

Meteo M&R

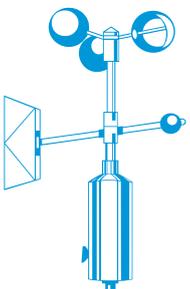
radiation & light



RA01 net radiation sensor

2-COMPONENT
RADIATION SENSOR
EASY TO USE

RA01 is a 2-component radiation sensor that is used for scientific-grade energy balance studies. The instrument has separate measurements of solar (Short Wave) and Far Infra-Red (Long Wave) radiation. Combined with estimates of Short Wave solar albedo- and of surface temperature, this instrument can also be used for estimation of net-radiation.



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scientific and meteorological instruments

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RA01 radiation sensor

RA01 is a 2-component radiation sensor that is used for scientific-grade energy balance studies. The instrument has separate measurements of solar (Short Wave or SW) and Far Infra-Red (Long Wave or LW) radiation. Combined with estimates of SW solar albedo- and of surface temperature, this instrument can also be used for estimation of net-radiation. The advantage in this approach are reduction of costs and independence from local surface properties.

RA01 serves to measure 2 separate components of the surface radiation balance. Working completely passive, using a thermopile sensors, generates 4 small output voltage proportional to the incoming solar SW and LW flux. The solar radiation sensor is also called pyranometer, the LW sensor is also called pyrgeometer. For calculation of sky- and surface temperature, a Pt100 temperature sensor is included in the pyrgeometer.

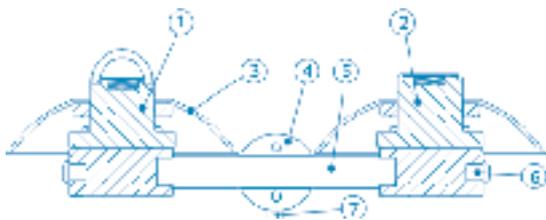


Figure 1
RA01 2-component radiation sensor. SW solar radiation sensor or pyranometer (1), LW Far Infra-Red radiation sensor or pyrgeometer (2), radiation shield (3), levelling assembly for x- and y axis (4, 5 and 7).

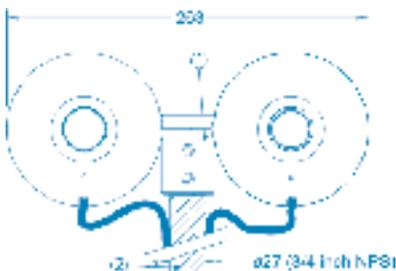


Figure 2
RA01 top view. Standard cable length is 5 m. Cable can be installed / replaced by the user. Attachment to a 1 inch tube (2), not included, is extremely easy, levelling possibilities are included. Dimensions in mm.

In order to avoid deposition of dew, the pyrgeometer may be heated. A 2-axis levelling assembly is included. The RA01 cable can easily be installed or replaced by the user. See also NR01 4-component net-radiometer, which is a double side version of RA01.

TECHNICAL SPECIFICATIONS

General

Temperature range	-40 to +80°C
Range	0 to 2000 Wm ⁻²
Temperature sensor	Pt100
Temperature sensor	users own preference can be plugged in

Pyranometer (SW)

Pyranometer ISO classification	second class
Spectral range	305 to 2800 nm
Calibration traceability	WRR

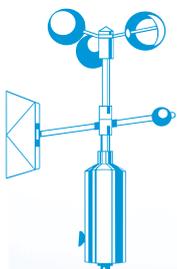
Pyrgeometer (LW)

Spectral range	4500 to 50000 nm
Calibration traceability	NIST
Window heating offset @ 1000 Wm ⁻² solar radiation	< 15 Wm ⁻²
heating power	5 Watt @12VDC

OPTIONS

Additional cable length x metres (add to 5m)
Upgrade to NR01

made to measure



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