

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 rough environments
- Focusable precision optics for adjusting smallest spot sizes
- Temperature display on the housing, in the view finder and on the multifunctional display sideways
- 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 *pro* series is a revision of the 15 years proven *plus* series. 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 the 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 a range from 250 to 1600°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.

Typical applications for metals:

- preheating, tempering, hardening, normalizing
- forging, brazing
- sintering
- melting
- welding, rolling
- founding

Typical applications for glass:

- molten glass
- glass gob
- glass moulds

Technical Data

Temperature ranges:	IS 8 pro: 600 to 1800°C (MB 18) 750 to 2500°C (MB 25)	IGA 8 pro: 250 to 1600°C (MB 16) IS 8-GS pro: 1000 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	
Accuracy:	0.4% of reading + 1°C (at $\epsilon = 1$, $T_{amb.} = 23^\circ\text{C}$)	
Temperature coefficient:	0.01% / K ($T_{amb.} = 23^\circ\text{C}$) of reading	
Repeatability:	0.1% of reading or 0.8°C (the larger value is valid; at $\epsilon = 1$, $T_{amb.} = 23^\circ\text{C}$)	
Resolution:	LED inside: 1°C/°F; LED outside: 0.1° up to 1000°C/°F, after this: 1°; LCD: 0.1°C/°F	
Response time t_{90} :	1 ms (IS 8-GS pro: 0.5 s)	
Emissivity ϵ :	adjustable from 10 to 100% in 0.1% steps	
Measuring functions:	Normal (normal temp. measurement), MAX (maximum value measurement), AVG (average temperature)	
Parameters:	Emissivity, direct emissivity setting; storage interval, temperature indication in °C or °F	
Instrument settings:	side keypad	
Data storage:	4000 values, storage of: measurement value, date, time, parameters, emissivity, temperature unit	
Storage interval:	Off; 0.001 s; 0.02 s; 0.1 s; 1 s; 10 s; 100 s; 500 s	
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)	
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	
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	
Serial interface:	USB 2.0 (supplies the instrument when connected, but without battery charging function)	
Protection class:	IP52 (housing, exclude handle with battery case), IP40 (handle)	
Ambient temperature:	0 ... 50°C	
Storage temperature:	-10 ... 65°C	
Rel. humidity:	Non condensing conditions	
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)	
Thread for tripod:	3/8"	
Housing:	Aluminum. Handle: polyamide	
Weight:	1.2 kg with batteries	
Dimensions:	210 x 75 x 175 mm (L x W x H)	
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
With standard focusable optics:				
$a : M$ *)	310 : 1	500 : 1	180 : 1	230 : 1
500	1.6	1	2.8	2.2
1000	3.2	2	5.6	4.4
2000	6.4	4	11	8.7
3000	9.6	6	17	13.3
4000	13	8	22	17.5
5000	16	10	28	22
9000	29	18	51	40
With additional close-up lens:				
250	0.8	0.5	1.4	1.1
500	1.6	1	2.8	2.2



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

Instrument's Equipment

Choosing the measuring function:
Normal temp. measurement, maximum temp. measurement or average temperature. Pyrometer parameter settings:
Emissivity, storage interval, °C/°F



Numeric or graphic display



View through view finder with spot indication and built-in digital display

Switchable eye protection filter



Focusable optics with distance indication

Direct adjustment for emissivity

Push button with 2 trigger points:
1: measurement
2: measurement storage / value transferred to USB



3/8" tripod thread

Carrying loop

Continuous measurement
Display switch
clearing the data storage

Digital display



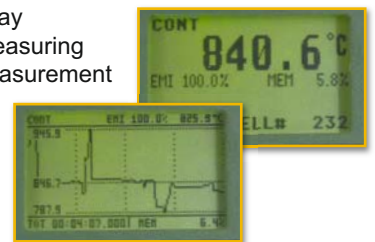
USB interface for connection with the software *PortaWin*

Features Overview

The operating of the *pro* instruments is just as easy as the forerunner types from the plus series. Switching on and measurement will be done by pressing the push button. The second trigger point stores measurement values.

Additionally the instruments are completed by a large display and a easy designed keypad for selecting and changing of all available functions and instrument settings.

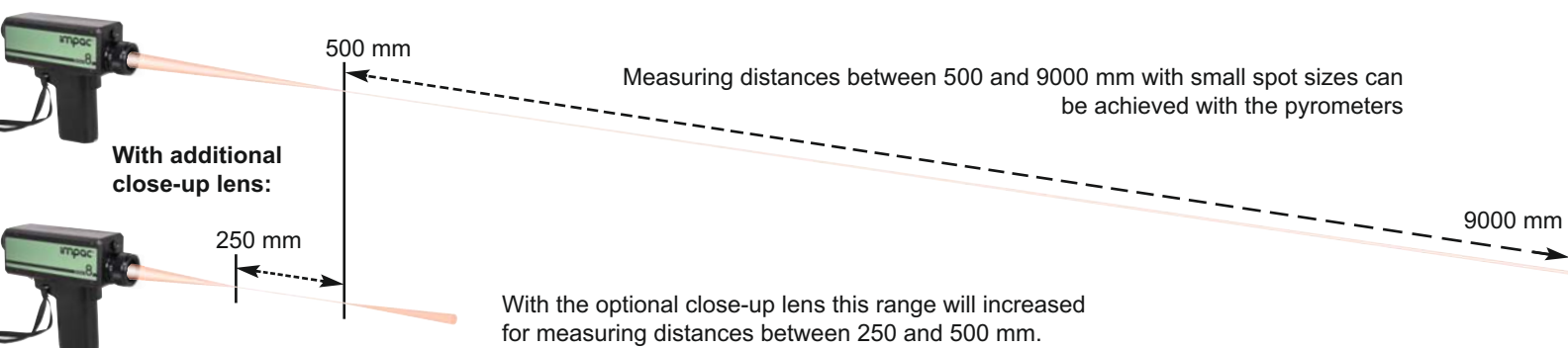
- Current measuring temperature display
- Single value storage / Continuous measuring
- Minimum / maximum value of the measurement
- Time of the measurement
- Emissivity display / quick adjustment
- Data storage for 4000 values
- Acoustic signal at full storage



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** for the use in foundries is a modification of the robust standard version **IS 8 pro**. It is specially designed for non-contact temperature measurement of molten metals in the range between 1000 and 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)

Scope of delivery:

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

Accessory:

3 858 560	Protection window
3 858 100	Close-up lens
3 858 630	Heat protection bag
4 342 100	External battery charger (incl. power socket adapter)
3 876 030	Set of rechargeable batteries
3 876 020	Spare battery set (6 piece)
3 858 600	Software <i>PortaWin</i> incl. USB cable
3 858 610	USB cable

Accessory overview

Analysing software *PortaWin*:

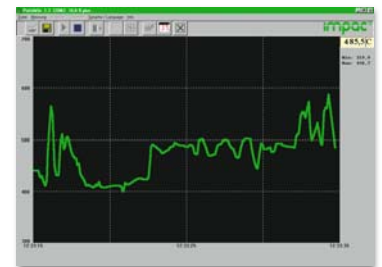
PortaWin is the analysing software for all portable IMPAC pyrometers.

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 some helpful functions such as graphics, monitoring, recording and analyzing of measured values.



PortaWin CD and USB cable



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.



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