

Series 14 · Series 15

Fast digital portable infrared pyrometers

- Fast temperature measurement
- High accuracy
- Locking switch for continuous mode
- Laser pilot light
- Large display with automatic back-light

Options:

- Serial Interface
- Analysing software
- Portable printer
- Integrated **Data logger** with real-time clock
- Small spot sizes down to 2.2 mm



All series 14 and 15 **portables** are thermometers for non-contact temperature measurement. For almost all applications an appropriate pyrometer is available which solves your measuring task at its best.

All types are equipped with a red **laser pilot light** to simplify the alignment of the pyrometer.

Special attention was given to **ergonomics** and a **simple operation**. It begins with the mechanical locking switch for continuous measurement and is going on in the easily understandable keyboard menu and the self-describing software PortaWin for series 15 (except IN 15-N).

The **series 14** thermometers offer temperature ranges between -32°C and 400, 500 or 600°C with different spot sizes.

The **series 15** thermometers have temperature ranges from -32°C up to 800 or 900°C and small spot sizes (e.g. 20 mm at 1 m distance). The three types differ by internal **data loggers**, external analog and digital interfaces.

The **15/5 types** are optimized for the temperature measurement of **glass surfaces** by appropriate selection of the spectral range, they measure Glass temperatures between 150 and 1800°C.

The pyrometers of series 15 (except IN 15-N) equipped with the optional **close-up lens** are able to measure smallest objects with **2.2 mm** diameter (e.g. electronic components).

→ Typical application ranges

Types 14 and 15:

For non-metallic surfaces, also for coated, painted or anodized metals.

Types 15/5:

Measurements on glass surfaces.

1. The measurement temperature range

2. The size of the measuring object

Distance ratio = Distance / spot size.

Example: At a distance ratio of 10 : 1 you have a spot size of 100 mm at 1000 mm distance.

3. The material of the object

Most of non-metallic surfaces have emissivities above 80%, many are even around 95%. Do you want to adjust the emissi-

ivity, or is a fixed adjustment to 95% sufficient?

4. The data logger

Some types have an integrated memory. Thus measured values can be recalled later again.

5. The digital interface

Measured values can be transmitted via RS232-interface to a computer. This is possible immediately during the measurement or later from the memory, for evaluation and documentation.

Technical Data Series 14

Common data of Series 14:

Laser pilot light: laser-class II
 Continuous measurement: with locking switch
 HOLD-function: 10 seconds
 Display illumination: automatically
 Display resolution: 0.1°C from -10 ... 200°C at AVG, otherwise 1°C
 Spectral range: 8 ... 14 μm
 Response time t_{90} : 300 ms

Operating temperature: 0 ... 55°C
 Storage temperature: -20 ... 70°C
 Power supply: 9 V (block-battery or accu)
 Battery life: app. 80 h / 25 h (without/with laser)
 Weight: 340 g (with battery)
 Tripod thread: UNC 1/4"
 Safety system: IP 20
 CE-mark: corresponding to EU rules on immunity from electromagn. fields

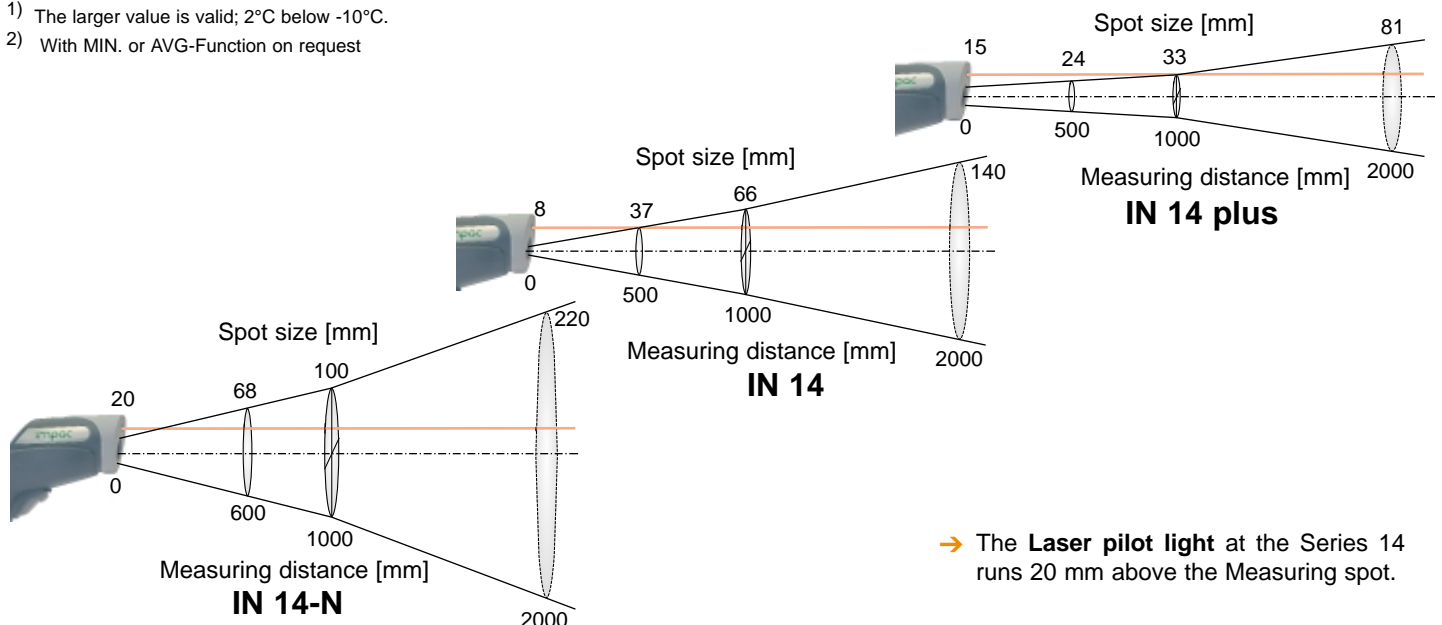


Type-related data of Series 14:

Type:	IN 14-N	IN 14	IN 14 plus
Temperature range:	-32 ... 400°C	-32 ... 500°C	-32 ... 600°C
Distance ratio (1 m):	10 : 1	15 : 1	30 : 1
Aperture:	20 mm	8 mm	15 mm
Measurement uncertainty (23°C, EMI = 100%):	2% of measured value or 2°C ¹⁾	1% of measured value or 1°C ¹⁾	1% of measured value or 1°C ¹⁾
Repeatability:	1% of measured value or 1°C ¹⁾	0.5% of measured value or 1°C ¹⁾	0.5% of measured value or 1°C ¹⁾
Emissivity:	fixed at 95%	20 ... 100%	20 ... 100%
MIN, MAX, Average-Function:	MAX ²⁾	switchable	switchable
Temperature unit:	°C (optional °F, to specify when ordering)	°C / °F (switchable)	°C / °F (switchable)

¹⁾ The larger value is valid; 2°C below -10°C.

²⁾ With MIN. or AVG-Function on request



→ The **Laser pilot light** at the Series 14 runs 20 mm above the Measuring spot.

Common data of the types 15 and 15/5:

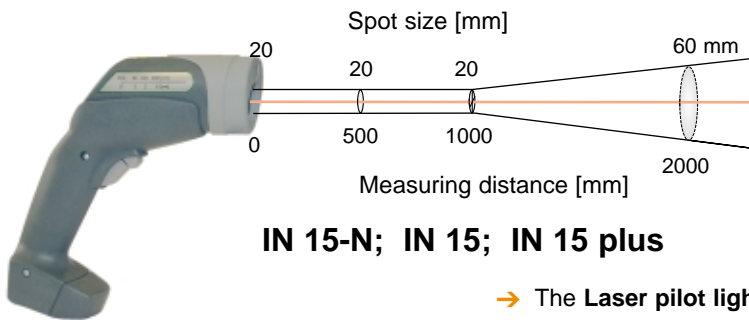
Laser pilot light:	Laser class II, parallax-free
Temperature unit:	°C oder °F (switchable)
Emissivity:	20 ... 100% switchable
MIN, MAX, AVG-Function:	switchable
Continuous measurement:	with locking switch
HOLD-Function:	10 seconds
Display illumination:	automatically
Spectral range:	8 ... 14 μm (5.14 μm for types 15/5)
Aperture:	20 mm
Resonse time t_{90} :	150 ms
Display resolution:	0.1°C

Meas. uncertainty (23°C):	1% of measured value or 1°C *)
Repeatability:	0.5% of measured value or 1°C *)
Temperature drift:	0.03% / °C (23°C)
Operating temperature:	0 ... 55°C
Storage temperature:	-20 ... 70°C
Power supply:	9 V (block battery or accu)
Battery life:	app. 50 h / 15 h (without / with laser)
Weight:	340 g (with battery)
Tripod thread:	UNC 1/4"
Safety system:	IP 20
CE-mark:	corresponding to EU rules on immunity from electromagn. fields

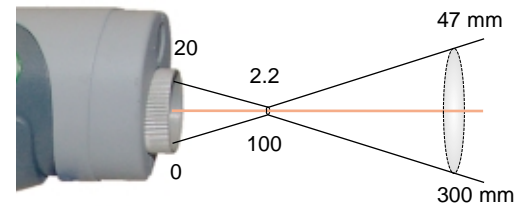
*) The larger value is valid; 2°C below -10°C.

Type-related data of the types 15:

Type:	IN 15-N	IN 15	IN 15 plus
Temperature range:	-32 ... 800°C	-32 ... 900°C	-32 ... 900°C
Distance ratio (1 m):	50 : 1	50 : 1	50 : 1
Close-up lens:	–	option	option
Data logger:	20 measured values	–	250 measured values
Integrated clock:	–	–	Yes
Acoustic alarm:	HI / LO	HI	HI / LO
Digital interface:	–	RS232	RS232
Analog output:	–	–	1 mV / °C
Charging connector:	–	yes	yes



With close-up lens:

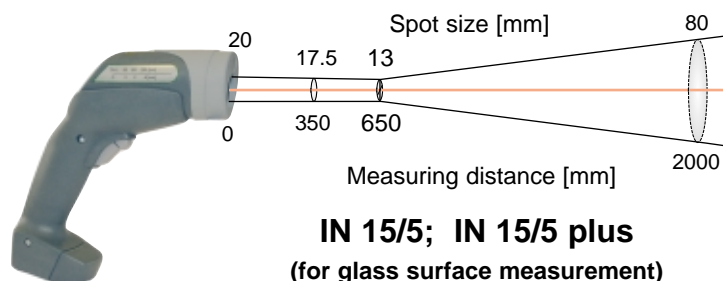


→ The Laser pilot light of the Series 15 always points to the center of the spot.

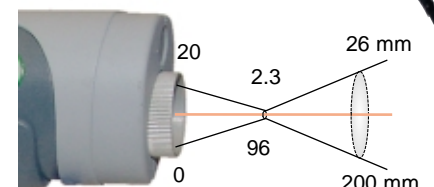
→ → The 15/5 Special Pyrometer for Glass ← ←

Type-related data of the types 15/5:

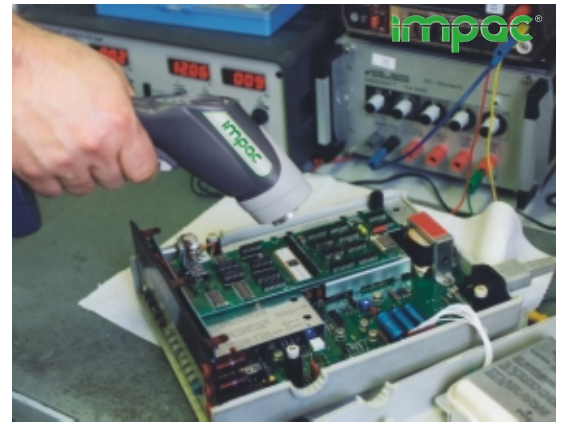
Type:	IN 15/5	IN 15/5 plus
Temperature range:	150 ... 1800°C	150 ... 1800°C
Distance ratio (0,6 m):	50 : 1	50 : 1
Close-up lens:	option	option
Data logger:	–	250 measured values
Integrated clock:	–	yes
Acoustic alarm:	HI	HI
Digital interface:	RS232	RS232
Analog output:	–	1 mV / °C
Charging connector:	yes	yes



With close-up lens:



- Asphalt
- Chemistry, glueing
- Electric / electronics
- Glass
- Rubber
- Heating technique
- Wood
- Air conditioning technology
- Ceramics
- Plastics
- Lacquer drying
- Leathers
- Food
- Paper, cardboard, packing
- Tobacco
- Textiles
- Environmental, solar



Reference numbers

Type	Ref. no.	Type	Ref. no.	Type	Ref. no.
IN 14-N	3 886 130	IN 15-N	3 887 090	IN 15/5	3 887 170
IN 14	3 886 140	IN 15	3 887 120	IN 15/5 plus	3 887 160
IN 14 plus	3 886 150	IN 15 plus	3 887 100		



Scope of delivery: portable pyrometer with battery and plastic case

Accessories

For all Infrared portables series 14 and 15:

- NiMH-Accu 9 V (3 749 150)
- Universal battery recharger for NiMH Accu (3 806 330)
- Fanny pack (3 858 520)

Additionally for Series 15 (except IN 15-N):

- Accu-charger(3 858 490)
- Analysing-Software **PortaWin** (Windows® 95 B or higher) incl. RS232 cable (3 858 460)
- Battery-driven printer (3 858 090)
- RS232 cable to printer (3 858 470)
- Analog cable (3 858 480)
- Close-up lens (3 858 500)

Close-up lens:



Printer:



Analysing software
PortaWin:



Precision measuring device for contact temperature measurement (e.g. for determination of the emissivity):

- Tastoherm MP 2000 (3 740 300)
- Tastoherm MP 2001 (3 740 310)
- Probe (type K) OT 2000 (3 759 110)
- RS232 cable for Tastoherm thermometers (3 749 820)

Complete temperature measurement sets:

- **IN 15 plus Set 1** (3 887 140) or
- **IN 15 plus Set 2** (3 887 150)

Plastic case with: Pyrometer IN 15 plus, Accu with charging unit, Software PortaWin with interface cable, Tastoherm MP 2000 (Set 2: Tastoherm MP 2001), Probe OT 2000 and RS232 cable for Tastoherm.

Set 1:



IMPAC Electronic GmbH
Temperature measurement

Kräfteler Strasse 32
D-60326 Frankfurt/Main

Telefon: +49(0)69-97373-190
Telefax: +49(0)69-97373-167

E-Mail: info@ir-impac.com
Internet: www.ir-impac.com

Specifications are subject to change without notice