



FLIR A-SERIES

A400, A500, A700 Science Kits



Key Features:

- Complete science kits include everything researchers and engineers need to accurately measure temperatures on nearly any object of interest
- Simple connectivity to the included FLIR Research Studio software accelerates set-up, testing, and thermal data sharing
- Advanced capabilities of Wi-Fi data streaming*, FLIR Macro Mode, visible imagery with MSX*, and 2X Macro Lens* offer the flexibility needed to meet current and future testing requirements

*Professional Science Kits

Main Applications:

- PCB and electronics product design and verification testing
- Materials, life science, agricultural, and battery research
- Thermal analysis projects in academic research

SPECIFICATIONS

Detector Data	Standard Kit	Professional Kit
IR resolution	320 × 240 (A400), 464 × 348 (A500), or 640 × 480 (A700)	
Thermal resolution/NETD	30 mK to <40 mK @ 30°C (86°F)	
Focal plane array/spectral range	Uncooled microbolometer	
Detector pitch	24 μm, 17 μm, or 12 μm - camera dependent	
Spectral range	7.5 μm to 14.0 μm	
Frame Rate	30 Hz	
Image and Optical Data		
Camera f/#	Lens dependent	
Included Lenses	24°	24°, 2.0X Macro
Optional Lenses	2.0X Macro, DFOV (24°/14°), 6°, 14°, 42°, 80°	DFOV (24°/14°), 6°, 14°, 42°, 80°
Macro Mode	Included	
Lens identification	Automatic	
Focus	One-shot contrast, motorized, manual	
Minimum focus distance	2.0X Macro: 18 mm (0.71 in) 6°: 5.0 m (16.4 ft) 14°: 1.0 m (3.28 ft) DFOV (24°/14°): 0.18 m (0.59 ft) and 1.0 m (3.28 ft) 24° with Macro Mode: 17 mm (0.67 in) 24°: 0.15 m (0.49 ft) 24° f/1.0: 0.3 m (0.98 ft) 42°: 0.15 m (0.49 ft) 80°: 0.1 m (3.9 in)	
Visual Camera	Optional	5 Megapixel

Measurement	Standard Kit	Professional Kit
Standard Temperature Ranges	-20°C to 120°C (-4°F to 248°F) 0°C to 650°C (32°F to 1202°F) A400/A500: 300°C to 1500°C (572°F to 2732°F) A700: 300°C to 2000°C (572°F to 3632°F)	
Accuracy	±2°C (±3.6°F) or ±2% of reading for ambient temperature 15°C to 35°C (59°F to 95°F), object temperature above 0°C (32°F)	
Image Presentation		
Digital data	Via workstation running included Research Studio Software	
Data Streaming & Control	Gigabit Ethernet (RTSP, GigE Vision)	Gigabit Ethernet (RTSP, GigE Vision), Wi-Fi
Dynamic Range	16-bit	
Image Modes in Research Studio		
Infrared	Yes	
Visual	–	Yes
MSX®	–	Yes
Wi-Fi		
Connector type	Optional	Female RP-SMA
Standard	Optional	IEEE802.11a/b/g/n
Connections	Optional	Peer to peer (ad hoc) or infrastructure (network)
Gigabit Ethernet		
Ethernet Image Streaming	Standard Kit	Professional Kit
	Yes	



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SPECIFICATIONS, CONT.

Connector type	M12 8-pin X-coded, female
Ethernet power	Power over Ethernet, PoE IEEE 802.3af class 3
Ethernet communication	GigE Vision ver. 1.2, Client API GenICam compliant, TCP/IP socket-based (FLIR proprietary)
Digital Input/Output	
Connector type	M12 Male 12-pin A-coded (shared with ext. power)
Digital input	2× opto-isolated, Vin (low) = 0 V to 1.5 V, Vin (high) = 3 V to 25 V
Digital output	3× opto-isolated, 0–48 VDC, max. 350 mA (derated to 200 mA at 60°C). Solid-state opto relay, 1× dedicated as fault output (NC)
Power System	
Connector type	M12 Male 12-pin A-coded (shared with Digital I/O)
General	Power over Ethernet or External
External voltage	24/48 VDC, 8 W max
General	
Operating Temperature Range	-20°C to 40°C (-4°F to 104°F) (in free air) 40°C to 50°C (104°F to 122°F) (mounted on cooling plate accessory) Maximum camera case temperature: 65°C (149°F)
Storage Temperature Range	IEC 68-2-1 and IEC 68-2-2, -40°C to 70°C (-40°F to 158°F) for 16 hours
Encapsulation	IEC 60529, IP54, IP66 with accessory
Shock	IEC 60068-2-27, 25 g
Vibration	IEC 60068-2-6, 0.15 mm at 10 Hz to 58 Hz and 2 g at 58 Hz to 500 Hz, sinusoidal
Size	123 mm × 77 mm × 77 mm (4.84 in × 3.03 in × 3.03 in)
Weight (including 24° lens)	0.82 kg (1.8 lb)
Mounting	UNC ¼"-20 on 2 sides 4× M4 on 4 sides