

Black globe thermometer



- ▶ Accurate temperature measurement
- ▶ Design made in compliance to ISO7726 standard
- ▶ High absorption paint on the copper globe (>0,97)
- ▶ IP66 protection rate
- ▶ Availability of external converters for 4...20 mA and Modbus-RTU outputs
- ▶ In-house ISO17025 calibration laboratory

The standard globe thermometer consists of a black-painted copper sphere with a diameter of 150 mm and a thickness of 0,4 mm. It contains a thermometer with its bulb at the center of the sphere. This sensor is described in the ISO7726 standard. Main scope of the globe temperature measurement in meteorological applications is the possibility of estimate the Mean Radiant Temperature (T_{mrt}) which is one of the most important meteorological parameters governing human energy balance and the thermal comfort of man in micrometeorological measurements.





Technical Specifications

Codice	DMA131A	DMA131.1	PRTEA4922
Connector	Free wires (4-wires)	Male connector for DWA5nn cables	M5-4
Cable	L=5 m	L=5 m + connector for cable extension (DWA5nnA)	L=5 m + connector
Output	Pt100 Class A IEC60751 (DIN Class A)		Digital I2C
Accuracy	±0.15 K @ 0 °C		±0.1 °C @ -20...50 °C ±0.15 °C @ 50...70 °C ±0.2 °C @ 70...80 °C
Power supply	none		3.3 V
Power consumption	none		Max 500 µA
Data Logger compatibility	E-Log, Alpha-Log		Alpha-Log

Common Technical Specifications

Temperature	Emissivity of the paint	> 0.97
	Measurement range	-20...80 °C
	Response time	Typ. (in heating) 10 min; Max (in cooling) 20 min
	Material	Copper
	Design	ISO7726
	Protection	IP66

Accessories

	DYA032	Arm for fixing Black Globe sensor on DYA049 collar
	DYA049	Mast-mounting collar for Ø 45...65 mm pole
	DWA505A	Extension cable L=5 m for DMA131.1
	DWA510A	Extension cable L=10 m for DMA131.1
	DWA525A	Extension cable L=25 m for DMA131.1
	SVICA0103	Calibration certificate ISO9001 type (Radiant temperature)
	SVACA0105	Calibration certificate ISO17025-ACCREDIA type (Radiant temperature)
	DEA420.1	Converter Output: 4...20 mA. Power supply: 10...30 V AC/DC More information on MW9008 catalogue
	MDMMA1010.1	Same feature as DEA420.1: Output: RS485 Modbus-RTU



► LSI LASTEM is an ISO17025 accredited laboratory for air temperature measurements. All sensors manufactured are tested inside our laboratory. LSI LASTEM provides Test report for any sensor supplied and on request, ISO17025 or ISO9001 calibration certificates (see Accessories list).

► Measurement of black globe temperature in outdoor applications finds its most typical application in the definition of heat stress in public places, in order to warn about potentially dangerous situations for health or for research purposes.

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