LAND®
AMETEK®

SPOT+

Smart high-precision pyrometers

The SPOT+ range of smart infrared pyrometers offers advanced industrial connectivity and visible light process video. Pyrometer readings and configuration settings are available on the rear display and remotely via web server or through SpotPro software.

MONOCHROMATIC PYROMETERS

M100, M160, M210, M3-5 and M390 Standard Body

The M-Series pyrometers cover a temperature range from 0 to 2500 °C / 32 to 4532 °F. Proven, reliable electronics and a precision optical system combine to give a pyrometer which delivers accurate, repeatable temperature measurement.

RATIO PYROMETERS

R100, R160, R210

The R-series pyrometers allow measurements to be made on objects with changing emissivity or where the field-of-view is obscured by smoke or dust.

FIBRE-OPTIC VARIANTS

M100, M160, R100 and R160

The use of flexible fibre-optics allows the optic head to be mounted in a hostile environment and the detector and electronics enclosure to be located several metres away. This allows measurement of inaccessible targets, even in areas with electromagnetic interference or high temperatures where water cooling isn't feasible.

SPOT+ is designed to be interchangeable with existing LAND fixed spot pyrometers.

FEATURES & BENEFITS

- **SPOTPro software** provides datalogging at up to 1 kHz data rate & control of the SPOT+ pyrometers when used with the SPOT Actuator.
- **Rapid response times** and smart onboard processing provides immediate live process control.
- **Precise process temperature control** improves product quality and reduces scrap.
- **Hazardous area housing** available to use the pyrometer in the harshest of environmental conditions.
- **SPOT+ M390 features advanced spectral filtering** to minimise interferences from flames and hot gases inside furnaces.

See degrees differently.

MONO PYROMETER MODELS

	M100	M160	M210	M390	M3-5	M100 FO	M160 FO
Measurement Range:	500 -1800 °C / 932 - 3272 °F	250 -1600 °C / 482 - 2912 °F	50 -1100 °C / 122-2012 °F	150 - 1800 °C 302 - 3272 °F	0 - 500 °C 32 - 932 °F	500 -1800 °C / 932 - 3272 °F	250 -1600 °C / 482 - 2912 °F
Extended Range:	500 -2500 °C / 932 - 4532 °F	-	-	-	-	-	-
Field of View (90% of energy):	200:1	200:1	60:1	30:1 †	30:1 †	100:1 3 m, 6 m and 10 m light guides available	
Detector Type:	Single Wave-length 1.0 µm	Single Wave-length 1.6 µm	Single Wave-length 2.3 µm	Single Wave-length 3.9 µm	Broadband 3-5 µm	Single Wave-length 1.0 µm	Single Wave-length 1.6 µm
Display:	Local with video streaming					Local display	
Settings:	Configure locally using the pyrometer interface or remotely (using the Web server or SPOTPro or IMAGEPro. Emissivity, mode, current output range, alarm logic output and thresholds, network settings, focus and LED, language and user name (focus and LED on standard body only)						
Sighting Image:	Local display and remote video streaming					Not available	
Focus Range:	300 mm / 11.8 in to infinity, locally or remotely adjusted					100 mm / 3.9 in to 500 mm 19.7 in manually adjusted	
LED Targeting:	Patented* pulsed green LED focus pattern					Red circle LED	
Mounting:	Full range of mountings and accessories available - see Mountings and Accessories Brochure or visit our website						
Measurement Accuracy:**	±0.25 % K or 2 K			±1 % K (T<1100 °C) ±1.5 % K (T>1100 °C)	1 % K	±0.25 % K or 2 K	
Repeatability:	<1 °C						
Resolution:	0.1 °C						
Noise:**	<0.5 °C RMS						
Sealing:	IP65						
Response Time:	1 ms to 10 s				10 ms to 10 s	1 ms to 10 s	
Analogue I/O:	Two 4-20 mA outputs, One 4-20 mA input, Contact closure input, Relay output						
Communications:	EtherNet/IP, REST API, Modbus TCP/IP, web server						
Processing Functions:	Peak/Valley Picking, Averager, Modemaster, CMD in sampling, CMD out alarms						
Power Req.:	Power over Ethernet or 19 to 30 V DC at the instrument; 8 W max consumption						
Software:	Live configuration and temperature display on any web browser. Optional SPOTPro or IMAGEPro software with data-logging, live and historical data trending, plus remote image capture, control of multiple instruments (image capture not available on fibre-optic versions)						
Languages:	Integrated multiple language selections: English, German, French, Italian, Spanish, Portuguese (Brazilian), Japanese, Chinese (simplified Mandarin), Korean, Russian, Polish						
Ambient Temp. Range:	5-60 °C specified, 0-70 °C operating before cooling required					Optic head up to 200 °C / 392 °F	
Warranty:	See our website at www.ametek-land.com for warranty details						

† 98% of energy
* Patent Number GB2497609
** Measurements within specification over 5-95% of range

SPOT+ SPECIFICATION SHEET

RATIO PYROMETER MODELS

	R100	R160	R210	R100 FO	R160 FO
Measurement Range:	550 -1800 °C / 1022 - 3272 °F (ratio) 400 -1800 °C / 752 - 3272 °F (overall) 700 to 3500 °C / 1292 to 6332 °F (all modes)†	550 -1600 °C / 1022 - 2912 °F (ratio) 250 -1600 °C / 482 - 2912 °F (overall)	125 -1100 °C / 257-2012 °F	550 -1800 °C / 1022 - 3272 °F (ratio) 400 -1800 °C / 752 - 3272 °F (overall)	550 -1600 °C / 1022 - 2912 °F (ratio) 250 -1600 °C / 482 - 2912 °F (overall)
Field of View (90% of energy):	200:1	200:1	60:1	100:1 3 m, 6 m and 10 m light guides available	
Detector Type:	Ratio Short Wavelength; Detector 1: 1.0 µm, Detector 2: 1.2 µm	Ratio Short Wavelength; Detector 1: 1.0 µm, Detector 2: 1.5 µm	Ratio Mid Wavelength; Detector 1: 2.1 µm, Detector 2: 2.4 µm	Ratio Short Wavelength; Detector 1: 1.0 µm, Detector 2: 1.2 µm	Ratio Short Wavelength; Detector 1: 1.0 µm, Detector 2: 1.5 µm
Display:	Local with video streaming			Local display	
Settings:	Configure locally using the pyrometer interface or remotely (using the Web server or SpotPro or ImagePro. Emissivity, mode, current output range, alarm logic output and thresholds, network settings, focus and LED, language and user name (focus and LED on standard body only)				
Sighting Image:	Local display and remote video streaming			Not available	
Focus Range:	300 mm / 11.8 in to infinity, locally or remotely adjusted			100 mm / 3.9 in to 500 mm 19.7 in manually adjusted	
LED Targeting:	Patented* pulsed green LED focus pattern			Red circle LED	
Mounting:	Full range of mountings and accessories available - see Mountings and Accessories Brochure or visit our website				
Measurement Accuracy:**	Mono & Duo: ±0.25% K or 2 K Ratio & Multi: ±0.5% K or 5 K				
Repeatability:	<1 °C				
Resolution:	0.1 °C				
Noise:**	<0.5 °C RMS				
Sealing:	IP65				
Response Time:	Adjustable 1 ms to 10 s		Adjustable 15 ms to 10 s	Adjustable 1 ms to 10 s	
Analogue I/O:	Two 4-20 mA outputs, One 4-20 mA input, Contact closure input, Relay output				
Communications:	EtherNet/IP, REST API, Modbus TCP/IP, web server				
Processing Functions:	Peak/Valley Picking, Averager, Modemaster, CMD in sampling, CMD out alarms				
Power Req.:	Power over Ethernet or 19 to 30 V DC at the instrument; 8 W max consumption				
Software:	Live configuration and temperature display on any web browser. Optional SPOTViewer software with datalogging, live and historical data trending, plus remote image capture, control of multiple instruments (image capture not available on fibre-optic versions)				
Languages:	Integrated multiple language selections: English, German, French, Italian, Spanish, Portuguese (Brazilian), Japanese, Chinese (simplified Mandarin), Korean, Russian, Polish				
Ambient Temp. Range:	5 - 60 °C specified, 0 - 70 °C operating before cooling required			Optic head up to 200 °C / 392 °F	
Warranty:	See our website at www.ametek-land.com for warranty details				

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We are fully committed to Quality Assurance. See all our accreditations at **AMETEK-LAND.COM/QUALITY**

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