

Portable digital pyrometers for non-contact temperature measurement between 250 and 2500 °C

IS 8 pro, IS 8-GS pro, IGA 8 pro

- Very robust aluminum die-cast housing for use in harsh environments
- Focusable precision optics for adjusting to the smallest spot sizes
- Temperature display on the housing, in the view finder and on the multifunctional display
- Large data storage for subsequent analysis of measuring data
- Integrated maximum value storage to determine the peak value achieved during a measuring series
- Extremely short response time for measurements on fast-moving objects
- USB interface for using the optional analyzing software PortaWin



The series 8 pyrometers are high-quality, battery driven portables for non-contact temperature measurement between 250 and 2500 °C.

The instruments feature fully digital signal processing, resulting in wider temperature ranges as well as higher accuracy. With the additional integrated graphic display the measuring results can be shown and analyzed directly on site.

The aluminium die-cast housing is specially designed for daily use under rough industrial conditions. The easy focusable precision optics provides small spot sizes for measuring distances between 500 mm and ∞. The bright, optimized view finder with exact spot indication and built-in temperature display facilitates the accurate aiming on the object. Moreover, the large measurement data storage

offers the best possibility for subsequent interpretation of the measured values.

The extremely short response time of 1 ms allows exact measurements of fast moving objects and a very quickly detection of temperature differences. The maximum temperature can be stored in the built-in peak picker (maximum value storage).

For high temperatures the IS 8 pro is available in two temperature ranges between 600 and 2500 °C, for the medium temperatures the IGA 8 pro with ranges from 250 to 1600 °C and 280 to 2000 °C. The IS 8-GS pro is a special version for use in foundries.

The instruments are mainly used in the steel-, glass-, forging industry and in foundries.

Application areas for metals:

- Preheating, tempering
- Hardening, normalizing
- Forging, brazing
- Sintering
- Melting
- Welding, rolling
- Founding

Application areas for glass:

- Molten glass
- Glass gob
- Glass moulds

Technical Data

Measurement Specifications		Display:	Instrument's back side: LED, 4 digit, 7 segment, 10 mm high. Additional built-in LED display in the view finder. Left side: LC display, 128 x 64 pixel, illuminated. 3 values / s; last value is displayed for another 10 s after finishing measurement (HOLD function). Display when exceeding the max. temp range: 20 °C above end of temp. range. Display when falling below the min. temp range: 5 °C below beginning of temp. range.
Temperature Range:	IS 8 pro: 600 to 1800 °C (MB 18) 750 to 2500 °C (MB 25) IS 8-GS pro: 1000 to 2000 °C (MB 20) IGA 8 pro: 250 to 1600 °C (MB 16) 280 to 2000 °C (MB 20)		
Spectral Ranges:	IS 8 pro: 0.78 to 1.1 µm IGA 8 pro: 1.45 to 1.8 µm IS 8-GS pro: 0.55 µm		
Measurement Accuracy:	0.4% of reading + 1°C (at $\epsilon=1, T_{amb.}=23\text{ °C}$)		
Temperature Coefficient:	0.01% / K ($T_{amb.}=23\text{ °C}$) of reading		
Repeatability:	0.1% of reading or 0.8 °C (the larger value is valid; at $\epsilon = 1, T_{amb.}=23\text{ °C}$)	Serial Interface:	USB 2.0 (supplies the instrument when connected, but without battery charging function)
Resolution:	LED inside: 1 °C/°F; LED outside: 0.1° up to 1000 °C/°F, after this: 1°; LCD: 0.1 °C/°F	Physical Characteristics	
Response time t_{90} :	1 ms (IS 8-GS pro: 0.5 s)	Dimensions:	210 x 75 x 175 mm (L x W x H)
Emissivity ϵ :	Adjustable from 10 to 100% in 0.1% steps	Weight:	1.2 kg with batteries
Measuring Functions:	Normal (normal temp. measurement), MAX (maximum value measurement), AVG (average temperature)	Housing:	Aluminum. Handle: polyamide
Parameters:	Emissivity, direct emissivity setting; storage interval, temperature indication in °C or °F	Thread for Tripod:	3/8"
Instrument Settings:	Side keypad	Environmental Specifications	
Data Storage:	4000 values, storage of: measurement value, date, time, parameters, emissivity, temperature unit	Ambient Temperature:	0 to 50 °C
Storage Interval:	Off; 0.001 s; 0.02 s; 0.1 s; 1 s; 10 s; 100 s; 500 s	Storage Temperature:	-10 ... 65 °C
Objective:	Achromatic, adjustable from a=500 mm to ∞ With close-up lens: a=250 mm to 500 mm Effective lens aperture diameter D: 20 mm (distance ∞) to 25 mm (distance 500 mm)	Relative Humidity:	Non condensing conditions
Sighting:	Optimized thru-lens view finder with dioptre correction -2.5 dpt. to +3 dpt., View magnification: 3 x, angle of view: 10° Indication circle for measuring spot	Protection Class:	IP52 (housing, exclude handle with battery case), IP40 (handle)
		Electrical	
		Power Supply:	6 x 1.5 V alkali-manganese IEC LR6 or 6 x 1.2 V rechargeable batteries (uninterrupted operation time approx. 35 hours with alkali-manganese batteries)
		CE label:	According to EU directives about electromagnetic immunity

Spot sizes

Measuring distance a [mm]	Spot size M_{90} [mm]				
	IS 8 pro (MB 18)	IS 8 pro (MB 25)	IS 8-GS pro	IGA 8 pro (MB 16)	IGA 8 pro (MB 20)
With standard focusable optics					
a : M*	310 : 1	500 : 1	180 : 1	230 : 1	310 : 1
500	1.6	1	2.8	2.2	1.6
1000	3.2	2	5.6	4.4	3.2
2000	6.4	4	11	8.7	6.4
3000	9.6	6	17	13.3	9.6
4000	13	8	22	17.5	13
5000	16	10	28	22	16
9000	29	18	51	40	29
With additional close-up lens					
250	0.8	0.5	1.4	1.1	0.8
500	1.6	1	2.8	2.2	1.6

* a : M: distance ratio (90% intensity)



Instrument's equipment



Features overview

The operating of the Series 8 pro instruments is easy. Switching on and measurement will be done by pressing the push button. The second trigger point stores measurement values. Additionally the Series 8 pro instruments are completed by a large display and a easy designed keypad

for selecting and changing of all available functions and settings.

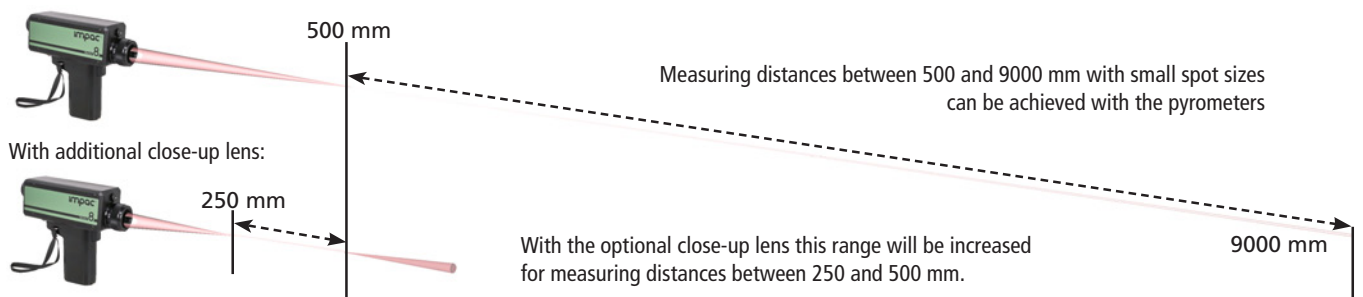
- Current measuring temperature display
- Single value storage / Continuous measuring

- Minimum / maximum value of the measurement
- Time of the measurement
- Emissivity display / quick adjustment
- Data storage for 4000 values
- Acoustic signal at full storage

Optics

The pyrometers are equipped with a high quality focusable optics. Adjusting the optics to the required measuring distance achieves the spot sizes specified in the table. The adjustment either can be taken via the scale on the objective or by focusing the measuring object in the view finder. Interim values for distances or spot sizes can be calculated by interpolation.

With standard focusable optics:



IS 8-GS pro: special pyrometer for foundries

IS 8-GS pro for measurement of molten metals:

The IS 8-GS pro is specially designed for non-contact temperature measurement of molten metals in the range between 1000 to 2000 °C. In casting processes the correct measurement can only be done on the pouring stream to avoid the influence of slag.

The specially selected wavelength of 0.55 µm facilitates this accurate temperature measurement as molten metals have their maximum emissivity in this spectral range. Additionally the influence of changing emissivity is reduced in

this range as well as interference of the measurement by atmospheric absorption is avoided. A longer response time of 0.5 s prevents the possible influence of hot sparks.

Even for long measuring distances the easy focusable precision optics achieves small spot sizes (e.g. at a distance of 5 m the spot is only 16 mm) to allow larger safety distances between operator and pouring stream. The IS 8-GS pro is equipped with a switchable filter in the view finder to protect the eyes against the extremely bright radiation of the pouring stream.



Reference numbers

Type	Ref. number	Temperature range	
IS 8 pro	3 807 300	600 to 1800 °C	(MB 18)
	3 807 310	750 to 2500 °C	(MB 25)
IS 8-GS pro	3 807 380	1000 to 2000 °C	(MB 20)
IGA 8 pro	3 807 350	250 to 1600 °C	(MB 16)
	3 807 410	280 to 2000 °C	(MB 20)

Accessory:

3 858 560	Protection window
3 858 100	Close-up lens
3 858 630	Heat protection bag
3 876 030	Set of rechargeable batteries
3 876 020	Spare battery set (6 piece)
3 858 600	Software PortaWin incl. USB cable
3 858 610	USB cable

Scope of delivery:

Instrument with batteries, protection window, robust plastic case, works certificate, operating instructions

Accessory overview



Protection window:

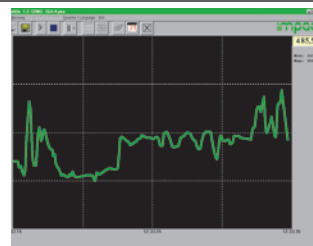
The protection window is an additional window that is screwed in front of the objective to protect the pyrometer optics e.g. from hot sparks.

Close-up lens:

The close-up lens provides measuring distances in a range between 250 and 500 mm, it is also screwed in front of the objective.

Heat protection bag:

Protects the pyrometer against radiation heat.



PortaWin-CD und USB-Kabel

Analysing software

PortaWin:

PortaWin is the analyzing software for Series 8 portable IMPAC pyrometers. The pyrometer can be connected via USB interface with the PC. Then the measured values can be read out, stored permanently and retrieved at any time. Additionally the software offers helpful functions such as graphics, monitoring, recording and analyzing of measured values.

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