

## Net radiometer



- ▶ Sensor for measuring the radiant heat flow between two opposite faces of a flat element
- ▶ Integrated temperature sensor used to obtain the Planar Radiant Asymmetry
- ▶ When connected to M-Log, it is possible to obtain a range of parameters related to the radiant asymmetry and local discomfort index as described in the ISO7726 and ISO7730 standards
- ▶ Measurement of the Planar Radiant Asymmetry on three axes of the space
- ▶ Fast response time

Probe to measure the net radiation in confined environments. In environments with low air velocity it is possible to obtain a measurement close to the mean plane radiant temperature obtaining the direction of the radiant flow. To operate, the probe must be combined with a temperature probe. Portable use or attached to stands BVA320-315. Sensitivity values are reported in the enclosed calibration certificate.

### Technical Specifications

PN	PRRDA0110	PRRDA0111
Connector	Double Mini-Din connector	Free wires
Cable	L= 1 m	L= 3 m
Data logger compatibility	M-Log (ELO009)	E-Log Alpha-Log (con modulo ALIEM)

### Common Technical Specifications

<b>Thermal flow between two semi-areas of the environment</b>	Principle	Thermopile
	Spectral range	0.3...50 $\mu\text{m}$
	Accuracy	5% (Net radiation)
	Output	$\mu\text{V/W/m}^2$
	Range	-1500...1500 $\text{W/m}^2$
<b>General Information</b>	Housing	Anodized aluminum
	Protection	IP54
	Operative temperature	-30...70 $^{\circ}\text{C}$
	Derived quantities obtained by M-Log and E-Log	<ul style="list-style-type: none"> <li>Planar radiant asymmetry (ISO7726)</li> <li>Planar radiant mean temperature (ISO7726)</li> <li>People dissatisfied by radiant asymmetry (ISO7730)</li> </ul>
	Mounting	On BVA320-315 stands

### Accessories

	<b>DPA295</b>	Spare part: salts for PRRDA0110 and PRRDA0111
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## Heat flow meter



- ▶ Used for heat flux measurement in the soil as well as through walls and building envelopes
- ▶ LSI LASTEM supplies a turn-key system to calculate the "U Factor" of the walls using heat flux and surface temperature sensors, data logger and software as described by the ISO 9869:1994 standard
- ▶ Suitable for long term and portable applications
- ▶ Sensor with free wire cable version (DPE240.x / DPE250); sensor with cable and Mini-DIN connector (ESR240.x)

Sensor for heat flux measurement in the soil as well as through walls and building envelopes. It measures the heat that flows through the sensor and its surrounding environment. Heat may be exchanged through conduction with the solid, or by radiation and convection. Sensor sensitivity is reported in the calibration certificate. Thermo-conductive paste can be used to increase the heat exchange.

### Technical Specifications

PN	DPE240	DPE250	DPE240A.1	ESR240	ESR240A.1	ESR240A.2
Connector	Free wires (4 wires)			Mini-Din connector		
Cable	5 m		15 m	5 m	10 m	25 m
Data logger compatibility	E-Log Alpha-Log (using ALIEM module)			M-Log (ELO009)		

### Common Technical Specifications

<b>Thermal flow on the wall or inside ground</b>	Principle	Thermopile
	Calibration uncertainty	±3% (k=2)
	Sensitivity/output	60 x 10 <sup>-6</sup> V/W/m <sup>2</sup> 500 x 10 <sup>-6</sup> V/W/m <sup>2</sup> (DPE250 only)
	Range	-2000...2000 W/m <sup>2</sup>
	Guard width to thickness ratio	5 m/m (as required by ISO 9869 D.3.1 standard)
	Sensor thermal resistance	71 x 10 <sup>-4</sup> K/(W/m <sup>2</sup> )
<b>General Information</b>	Housing	Anodized aluminum
	Protection	IP67
	Weight	0.5 kg (with 5 m cable)
	Operative temperature	-30...70 °C
	Mounting	Fixed on a wall or buried in soil (thermo-conductive paste not included)

### Accessories

	<b>MM7500.R</b>	Thermo-conductive paste for surface application
	<b>SVICA4603</b>	ISO9001 type calibration certificate (Thermal flow)

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