

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

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.

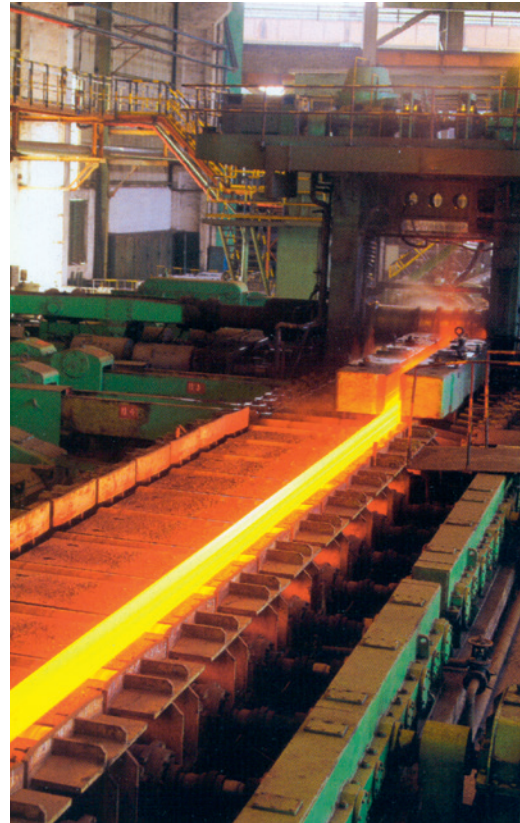
The bright, optimized view finder with exact spot indication and built-in temperature display facilitates accurate aiming on the object. Moreover, the large measurement data storage offers the best possibility for subsequent interpretation of the measured values.

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 (ε = 1, T _{amb.} = 23 °C) | 0.4% of reading +1°C |
| Repeatability (ε = 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) |

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 electromagnetic 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)

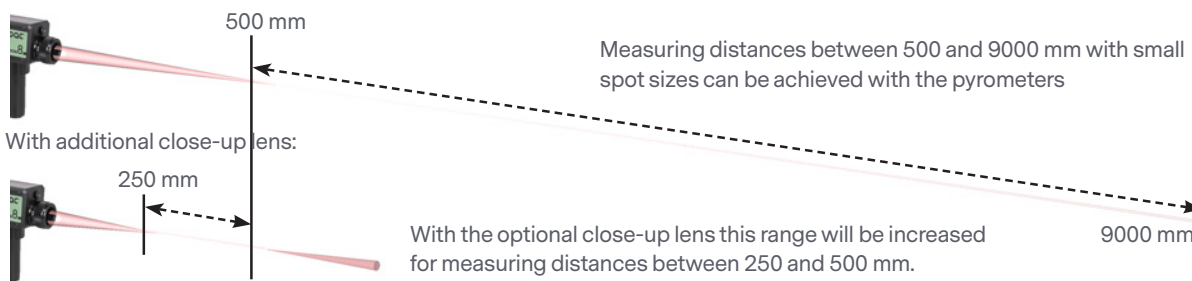
| Measuring distance a [mm] | Spot size M_{90} [mm] (with additional close-up lens) | | | | |
|---------------------------|---|------------------|-------------|-------------------|-------------------|
| | IS 8 Pro (MB 18) | IS 8 Pro (MB 18) | IS 8-GS Pro | IGA 8 Pro (MB 16) | IGA 8 Pro (MB 20) |
| 250 | 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:



INSTRUMENT EQUIPMENT



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, video grabber, video cable, PC adjustment and evaluation software InfraWin, 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.

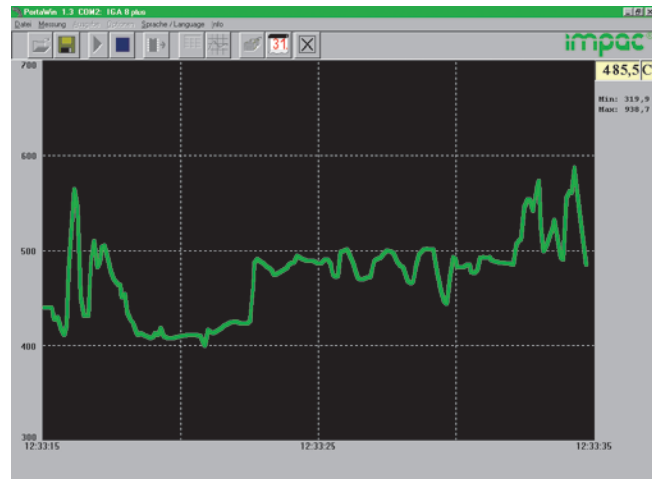


Heat protection bag

Protects the pyrometer against radiation heat.

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 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 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.





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