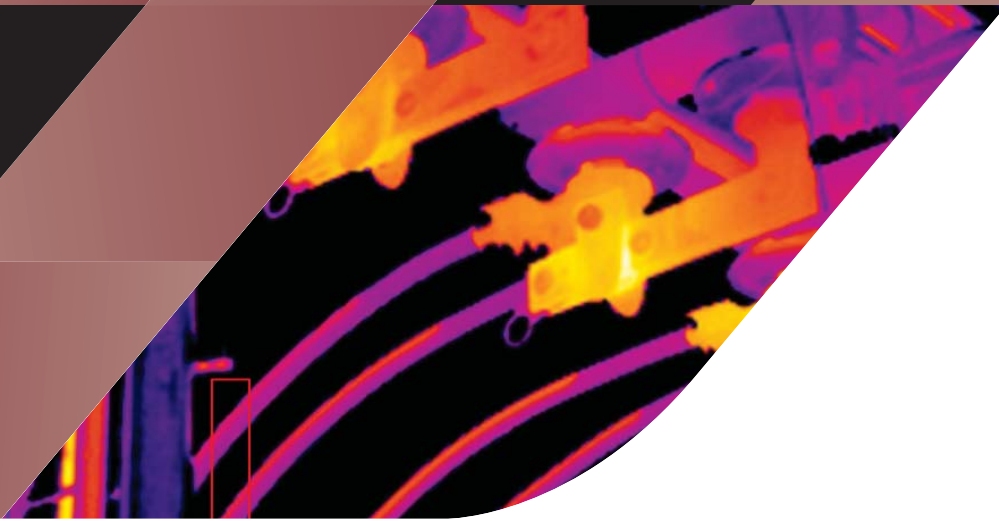


LWIR-640

THERMAL IMAGING SOLUTIONS



① -20 to 1000 °C / -4 to 1832 °F



LAND
AMETEK®



QUALITY CUSTOMER SOLUTIONS

LWIR-640

THERMAL IMAGING SOLUTIONS

AMETEK LAND HAS BEEN MANUFACTURING PRECISION MEASURING EQUIPMENT SINCE 1947.

We are specialists in non-contact temperature measurement and combustion monitoring with applications across diverse industries such as steel and glass making, power generation and cement manufacture.

As part of AMETEK Process & Analytical Instruments Division since 2006, our customers benefit from our worldwide AMETEK sales and service team.

WITH INCREASING DEMAND FOR IMPROVED PRODUCT QUALITY AND EFFICIENCY, ENERGY SAVING, PREDICTIVE MAINTENANCE AND EMISSION REDUCTION, THERMAL IMAGING CAMERAS AND SYSTEMS PLAY AN IMPORTANT ROLE IN MODERN AND INDUSTRIAL PROCESSING.

The new LWIR-640 long-wavelength thermal imager builds on more than 20 years of thermal imaging experience, expanding the market-leading range of AMETEK Land temperature measurement solutions.

It provides a full temperature measurement range of -20 to 1000 °C (-4 to 1832 °F) in three ranges with a choice of different optics and lenses.

An integrated webserver with multiple I/O options enables the camera to be used autonomously or easily integrated into new or existing process control systems. The webserver provides easy camera access, control and setup, using a standard browser.

The LWIR-640 measures and streams live true-temperature images at up to 60 frames per second, providing high-precision temperature measurements and thermal profiles to continuously control, document, and visualise industrial processes.

INDUSTRIAL THERMAL IMAGING

Designed for use in harsh industrial and environmental conditions, the LWIR-640's smart, Industry 4.0 capabilities, bi-direction digital interfaces and on-board I/O provide reliable and robust, real-time thermographic measurement and imagery in industrial processes.

ADVANCED IMAGE RESOLUTION

The pixel resolution of 640 x 480 pixels and the high thermal resolution deliver uniquely clear and detailed thermal images and videos, at up to 60 Hz frame rate. This unmatched image quality supports highly accurate process visualisation and control.

INNOVATIVE SOFTWARE ANALYSIS

Advanced IMAGEPro image and data processing software offers real-time analysis of thermal images, giving users an exceptional level of understanding and control of their process. It also enables monitoring and configuration of up to 16 imagers.

LWIR-640 is AMETEK Land's smart long-wavelength thermal imaging solution for a range of industrial applications including automation, process control, machine vision, flare stack monitoring, hot spot detection, medical, critical vessel refractory monitoring, petrochemical, and food and mineral processing.

TEMPERATURE RANGE

Optic (HFOV x VFOV)	-20 - 120 °C -4 - 248 °F	0 - 500 °C 32 - 932 °F	100 - 1000 °C 212 - 1832 °F
6° x 4°		✓	✓
12° x 9°		✓	✓
25° x 19°	✓	✓	✓
50° x 37°	✓	✓	✓

FIELD OF VIEW LENS OPTION

Distance	1 m			2.5 m			5 m			10 m			15 m		
	Width	Height	IFOV (centre)	Width	Height	IFOV (centre)	Width	Height	IFOV (centre)	Width	Height	IFOV (centre)	Width	Height	IFOV (centre)
6° x 4°	-	-	-	-	-	-	-	-	-	1.09 m	0.82 m	1.7 mm	1.64 m	1.23 m	2.6 mm
12° x 9°	0.22 m	0.16 m	0.3 mm	0.55 m	0.41 m	0.9 mm	1.10 m	0.82 m	1.7 mm	2.19 m	1.64 m	3.4 mm	3.29 m	2.46 m	5.1 mm
25° x 19°	0.44 m	0.33 m	0.7 mm	1.11 m	0.83 m	1.7 mm	2.22 m	1.66 m	3.5 mm	4.43 m	3.33 m	6.9 mm	6.65 m	4.99 m	10.4 mm
50° x 37°	0.93 m	0.70 m	1.5 mm	2.33 m	1.75 m	3.6 mm	4.66 m	3.50 m	7.3 mm	9.33 m	6.99 m	14.6 mm	13.99 m	10.49 m	21.9 mm

LWIR-640



SPECIFICATION & DESIGN

1: HIGH SPATIAL AND THERMAL RESOLUTION

Providing unmatched image quality for process visualisation and control

2: INTEGRATED WEBSERVER

Allowing easy access for remote configuration, I/O setup and image monitoring setup via web browser

3: SMART FUNCTIONALITY

INDUSTRY 4.0 ready for autonomous operation and can be integrated into existing process controls

4: INDUSTRY READY

IP65/NEMA 4 sealing – industrial enclosure design. Optional ATEX and class/division enclosures available

5: MULTIPLE I/O OPTIONS

On board analog and digital I/O for easy process integration and extended functionality

6: OPTIC OPTIONS & MOTORIZED FOCUS

A range of optics (FOV) available, all with remotely accessible motorised focus



FEATURES & BENEFITS

INDUSTRIAL THERMAL IMAGER - For use in harsh industrial and environmental conditions, providing continuous reliable temperature measurements

HIGH TEMPERATURE MEASUREMENT ACCURACY & REPEATABILITY - Unmatched image homogeneity across the entire image

ADVANCED IMAGE RESOLUTION & QUALITY - High pixel and thermal resolution, providing 640x480 camera pixels and NETD of 40 mK (@ 20 °C) (-20 to 120 °C) 7.5 Hz

EXTENSIVE ACCESSORIES - Hazardous location and general purpose enclosures for cooling and protection plus further mechanical and electrical accessories available

TYPICAL APPLICATIONS

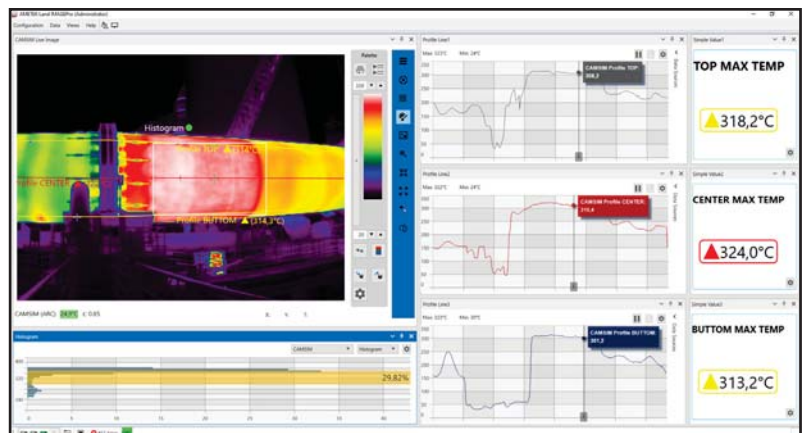
- | | |
|---------------------------------------|-----------------------------|
| Automation | Process Control |
| Machine Vision | Flare Stack Monitoring |
| Hot Spot Detection | Medical Imaging |
| Critical Vessel Refractory Monitoring | Food and Mineral Processing |
| Petrochemical Processing | |

IMAGEPRO

The innovative IMAGEPro software is advanced image processing software for controlling, monitoring, analysing and capturing imager data.

IMAGEPro is a Windows PC software system that enables custom configuration of LAND imagers and offers advanced analysis and visualisation of temperature data. Free 30-day trial available.

With the ability to monitor and control up to sixteen imagers, IMAGEPro offers real-time analysis for AMETEK Land thermal imagers. It gives users an exceptional level of understanding and control of their process.



MONITORING PROCESSING AND CONTROLLING SOFTWARE

SPECIFICATIONS

IMAGER UNIT

Measurement Range:	-20 - 120 °C / -4 - 248 °F 0 - 500 °C / 32 - 932 °F 100-1000 °C / 212 - 1832 °F
Pixel Resolution:	640 x 480
Pixel Size / Pitch:	17 µm
Spectral Response:	8 to 14 µm
Max Frame Rate:	60 fps* / 7.5 fps
Detector:	640 x 480 Uncooled Amorphous Silicon detector
Optic (HFOV x VFOV):	50° x 37° / 25° x 19° / 12° x 9° / 6° x 4°
Focus Range:	Min 0.3 m to infinity (motorised focus) – (25° & 50°) Min 0.75 m to infinity (motorised focus) – (12°) Min 10 m to infinity (motorised focus) – (6°)
Accuracy:	1.5 % or 2 °C of reading
NETD:	40 mK (@ 20 °C) (-20 to 120 °C) 7.5 Hz
Dimensions:	80 x 80 x 222 mm (max) / 3.14 x 3.14 x 8.7 in (including lens)
Power Rating:	12 to 24 V DC, +/-10% 12W / IEEE 802.3 at PoE+
Weight:	1.6 kg / 3.5 lbs
Ambient Temperature:	-20 to 60 °C / -4 to 140 °F (0 - 95 % humidity, non-condensing)
Environmental Rating:	IP66/ NEMA 4
Compliance:	EMC (EN 61326-1)

CONNECTIVITY AND SERVICES

Digital Connections:	M12 X coded 8way connector: 10/100/1000 Ethernet & IEEE 802.3 at PoE+
Analog Connections:	8 pin binder connector: 2pins - 12-24V DC power input 6 pins functions can be assigned to internal image processing algorithms 1 x 4 -20 mA output 1 x 4 -20 mA output OR relay output 1 x 4 -20 mA input OR digital input OR relay output Camera web browser for alignment & internal image processing analog I/O setup
Signal-LED:	Visible on rear of camera only (not with jacket) 3 x LED - Power / Status, Ethernet Comms & Camera internal temperature
Service:	Water, instrument air for optional cooling enclosures

SMART FUNCTIONALITY

Integrated Webserver:	Remote access via Gbit ethernet interface Integrated webserver provides live thermal image
Autonomous Operation:	3 ROI's and configuration of integrated I/O's for full autonomous operation

THERMAL IMAGING PSU MODULE (UL APPROVED)

Components & Connections:	Power supply, Gbit Ethernet communications (switch)/ IEEE 802.3 at PoE+, Fibre optic data connection
Environmental Rating:	IP65 / NEMA 4
Size:	380 x 380 x 211 mm / 15 x 15 x 8.3 in
Weight:	15 kg / 33.07 lbs
UL Approval:	Listed to UL508A & CSA-C22.2 No. E499440

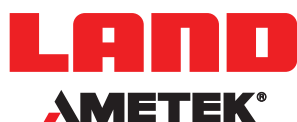
IMAGE PROCESSING

Integrated Webserver:	Integrated webserver accessible via standard web browser
Software:	IMAGEPro, IMAGEPro Application Specific (e.g Asset Monitor)
Workstation:	PC-Workstation (option)
Interfacing:	Open Data Interface, Modbus TCP, Moxa I/O unit



STANDARD ACCESSORIES

Accessories (optional):	Thermal Imaging PSU Modules (UL Approved), Process Imager Power Supply, Industrial Housing Assembly and Purge, Light Housing with Purge, Cables, Brackets, Blower System, Software and Workstation
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*60Hz instruments are subject to different export restrictions in different authorities and countries around the world. All sales must be subject to export licence review.



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