PSC-SSS (Smart Small Sensor)

Precise non-contact temperature measurement from -50°C to 975°C

FEATURES

- One of the smallest infrared sensors worldwide with 22:1 optical resolution
- Rugged and usable up to 180°C ambient temperature without cooling
- Separate electronics with easy accessible programming keys and LCD backlit display
- Selectable analog output: 0/4-20 mA, 0-5 V, 0-10 V, thermocouple type K or J
- Optional USB, RS485, RS232 interface, relay outputs (2 x optically isolated), CAN-Bus, Profibus DP, Ethernet
- Installation of up to 32 sensing heads

General Specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	sensing head: -20°C to 180°C (130°C at LT02) electronics: 0°C to 85°C
Storage temperature	sensing head: -40 to 180°C (130°C at LT02) electronics: -20°C to 85°C
Relative humidity	10 - 95%, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11-200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	sensing head 40 g electronics 420 g

Electrical Specifications

Outputs/analog	channel 1: 0/4 - 20 mA, 0-5/10 V, thermo-couple J, K channel 2: sensind head temperature (-20°C - 180°C as 0-5 V or 0-10 V), alarm output
Output/alarm	24 V/50 mA (open collector)
Optional	relay: 2 x 60 V DC/42 V AC$_{eff}$; 0.4 A; optically isolated
Outputs/digital (optional)	USB, RS232, RS485 (optional), CAN-Bus, Profibus DP, Ethernet
Output impedances	mA max. 500 Ω (with 8-36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	1 m (standard), 3 m, 8 m, 15 m
Current draw	max. 100 mA
Power Supply	8-36 V DC

Measurement Specifications

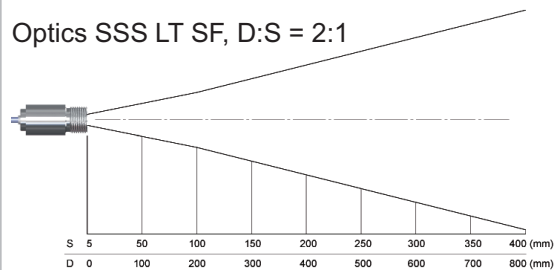|	
Temperature range (scalable via programming keys or software)	-50°C to 975°C (LT22) -50°C to 600°C (LT15) -50°C to 600°C (LT02)
Spectral range	8-14 μm
Optical resolution (90% energy)	22:1 (precision glass optics) 15:1 (precision glass optics) 2:1 (with flat front window)
CF-lens (optional)	0.6 mm @ 10 mm (LT22) 0.8 mm @ 10 mm (LT15) 2.5 mm @ 23 mm (LT02)
System accuracy[1],[2] (at ambient temp. 23 ±5°C)	± 1% or ± 1°C
Repeatability[1],[2] (at ambient temp. 23 ±5°C)	± 0.5% or ± 0.5°C
Temperature resolution (display)	0.1°C
NETD[2],[3]	0.05 K(LT22/LT15) 0.1 K (LT02)
Response time	150 ms (95 %)
Emissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Transmissivity/Gain (adjustable via programming keys or software)	0.100 - 1.100
Signal processing (parameter adjustable via pro-gramming keys or software, respectively)	peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	PSCconnect

[1] whichever is greater

[2] at object temperatures > 0°C, ε = 1
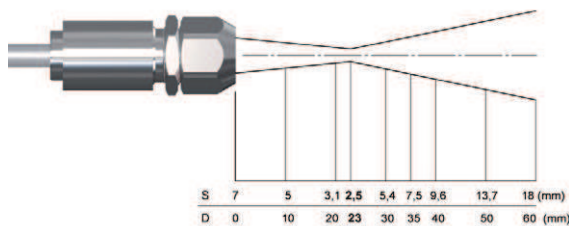
[3] at time constant 200 ms and T_{Obj} 25°C
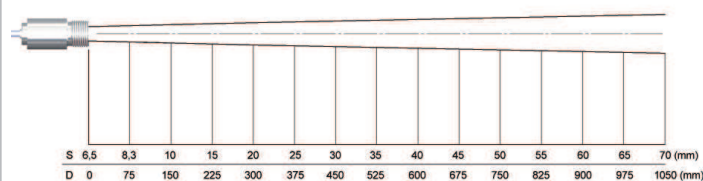
Innovative Infrared Technology
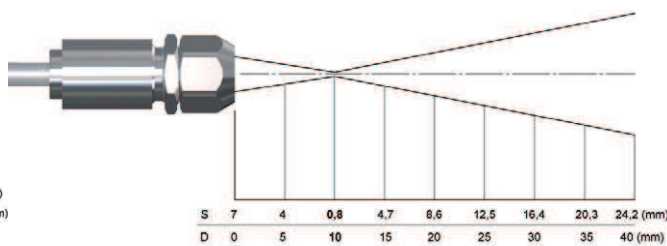
Optical Specifications

Optics SSS LT SF, D:S = 2:1

S	5	50	100	150	200	250	300	350	400 (mm)
D	0	100	200	300	400	500	600	700	800 (mm)

Optics SSS LT CF, D:S = 2:1 (far field = 2.5:1)

S	7	5	3,1	2,5	5,4	7,5	9,6	13,7	18 (mm)
D	0	10	20	23	30	35	40	50	60 (mm)

Optics SSS LT SF, D:S = 15:1

S	6,5	8,3	10	15	20	25	30	35	40	45	50	55	60	65	70 (mm)
D	0	75	150	225	300	375	450	525	600	675	750	825	900	975	1050 (mm)

Optics SSS LT CF, D:S = 15:1 (far field = 1.5:1)

S	7	4	0,8	4,7	8,6	12,5	16,4	20,3	24,2 (mm)
D	0	5	10	15	20	25	30	35	40 (mm)

Optics SSS LT SF, D:S = 22:1

S	6,5	8,3	10	15	20	25	30	35	40	45	50 (mm)
D	0	110	220	330	440	550	660	770	880	990	1100 (mm)

Optics SSS LT CF, D:S = 22:1 (far field = 1.5:1)

S	7	4	0,8	4	8	12	16	20	24 (mm)
D	0	5	10	15	20	25	30	35	40 (mm)
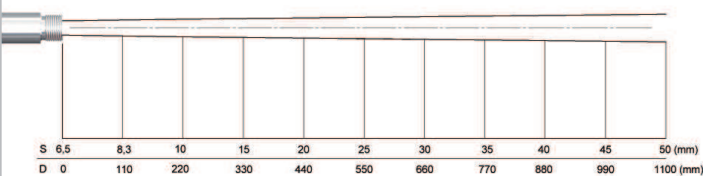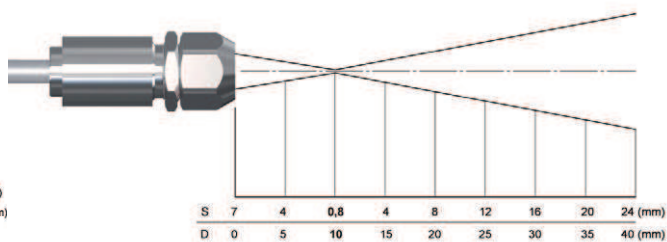
Versions with built-in CF lenses

Optics SSS LT CF, D:S = 15:1 (far field = 5:1)

S	6,5	5	4	3,4	5,4	8,4	13,3	18,3	23,2	28,2	33,1 (mm)
D	0	25	40	50	60	75	100	125	150	175	200 (mm)

Optics SSS LT CF, D:S = 22:1 (far field = 6:1)

S	6,5	4,4	3,2	2,3	4,1	6,7	11,1	15,5	19,9	24,3	28,7 (mm)
D	0	25	40	50	60	75	100	125	150	175	200 (mm)
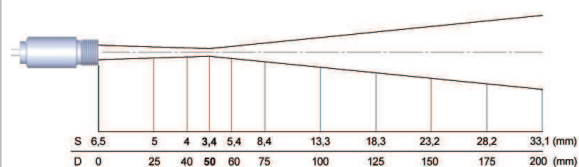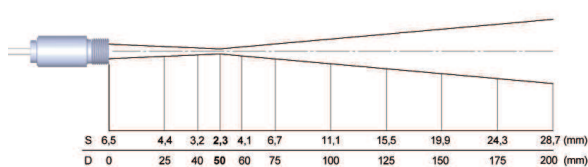
Dimensions

Sensing head

Electronics