

IMPAC ISR 6 ADVANCED

Stationary, digital ratio pyrometer for noncontact temperature measurement in ranges between 600 and 3000°C (1112 to 5432°F).



The Impac[®] ISR 6 Advanced pyrometer is a digital, compact and fast 2-color pyrometer for non-contact temperature measurement. The pyrometer measures in the 2-color method (ratio method) in which two adjacent wavelengths are used for the temperature determination.

PRODUCT HIGHLIGHTS

- Widest temperature ranges for most flexible process adaptation
- Highest accuracy and repeatability in its class
- "Dirty Window" warning
- Fully digital core for sub-ranging and adopted analog output
- Very fast 2 ms response time for highly dynamic processes
- Best optics in its class with manual focus capability
- 4 digit LED display
- Robust, stainless steel sensor for harsh environments (IP65/NEMA4)

TYPICAL APPLICATIONS

- Steel making
- Metal processing induction processes: hardening, welding, forging, brazing, soldering, etc.
- Metal processing noble metals melting and purifying
- Metal processing wire/rod mill water box measurement, laying head & air cooling conv.
- Solar industry silicon processing polycrystalline casting in vacuum melting furnace, silicon ingot growth in CVD reactors (Siemens process), crystal pulling of monocrystalline silicon (Czochralski process)
- Glass industry gob temperature measurement
- Cement industry clinker temperature in rotary kilns

AT A GLANCE

Temperature Ranges

600 to 1400°C (1112 to 2552°F) 700 to 1800°C (1292 to 3272°F) 800 to 2500°C (1472 to 4532°F) 1000 to 3000°C (1832 to 5432°F)

Spectral Range

Ch. 1: 0.9 μm Ch. 2: 1.05 μm

Measurement Uncertainty

< 1500°C: 0.3% oR + 2°C > 1500°C: 0.6% oR in °C

Repeatability

0.15% oR + 1°C

Field of View

min 350:1 (min. 0.6 mm) Option: line optics

Alignment

Laser targeting or through-lens sighting or color TV camera

OVERVIEW

The ISR 6 Advanced ratio pyrometer uses two adjacent wavelengths for the temperature determination. This technique offers the following advantages compared to standard 1-color pyrometers:

The temperature measurement is largely independent of the object's emissivity and in wide ranges unaffected by dust and other contaminants in the field of view.

The measuring object can be smaller than the spot size, measurements through dirty viewing windows are possible up to a certain contamination.

Additionally the pryometer can be switched to 1-color mode and used like a conventional pyrometer in a spectral range near $0.9 \,\mu$ m.

The response time of only 2 ms facilitates the measurement of fast processes. The ISR 6 is equipped with a built-in "dirty window" warning.

The pyrometer can be connected to a PC through an RS485 to USB connection, enabling parameter adjustments to be made using the InfraWin software. This can be used for temperature indication, data logging and further analyzing of complete temperature processes.

TECHNICAL DATA

Measurement Specifications		
Temperature Range	600 to 1400°C (1112 to 2552°F) (MB 14) 700 to 1800°C (1292 to 3272°F) (MB 18) 800 to 2500°C (1472 to 4532°F) (MB 25) 1000 to 3000°C (1832 to 5432°F) (MB 30)	
Sub Range	Any range adjustable within the temperature range, minimum span: 50°C	
Spectral Ranges	Channel 1: 0.9 µm	
	Channel 2: 1.05 µm	
Resolution	0.1°C or 0.2°F at interface	
	< 0.0015% of selected sub range at analog output, min. 0.1°C, 16 bit; 1°C or 1°F on display	
Emissivity ε	0.050 to 1.000 in steps of 1/1000 (1-color mode)	
Transmittance τ	0.050 to 1.000 in steps of 1/1000 (1-color mode)	
Emissivity Slope κ	0.800 to 1.200 in steps of 1/1000 (2-color mode)	
Measurement Uncertainty $(\kappa = 1, t_{90} = 1 \text{ s}, T_{amb_1} = 25 \text{ °C})$	< 1500°C: 0.3% of reading in °C + 2°C	
	> 1500°C: 0.6% of reading in °C	
Repeatability ($\kappa = 1, t_{90} = 1 \text{ s}, T_{amb} = 25 \text{ °C}$)	0.15% of reading in °C + 1°C	

Optical Specifications		
Sighting	Built-in laser aiming light (max. power level < 1 mW, λ = 630 to 680 nm, CDRH class II) or through-lens sighting	
Optics	Nanually focusable from rear cover measuring distance a = 210 to 5000 mm	
Distance Ratio	MB 14 approx. 100:1 MB 18 approx. 190:1 MB 25 and MB 30 approx. 350:1	



TECHNICAL DATA (CONTINUED)

Electrical		
Power Supply	24 VDC ±25%, ripple must be less than 50 mV	
Power Consumption	Approximately 3 W (including laser)	
Load (analog output)	0 to 500 Ω	
Isolation	Power supply, analog output and digital interface are electrically isolated from each other	

Environmental Specifications		
Protection Class	IP 65 IEC 60529 (value in mated condition)	
Operating Position	Any	
Ambient Temperature	0 to 65°C (32 to 149°F) at housing	
Storage Temperature	-20 to 80°C (-4 to 176°F)	
Relative Humidity	Non-condensating conditions	
Weight	0.6 kg (~1.32 lbs)	
Housing	Stainless steel	
CE Label	According to EU directives about electromagnetical immunity	

Interface	
Connection	12-pin connector
Display (in rear cover)	LED, 4 digit matrix, 5 mm high for 2-color or 1-color temperature signal or measuring distance
Parameters	Adjustable via interface: 2-color / 1-color temperature signal, metal mode, accordingly emissivity slope or emissivity, temperature sub range, settings for maximum value storage, address, baud rate, switch off limit, "dirty window" warning, transmittance, response time t_{90} , 0 to 20 mA or 4 to 20
	Readable via interface: measured value, internal temperature of the unit, measuring distance

Communication		
Analog Output	Adjustable 0 to 20 mA or 4 to 20 mA, linear (via digital interface)	
Digital Interface	RS485 addressable (half-duplex)	
	Baud rate: 1200 to 115.2 kBd (on request RS232, not addressable)	
Switch Off Limit	2% to 50% (adjustable via interface)	
"Dirty Window" Warning	Relay contact, max. continuous current 0.4 A, setting of the warning level: 0 (off) to 99%	
Response Time t ₉₀	2 ms (with dynamic adaption at low signal levels); adjustable to min; 0.01 s; 0.05 s; 0.25 s; 1 s; 3 s; 10 s	
Maximum Value Storage	Built-in single or double storage. Clearing with adjusted time t _{clear} (off; 0.01 s; 0.05 s; 0.25 s; 1 s; 5 s; 25 s), via interface, automatically with the next measuring object, external contact, hold-function	

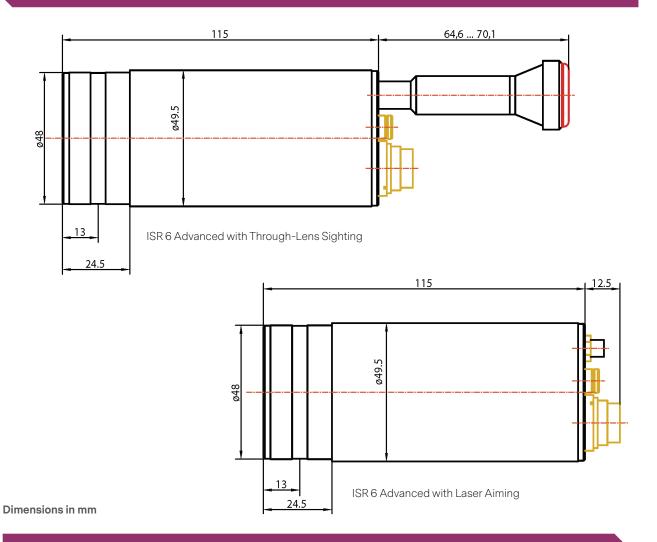
1 MB is a shortcut used for temperature range (in German: Messbereich).

The determination of the technical data of this pyrometer is carried out in accordance with VDI/VDE IEC TS 62942-2, the calibration / adjustment in accordance with VDI/VDE 3511, Part 4.4.



IMPAC ISR 6 ADVANCED

PRODUCT SCHEMATIC



SIGHTING

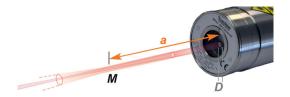
ISR 6 Advanced with Through-Lens Sighting

ISR 6 Advanced with Laser Aiming



OPTICS

The optics can be manually adjusted at all distances between 210 mm and 5000 mm. The table shows examples of distances and the corresponding spot diameters.



Effective aperture D for all temperature ranges: 13 mm (focused to longest distance) to 15 mm (focused to shortest distance).

ISR 6 Advanced				
	600 to 1400°C	700 to 1800°C	800 to 2500°C	1000 to 3000°C
Distance a [mm]	Spot Diameter M [mm]			
210	2.1	1.1	0.6	0.6
300	3	1.6	0.9	0.9
500	5	2.7	1.5	1.5
800	8	4.2	2.3	2.3
1300	13	6.9	3.7	3.7
2000	20	10.6	5.8	5.8
5000	50	27	15	15

Optional Integrated Line Optics

Besides the standard optical heads, the ISR 6 Advanced is also available with integrated line optics, which features a special spot in the shape of a line. This provides additional advantages for some applications such as wire production or pouring stream measurements.



REFERENCE NUMBERS

ISR 6 Advanced				
Temperature Range	With Through-Lens Sighting	With Laser Aiming	With Laser Targeting and line shaped spot (5%)	
600 to 1400°C (MB 14)	3 904 020	3 904 010	3 904 050	
700 to 1800°C (MB 18)	3 904 080	3 904 070	-	
800 to 2500°C (MB 25)	3 904 150	3 904 140	3 904 180	
1000 to 3000°C (MB 30)	3 904 220	3-904210	-	

Scope of Delivery

Pyrometer, PC adjustment and evaluation software InfraWin, works certificate, and operating instructions.

Ordering Note

A connection cable is not included in scope of delivery and must be ordered separately.



ACCESSORIES

8420 320Special connection cable, 3m, straight connector'8420 330Connection cable, 1m, straight connector'8420 340Connection cable, 1m, straight connector'8420 340Connection cable, 20m, straight connector'8420 340Connection cable, 20m, straight connector'8420 340Connection cable, 20m, straight connector'8420 340Connection cable, 25m, straight connector'8420 340Connection cable, 5m, 90° connector'8420 340Connection cable, 5m, 90° connector'8420 340Connection cable, 5m, 90° connector'8420 340Connection cable, 25m, 90° connector'8420 341Potocol transducer RS485/RS232 (switch) => Profibus-DP for 1 device8421 342Potocol transducer RS485/RS232 (switch) => Profibus-DP for 1 device8422 340Potocol transducer RS485/RS232 (switch) => Profibus-DP for 1 device8422 341Potocol converter UPP RS485 or RS232 confolkt, for max: 32 pyrometers8422 343Potocol converter UPP RS485 res Profibus Uf pyrometer through RS485 interface8432 341Potocol converter UPP RS485 res Profibus Uf pyrometer through RS485 interface <th></th> <th></th>				
820 330 Connection cable, 5 m, straight connector ¹ 820 500 Connection cable, 10 m, straight connector ¹ 820 501 Connection cable, 25 m, straight connector ¹ 820 502 Connection cable, 25 m, straight connector ¹ 820 502 Connection cable, 5 m, straight connector ¹ 820 502 Connection cable, 5 m, 90° connector ¹ 820 503 Connection cable, 5 m, 90° connector ¹ 820 504 Connection cable, 5 m, 90° connector ¹ 820 505 Connection cable, 5 m, 90° connector ¹ 820 506 Connection cable, 5 m, 90° connector ¹ 820 507 Connection cable, 5 m, 90° connector ¹ 820 508 Connection cable, 5 m, 90° connector ¹ 820 509 Connection cable, 5 m, 90° connector ¹ 820 500 Connection cable, 5 m, 90° connector ¹ 820 500 Connection cable, 3 0 m, 90° connector ¹ 820 500 Connection cable, 15 m, 90° connector ¹ 820 500 Connection cable, 15 m, 90° connector ¹ 820 500 Connection cable, 30 m, 90° connector ¹ 820 500 Power supply NG DC for DIN rail mounting; 85 to 265 VAC => 24 VDC, 600 mA with 2 settable limit switches 820 501 UBS Cool transducer R5485 > PORIDUE DF or 32 devic	PN	Description		
3820 600 Connection cable, 10 m, straight connector ¹ 3820 510 Connection cable, 20 m, straight connector ¹ 3820 820 Connection cable, 20 m, straight connector ¹ 3820 820 Connection cable, 20 m, straight connector ¹ 3820 820 Connection cable, 30 m, straight connector ¹ 3820 820 Connection cable, 5 m, 90° connector ¹ 3820 820 Connection cable, 5 m, 90° connector ¹ 3820 820 Connection cable, 5 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 Connection cable, 25 m, 90° connector ¹ 3820 840 <td>3 820 320</td> <td>Special connection cable with plug and additional pilot light switch, 5 m</td>	3 820 320	Special connection cable with plug and additional pilot light switch, 5 m		
8820 510 Connection cable, 15 m, straight connector ¹ 8820 810 Connection cable, 20 m, straight connector ¹ 8820 820 Connection cable, 5 m, 90° connector ¹ 8820 830 Connection cable, 5 m, 90° connector ¹ 8820 840 Connection cable, 5 m, 90° connector ¹ 8820 840 Connection cable, 5 m, 90° connector ¹ 8820 840 Connection cable, 5 m, 90° connector ¹ 8820 840 Connection cable, 5 m, 90° connector ¹ 8820 840 Connection cable, 5 m, 90° connector ¹ 8820 840 Connection cable, 5 m, 90° connector ¹ 8820 840 Connection cable, 5 m, 90° connector ¹ 8820 840 Connection cable, 5 m, 90° connector ¹ 8820 840 Connection cable, 20 m, 90° connector ¹ 8820 840 Connection cable, 20 m, 90° connector ¹ 8820 840 Connection cable, 10 m all mounting; 100 to 240 VAC ⇒ 24 VDC, 1 A 8820 850 Protocol transducer R5485 resize 7 Profibus DP for 12 evice 8820 840 Protocol transducer R5485 or R5232 covirch (r or max. 32 pyrometer 8820 820 Protocol converter UPP R5485 or Profibus DP for 32 devices 8820 820 Protocol converter UPP R5485 or Profibus DP for 32 devices 8820 820 Pro	3 820 330	Connection cable, 5 m, straight connector ¹		
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3820 520 Connection cable, 30 m, straight connector ¹ 3820 520 Connection cable, 5 m, 90° connector ¹ 3820 540 Connection cable, 10 m, 90° connector ¹ 3820 540 Connection cable, 20 m, 90° connector ¹ 3820 540 Connection cable, 20 m, 90° connector ¹ 3820 540 Connection cable, 25 m, 90° connector ¹ 3820 560 Connection cable, 25 m, 90° connector ¹ 3820 560 Connection cable, 30 m, 90° connector ¹ 3820 560 Connection cable, 30 m, 90° connector ¹ 3820 560 Connection cable, 30 m, 90° connector ¹ 3820 560 Connection cable, 30 m, 90° connector ¹ 3820 560 Connection cable, 30 m, 90° connector ¹ 3820 560 Connection cable, 30 m, 90° connector ¹ 3820 570 USB-Stable 30 ptor cable, 1.8m, HS version 4.5 Mbd 3820 560 USB-Stable 30 ptor cable, 21 with 30 ptor 90 for 32 devices 3820 560 Protocol transducer R5485/RS232 (switch.) ⇔ Profibus-DP for 1 device 9820 561 Picocol converter UPP R5485 or RS232 ⇔ Profiblet, for max. 32 pyrometers 3820 562 Protocol converter UPP R5485 or Sprofiblet, for max. 32 pyrometers 3820 570 DA 6000: PlD dogaramable controller, very fast, for digital IMPAC pyrometers <td>3 820 810</td> <td>Connection cable, 20 m, straight connector¹</td>	3 820 810	Connection cable, 20 m, straight connector ¹		
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3 820 530 Connection cable, 10 m, 80° connector ¹ 3 820 540 Connection cable, 20 m, 90° connector ¹ 3 820 830 Connection cable, 20 m, 90° connector ¹ 3 820 840 Connection cable, 30 m, 90° connector ¹ 3 820 850 Connection cable, 30 m, 90° connector ¹ 3 820 550 Connection cable, 30 m, 90° connector ¹ 3 820 550 Power supply NG DC for DIN rail mounting; 100 to 240 VAC -> 24 VDC, 1 A 8 852 550 Power supply NG DC for DIN rail mounting; 85 to 265 VAC -> 24 VDC, 600 mA with 2 settable limit switches 3 825 240 Protocol transducer RS485/RS232 (switch.) -> Profibus-DP for 1 device 3 825 240 Protocol transducer RS485 c> Profibus DP for 32 devices 3 826 260 Protocol converter UPP RS485 c> Profibus DP for 32 pyrometers 3 826 261 Protocol converter UPP RS485 c> Profibus for digital IMPAC pyrometers 3 826 510 D 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC 3 800 550 DA 4000: LED-display, 2-wire power supply, 2 limit switches for the RS485 interface 3 840 260 Ibat Turment's support (Series 5 and 6) 3 844 260 Instrument's support (Series 5 and 6) 3 844 260 Instrument's support (Series 5 and 6) 3 845 260 PO' mirror with quart	3 820 520	Connection cable, 30 m, straight connector ¹		
3820 540 Connection cable, 15 m, 80° connector ¹ 3820 830 Connection cable, 20 m, 80° connector ¹ 3820 840 Connection cable, 30 m, 90° connector ¹ 3820 550 Connection cable, 30 m, 90° connector ¹ 3820 550 Connection cable, 30 m, 90° connector ¹ 3820 550 Connection cable, 30 m, 90° connector ¹ 3820 560 Power supply NG DC for DIN rail mounting; 100 to 240 VAC ⇒ 24 VDC, 1 A 3825 560 Power supply NG DC for DIN rail mounting; 85 to 265 VAC ⇒ 24 VDC, 600 mA with 2 settable limit switches 3825 460 Protocol transducer RS485/RS232 (switch.) ⇔ Profibus-DP for 1 device 3852 460 Protocol transducer RS485 or Profibus DP for 32 devices 3826 510 Protocol converter UPP RS485 or Profibut, for max. 32 pyrometers 3826 520 Protocol converter UPP RS485 ⇔ Profibut, for max. 32 pyrometers 3827 500 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC 3890 520 DA 4000: LED-display, 2-wire power supply, 2 limit switches for the RS485 interface. 3842 540 Instrument's support (Series 5 and 6) 3844 540 Instrument's support (Series 5 and 6) 3842 540 Instrument's support (Series 5 and 6) 3843 540 Adjustable mounting support (Series 5 and 6)	3 820 340	Connection cable, 5 m, 90° connector ¹		
3820 830Connection cable, 20 m, 90° connector¹3820 840Connection cable, 25 m, 90° connector¹3820 850Connection cable, 30 m, 90° connector¹3820 850Connection cable, 30 m, 90° connector¹3822 920Power supply NG DC for DIN rail mounting; 100 to 240 VAC => 24 VDC, 1 A3825 821Power supply NG 2D for DIN rail mounting; 85 to 265 VAC => 24 VDC, 600 mA with 2 settable limit switches3826 750USB-RS485 adaptor cable, 1.8m, HS Version 4.5 Mbd3827 400Protocol transducer RS485/RS232 (switch.) => Profibus-DP for 1 device3852 401Protocol transducer RS485 >> Profibus DP for 32 devices3826 402Protocol converter UPP RS485 or RS232 <> ProfiNet, for 1 pyrometer3826 510Ptocol converter UPP RS485 c> Profibus DP for 32 devices3827 620Protocol converter UPP RS485 c> Profibus ty for digital IMPAC pyrometers3828 630DA 6000: ED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC3809 530DA 6000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 20 VAC3809 530DA 6000: Nite the DA 6000-N, but with analog input and 2 limit switches for the RS485 interface3809 530DA 6000: Nite the DA 6000-N, but with nalog input and 2 limit switches for the RS485 interface.3842 640Instrument's support (Series 5 and 6)3844 290Instrument's support (Series 5 and 6)3843 201Adjustable mounting support (Series 5 and 6)3843 202Adf ustable mounting support (Series 5 and 6)3843 203Adf ustable mounting support (Series 5 and 6)3843 204Arip urge unit, al	3 820 530	Connection cable, 10 m, 90° connector ¹		
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3852 290 Power supply NG DC for DIN rail mounting; 100 to 240 VAC ⇒ 24 VDC, 1 A 3852 550 Power supply NG 2D for DIN rail mounting; 85 to 265 VAC ⇒ 24 VDC, 600 mA with 2 settable limit switches 3826 750 USB-RS485 adaptor cable, 1.8m, HS Version 4.5 Mbd 9 rotocol transducer RS485/RS232 (switch.) ⇔ Profibus-DP for 1 device 3852 640 Protocol transducer RS485 ⇔ Profibus DP for 32 devices 3852 630 Protocol converter UPP RS485 ⇔ ProfiNet, for max. 32 pyrometers 382 651 PI 6000: PID programmable controller, very fast, for digital IMPAC pyrometers 389 120 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC 389 650 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 20 VAC 389 650 DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface 384 240 SCA 5, External Scanner Series 5 & 6 with fused silica window, 24 VAC/DC 384 210 Adjustable mounting support (Series 5 and 6) 384 220 Instrument's support (Series 5 and 6) 384 210 Adjustable mounting support (Series 5 and 6) 384 210 Adjustable mounting support (Series 5 and 6) 384 210 Adjustable mounting support (Series 5 and 6) 384 210 Adjustable mounting support (Series 5 and 6)	3 820 840	Connection cable, 25 m, 90° connector ¹		
3 852 550 Power supply NG 2D for DIN rail mounting; 85 to 265 VAC ⇒ 24 VDC, 600 mA with 2 settable limit switches 3 852 550 USB-RS485 adaptor cable, 1.8m, HS Version 4.5 Mbd 3 852 440 Protocol transducer RS485/RS232 (switch) ⇒ Profibus-DP for 1 device 3 852 640 Protocol transducer RS485 ⇔ Profibus DP for 32 devices 3 852 650 Protocol converter UPP RS485 or RS232 ⇔ ProfiNet, for 1 pyrometer 3 852 650 Protocol converter UPP RS485 or Profibus DP for 32 devices 3 852 651 Pl 6000: PID programmable controller, very fast, for digital IMPAC pyrometers 3 826 510 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC 3 890 650 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 230 VAC 3 890 550 DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface 3 882 650 In Actionary Support (Series 5 and 6) 3 842 100 Adjustable mounting support (Series 5 and 6) 3 842 200 Instrument's support (Series 5 and 6) 3 843 550 90° mirror with quartz glass window (Series 5 and 6) 3 843 550 90° mirror with quartz glass window (Series 5 and 6) 3 843 250 ROT 5 scanning mirror attachment up to 70° 3 833 5100 Air purge unit, aluminium <td>3 820 550</td> <td>Connection cable, 30 m, 90° connector¹</td>	3 820 550	Connection cable, 30 m, 90° connector ¹		
B326 750 USB-R5445 adaptor cable, 1.8m, HS Version 4.5 Mbd B326 750 Protocol transducer R5455/RS232 (switch.) ⇔ Profibus-DP for 1 device B352 460 Protocol transducer R5485 ⇔ Profibus DP for 32 devices B352 620 Protocol converter UPP R5485 or RS232 ⇔ ProfiNet, for 1 pyrometer B352 630 Protocol converter UPP RS485 ⇔ ProfiNet, for max.32 pyrometers B326 510 PI 6000: PID programmable controller, very fast, for digital IMPAC pyrometers B380 650 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC B380 650 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 230 VAC B380 650 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 230 VAC B380 650 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 230 VAC B380 650 DA 4000: LED-display, to allow adjustment of pyrometer through RS485 interface B380 650 DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface. B381 220 DA 6000: like the DA 6000-N, but with analog input and 2 limit switches for the RS485 interface. B384 210 Adjustable mounting support (Series 5 and 6) B384 210 Adjustable mounting support (Series 5 and 6) B384 250 ROT 5 scanning mirror attachment up to 70° </td <td>3 852 290</td> <td>Power supply NG DC for DIN rail mounting; 100 to 240 VAC \Rightarrow 24 VDC, 1 A</td>	3 852 290	Power supply NG DC for DIN rail mounting; 100 to 240 VAC \Rightarrow 24 VDC, 1 A		
3 852 440Protocol transducer RS485/RS232 (switch.) ⇔ Profibus-DP for 1 device3 852 460Protocol transducer RS485 ⇔ Profibus DP for 32 devices3 852 620Protocol converter UPP RS485 ⇔ ProfiNet, for 1 pyrometer3 852 630Protocol converter UPP RS485 ⇔ ProfiNet, for max. 32 pyrometers3 826 510PI 6000: PID programmable controller, very fast, for digital IMPAC pyrometers3 891 220DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC3 890 650DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 230 VAC3 890 530DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface3 842 400SCA 5, External Scanner Series 5 & 6 with fused silica window, 24 VAC/DC3 842 620Instrument's support (Series 5 and 6)3 843 250ROT 5 scanning mirror attachment up to 70°3 843 250ROT 5 scanning mirror attachment up to 70°3 835 260Air purge unit, aluminium3 837 230Water cooling jacket (heavy duty) with integrated air purge unit3 837 230Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting)3 837 530Water cooling jacket (light duty, with fused silica window (only for instruments with laser targeting)	3 852 550	Power supply NG 2D for DIN rail mounting; 85 to 265 VAC \Rightarrow 24 VDC, 600 mA with 2 settable limit switches		
3 852 460 Protocol transducer RS485 ⇔ Profibus DP for 32 devices 3 852 620 Protocol converter UPP RS485 or RS232 ⇔ ProfiNet, for 1 pyrometer 3 852 630 Protocol converter UPP RS485 or RS232 ⇔ ProfiNet, for 1 pyrometers 3 826 510 PI 6000: PID programmable controller, very fast, for digital IMPAC pyrometers 3 890 550 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC 3 890 557 DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface 3 891 220 DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface 3 890 550 DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface 3 894 540 SCA 5, External Scanner Series 5 & 6 with fused silica window, 24 VAC/DC 3 842 620 Instrument's support (Series 5 and 6) 3 842 620 Instrument's support (Series 5 and 6) 3 843 250 ROT 5 scanning mirror attachment up to 70° 3 835 160 Air purge unit, aluminium 3 837 230 Water cooling jacket (heavy duty) with integrated air purge unit 3 837 530 Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting) 3 837 530 Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 826 750	USB-RS485 adaptor cable, 1.8m, HS Version 4.5 Mbd		
3 852 620 Protocol converter UPP RS485 or RS232 ⇔ ProfiNet, for 1 pyrometer 3 852 630 Protocol converter UPP RS485 ⇔ ProfiNet, for max. 32 pyrometers 3 826 610 PI 6000: PID programmable controller, very fast, for digital IMPAC pyrometers 3 891 220 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC 3 890 650 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 230 VAC 3 880 570 DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface 3 880 503 DA 6000: like the DA 6000-N, but with analog input and 2 limit switches for the RS485 interface. 3 843 490 SCA 5, External Scanner Series 5 & 6 with fused silica window, 24 VAC/DC 3 844 200 Instrument's support (Series 5 and 6) 3 845 250 Instrument's support (Series 5 and 6) 3 843 5590 90° mirror with quartz glass window (Series 5 and 6) 3 843 250 ROT 5 scanning mirror attachment up to 70° 3 843 260 Air purge unit, aluminium 3 837 280 Water cooling jacket (heavy duty) with integrated air purge unit 3 837 280 Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting) 3 837 500 Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 852 440	Protocol transducer RS485/RS232 (switch.) ⇔ Profibus-DP for 1 device		
3 852 630 Protocol converter UPP RS485 ⇔ ProfiNet, for max. 32 pyrometers 3 826 510 PI 6000: PID programmable controller, very fast, for digital IMPAC pyrometers 3 891 220 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC 3 890 650 DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 230 VAC 3 890 570 DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface 3 880 530 DA 6000: like the DA 6000-N, but with analog input and 2 limit switches for the RS485 interface. 3 843 490 SCA 5, External Scanner Series 5 & 6 with fused silica window, 24 VAC/DC 3 844 200 Instrument's support (Series 5 and 6) 3 845 250 Instrument's support (Series 5 and 6) 3 843 550 90° mirror with quartz glass window (Series 5 and 6) 3 843 250 ROT 5 scanning mirror attachment up to 70° 3 835 160 Air purge unit, aluminium 3 837 230 Water cooling jacket (heavy duty) with integrated air purge unit 3 837 500 Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting) 3 837 510 Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 852 460	Protocol transducer RS485 ⇔ Profibus DP for 32 devices		
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3 891 220DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC3 890 650DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 230 VAC3 890 650DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface3 890 530DA 6000: like the DA 6000-N, but with analog input and 2 limit switches for the RS485 interface.3 843 490SCA 5, External Scanner Series 5 & 6 with fused silica window, 24 VAC/DC3 846 260Instrument's support (Series 5 and 6)3 846 260Instrument's support (Series 5 and 6)3 846 290Instrument's support (Series 5 and 6)3 845 59090° mirror with quartz glass window (Series 5 and 6)3 843 420Adjustable mounting mirror attachment up to 70°3 835 160Air purge unit, aluminium3 837 230Water cooling jacket (heavy duty) with fused silica window3 837 550Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting)3 837 510Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 852 630	Protocol converter UPP RS485 ⇔ ProfiNet, for max. 32 pyrometers		
3 890 650DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 230 VAC3 890 570DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface3 890 530DA 6000: like the DA 6000-N, but with analog input and 2 limit switches for the RS485 interface.3 843 490SCA 5, External Scanner Series 5 & 6 with fused silica window, 24 VAC/DC3 846 260Instrument's support (Series 5 and 6)3 846 260Instrument's support (Series 5 and 6)3 846 290Instrument's support (Series 5 and 6)3 845 250SCT 5 scanning mirror with quartz glass window (Series 5 and 6)3 843 250ROT 5 scanning mirror attachment up to 70°3 835 160Air purge unit, aluminium3 837 230Water cooling jacket (heavy duty) with fused silica window3 837 500Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting)3 837 510Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 826 510	PI 6000: PID programmable controller, very fast, for digital IMPAC pyrometers		
3 890 570DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface3 890 530DA 6000: like the DA 6000-N, but with analog input and 2 limit switches for the RS485 interface.3 843 490SCA 5, External Scanner Series 5 & 6 with fused silica window, 24 VAC/DC3 846 260Instrument's support (Series 5 and 6)3 846 290Instrument's support (Series 5 and 6)3 846 290Instrument's support (Series 5 and 6)3 843 25080° 50° mirror with quartz glass window (Series 5 and 6)3 843 250ROT 5 scanning mirror attachment up to 70°3 835 160Air purge unit, aluminium3 837 230Water cooling jacket (heavy duty) with integrated air purge unit3 837 500Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting)3 837 510Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 891 220	DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 115 VAC		
3 890 530DA 6000: like the DA 6000-N, but with analog input and 2 limit switches for the RS485 interface.3 843 490SCA 5, External Scanner Series 5 & 6 with fused silica window, 24 VAC/DC3 846 260Instrument's support (Series 5 and 6)3 834 210Adjustable mounting support (Series 5 and 6)3 846 290Instrument's support (Series 5 and 6)3 845 290Instrument's support (Series 5 and 6) with fused silica window3 835 59090° mirror with quartz glass window (Series 5 and 6)3 843 250ROT 5 scanning mirror attachment up to 70°3 835 160Air purge unit, aluminium3 837 230Water cooling jacket (heavy duty) with integrated air purge unit3 837 500Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting)3 837 510Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 890 650	DA 4000: LED-display, 2-wire power supply, 2 limit switches (relay contacts), 230 VAC		
3 843 490SCA 5, External Scanner Series 5 & 6 with fused silica window, 24 VAC/DC3 846 260Instrument's support (Series 5 and 6)3 834 210Adjustable mounting support (Series 5 and 6)3 846 290Instrument's support (Series 5 and 6) with fused silica window3 835 59090° mirror with quartz glass window (Series 5 and 6)3 843 250ROT 5 scanning mirror attachment up to 70°3 835 160Air purge unit, aluminium3 837 230Water cooling jacket (heavy duty) with integrated air purge unit3 837 500Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting)3 837 510Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 890 570	DA 6000-N digital display, to allow adjustment of pyrometer through RS485 interface		
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3 846 290Instrument's support (Series 5 and 6) with fused silica window3 846 29090° mirror with quartz glass window (Series 5 and 6)3 835 59090° mirror with quartz glass window (Series 5 and 6)3 843 250ROT 5 scanning mirror attachment up to 70°3 835 160Air purge unit, aluminium3 837 230Water cooling jacket (heavy duty) with integrated air purge unit3 837 280Water cooling jacket (heavy duty) with fused silica window3 837 500Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting)3 837 510Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 846 260	Instrument's support (Series 5 and 6)		
3 835 59090° mirror with quartz glass window (Series 5 and 6)3 835 59090° mirror with quartz glass window (Series 5 and 6)3 843 250ROT 5 scanning mirror attachment up to 70°3 835 160Air purge unit, aluminium3 837 230Water cooling jacket (heavy duty) with integrated air purge unit3 837 280Water cooling jacket (heavy duty) with fused silica window3 837 500Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting)3 837 510Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 834 210	Adjustable mounting support (Series 5 and 6)		
3 843 250 ROT 5 scanning mirror attachment up to 70° 3 843 250 Air purge unit, aluminium 3 835 160 Air purge unit, aluminium 3 837 230 Water cooling jacket (heavy duty) with integrated air purge unit 3 837 280 Water cooling jacket (heavy duty) with fused silica window 3 837 500 Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting) 3 837 510 Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 846 290	Instrument's support (Series 5 and 6) with fused silica window		
3 835 160 Air purge unit, aluminium 3 837 230 Water cooling jacket (heavy duty) with integrated air purge unit 3 837 280 Water cooling jacket (heavy duty) with fused silica window 3 837 500 Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting) 3 837 510 Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 835 590	90° mirror with quartz glass window (Series 5 and 6)		
3 837 230Water cooling jacket (heavy duty) with integrated air purge unit3 837 230Water cooling jacket (heavy duty) with fused silica window3 837 500Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting)3 837 510Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)3 837 510Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 843 250	ROT 5 scanning mirror attachment up to 70°		
3 837 280 Water cooling jacket (heavy duty) with fused silica window 3 837 500 Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting) 3 837 510 Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting) 3 837 510 Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 835 160	Air purge unit, aluminium		
3 837 500 Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting) 3 837 510 Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 837 230	Water cooling jacket (heavy duty) with integrated air purge unit		
3 837 510 Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)	3 837 280	Water cooling jacket (heavy duty) with fused silica window		
	3 837 500	Water cooling jacket (light duty, with air purge unit (only for instruments with laser targeting)		
3 837 540 Cooling plate for series 5 and 6, with air purge	3 837 510	Water cooling jacket (light duty), with fused silica window (only for instruments with laser targeting)		
	3 837 540	Cooling plate for series 5 and 6, with air purge		
3 846 590 Vacuum flange KF16 with quartz glass window	3 846 590	Vacuum flange KF16 with quartz glass window		

1 All connection cables include a short adapter cable with a 9-pin SUB-D connector. This connector may be used in combination with the RS485 to USB adapter.



INFRAWIN OVERVIEW

InfraWin is easy-to-use measurement and evaluation software for remote configuration of stationary, digital IMPAC brand pyrometers.

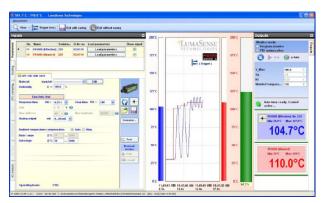
This software allows the user to remotely adjust and control settings for one or two pyrometers from a single computer. InfraWin also allows the user to simultaneously monitor and control temperatures.

- Display temperature data as color bars and online graphics
- Capture downstream evaluations as tables, graphics or text files
- Calculate the spot size for different measuring distances
- Features UPP standard (Universal Pyrometer Protocol)

Pyrometer Settings

An IMPAC digital pyrometer connected to a PC will be automatically detected by the software. All available parameters are adjustable, including emissivity, response time, maximum value storage, output signal and sub range.

Further special functions are adjustable for example controllers or TV parameters on instruments available with these functions. Changes are transmitted directly to the pyrometer.



Measurement with Internal Temperature of radiation temperature and internal instrument temperature. Parameters can be changed during the measurement.



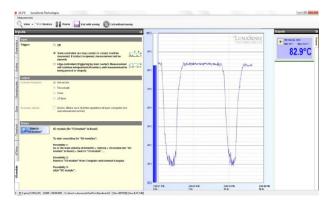
Measurement with Color Bar

In this window a temperature value for the upper or lower limit can be adjusted numerically or with the mouse.

The acquired minimum and maximum value is indicated as well as the inner temperature of the pyrometer. The emissivity is changeable during the measurement at any time.

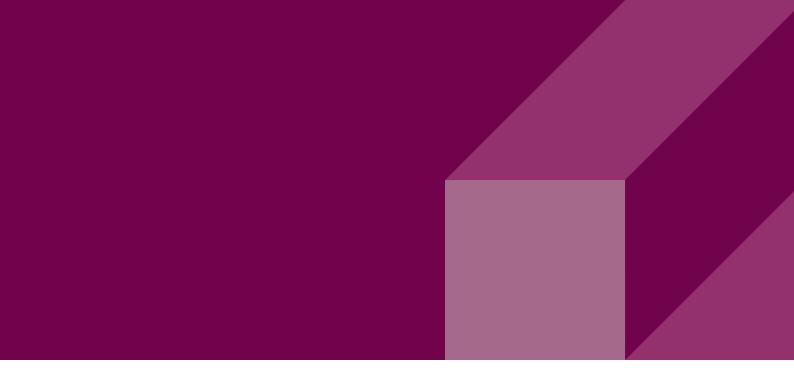
Infrared Calculator

After input of the aperture and the focused spot size per datasheet, the calculation of spot sizes at non-focused distances is possible.



I/O Module allows users to trigger measurement externally and gives a potential free output contact.





ABOUT ADVANCED ENERGY

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

AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.



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PRECISION | POWER | PERFORMANCE

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