

## Metis MP23 / MP25

### Temperature measurements on metal surfaces already from 75°C

Pyrometer Series *Metis MP* utilizes lead sulfide detectors with filtered spectral response at relative short infrared wavelengths, and they are therefore often used to measure metal surfaces above 75°C. The emissivity of these surfaces decreases with an increase wavelength, so they offer much better performance than other pyrometers with similar low zero scale temperatures, but with longer wavelength response. Other major advantages are the lower sensitivity for changes in emissivity at shorter wavelengths, the small spot sizes, the fast response time and the digital signal processing which allow the pyrometer to operate within very wide temperature ranges. This makes these units preferable for many other applications, too. Optical and electronic parts are housed in a rugged IP65, extruded aluminum casting to operate in harsh industrial environments.



**Chart 1: Temperature Ranges and Spectral Responses**

Model	MP23	MP25
<b>Spectral Response</b>	2 – 2.6 $\mu\text{m}$	2.0 – 2.8 $\mu\text{m}$
<b>Temperature Range</b>	130 – 700°C	75 – 550°C 100 – 700°C 160 – 1200°C 200 – 1300°C

**Lenses:**

The infrared energy radiated by the target is centered via focusable lenses directly on the detector. The focusing feature gives you control of the cone of vision and offers the possibility to measure either a small spot (focused) or the average of a bigger spot (out of focus).

The lenses are made of calcium fluoride and protected by sapphire window, materials which are highly transparent in the visible as well as in the infrared spectral regions of *Metis MP* series. If additional windows are necessary, they must offer similar optical characteristics.

**Chart 2: Focusable Lenses *Metis MP23* and *MP25***

Lens	Distance	MP25				
		130 – 700°C	75 – 550°C	100 – 700 °C	160 – 1200°C	200 – 1300°C
OM25-A0	100 mm	0.60 mm	0.85 mm	0.60 mm	0.40 mm	0.25 mm
	120 mm	0.85 mm	1.30 mm	0.85 mm	0.50 mm	0.35 mm
	133 mm	1.00 mm	1.60 mm	1.00 mm	0.60 mm	0.40 mm
OM25-B0	190 mm	1.00 mm	1.50 mm	1.00 mm	0.70 mm	0.35 mm
	260 mm	1.60 mm	2.40 mm	1.60 mm	1.10 mm	0.60 mm
	340 mm	2.30 mm	3.40 mm	2.30 mm	1.60 mm	0.80 mm
OM25-C0	350 mm	1.85 mm	2.70 mm	1.85 mm	1.25 mm	0.65 mm
	1200 mm	7.80 mm	11.50 mm	7.80 mm	5.20 mm	2.60 mm
	2600 mm	17.50 mm	26.00 mm	17.50 mm	11.6 mm	5.80 mm

The detector is sensitive to infrared radiation in an area called the **cone of vision**. For the spot size diameter of it at shortest, medium and widest distances, if focused, please see **Chart 2**. For full scale temperatures up to 700°C the cone of vision diameter in front of the lens is about 16 mm and about 9 mm for full scale temperatures above. This area has to be kept free from any intervening objects. The spot size diameter for distances not given in the chart can be calculated by interpolation.

**Optical Alignment:**

*Metis MP* Pyrometers are available with 2 different solutions for aiming the sensor onto the target. The first and most popular method is the built-in laser pointer which is also helpful for focusing. The second is a sight-through optics version with reticle-defined target which is advantageous for applications where aiming onto hot, incandescent targets is needed.

**Temperature Output Signals:**

*Metis* Pyrometers offer a variety of analog and digital output signals for displaying, recording, archiving and controlling of measured process temperatures. The isolated analog output is switchable from 0 to 4 to 20 mA. Zero- and full-scale temperatures are adjustable to cover any portion of the instrument's available temperature span to a minimum of 50°C.

