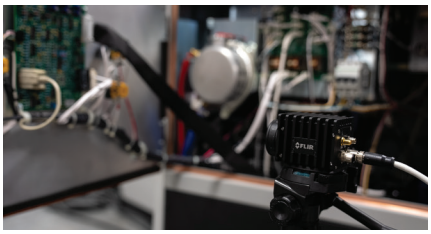
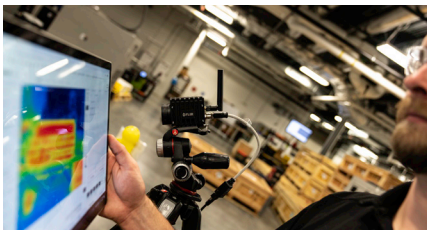
FLIR A50/A70

Research & Development Kit

FLIR A50/A70 Research & Development Kits are affordable, ready-to-use solutions for thermal imaging analysis in proof-of-concept, electronics testing, and R&D applications. Providing thousands of temperature measurement points, users can eliminate thermal guesswork, reduce product development time, and increase product efficiency and reliability. These kits are the right choice for engineers and technicians who need to fully understand the thermal profiles of their systems or require defensible thermal data to support critical decisions. Simple connections and standard manual focus lens options provide the ultimate flexibility to satisfy research and development needs. Users can quickly view, record, analyze and share thermal data with the included FLIR Research Studio software or take advantage of industry-standard connections to integrate into custom software applications when needed. When mobility is required, the compressed radiometric data transmitted over Wi-Fi eliminates the cord between the camera and workstation.





IMPROVE EFFICIENCY

Quickly reveal thermal characteristics to eliminate guesswork and reduce product development time

- Accurately measure temperatures with up to 307,200 thermal measurement pixels (640 × 480 resolution) and ±2°C accuracy
- Reveal unknown thermal anomalies faster with quality infrared imagery
- Easily differentiate between features and components with the built-in visible camera
- Enhance understanding of infrared image data using FLIR MSX®

CAPTURE MEANINGFUL DATA QUICKLY

Start testing sooner with limited ramp-up time and simple non-proprietary industry standard interfaces

- Stream full radiometric image data using standard Gigabit Ethernet or Wi-Fi connections
- Perform qualitative and quantitative thermal analysis with the included FLIR Research Studio software
- Quickly view, record, analyze and share important thermal data across multiple platforms and languages
- Compare and examine thermal data simultaneously from multiple connected cameras and recorded data files

RUGGED, COMPACT, AND FLEXIBLE

Meet the demands of multiple application environments and installations

- Ensure operation in tough environments thanks to rugged M-style connectors and standard IP66 protection
- Easily install this compact camera in any location, with multiple mounting options
- Eliminate the need for multiple cables using Power over Ethernet and included Wi-Fi connectivity
- Transition from design and testing in the lab to process control in production using non-proprietary GigE Vision and GenICam protocols, as well as SDKs

For more information visit:
www.flir.com/A50-A70-science

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Detector Data	A50 R&D Kit	A70 R&D Kit
IR resolution	464 × 348	640 × 480
Thermal resolution/NETD	35 mK	
Focal Plane Array	Uncooled Microbolometer	
Detector Pitch	17 µm	12 µm
Spectral Range	7.5–14.0 µm	
Frame Rate	30 Hz	
Image and Optical Data		
Camera f/#	1.4	
Lens Fields of View	29°, 51°, 95°	
Spatial Resolution (IFOV)	29°: 1.2 mrad/pixel 51°: 2.1 mrad/pixel 95°: 4.0 mrad/pixel	29°: 0.84 mrad/pixel 51°: 1.5 mrad/pixel 95°: 2.9 mrad/pixel
Lens Type	Fixed, cannot be changed	
Focus	Adjustable with included focus tool	
Minimum Focus Distance	29°: 0.25 m / 51°: 0.2 m / 95°: 0.1 m	
Visual Camera	Included	
Visual Resolution	1280 × 960	
Measurement		
Object temperature range	-20°C to 175°C (-4°F to 347°F) 175°C to 1000°C (347°F to 1832°F	-20°C to 175°C (-4°F to 347°F) -20°C to 250°C (-4°F to 482°F) 175°C to 1000°C (347°F to 1832°F)
Accuracy	±2°C (±3.6°F) or ±2% of reading, for ambient temperature 15°C to 35°C (59°F to 95°F) and object temperature above 0°C (32°F)	
Image Presentation		
Digital Data	Via workstation running included Research Studio Software	
Digital Data Streaming	Gigabit Ethernet (RTSP, GigE Vision), Wi-Fi	
Command & Control	Gigabit Ethernet (RTSP, GigE Vision), Wi-Fi	
Dynamic Range	16-bit	
Image Modes in Research Studio		
Infrared	Radiometric	
Visual	Non-radiometric	
Screen	Non-radiometric, selected in software (Thermal, MSX®, Visual, FSX)	
Wi-Fi		
Connector Type	Female RP-SMA	
Standard	IEEE802.11a/b/g/n	
Connections	Peer to peer (ad hoc) or Infrastructure (network)	

Gigabit Ethernet	A50 R&D Kit	A70 R&D Kit
Ethernet Image Streaming	Yes	
Ethernet Connector Type	M12 8-pin X-coded, female	
Ethernet Interface	Wired, Wi-Fi	
Ethernet Power	Power over Ethernet, PoE IEEE 802.3af class 3.	
Ethernet Type	1000 Mbps	
Digital Input/Output		
Connector Type	M12 Male 12-pin A-coded (shared with external power)	
Digital I/O Isolation Voltage	500 VRMS	
Digital Input	2× opto-isolated, Vin (low) = 0 to 1.5 V, Vin (high) = 3 to 25 V	
Digital Output	3× opto-isolated, 0 to 48 V DC, max. 350 mA (derated to 200 mA at 60°C). Solid-state opto relay, 1× dedicated as fault output (NC)	
Power		
Configuration	Power over Ethernet or External	
Connector Type	M12 Male 12-pin A-coded (shared with Digital I/O)	
External Power Operation	24/48 V DC, 8 W max	
Power Consumption	7.5 W at 24 V DC typical; 7.8 W at 48 V DC typical	
Physical data		
Size (L × W × H)	107 × 67 × 57 mm, without bottom cooling plate	
Housing Material	Aluminum	
Tripod Mounting	1/4-20 UNC depth 7 mm + Ø5 depth 2.7 mm	
Atmospheric Transmission Correction	Based on inputs of distance, atmospheric temperature, and relative humidity	
Corrosion	ISO 12944 C4 G or H; EN60068-2-11	
Encapsulation	IEC 60529, IP66	
Humidity (Operating and Storage)	IEC 60068-2-30/24 hours, 95% relative humidity, 25°C to 40°C (77°F to 104°F)/ 2 cycles EN60068-2-38	
Operating Temperature Range	–20°C to 50°C (–4°F to 113°F), with included cooling plate. Maximum camera case temperature: 65°C (149°F)	
Wi-Fi Radio Spectrum	FCC 47 CFR Part 15 Class C (2.4 GHz band US); FCC 47 CFR Part 15 Class E (5 GHz band US); RSS-247 (2.4 GHz and 5 GHz band Canada); ETSI EN 300 328 V2.1.1 (2.4 GHz band EU); ETSI EN 301 893 V2.1.1 (5 GHz band EU)	
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 IEC 61373 Cat 1 (Railway)	

For a complete list of specifications, go to flir.com/A50-A70-science

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