digits LCD, three keys keyboard).
- Used for the display and the monitoring of data and information, for maintenance and calibration operations, for settings.

### 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.

## ● Specifications

MOR measurement range : 30m base length (optimum) 50m base length 75m base length Accuracy and resolution (with 30m optimum base length) Accuracy on the TAA	From 10 to 10 000 meters From 10 to 15 000 meters From 30 to 25 000 meters Compliant with ICAO and WMO specifications for RVR and visibility (CAT I to CAT III b) < 0.75 % from 0.15 to 0.3 % of TAA and < 0.35 % beyond
Light source Base length (single base cover complete useful range) Height of measurement Weight Dimensions	White LED lamp amplitude modulated From 25 m to 75 m (30 m advised) From 1.5 m to 4 m ~ 80 Kg ~ 100 x 30 x 30 cm (head) ~ 500 x 400 mm (electronic box)
Power supply Electromagnetic compatibility Environmental compatibility Electronics operating temperature Optics operating temperature Relative Humidity Wind	230 V + - 10 %, 50-60 Hz, 400 VA NF EN 61000-6-3/A1 and NF EN 61000-6-1 (CE) NF EN ISO 11997-2 (48 h salted fog 5 %) - 40°C to + 85°C - 20°C to + 60°C ; -40°C with high power heating option 0 % to 100 % < 200 Km/h
Accessories	Background luminance sensor LU320 with 0 ~ 40,000 cd/m2 measuring range Runway light intensity transmitter Remote display INT 300 MOR

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