

IR02
PYRGEOMETER WITH HEATING

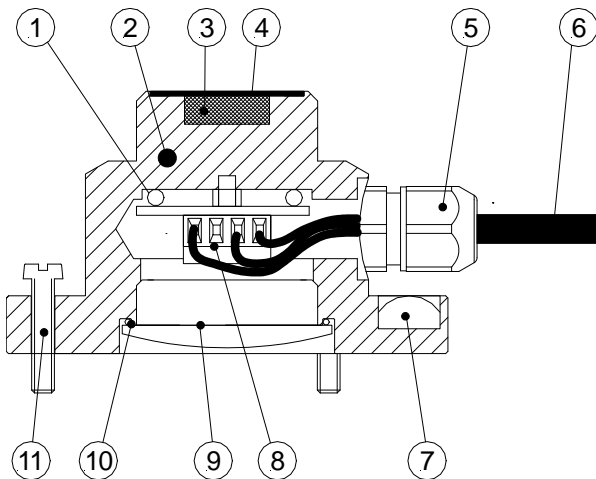


Figure 1 IR02 pyrheliometer: (1) heater, (2) Pt100 temperature sensor, (3) sensor, (4) FIR window, (5) cable gland, (6) cable, standard length 5 m, (7) level, (8) screwed cable connection, (9) access for cable connection / replacement, (10) rubber O-ring, (11) levelling feet

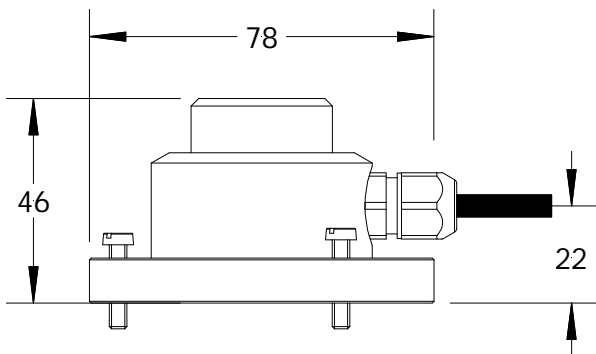


Figure 2 IR02 dimensions. Standard cable length is 5 m. Cable can be installed / replaced by the user.

IR02 is a sensor that can be applied for Far Infra Red (FIR) radiation observations. The main application is in meteorological outdoor experiments. The scientific name of this instrument is pyrheliometer. IR02 is heated, which improves measurement accuracy because it prevents dew deposition.

IR02 serves to measure the FIR radiation flux that is incident on a plane surface in W/m^2 . Working completely passive, using a thermopile sensor, IR02 generates a small output voltage proportional to the flux between the object within the field of view, and the IR02 sensor. IR02 has a spectrally flat response across the full FIR spectrum, effectively from 4500 to 50000 nm. A Pt100 temperature sensor is used to estimate the sensor temperature, and makes it possible to calculate the object's emitted radiation or temperature (facing the sky, this is the so-called "sky temperature").

The instrument can directly be connected to most commonly used datalogging systems. IR02 can be used for general meteorological observations. A common application is for outdoor FIR measurements, in combination with a pyranometer, as part of a meteorological station. This application requires horizontal levelling; levelling feet (11) and a level (7) are included. The IR02 cable can easily be installed or replaced by the user. For net-FIR measurements, see also the NR01 net-radiometer.

IR02 SPECIFICATIONS

Sensitivity (nominal):	15 $\mu V / Wm^{-2}$
Temperature range:	-40 to +80 °C
Range :	-1000 to +1000 Wm^{-2}
Temperature dependence:	< 0.1%/°C
Temperature sensor:	Pt100
Spectral range:	4500 to 50000 nm
Calibration traceability:	ITS 90
Window heating offset: @ 1000 Wm^{-2} solar radiation	< 15 Wm^{-2}
Heating power:	1.6 Watt @12VDC

OPTIONS

Additional cable length x metres (add to 5m).