



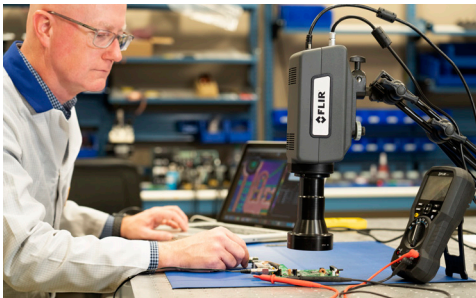
## MWIR THERMAL IMAGING CAMERA

# FLIR A6780



The FLIR A6780 midwave camera system makes it easy to measure the temperatures of rapid thermal events and fast-moving targets across a wide temperature range. This cooled indium antimonide (InSb) camera offers a built-in, 3-position warm filter wheel for simple, remote switching between standard and high-temperature ranges. The A6780 also offers short exposure times, advanced synchronization options, and high-speed windowed frame rates, ensuring you will always capture meaningful thermal data. A full suite of lens options, including both manual and motor-focus lenses, provide the flexibility to maximize the number of measurement pixels on the object of interest regardless of size and distance. And with the ability of this 327,680 (640 × 512) pixel resolution camera to achieve spatial resolutions down to 5  $\mu\text{m}$  per pixel, the A6780 is an ideal choice for industrial, military, and manufacturing R&D applications.

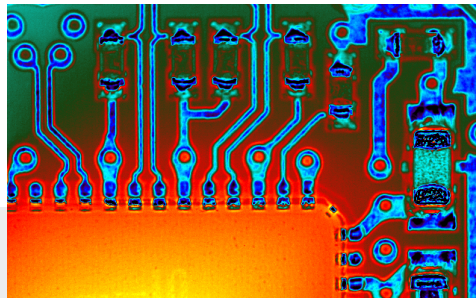
[www.flir.com/A6780-MWIR](http://www.flir.com/A6780-MWIR)



### GET UP AND RUNNING QUICKLY

Start testing quickly with limited ramp-up time and simple connections

- Control all aspects of the A6780 camera and stream data using a single Gigabit Ethernet cable
- Effortlessly achieve crisp, sharp thermal images using automatic, remote, or manual focusing
- Easily measure high-temperature targets with the software controlled built-in 3-position warm filter wheel
- Capture the data you want when you want it thanks to advanced triggering and synchronization capabilities



### MEASURE TEMPERATURE ACCURATELY

Precisely measure temperatures on nearly any target

- Measure accurate temperatures on small objects with spatial resolution down to 5  $\mu\text{m}$  per pixel
- Capture fast-moving thermal events or targets with sub-windowed frame rates up to 4,130 Hz and fast integration times
- Maximize the number of measurement pixels on the object under test regardless of size or distance with multiple lens options



### SIMPLIFY DATA ANALYSIS, SHARING, & COLLABORATION

Collect and share meaningful data easily

- Employ FLIR Research Studio's simple Connect  $\rightarrow$  View  $\rightarrow$  Record  $\rightarrow$  Analyze workflow to record and analyze thermal data without the need for extensive training
- Compare multiple live data streams or recorded files to quickly determine results and make decisions
- Work in the operating system you prefer and share data globally with colleagues in their preferred language

## SPECIFICATIONS

Model Number	A6780	A6781	A6782	A6783
Detector Type	FLIR indium antimonide (InSb)			
Spectral Range	1.0 – 5.0 $\mu\text{m}$	3.0 – 5.0 $\mu\text{m}$	1.0 – 5.0 $\mu\text{m}$	3.0 – 5.0 $\mu\text{m}$
Resolution	640 x 512			
Pixel Size	15 $\mu\text{m}$			
Thermal Sensitivity / NETD	$\leq 25$ mK typical	$\leq 20$ mK typical	$\leq 25$ mK typical	$\leq 20$ mK typical
Operability	$\geq 99.8\%$ ( $\geq 99.95\%$ typical)			
Sensor Cooling	Closed-cycle rotary			
Readout Electronics				
Readout	Snapshot			
Readout Modes	Asynchronous integrate while read, asynchronous integrate then read			
Image Time Stamp	Yes			
Integration Time	480 ns to ~full frame			
Pixel Clock	50 MHz			
Frame Rate (Full Window)	Programmable; 0.0015 Hz to 125 Hz			
Subwindow Mode	Flexible windowing down to 16 x 4 (steps of 16 columns, 4 rows)			
Camera Electronics				
Synchronization Modes	Internal, external, video			
Sync In/Sync Out Connection	Sync In (via Rear Panel), Sync Out (via Aux Cable)			
Trigger Input	Yes (via AUX breakout cable)			
Superframing/DRX	Yes			
Max Frame Rate (Min Window)	4,130 Hz (16 x 4 sub-window)			
Dynamic Range	14-bit			
On-Camera Image Storage	None			
Radiometric Data Streaming	Gigabit Ethernet (GigE Vision)			
Standard Video	SDI			
Command and Control	GenICam (GigE), RS-232			
Integration Active Output	Yes (via AUX breakout cable)			
Lock-in Signals Input	Optional (via AUX breakout cable)			
Record Start Input	Yes (via AUX breakout cable)			
Measurement				
Standard Temperature Range [with band-matched optics]	-20°C to 300°C (-4°F to 572°F)	-20°C to 350°C (-4°F to 662°F), Microscope Lenses: -10°C to 350°C (14°F to 662°F)	-20°C to 350°C (-4°F to 662°F)	-20°C to 350°C (-4°F to 662°F), Microscope Lenses: -10°C to 350°C (14°F to 662°F)

Optional Temperature Range [with band-matched optics]	45°C to 600°C/113°F to 1112°F (ND1); 250°C to 2000°C/482°F to 3632°F (ND2); 500°C to 3000°C/932°F to 5432°F (ND3)			
Accuracy	$\leq 100^\circ\text{C}$ ( $\leq 212^\circ\text{F}$ ), $\pm 2^\circ\text{C}$ ( $\pm 3.6^\circ\text{F}$ ) accuracy ( $\pm 1^\circ\text{C}/1.8^\circ\text{F}$ typical); $> 100^\circ\text{C}$ $\pm 2\%$ of reading ( $\pm 1\%$ typical)			
Ambient Drift Compensation [with factory calibration]	Yes			
Optics				
Camera f/#	f/2.5		f/4.0	
Available Lenses	Manual (broadband): 25 mm, 50 mm, 100 mm	Manual (3-5 $\mu\text{m}$ ): 17 mm, 25 mm, 50 mm, 100 mm, 200 mm  Motorized (3-5 $\mu\text{m}$ ): 17 mm, 25 mm, 50 mm, 100 mm, 200 mm	Manual (broadband): 25 mm, 50 mm, 100 mm	Manual (3-5 $\mu\text{m}$ ): 17 mm, 25 mm, 50 mm, 100 mm, 200 mm  Motorized (3-5 $\mu\text{m}$ ): 17 mm, 25 mm, 50 mm, 100 mm, 200 mm
Close-up Lenses / Microscopes	No microscopes available	1X, 3X	No microscopes available	1X, 3X
Lens Interface	FLIR FPO-M (4-tab bayonet, motorized)			
Focus	Motorized (compatible w/ manual)			
Filter Holder (Warm)	3-position motorized filter wheel (1-inch diameter filters), factory installed only			
Image / Video Presentation				
Palettes	Selectable 8-bit			
Automatic Gain Control	Manual, linear, plateau equalization, DDE			
Overlay	Fixed configuration, can be turned off			
Video Modes	SDI: 720p at 50/59.9 Hz, 1080p at 25/29.9 Hz			
Standard Video Zoom	Automatic, best fit			
General				
Operating Temperature Range	-20°C to 50°C (-4°F to 122°F)			
Power	24 VDC (< 24 W steady state)			
Weight w/o Lens	2.3 kg (5 lbs)			
Size [L x W x H] w/o Lens	226 x 102 x 109 mm (8.9 x 4.0 x 4.3 in)			
Mounting	2 x ¼"-20 tapped holes, 1 x 3/8"-16 tapped hole, 4 x 10-24 tapped holes			

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