

High performance series

Infrared thermometers with highest optical resolution and double laser



Base Model	CSlaser	CSlaser	CSlaser	CTlaser	CTlaser
Type	LT / hs LT	2M	G5HF	LT / LTF	05M
Classification / special features	Single-piece two-wire sensor with electronics in sensing head	Single-piece two-wire sensor with electronics in sensing head for measurement of metal	Single-piece two-wire infrared thermometer for temperature measurement of glass	Two-piece sensor with separate electronic box with fast response time, incl. programming keys and display	Two-piece sensor with separate electronic box for high temp. measurement of liquid metal, incl. programming keys and display
Detector	Thermopile	InGaAs	Thermopile	Thermopile	Si
Sensing head exchangeable	–	–	–	■	■
Head cable shortening	■	■	■	■ [max. 6 m]	■ [max. 6 m]
Thread (sensing head)	M48x1.5	M48x1.5	M48x1.5	M48x1.5	M48x1.5
Spectral range	8–14 µm	1.6 µm	5.0 µm	8–14 µm	0.525 µm
Temperature ranges	LT: –30 °C ... 1000 °C hs LT: –20 °C ... 150 °C	L: 250 °C ... 800 °C H: 385 °C ... 1600 °C	200 ... 1650 °C	–50 °C ... 975 °C	1000 °C ... 2000 °C
Temperature resolution	LT: 0.1 K / hs LT: 0.025 K	0.1 K	0.1 K	LT: 0.1 K / LTF: 0.5 K	0.2 K
Optical resolution	50:1	300:1	45:1	LT: 75:1 LTF: 50:1	150:1
Option: CF lens	–	–	–	–	–
Smallest spot (CF optics/ add. CF lens)	1.4 mm @ 70 mm	0.5 mm @ 150 mm	1.6 mm @ 70 mm	LT: 0.9 mm @ 70 mm LTF: 1.4 mm @ 70 mm	–
Smallest spot (SF optics)	24 mm @ 1200 mm	3.7 mm @ 1100 mm	27 mm @ 1200 mm	LT: 16 mm @ 1200 mm LTF: 24 mm @ 1200 mm	7.3 mm @ 1100 mm
Sighting	Double laser	Double laser	Double laser	Double laser	Double laser
Response time (90 %)	150 ms	10 ms	30 ms	LT: 120 ms / LTF: 9 ms	1 ms
Accuracy	±1 °C or ±1 %	±(0.3 % T _{meas} +2 °C)	±1% or ±1 °C	LT: ±1 °C or ±1 % LTF: ±1.5 °C or ±1.5 %	±(0.3 % T _{meas} +2 °C)
Outputs analog: 0–20 mA / 4–20 mA / 0–5 V / 0–10 V / t/c (K/J)	– / ■ / – / – / –	– / ■ / – / – / –	– / ■ / – / – / –	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■
Second analog output	–	–	–	■	–
Interfaces: USB / RS232 / RS485 / Profibus / Ethernet	■ / – / – / – / –	■ / – / – / – / –	■ / – / – / – / –	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■
Signal processing: Peak / Valley / AVG / Advanced hold	■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■
T _{Amb} Head min.	–20 °C	–20 °C	–20 °C	–20 °C	–20 °C
T _{Amb} Head max.	85 °C	85 °C	85 °C	85 °C	85 °C
T _{Amb} Electronics max.	85 °C	85 °C	85 °C	85 °C	85 °C
Functional inputs/ number	– / –	– / –	– / –	■ / 3	■ / 3
External emissivity adjustment	–	–	–	■	■
External background temperature control	–	–	–	■	■
Trigger input for reset of hold functions	–	–	–	■	■
Digital I/O pins/ number	–	–	–	–	–
Simultaneous analog and digital output	■	■	■	■	■
Alarm output as alternative to analog output	■	■	■	■	■
Additional alarm output/ switching output	■	■	■	■	■
Voltage supply	5–30 V DC	5–30 V DC	5–28 V DC	8–36 V DC	8–36 V DC
Standard cable length	3 m	3 m	3 m	3 m	3 m
Cable length options	8 / 15 m	8 / 15 m	3 m / 8 m / 15 m	8 / 15 m	8 / 15 m

Spot size calculator:
www.optris.com/spot-size-calculator



CTlaser	CTlaser	CT XL	CTlaser	CTlaser	CTlaser	CTratio
1M / 2M	3M	3M	MT / F2 / F6	G5	P7	1M
Two-piece sensor with separate electronic box for high temp. measurement of metal, incl. programming keys and display	Two-piece sensor with separate electronic box for low temp. measurement of metal, incl. programming keys and display	Two-piece sensor with separate electronic box for laser applications, incl. programming keys and display (no laser)	Two-piece sensor with separate electronic box incl. progr. keys and display for measurement: MT: through flames F2: CO ₂ flame gas F6: CO flame gas	Two-piece sensor with separate electronic box for measurement of glass, incl. programming keys and display	Two-piece sensor with separate electronic box for measurement of plastic foils, incl. programming keys and display	Ratio pyrometer with separate electronic box for high temp. measurement of metal feat. glass fiber cable and laser, incl. programming keys and display
1M: Si / 2M: InGaAs	Extended InGaAs	Extended InGaAs	Thermopile	Thermopile	Thermopile	Si sandwich
■ [+CT 1M / 2M]	■ [+CT 3M]	–	■	■	■	–
■ [max. 6 m]	■ [max. 6 m]	■	■ [max. 6 m]	■ [max. 6 m]	■ [max. 6 m]	–
M48x1.5	M48x1.5	M30x1	M48x1.5	M48x1.5	M48x1.5	M18x1
1M: 1.0 µm 2M: 1.6 µm	2.3 µm	2.3 µm	MT: 3.9 µm / F2: 4.24 µm / F6: 4.64 µm	5.0 µm	7.9 µm	0.7 – 1.1 µm
1ML: 485 °C ... 1050 °C 1MH: 650 °C ... 1800 °C 1MH1: 800 °C ... 2200 °C 2ML: 250 °C ... 800 °C 2MH: 385 °C ... 1600 °C 2MH1: 490 °C ... 2000 °C	L: 50 °C ... 400 °C H: 100 °C ... 600 °C H1: 150 °C ... 1000 °C H2: 200 °C ... 1500 °C H3: 250 °C ... 1800 °C	H: 100 °C ... 600 °C H1: 150 °C ... 1000 °C H2: 200 °C ... 1500 °C H3: 250 °C ... 1800 °C	200 °C ... 1650 °C	L: 100 °C ... 1200 °C H: 250 °C ... 1650 °C HF: 200 °C ... 1650 °C	0 °C ... 710 °C	700 °C ... 1800 °C
0.1 K	0.1 K	0.1 K	0.1 K	L: 0.1 K / H, HF: 0.2 K	0.5 K	0.1 K (> 900 °C)
L: 150:1 H: 300:1	L: 60:1 / H: 100:1 / H1-H3: 300:1	H: 100:1 H1-H3: 300:1	45:1	L/HF: 45:1 H: 70:1	45:1	40:1
–	–	–	–	–	–	–
0.5 mm @ 150 mm	0.5 mm @ 150 mm	0.5 mm @ 150 mm	1.6 mm @ 70 mm	1 mm @ 70 mm	1.6 mm @ 70 mm	7.7 mm @ 305 mm
3.7 mm @ 1100 mm	11 mm @ 1100 mm	11 mm @ 1100 mm	27 mm @ 1200 mm	17 mm @ 1200 mm	27 mm @ 1200 mm	31.3 mm @ 1143 mm
Double laser	Double laser	–	Double laser	Double laser	Double laser	Laser
1 ms	1 ms	1 ms	10 ms	L: 120 ms / H: 80 ms HF: 10 ms	150 ms	5 ms
±(0,3% T _{meas} + 2 °C)	±(0,3% T _{meas} + 2 °C)	±(0,3% T _{meas} + 2 °C)	±1.5 °C or ±1 %	±1.5 °C or ±1 %	±1.5 °C or ±1 %	±(0,5% T _{meas} + 1 °C)
■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / –
–	–	–	■	■	■	–
■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	– / – / – / – / –
■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■
–20 °C	–20 °C	–20 °C	–20 °C	–20 °C	–20 °C	–20 °C
85 °C	85 °C	85 °C	85 °C	85 °C	85 °C	250 °C
85 °C	85 °C	85 °C	85 °C	85 °C	85 °C	85 °C
■ / 3	■ / 3	■ / 3	■ / 3	■ / 3	■ / 3	– / –
■	■	■	■	■	■	–
■	■	■	■	■	■	–
■	■	■	■	■	■	■ (via I/O pins)
–	–	–	–	–	–	■ / 2
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	■ (via I/O pins)
8–36 V DC	8–36 V DC	8–36 V DC	8–36 V DC	8–36 V DC	8–36 V DC	8–36 V DC
3 m	3 m	3 m	3 m	3 m	3 m	3 m
8 / 15 m	8 / 15 m	–	8 / 15 m	8 / 15 m	8 / 15 m	6 / 10 / 15 / 22 m