IMPAC SERIES 8 PRO

Portable digital pyrometers for non-contact temperature measurement between 250 and 2500°C (483 to 4532°F).

The Impac® Series 8 Pro infrared thermometers are high-quality, battery driven portables for non-contact temperature measurement. 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.

PRODUCT HIGHLIGHTS

- 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 multi-functional 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

TYPICAL APPLICATIONS

- Metal industry - e.g. preheating, tempering, hardening, normalizing, forging, brazing, sintering, melting, welding, rolling, and founding
- Glass industry - e.g. molten glass, glass gob, and glass molds

AT A GLANCE

Temperature Ranges

250 to 2500°C (varies by model)

Spectral Range

IS 8 Pro: 0.78 to 1.1 µm
IS 8-GS Pro: 0.55 µm
IGA 8 Pro: 1.45 to 1.8 µm

Measurement Uncertainty

0.4% of reading + 1°C

Repeatability

0.1% of reading or 0.8°C

Optics

Standard lens: 500 to 9000 mm
Close-up lens: 250 to 500 mm

Field of View

IS 8 Pro: min. 500:1 (1 mm)
IS 8-GS Pro: 180:1 (2.8 mm)
IGA 8 Pro: min. 310:1 (1.6 mm)

Alignment

Through-lens sighting

IMPAC SERIES 8 PRO

OVERVIEW

The Series 8 Pro pyrometers are specially designed with aluminium die-cast housing for daily use under rough industrial conditions. The easy focusable precision optics provides small spot sizes for measuring distances between 500 and 9000 mm.

The bright, optimized view finder with exact spot indication and built-in temperature display facilitates 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 very quick 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 is available 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 and has a temperature range of 1000 to 2000°C.

These portable pyrometers are mainly used in the steel, glass, and forging industries.
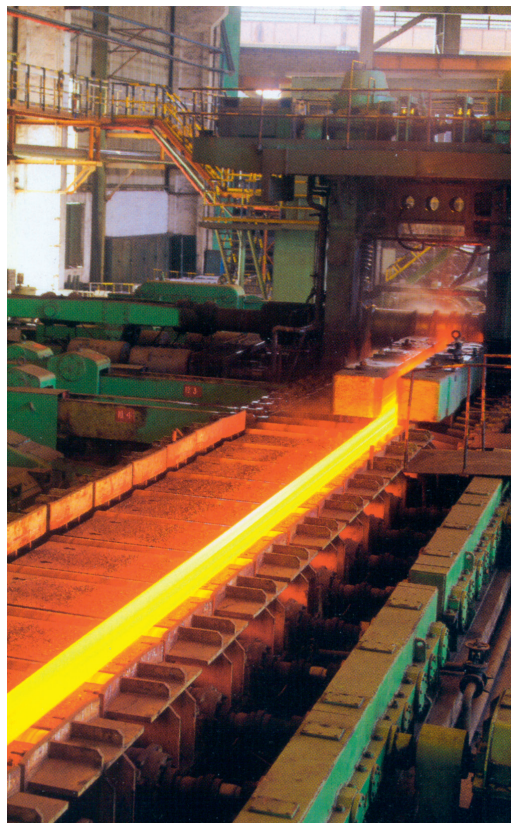
TECHNICAL DATA

Measurement Specifications	
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
	IS 8-GS Pro: 0.55 µm
	IGA 8 Pro: 1.45 to 1.8 µm
Resolution	LED inside: 1°C/°F
	LED outside: 0.1° up to 1000°C/°F, after this: 1°;
	LCD: 0.1°C/°F
Emissivity ε	Adjustable from 10 to 100% in 0.1% steps
Measurement Uncertainty ($\varepsilon = 1$, $T_{amb.} = 23\,°C$)	0.4% of reading +1°C
Repeatability ($\varepsilon = 1$, $T_{amb.} = 23\,°C$)	0.1% of reading or 0.8°C (the larger value is valid)
Temperature Coefficient	0.01% / K ($T_{amb.}$=23°C) of reading
Measuring Functions	Normal (normal temp. measurement), MAX (maximum value measurement), AVG (average temperature)

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TECHNICAL DATA (CONTINUED)

Optical Specifications	
Sighting	Optimized through-lens view finder with dioptry correction -2.5 to +3 dpt, indication circle for measuring spot
Optics	Achromatic, adjustable from a=500 to 9000 mm (with close-up lens: a=250 to 500 mm)
	Effective lens aperture diameter D: 20 mm (distance ∞) to 25 mm (distance 500 mm)
	View magnification: 3 x, angle of view: 10°
Distance Ratio	IS 8 Pro: min 500:1 (1 mm)
	IS 8-GS Pro: 180:1 (2.8 mm)
	IGA 8 Pro: min 310:1 (1.6 mm)

Environmental Specifications	
Protection Class	IP52 (housing, exclude handle with battery case), IP40 (handle)
Ambient Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-10 to 65°C (14 to 149°F)
Relative Humidity	Non-condensing conditions
Weight	1.2 kg with batteries
Dimensions (L x W x H)	210 mm x 75 mm x 175 mm (8.27" x 2.95" x 6.89")
Housing	Aluminum (housing), Polyamide (handle)
CE Label	According to EU directives about electromagnetical immunity

Electrical and Interface Specifications	
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)
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 per 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

Communication Specifications	
Serial Interface	USB 2.0 (supplies the instrument when connected, but without battery charging function)
Response Time t_{90}	IS 8 Pro: 1 ms
	IS 8-GS Pro: 500 ms
	IGA 8 Pro: 1 ms
Data Storage	4000 values, storage of: measurement value, date, time, parameters, emissivity, temperature unit
Thread for Tripod	3/8"

SPOT SIZES

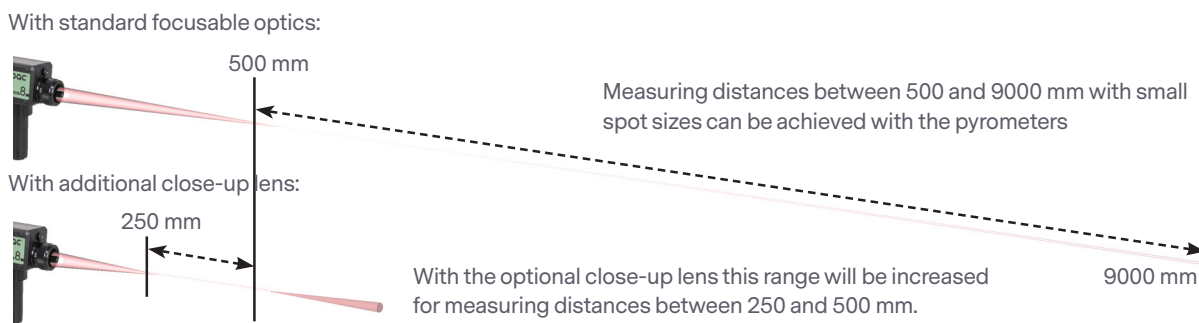| Measuring distance a [mm]	Spot size M_{90} [mm] (with standard focusable optics)				
	IS 8 Pro (MB 18)	IS 8 Pro (MB 18)	IS 8-GS Pro	IGA 8 Pro (MB 16)	IGA 8 Pro (MB 20)
a : M*	310:1	500:1	180:1	230:1	310:1
500	1.6	1	2.8	2.2	1.6
1000	3.2	2	5.6	4.4	3.2
2000	6.4	4	11	8.7	6.4
3000	9.6	6	17	13.3	9.6
4000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

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

Measuring distance a [mm]	Spot size M_{90} [mm] (with additional close-up lens)				
	IS 8 Pro (MB 18)	IS 8 Pro (MB 18)	IS 8-GS Pro	IGA 8 Pro (MB 16)	IGA 8 Pro (MB 20)
250	0.8	0.5	1.4	1.1	0.8
500	1.6	1	2.8	2.2	1.6

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:

500 mm

Measuring distances between 500 and 9000 mm with small spot sizes can be achieved with the pyrometers

With additional close-up lens:

250 mm

With the optional close-up lens this range will be increased for measuring distances between 250 and 500 mm.

9000 mm

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INSTRUMENT EQUIPMENT

Numeric or graphic display

Continuous measurement
Display switch
Clearing the data storage

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

Focusable optics with distance indication

Choosing the measuring function:
Normal temperature measurement, maximum temperature measurement or average temperature measurement.

Pyrometer parameter settings: Emissivity, storage interval, °C/°F

Direct adjustment for emissivity

USB interface for connection with the software

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

3/8" tripod thread

Carrying loop

Digital display

Switchable eye protection filter

FEATURES OVERVIEW

Operating the Series 8 Pro pyrometers 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 pyrometers include a large display

and simple keypad design 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

REFERENCE NUMBERS

Model	Reference 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)

Scope of Delivery

Pyrometer, works certificate, and operating instructions.

ACCESSORIES

PN	Description
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

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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PORTAWIN OVERVIEW

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.
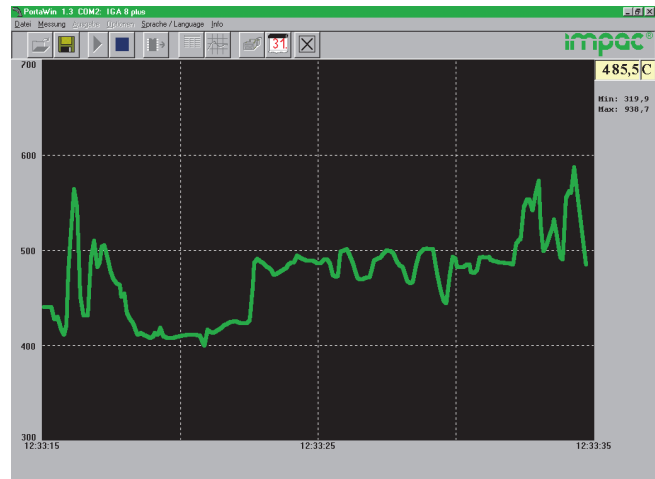
IS 8-GS PRO: SPECIAL PYROMETER FOR FOUNDRIES

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 and any interference of the measurement by atmospherical 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 the operator and the pouring stream. The IS 8-GS Pro is also equipped with a switchable filter in the view finder to protect the eyes against the extremely bright radiation of the pouring stream.

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. We design and manufacture highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE

![Advanced Energy logo]

CE