

PM41

IR sensor for measuring quartz tube temperatures of uv lamps

Beschreibung:

The infrared sensor PM41 measures IR radiation at 4,5 to 4,8µm. As quartz by physical reasons blocks the short wave IR radiation of the arc lower than 4,5µm, the sensor only measures the long wave IR of the quartz tube itself. As a result it measures the real temperature of the tube, nothing else.

Up to now it was very difficult to measure the real quartz tube temperature of UV lamps while operating. Normally it is done with thermo elements or resistance wires. Principal disadvantage of those sensors is the additional heating of the sensor by the IR radiation of the arc itself and an additional cooling of the sensor by the normally necessary cooling air flow for the lamp.

The sensor takes a bearing on the lamp with a distance of approx. 40 to 100 mm, while the spot size on the lamp tube is 3.8 to 13 mm of diameter. **It is important to have an aperture between lamp and sensor to protect the sensor housing to the lamp heat.** Max. housing temperature is 65°C.

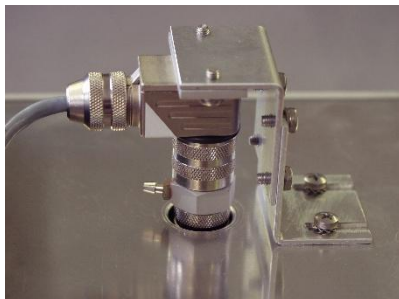
The measuring spot on the lamp tube have to be smaller than the tube diameter, otherwise a mixed temperature of lamp tube and background will be displayed. The hole diameter has to be adopted to its placement within the measuring area, shown in the picture below. As an example it could be mounted on the rear side of a lamp head and takes its bearing through-out a hole in the lamp housing.

By an optional air flush ring (for pressurised, clean air) in front of the sensor opening a pollution by e.g. dust could be avoided or reduced.

The IR sensor is available in two different versions:

- IR-Sensor with cable connection (PM 41; Art. 150) or
- IR sensor with intelligent plug (PMI 41, Art. A004503) to use in combination with the handheld HI to display the temperature values

Application examples:



The holders and the optional air flush ring are not included in the standard delivery



PM 41, Art.No. 150



PMI 41 Art. No. A004503
(with intelligent plug to use with optional handheld HI)

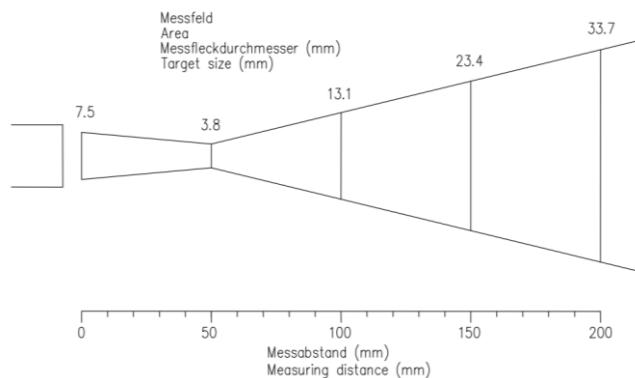


Reflector unit with PM 41 and customer side bracket

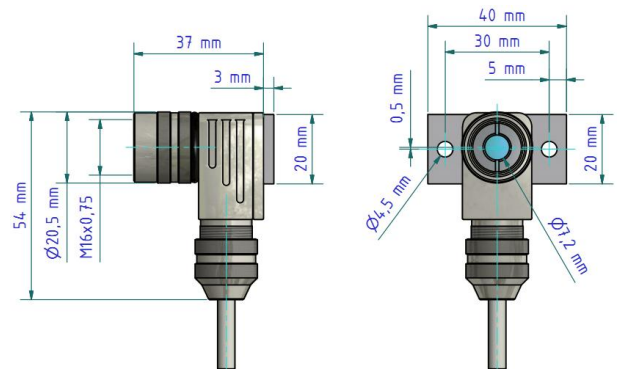
Technical data:

PM 41 AF91	
Art. No.	<ul style="list-style-type: none"> 150: PM 41 A004503: PMI 41 (with connected intelligent plug to use in combination with the optional handheld HI)
Temperature range	500° to 1100° C
Resolution	2 K
Reproducibility	≤ 3 K
Emission factor	0,95, fixed
Electrical output	DC 0,5 to 1,1 V
Sensor	Thermopile
Wavelength	4,5 to 4,8µm
Measuring time	Approx. 200 ms
Housing temperature	0 to max. 65° C
Power supply	DC 7 to 15 V, ≤ 10 mA, ripple ≤ 200 mV
Dimensions (LxWxH) (incl. Cable gland, without air outlet)	36 x 20 x 52 mm mounting plate 40 x 20 mm
Cable length	2 m
Housing material	Metal, anodised
Protection degree according to DIN 40050	IP 65
Delivery includes	sensor with 1m cable
Options:	
Art. No. 561-659-1 Air purging flush ring	The air purging flush ring is screwed against the measuring window. By using filtered pressed air contamination of the optic filter may be reduced
Art. Nr. A002067	Handheld HI 1 to display the temperature. The IR sensor PM 41 is supplied with auxiliary voltage by the handheld HI.
Art. Nr. A004338	Intelligent input connector for connection to the IR sensor PM 41 for use on a handheld HI.

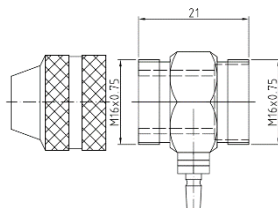
Measuring area (spot) PM 41/PMI 41:



Dimensions PM 41:



Options: Air purging flush ring:



Art.Nr. 561-659-1

Handheld HI 1:



Art.Nr. A002067

Intelligent input connector for PM 41:



Art.Nr. A004338



More information about the handheld HI 1 [here](#).