

Infrared Temperature



INFRAREDS

Model Number	OSXL-101	IR-USB	UWIR-2-NEMA	OS530E Series	OS-DT8855W	HHM290	OS523E/524E/533E and OS534E-LR	OSXL450	OS561	OS562	OS540	OS423-LS
Price	\$2900	\$175	\$285	\$295	\$279	\$245	\$625 - \$1095	\$65	\$85	\$125	\$95	\$199
Page	J-7	J-10	J-11	J-13	J-18	J-19	J-23/27/29	J-31	J-32	J-33	J-34	J-35
Temperature Range	-20 to 300°C (-4 to 572°F)	-18 to 538°C (0 to 1000°F)	-18 to 538°C (0 to 1000°F)	-30 to 871°C (-22 to 1600°F)	-50 to 1370°C (-58 to 2498°F)	-20 to 550°C (-4 to 1022°F)	18 to 2482°C (0 to 4500°F)	-20 to 320°C (-4 to 608°F)	-60 to 500°C (-76 to 932°F)	-60 to 760°C (-76 to 1400°F)	-20 to 500°C (-4 to 932°F)	-60 to 860°C (-76 to 1580°F)
Accuracy	±2% rdg or ±3°C	±2% rdg or 2.2°C (4°F)	±2% rdg or 2.2°C (4°F)	±1% of rdg or 3°F	±1.5 rdg or 3°C (5°F)	2% reading or 1.7°C	±1% of rdg or 2°F	±2°C (3°F) or 2% rdg	±2% rdg or 2°C (4°F)	±2% rdg or 2°C (4°F)	3%	±2% rdg or 2°C (4°F)
Repeatability		±1% rdg	±1% rdg	±1% rdg +1 digit		1°C to 1°F	±(1% rdg +1 digit)	2% rdg or 3°F			1% rdg	
Emissivity	0.01 to 1.00	0.10 to 1.00	0.10 to 1.00	0.1 to 1.00 in 0.01 steps	0.10 to 1.00	0.1 to 1.0	0.10 to 1.00 in 0.01 increments	0.95	0.95	0.10 to 1.00	0.95	0.10 to 1.00
Spectral Response		5 to 14 μ	5 to 14 μ	8 to 14 μ	8 to 14 μ	8 to 14 μ	8 to 14 μ 2 to 2.5 μ	7 to 18 μ	8 to 14 μ	8 to 14 μ	6 to 14 μ	8 to 14 μ
Response Time to 63% Full Scale	3 frames per second	100 ms	100 ms	100 msec	Less than 1 sec	1.5 sec	100 msec	500 msec	1 sec	1 sec	500 ms	90% 1 sec
Outputs	Ethernet	USB	USB	1 mV ² , RS232	USB		mV/deg- RS232					
Display	Thermopile array	PC	PC	Backlit LCD	Backlit LCD	LCD	Backlit LCD	Backlit LCD	Backlit LCD	Backlit LCD	LCD	Backlit
Resolution	2256 pixel	0.1°C 0.1°F	0.1°C 0.1°F	1°	1°	1°C or 1°F	1°C or 1°F	0.1°C	0.1°C (0.1°F) -9.9 to 199.9	0.1°C (0.1°F) -9.9 to 199.9		-9.9 to 199.9, 0.1°C/°F
Power	9 to 30 Vdc	USB port	3.6V lithium "C" cell	4 "AA" batteries or AC adaptor	9V or AC adaptor	6 "AA" alkaline batteries	4 "AA" batteries or AC adaptor	9 V	2 "AAA" batteries	2 "AAA" batteries	9V battery	2 "AAA" batteries
Battery Life			1.5 years @ 1 sample per minute	240 hrs with lithium battery		100 hrs typical with no laser	60 hrs alkaline, 10 days lithium	12 hrs with laser on	180 hrs without laser	180 hrs without laser	9 hrs	140 hrs, no laser or backlit
Min. Spot Size vs Distance (FOV)**		0.4" @ Din	6:1	0.35" @ 24" 1.0" @ 30"	30:1	0.5" @ 0"	See specifications	6:1	10:1	12:1	14 mm (0.55") 8:1; 10:1; 12:1	30:1
Aiming		Laser	Laser	Built-In switchable laser circle/dot sight	Laser	Built-in laser circle/dot	Switchable laser circle/dot or sighting scope	Laser dot or circle	Laser Circle	Laser Circle	Laser	Laser circle
Alarms	Two SPST			Hi and low alarm standard	Hi and low alarm standard		Hi and low alarm standard					✓
Data Storage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Switchable °F/°C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Tripod Mount				✓	✓	✓	✓					
Other Features	Thermal imager CE	Free logging software	Wireless transmitter CE	Backlit LCD display audible buzzer RS232 free software CE	Wireless transmission	Multimeter thermometer backlit display CE	Backlit LCD audible buzzer RS232 free software CE	Circle/dot laser CE	NIST certificate CE	K/T/C input, NIST cert 5 math modes CE	Series with different features CE	4 math modes, white LCD light CE

* Meters shown with these sensors are for reference only and not included with the basic unit.

✓ = has this feature.

** FOV = Field of View

Selection Guide

See OMEGA's Complete Line of Blackbody Calibration Sources (Section K) Used to Test and Calibrate Your Non-Contact and Infrared Pyrometers and Transmitters



Model BB701 Hot/Cold
0 to 300°F, 2.5" Target Plate
0.95 Emissivity



Model BB702
90 to 420°F, 2.5" Target Plate
0.95 Emissivity



Model BB703
90 to 752°F, 1.125" Target Plate
0.95 Emissivity



Model BB704
212 to 752°F, 4" Target Plate
0.95 Emissivity



Model BB705
212 to 2190°F, 1.75" Cavity
Cone, 0.99 Emissivity

Model Number	OS425-LS	OS3750 Series	OS651, OS650 KIT and OS500,	OS91 and OS93	OS950	OS-610 and OS-620	OS-FS/OS-PAL and OS303	OS685
Price	\$259	\$1425	\$435 - \$1595	\$699 - \$849	\$359	\$495	\$49 - \$139	\$149
Page	J-36	J-37	J-39	J-39	J-40	J-41	J-42	J-43
Temperature Range	-60 to 1000°C (-76 to 1832°F)	300 to 1000°C 600 to 2000°C 400 to 3000°C	-29 to 1093°C (-20 to 2000°F)	-46 to 228°C (-50 to 550°F)	-45 to 871°C (-50 to 1600°F)	-55 to 315°C (-67 to 600°F) (see ranges)	-55 to 250°C (-67 to 482°F)	-20 to 500°C (-4 to 932°F)
Accuracy	Target temp 33 -100°C ±2% of rdg or 2°C (4°F)	6°C (11°F)	1.0% reading +1 digit	1.0% reading +1 digit	±1% of reading	±1% rdg + 1 digit OS614; ±1°F (0.5°C) +1 digit	2% Full Scale	±1% rdg or 1°C
Repeatability		±1°C	OS91: ±0.1°C or F OS92: ±1°F	OS91: ±0.1°C or F OS92: ±1°F	±0.1°C (0.1°F)	±0.5 rdg + 1 digit	3°F/2°C or 2% full scale	±0.5% rdg or 0.5°C
Emissivity	Adj. 0.1 to 1 0.01 step	0.1 to 1.000	Automatic 0.1 to 1.0	Automatic 0.1 to 1.0	Automatic above 0.8	0.2 to 1.0	0.95 adjustable	0.95 or
Spectral Response	8 to 14 μ	1.55, 0.9, 2 color	2 to 20 μ	2 to 20 μ	2 to 20 μ	8 to 14 μ	8 to 14 μ	8 to 14 μ
Response Time	1 sec (90%)	250 msec	50 to 100 msec	50 to 100 msec	0.1 sec	1 sec	0.05 sec	500 ms
Outputs		RS232			RS232	1 mV/°		
Display	Backlit LCD	LCD	OS91: LED LCD OS92: LED	OS91: LED current, max, min OS92: LED	LED	LCD current, max, min	LCD	LCD
Resolution	0.1°C (0.1°F)	1°	0.1°C, 1°F	0.1°C, 1°F	0.1°	1°, 0.1, OS613	1°C or 1°F	0.1 up to 200
Power	2 "AAA" batteries	2 "AA" batteries	9V battery	9V battery 110 Vac adaptor	9V	9V battery or alkaline battery	One 9V batteries	2 "AAA" batteries
Battery Life		50 hrs	Approx 5000 readings	Approx 5000 readings	5000 readings	200 hrs		
Min. Spot Size vs Distance (FOV)**	50:1	20 mm (0.8") 4 m (13')	0.25" when touching	0.25" when touching	6.4 mm (0.25") when touching	0.25" @ 0.75'	3" @ 1" dia.	10:1
Aiming	Laser Circle	Through lens	Visual	Visual	Visual	Visual	Visual or laser	Visual or laser
Alarms	Display flash/beep							
Data Storage		500 points	Last reading	Last reading				
Switchable °F/°C	✓	✓		OS91 only	✓		✓	
Mounting	Magnetic swivel mount	Tripod Mount				Tripod Mount		
Other Features	AVG, dif mode	Optional software for PC	Scan/lock, auto, emissivity comp; audible assist	Scan/lock, auto, emissivity comp; audible assist high accuracy	NIST traceable certificate	Stand mount general purpose, low temp model,	Laser sighting	
	CE	CE	CE		CE		CE	CE

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For Additional Infrared Thermocouple Selection See Chart on Page J-45



Model Number	OS546	OSM101	OS36	OS36SM	OS37 OS38	OS88000	OS88000-K-1200	OS136 OS137	OS35	OS100E	OS35RS
Price	\$105	\$115	\$255	\$99	\$569 - \$1105	\$265	\$199	\$175 - \$345	\$359	\$195	\$265
Page	J-43	J-44	J-47	J-55	J-58	J-59	J-60	J-61	J-65	J-67	J-69
Temperature Range	-30 to 550°C (-22 to 1022°F)	-18 to 538°C 0 to 1000°F	-18 to 250°C (0 to 480°F)	-18 to 260°C (0 to 500°F)	-45 to 2760°C (-50 to 5000°F)	0 to 250°C (-18 to 480°F)	-73 to 650°C (-100 to 1200°F)	-18 to 202°C (0 to 400°F)	-30 to 1000°C (-22 to 1832°F)	-18 to 538°C (0 to 1000°F)	0 to 500°C (32 to 932°F)
Accuracy	±2% rdg or 3°C (6°F)	±3% rdg or 2.2°C	±2% range	±2% range	±2% range	±2% range	±2% rdg or 1°C (±2°F)	±3% rdg or 4.4°C	1% rdg ±1°C (2°F)	±2% rdg or ±4°F	±3% range
Repeatability		±1% rdg	±1% rdg	±1%	±1% rdg	±1% rdg	±1% rdg	±1% rdg	±0.1°C	±1% rdg	±1% rdg
Emissivity	0.1 to 1.00 or 0.95	0.1 to 1.00	0.9	0.9	Adjustable	Auto comp. from 0.8 to 1.0	Auto comp. from 0.8 to 1.0	0.95 in 0.01 steps	0.90	0.1 to 1.0 in 0.01 steps	0.90
Spectral Response		5 to 14 μ	6 to 14 microns	6.5 to 14 μ	2 to 20 microns	6 to 14 μ	6.5 to 14 μ	5 to 14 μ	5.5 to 20 μ	5 to 14 μ	3 to 20 microns
Response Time	0.25 sec	150 msec	80 msec	150 msec	80 msec	80 msec	80 msec	150 msec	250 msec	150 msec	<250 ms
Outputs		K	J, K, T, E T/C's	K	J, K, R, S	J, K, T, T/C's	K, T/C E, T/C's	K, 10 mV/Deg 0 to 5 V, 0/10 V 4 to 20 mA	mA, V	mV, μ mA, V	0 to 10 Vdc 0 to 5 Vdc 4 to 20 mA
Display	3½ digit LCD		*			*	*				
Resolution	0.5°C (1°F)									1°	
Power	3 "AAA"	1 "AA" battery	Self-powered	Self-powered	Self-powered	Self-powered	Self-powered	12 to 24 Vdc	12 or 24 Vdc	12 to 24 Vdc	12 or 24 Vdc
Battery Life	90 hrs, typ laser off	1.6									
Min. Spot Size vs Distance (FOV)**	15 mm (0.59"), 10:1		60°	2:1	0.6° to 6°	60° FOV	60° FOV	6:1	3:1 or 20:1	6:1	3 mm (0.1")
Aiming	Circle/Do laser	Laser	Visual	Visual	Visual	Visual	Visual	Visual	Visual	Laser accessory	
Alarms	Set, Hi, Lo, Beep									✓	
Data Storage	Max, Min										
Switchable °F/°C	✓					✓				✓	
Mounting			Mounting bracket or mounting ring	Mounting bracket or mounting ring	Mounting bracket			Mounting bracket		Mounting bracket	
Other Features	Pocket hook and magnet hanger CE	Handheld CE	Self-powered emissivity correction 0.8-1.0 CE	Self-powered CE	Built-in air purge collar self-powered CE	Self-powered unique handheld surface probe	Hermetically sealed optics	NEMA 4 CE	RS232	NEMA 4 OS102E includes display CE	RS232 CE

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Model No.	OS1550	OS550A, OS550-BB	OS555A	OS65	OS66	OS1600, OS1700, OS1800	OS4000	iR2 Series	OS1592	Series 4121
Price	\$690	\$495	\$800	\$395 - \$550	\$995	\$780	\$1495	\$2995	\$2320	\$2195
Page No.	J-71	J-73	J-77	J-81	J-84	J-84	J-85	J-89	J-93	J-95
Temperature Range	0 to 1370°C (32 to 2500°F)	-18 to 1370°C (0 to 2500°F)	538 to 2482°C (1000 to 4500°F)	-57 to 500°C (70 to 1000°F)	800 to 1500°C (1500 to 3000°F)	-45 to 2500°C (-50 to 4500°F)	100 to 1600°C (212 to 2912°F)	300 to 3000°C (572 to 5432°F)	260 to 2482°C (500 to 4500°F)	98 to 463°C (210 to 865°F)
Accuracy	±1% rdg	±1% reading or ±3°F	±1% rdg	±1% rdg or ±2°F (1°C)	±1% rdg or or 3°F	±0.75% FS	±1% rdg	±0.2% of full scale	±1% reading or 3°F	±1% rdg or 2°C (4°F)
Repeatability	±2°F (1°C)	±1% rdg or ±1 digit	±1% rdg ±1 digit	±0.5% rdg ±1 digit	±0.5% rdg ±1 digit	±0.5% rdg	±0.2% of full scale	±0.75% of reading		
Emissivity	0.05 to 1.0	0.10 to 0.99	0.10 to 1.00	0.1 to 0.99 0.01 steps	0.1 to 0.99 in in 0.01 steps	0.1 to 0.99 0.1 to 1.0	0.05 to 0.99	2-color: N/A 0.1 to 1.0	0.1 to 1.0 Analog dial only	0.10 to 0.99
Spectral Response	8 to 14 microns	8 to 14 μ	2 to 2.5 μ	8 to 14 microns	0.85 to 0.95	0.8 to 14 microns	1.2 to 2.6 μ	0.85 to 1.15 μ	0.8 to 1.8 μ	1.0 to 2.7 μ
Response Time	50 msec	250 msec	100 ms	300 msec	300 msec	0.2 to 5.0 sec adjustable	1 msec	10 msec (0 to 63%/final value)	25 msec	10 msec
Outputs	4 to 20 mA	1 mV/° 0 to 5 Vdc 4 to 20 mA	mA, mV, V	J, K, 1 mV/° 4-20, 0-20 mA 0 to 5 Vdc	R, S, B, 1 mV/° 4 to 20 mA 0 to 5 Vdc, RS232	4 to 20 mA	mV, mA, V	2 control, alarm, DC pulse, current, voltage	1 mV/° 4 to 20 mA 0 to 5 Vdc	1 mV 4 to 20 mA 0 to 10 Vdc
Display	LCD	LCD	Backlit LCD	LCD		✓ (OS1800)			LCD	
Resolution		1°	1°		1%	1°		1°	1°	
Power	18 to 40 Vdc	7 to 24 Vdc	8 to 24 Vdc	9 to 30 Vdc	9 to 30 Vdc	10 to 40 Vdc	15 to 24 Vdc	80 to 250 Vac	18 to 36 Vdc	±15 Vdc
Min. Spot Size vs Distance (FOV)**	0.69" @ 20'	0.15" at 6'	0.5" @ 0'	0.25" @ 0.75'	0.25" @ 8"	0.5" @ 7"	0.025" @ 2"	25:1 Adj. focus from 8" to 14"	0.02" @ 6"	
Aiming	Visual laser accessory	Laser accessory	Laser	Visual	Visual with optional laser	Visual	Laser	Built-in laser sighting		
Alarms		Visual/audible	Hi/Low				Hi/Low	✓		
Switchable °C/°F		✓	✓		✓		✓	✓	✓	✓
Mounting	Mounting bracket	Mounting bracket Din Rail optional	Mounting bracket	Mounting bracket	Mounting bracket	Mounting bracket	Mounting bracket	Mounting bracket panel mount	Mounting bracket	Mounting bracket
Other Features	Optional water cooled shell, 4-wire design	RS232 output NEMA 4 CE	RS232 output NEMA 4 data logging software CE	RS232, viewing window accessory	Air/water cooling NEMA 4, 12 low cost CE	Peak hold Air purge collar Water cooling Adjustable response time CE	Relay contacts RS232 output data logging software CE	Fast response controller outputs, signal processing 2-color CE	NEMA-4 fiber optic backlit LCD CE	FM CSA

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