

Compact series

innovative infrared technology

Spot size calculator:
<https://www.optris.global/spot-size-calculator>

Small, compact infrared thermo-
meters, ideal for use in cramped
and hot surroundings



Basic model	CS	CSmicro	CSmicro	CSmicro	CSmicro	CT	CTfast	CThot	CT	CT	CT	CT
Type	LT	LT02 / LT15 (H) / LT 22 H	LT15 HS	2M	3M	LT02 / LT15 / LT22	LT15F / LT25F	LT02H / LT10H	1M / 2M	3M	G5	P3 / P7
Classification / special features	Single-piece sensor with smart LED display (self diagnostics, aiming support, alarm, temperature code)	Single-piece sensor with electronics in cable; smart LED display	Single-piece two-wire sensor with electronics in cable; high thermal sensitivity; smart LED display	Single-piece sensor for temp. measurements on metal; electronics in cable; smart LED display	Single-piece sensor for temp. measurements on metal; electronics in cable; smart LED display	Two-piece sensor with separate electronic box incl. programming keys and display	Two-piece sensor with fast response time and separate electronic box incl. programming keys and display	Two-piece sensor for hot surroundings with separate electronic box incl. programming keys and display	Two-piece sensor for high temp. meas. of metal with separate electronic box incl. progr. keys and display	Two-piece sensor for low temp. meas. of metal with separate electronic box incl. progr. keys and display	Two-piece sensor for temp. meas. of glass with separate electronic box incl. progr. keys and display	Two-piece sensor for temp. meas. on thin plastic film and glass (P7) with separate electronic box incl. progr. keys and display
Detector	Thermopile	Thermopile	Thermopile	InGaAs	Ext. InGaAs	Thermopile	Thermopile	Thermopile	1M: Si / 2M: InGaAs	Extended InGaAs	Thermopile	Thermopile (P7)
Sensing head exchangeable	-	-	-	-	-	■	-	■	■	■	■	-
Head cable shortening	■	■ (behind electronics)	■ (behind electronics)	■ (behind electronics)	■ (behind electronics)	■ [-0.1 K/m]	■ [max. 3 m]	■ [-0.1 K/m]	■ [max. 3 m]	■	■ [-0.1 K/m]	-
Thread (sensing head)	M12x1	M12x1	M18x1	M12x1	M12x1	M12x1	M12x1	M18x1	M12x1	M12x1	M12x1	M18x1
Spectral range	8–14 μm	8–14 μm	8–14 μm	1.6 μm	2.3 μm	8–14 μm	8–14 μm	8–14 μm	1M: 1.0 μm / 2M: 1.6 μm	2.3 μm	5.0 μm	P3: 3.43 μm / P7: 7.9 μm
Temperature ranges	-40 °C ... 1030 °C	-50 °C ... 1030 °C	-20 °C ... 150 °C	2ML: 250 °C ... 800 °C 2MH: 385 °C ... 1600 °C	3ML: 50 °C ... 350 °C 3MH: 100 °C ... 600 °C	LT02: -50 °C ... 600 °C LT15: -50 °C ... 600 °C LT22: -50 °C ... 975 °C	-50 °C ... 975 °C	-40 °C ... 975 °C	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	L: 100 °C ... 1200 °C H: 250 °C ... 1650 °C	P3: 50 °C ... 400 °C P7: 0 °C ... 710 °C
Temperature resolution	0.1 K	0.1 K	0.025 K [>20 °C]	0.1 K	0.1 K	0.1 K	LT15F: 0.2 K LT25F: 0.4 K	0.25 K	0.1 K	0.1 K	L: 0.1 K H: 0.2 K	P3: 0.1 K / P7: 0.5 K
Optical resolution	15:1	LT02: 2:1 / LT15 (H): 15:1 / LT22 H: 22:1	15:1	2ML: 40:1 2MH: 75:1	3ML: 22:1 3MH: 33:1	LT02: 2:1 / LT15: 15:1 / LT22: 22:1	LT15F: 15:1 LT25F: 25:1	LT02H: 2:1 LT10H: 10:1	L: 40:1 H: 75:1	L: 22:1 / H: 33:1 / H1-H3: 75:1	L: 10:1 H: 20:1	P3: 15:1 P7: 10:1
Option: CF lens	■	■	■	■	■	■	■	■	■	■	-	-
Smallest spot (CF optics/ add. CF lens)	0.8 mm @ 10 mm	LT02: 2.5 mm @ 23 mm LT15 (H): 0.8 mm @ 10 mm LT 22 H: 0.6 mm @ 10 mm	0.8 mm @ 10 mm	2ML: 2.7 mm @ 110 mm 2MH: 1.5 mm @ 110 mm	3ML: 1.5 mm @ 30 mm 3MH: 1 mm @ 30 mm	LT02: 2.5 mm @ 23 mm LT15: 0.8 mm @ 10 mm LT22: 0.6 mm @ 10 mm	0.5 mm @ 10 mm	LT02H: 2.5 mm @ 23 mm LT10H: 1.2 mm @ 10 mm	1.5 mm @ 110 mm	3.4 mm @ 110 mm	-	P7: 1.2 mm @ 10 mm
Smallest spot (SF optics)	7 mm	7 mm	7 mm	7 mm	7 mm	7 mm	7 mm	7 mm	7 mm	7 mm	7 mm	7 mm
Sighting	LED aiming	LED aiming	LED aiming	LED aiming	LED aiming	-	-	-	-	-	-	-
Response time (90 %)	25 ms	14 ms	150 ms	8 ms (mA version: 20 ms)	8 ms (mA version: 20 ms)	150 ms	LT15F: 9 ms / LT25F: 6 ms	100 ms	1 ms	1 ms	L: 120 ms / H: 80 ms	P3: 100 ms / P7: 150 ms
Accuracy	±1.5 °C or ±1.5 %	±1 °C or ±1 %	±1 °C or ±1 %	±(0.3 % T _{Meas} + 2 °C)	±(0.3 % T _{Meas} + 2 °C)	±1 °C or ±1 %	±2 °C or ±1 %	±1.5 °C or ±1 %	±(0.3 % T _{meas} + 2 °C)	±(0.3 % T _{meas} + 2 °C)	±2 °C or ±1 %	P3: ±3 °C or 1 % P7: ±1.5 °C or 1 %
Outputs analog: 0–20 mA / 4–20 mA / 0–5 V / 0–10 V / t/c (K/J)	- / - / ■ / ■ / ■	- / - / ■ / ■ / - or - / ■ / - / - / -	- / - / ■ / ■ / - or - / ■ / - / - / -	- / - / ■ / ■ / - or - / ■ / - / - / -	- / - / ■ / ■ / - or - / ■ / - / - / -	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■
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	-20 °C	-20 °C	-20 °C	-20 °C	-20 °C	-20 °C	P3: 0 °C / P7: -20 °C
T _{Amb} Head max.	80 °C	LT02 / LT15: 120 °C LT15 H / LT22 H: 180 °C	75 °C	125 °C	85 °C	LT02: 130 °C LT15 / LT22: 180 °C	120 °C	250 °C	1M: 100 °C 2M: 125 °C	85 °C	85 °C	P3: 75 °C / P7: 85 °C
T _{Amb} Electronics max.	80 °C	80 °C / 75 °C (mA version)	80 °C / 75 °C (mA version)	80 °C / 75 °C (mA version)	80 °C / 75 °C (mA version)	85 °C	85 °C	85 °C	85 °C	85 °C	85 °C	P3: 75 °C / P7: 85 °C
Functional inputs/ number	■ / 1	■ / 1	■ / 1	■ / 1	■ / 1	■ / 3	■ / 3	■ / 3	■ / 3	■ / 3	■ / 3	■ / 3
External emissivity adjustment	■ (via V _{cc} adjust)	■ (mV version)	■ (mV version)	■ (mV version)	■ (mV version)	■	■	■	■	■	■	■
External background temperature control	■	■ (mV version)	■ (mV version)	■ (mV version)	■ (mV version)	■	■	■	■	■	■	■
Trigger input for reset of hold functions	■	■	■	■	■	■	■	■	■	■	■	■
Digital I/O pins/ number	-	-	-	-	-	-	-	-	-	-	-	-
Simultaneous analog and digital output	-	■ (mA version only)	■ (mA version only)	■ (mA version only)	■ (mA version only)	■	■	■	■	■	■	■
Alarm output as an alternative to analog output	■	■	■	■	■	■	■	■	■	■	■	■
Additional alarm output/ switching output	■	■	■	■	■	■	■	■	■	■	■	■
Voltage supply	5–30 V DC	5–30 V DC	5–30 V DC	5–30 V DC	5–30 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	8–36 V DC
Standard cable length	1 m	0.5 m + 0.5 m	0.5 m + 0.5 m	0.5 m + 0.5 m	0.5 m + 0.5 m	1 m	1 m	3 m	3 m	3 m	3 m	3 m
Cable length options	3 / 8 / 15 m	Options up to 9 m	Options up to 9 m	Options up to 9 m	Options up to 9 m	3 / 8 / 15 m	3 / 8 / 15 m	8 / 15 m	8 / 15 m	-	8 / 15 m	P3: 8 m / P7: 8 m, 15 m