

Compact series

Small, compact infrared thermometers, ideal for use in cramped and hot surroundings



Base Model	CS	CSmicro	CSmicro 2W	CSmicro 2W	CSmicro 2W
Type	LT	LT02 / LT15 / 3M	LT15/LT15H/LT22H	hs LT	2M
Classification / special features	Single-piece sensor with smart LED display (self diagnostics, aiming support, alarm, temperature code)	Single-piece sensor with electronics in cable and smart LED display (aiming support, alarm, temperature code)	Single-piece two-wire sensor with electronics in cable; smart LED display (aiming support, alarm, temperature code)	Single-piece two-wire sensor with electronics in cable with high thermal sensitivity; smart LED display; temperature code	Single-piece two-wire sensor with electronics in applications; smart LED display; temperature code
Detector	Thermopile	Thermopile/3M: Ext. InGaAs	Thermopile	Thermopile	InGaAs
Sensing head exchangeable	-	-	-	-	-
Head cable shortening	■	■ (behind electronics)	■ (behind electronics)	■ (behind electronics)	■ (behind electronics)
Thread (sensing head)	M12x1	M12x1	M12x1	M18x1	M12x1
Spectral range	8–14 μm	8–14 μm / 3M: 2.3 μm	8–14 μm	8–14 μm	1.6 μm
Temperature ranges	-40 °C... 1030 °C	-40 °C... 1030 °C 3ML: 50 °C... 350 °C 3MH: 100 °C... 600 °C	-40 °C... 1030 °C	-20 °C... 150 °C	2ML: 250 °C... 800 °C 2MH: 385 °C... 1600 °C
Temperature resolution	0.1 K	0.1 K	0.1 K	0.025 K [>20 °C]	0.1 K
Optical resolution	15:1	LT02: 2:1 / LT15: 15:1 / 3ML: 22:1 / 3MH: 33:1	LT15: 15:1 / LT15H: 15:1 / LT22H: 22:1	15:1	2ML: 40:1 2MH: 75:1
Option: CF lens	■	■	■	■	■
Smallest spot (CF optics/add. CF lens)	0.8 mm @ 10 mm	LT02: 2.5 mm @ 23 mm LT15: 0.8 mm @ 10 mm 3M: 1.5 mm @ 10 mm	LT15: 0.8 mm @ 10 mm LT15H: 0.8 mm @ 10 mm LT22H: 0.6 mm @ 10 mm	0.8 mm @ 10 mm	2MH: 1.5 mm @ 110 mm 2ML: 2.7 mm @ 110 mm
Smallest spot (SF optics)	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	30 ms	LT: 30 ms / LTH: 150 ms	150 ms	10 ms
Accuracy	±1.5 °C or ±1.5 %	±1.5 °C or ±1.5 %	±1.5 °C or ±1 %	±1 °C or ±1 %	±(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.	80 °C	LT02/LT15: 120 °C 3M: 85 °C	LT15: 120 °C LT15H/LT22H: 180 °C	75 °C	125 °C
T _{Amb} Electronics max.	80 °C	80 °C	75 °C	75 °C	75 °C
Functional inputs/ number	■ / 1	■ / 1	- / -	- / -	- / -
External emissivity adjustment	■ (via V _{cc} adjust)	■ (via V _{cc} adjust)	-	-	-
External background temperature control	■	■	-	-	-
Trigger input for reset of hold functions	■	■	-	-	-
Digital I/O pins/ number	-	-	-	-	-
Simultaneous analog and digital output	-	-	■	■	■
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
Standard cable length	1 m	1 m	1 m	4 m	1 m
Cable length options	3 / 8 / 15 m	Options up to 9 m	Options up to 9 m	-	Options up to 9 m

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



CT	CTfast	CThot	CT	CT	CT	CT
LT02 / LT15 / LT22	LT15F / LT25F	LT02H / LT10H	1M / 2M	3M	G5	P3 / P7
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
Thermopile	Thermopile	Thermopile	1M: Si / 2M: InGaAs	Extended InGaAs	Thermopile	Thermopile (P7)
■	-	-	■ [+CTlaser 1M/2M]	■ [+CTlaser 3M]	■	-
■ [-0.1 K/m]	■ [max. 3 m]	■ [-0.1 K/m]	■ [max. 3 m]	■	■ [-0.1 K/m]	-
M12x1	M12x1	M18x1	M12x1	M12x1	M12x1	M18x1
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
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
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
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
■	■	■	■	■	-	-
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
7 mm	7 mm	7 mm	7 mm	7 mm	7 mm	7 mm
-	-	-	-	-	-	-
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
±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 %
■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■
■	■	■	-	-	■	■
■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■	■ / ■ / ■ / ■ / ■
■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■	■ / ■ / ■ / ■
-20 °C	-20 °C	-20 °C	-20 °C	-20 °C	-20 °C	P3: 0 °C / P7: -20 °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
85 °C	85 °C	85 °C	85 °C	85 °C	85 °C	P3: 75 °C / P7: 85 °C
■ / 3	■ / 3	■ / 3	■ / 3	■ / 3	■ / 3	■ / 3
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	■
-	-	-	-	-	-	-
■	■	■	■	■	■	■
■	■	■	■	■	■	■
■	■	■	■	■	■	■
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
1 m	1 m	3 m	3 m	3 m	3 m	3 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