FLIR A6301

Advanced Thermal Camera for 24/7 Process Monitoring and Quality Control

www.flir.com/products/A6301

Key Features

- The highly sensitive, cooled MWIR sensor improves defect detection and increases product quality.
- Industry-leading long-life micro cooler, with 27,000-hour mean time to failure, maximizes camera uptime for consistent production schedules.
- Fast integration times ensure accurate temperature measurements on moving products and production lines.
- Low-latency, deterministic synchronization to external sources means thermal images are captured precisely when needed for decision support.
- Standard GigE Vision protocols, REST API and a built-in web interfaces shorten implementation timelines.

Main Applications

- Inline inspection and validation of package heat sealing
- Process control and monitoring for adhesives
- Quality assurance during paper and plastics production
- Remote monitoring of electrical/mechanical systems

SPECIFICATIONS

Imaging and optical	
IR resolution	640 × 512
Field of view (FOV)	50 mm lens – 11.0° × 8.8° 25 mm lens – 21.7° × 17.5° 17 mm lens – 31.5° × 25.5°
Minimum focus distance	50 mm lens – 500 mm 25 mm lens – 200 mm 17 mm lens – 60 mm
Focus	Manual
Zoom	Digital zoom, 1x, 2x, 4x, 8x
Digital image enhancement	High sensitivity mode (HSM)
Detector type	High Operating Temperature (HOT) MWIR T2SLS
Spectral range	3.4 µm - 5.1 µm
Detector pitch	15 µm
F/#	f/2.5
Frame rate	30 Hz
Sensor cooling	FLIR FL100 Linear cooler
Image modes	IR image, high sensitivity mode (HSM)
Automatic image adjustment	Linear, PE
Color palettes	Selectable 8-bit
Overlay	RTSP Only

Measurement & Analysis	
Thermal sensitivity (NETD)	≤15 mK at 25°C
Temperature measurement range	-20°C to 200°C
Ambient drift compensation (with factory calibration)	Yes
Accuracy	≤100°C ±2°C, >100°C ±2% of reading
Communication & Data Storage	
Synchronization modes	Sync In
Radiometric IR video recording	None
Non-radiometric IR recording	None
Radiometric IR video streaming	GigE Vision
Non-radiometric IR video streaming	H.264 or MJPEG over RTSP
Command & control	GEV: Genicam RTSP: Web Interface, REST API
Storage media	None
Digital I/O connector type	M12 12-pin A-coded, Male (shared with external power)
Digital inputs	2x opto-isolated, Vin(low)= 0–1.5 V, Vin(high)= 3–25 V
Digital outputs	3x opto-isolated, 0–48 V DC, max. 350 mA Solid-state opto relay 1x dedicated as Fault output (NC)
Communication interfaces	Ethernet

Specifications subject to change. For the most up-to-date specifications, please visit flir.com.

Revised 07/23/24
A6301-Datasheet-LTR 24-0062-INS

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SPECIFICATIONS, CONT.

Power	
Primary power source	PoE+ Type 2 (30 W min)
Optional DC power connection	M12 12-pin A-coded, male (shared with Digital I/O)
Power consumption	25 W (cool down)
DC voltage range	18 V-56 V
Environmental & Certifications	
Operating temperature range	-20°C to 50°C
Directives	EMC: 2014/30/EU, WEEE: 2012/19/EU
EMC	EN55032:2015/A11:2020 EN55035:2017/A11:2020 FCC Part 15, Subpart B ClassA KC C 9832 and KS C 9835
Encapsulation	IP50
Vibration	10-58 Hz, 0.15 mm; 58-500 Hz, 2 g; 5 cycles, 1 oct/min; X,Y&Z (IAW MIL-STD-810H)
Shock	25 g, 6 ms; Half sine; ± 500 shocks; X,Y&Z (IAW MIL-STD-810H)
General	
Camera size w/o lens	200 × 76 × 92 mm (7.9 × 3.0 × 3.6 in)
Camera size w/lens	50 mm lens: 241 × 76 × 92 mm (9.5 × 3.0 × 3.6 in) 25 mm lens: 260 × 76 × 92 mm (10.3 × 3.0 in × 3.6 in) 17 mm lens: 267 × 76 × 92 mm (10.5 in × 3.0 in × 3.6 in)
Camera weight w/o lens	1.32 kg (2.9 lbs)
Camera weight w/lens	50 mm lens: 1.63 kg (3.6 lbs) 25 mm lens: 1.72 kg (3.8 lbs) 17 mm lens: 1.77 kg (3.9 lbs)
Mounting	w/Mounting plate - 2 × 1/4"-20 tapped holes, 1 × 3/8"-16 tapped hole, 4 × #10-24 tapped holes w/o Mounting plate - 6 × #6-32
Box Contents	Camera w/lens, M12 to RJ45F Cable (0.3 m), quick start guide, certificate of calibration

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