

Digital high-end pyrometer for non-contact temperature measurement of silicon wafers from 350°C

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IS 12-Si

(Addendum to Data Sheet IS 12, IGA 12)

- For measurements of silicon wafers
- 4 Temperature ranges between 350 and 1800°C
- Spectral range: narrow band in the near infrared, especially for measurements of silicon
- 6 fixed optics and 3 focusable optics
- Response time 10 ms, adjustable up to 10 s



Optical data of focusable optics:

Optics	Measuring distance a [mm]	Spot size M_{90} [mm] MB 13 400 ... 1300°C
1	275 ... 520	2.3 ... 5
2	385 ... 1125	3.1 ... 10.5
3	540 ... 9000	4 ... 80
Aperture D [mm]:		13.5 ... 17

Optical data of fixed optics:

Optics	Measuring distance a [mm]	Spot size M_{90} [mm]		
		MB 9 400 ... 900°C	MB 10L *) 350 ... 1000°C	MB 18 500 ... 1800°C
1	80	1.2	–	0.7
2	120	1.4	2.2	0.6
3	250	2.4	4.4	0.8
4	660	6.2	10.5	2
5	1300	12	20	3.8
6	5600	50	86	15
Aperture D [mm]:		19	27	19

*) MB 10L is equipped with special lenses

Reference numbers (specify an optics when ordering):

- 3 840 320 400 ... 1300°C (MB 13), with focusable optics, thru-lens view finder and targeting light
 3 840 300 400 ... 900°C (MB 9), with fixed optics, thru-lens view finder and targeting light
 3 840 310 350 ... 1000°C (MB 10), with fixed optics, thru-lens view finder and targeting light
 3 840 330 500 ... 1800°C (MB 18), with fixed optics, thru-lens view finder and targeting light

The **IS 12-Si** is a special version of the IS 12, developed for the temperature measurement of silicon wafers.

The pyrometer is equipped with a optical narrow band filter in the near infrared. This enables a reliable measurement of thin silicon from 350°C

which otherwise is transparent for infrared radiation. In this special spectral range the emissivity of silicon is 67% and it is almost independent from temperatures. This allows the IS 12-Si to detect the correct temperature of the silicon wafer.

In the beginning of the temperature range the IS 12-Si is sensitive against light. This sensitivity decreases with increasing temperature. In applications which require the low temperatures at the beginning of the range this effect can be avoided by screening against the light.