DELTA OHM S.R.L.
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LP PYRA 10 : Pyranometer (ISO 9060 Secondary Standard)

The **LP PYRA 10** is a Pyranometer classified as "Secondary Standard" in accordance with ISO 9060 and according to the publication "Guide to Meteorological Instruments and Methods of Observation", fifth edition (1983) of WMO. The pyranometer LP PYRA 10 measures the irradiance on a flat surface (Watt/m^2). The radiation measured is the sum of direct solar irradiance and diffuse irradiance (global radiation), Shadow ring (Optional) is equipped with an adjustable shadow ring for the measurement of diffuse radiation only.

Pyranometer (LP PYRA 10) with calibration certificate, which fully comply with ISO 9060 standards, and meet the requirements defined by the World Meteorological Organization (WMO), **A 10 meter long cable**, These are strong and reliable ground-based instruments, especially designed to be used under all weather conditions.

The pyranometers LP PYRA 10 is based on a thermopile sensor which surface is covered by a matt black paint so to allow the instrument not to be selective at various wavelengths. **The spectral range of the pyranometers is determined by the transmission of the two glass domes.** The new sensor allows a response time less than the requirements of the ISO9060 standard for classification of Secondary Standard pyranometers (response time is generally less than 6 seconds, where ISO9060 standard requires a response time less than 15 seconds).

Recommended use:-

- Atmospheric research
- Weather stations, Climatology
- Energy saving research
- Productive efficiency test of photovoltaic plants, etc.

LP RING 12 : Shadow Ring (Optional)
The Shadow Ring prevents the direct solar radiation to reach the sensor the whole day long, so that only the diffuse solar radiation will be measured.

Technical Specification

Pyranometer (ISO 9060 Secondary Standard)

Detector type : Based on a thermopile sensor
Measuring range : 0 to 4000 W/m^2
Spectral range : 283 nm to 2800 nm
Typical sensitivity : 10 μV/(W/m^2)
Operating temperature : - 40 ^{0}C to 80 ^{0}C
Operating relative humidity : 0 to 100%
Response time (95%) : < 6 sec.
Field of View : 180^0
Response to thermal radiation (200W/m^2) : 7 W/m^2
Response to temperature change 5K/h : <± 2 W/m^2
Long term non-stability over 1 year : <± 0.8%
Non linearity : <± 0.5%
Cosine response : <±10 W/m^2
Spectral selectivity : < ±3%
Temperature Response : < 2%
Tilt response : <± 0.5%
Impedance : 5Ω - 50Ω
Cable : 10 meter cable
Weight : 0.90 Kg

Package Includes:-

- Pyranometer (LP PYRA 10)
- Calibration Certificate
- Shad disk
- Bubble Level
- Dessicant sachet with silica gel crystals
- 2 Silicagel cartridges
- 10 Meter cable with connector
- Manual

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HD2102.2 : Digital Datalogger

HD2102.2 Digital Datalogger

The HD2102.2 Digital Datalogger (Hand Held) is portable instruments with a large LCD display. They measure illuminance, luminance, PAR and irradiance (across VIS-NIR, UVA, UVB and UVC spectral regions or measurement of irradiance effective according to the UV action curve). The probes are fitted with the SICRAM automatic detection module: in addition to detection, the unit of measurement selection is also automatic. The factory calibration data are already stored inside the instruments. Some thresholds can be associated with the integrated measurement and with the integration time, which can be set in the menu. The datalogger stores up to **38,000 data** which can be transferred from the instrument connected to a PC via USB cable, The datalogger fitted with USB port and can transfer the acquired measurements in real time to a PC or to a portable printer. **The Max, Min and Avg.** function calculate the maximum, minimum or average values. Other functions include: the relative measurement REL, the HOLD function, and the automatic turning off that can also be excluded.

DeltaLog9 Software is windows based software which allow to configuration, Store data, Real time data, Download data, Graphical Data.

Technical Specification

Measured values storage data:-
Measuring unit : W/m2 -lux - fcd - lux/s - cd/s - µW/cm2 - J/m2 - µJ/cm2 - µmol(m2.s) - µmol/m2 - cd/m2
Data Storage Capacity : 38000 Data set
Type : 2000 pages containing 19 samples each
Storage interval : 1s, 5s, 10s, 15s, 30s, 1min, 2min, 5min, 10min, 15min, 20min, 30min and 1hour
PC interface : USB Port
Type : USB cable
Cable length : 2 meter
Immediate print interval : 1 sec. to 3600 sec. (1hour)
Digital Display : 2x4½ digits plus symbols - 52x42mm
Visible area : 52x42mm
Batteries : 4AA 1.5V type batteries
Autonomy : 200 hours with 1800mAh alkaline batteries
Power absorbed with instrument off : 20µA
Mains Output adapter : 12Vdc / 1000mA
Security of memorized data : Unlimited, independent of battery charge conditions
Date and time : Schedule in real time
Accuracy : 1min/month max drift
Operating conditions:-
Operating temperature : -5 to 60 ^{0}C
Storage temperature : -25 to 65 ^{0}C
Working relative humidity : 0 to 90% RH without condensation
Instrument Dimensions : (Length x Width x Height) : 185x90x40mm
Weight : 470g (complete with batteries)
Protection degree : IP67
Materials : ABS, rubber

Includes: Datalogger, USB Data Cable, Power adapter, Software CD, Manual, Carrying case