FLIR A35

Thermal imaging camera for machine vision applications

Thermal imaging cameras are used worldwide across a wide variety of industries to monitor continuous processes. Thermal imaging can easily collect information on product quality and/or production efficiency that is difficult or impossible to capture using conventional means such as thermocouples or visible light cameras.

The FLIR A35 is the perfect solution for those applications that only require the benefits of a thermal image but do not need exact temperature measurement. The FLIR A35 camera has features and functions that make it the natural choice for anyone who uses PC software to solve problems.

Extremely affordable
The FLIR A35 is an extremely affordable unit. From now on price is no longer an issue for deploying thermal imaging cameras to monitor continuous processes.

Compact
Extremely compact, measuring only 40 mm x 43 mm x 106 mm the FLIR A35 can easily be integrated in every production line.

GigE Vision™ standard compatibility
GigE Vision is a new camera interface standard developed using the Gigabit Ethernet communication protocol. GigE Vision is the first standard to allow for fast image transfer using low cost standard cables even over long distances. With GigE Vision, hardware and software from different vendors can interoperate seamlessly over GigE connections.

GenICam™ protocol support
The goal of GenICam is to provide a generic programming interface for all types of cameras. Regardless of interface technology (GigE Vision, Camera Link, 1394 DCAM, etc.) or features implemented, the Application Programming Interface (API) will always be the same. The GenICam protocol also makes it possible to use third party software with the camera. GenICam makes the FLIR A35 plug-and-play when used with software packages such as IMAQ Vision and Halcon.

Power over Ethernet (PoE)
Communication and power supplied with only one cable.

Synchronization
Possible to configure one camera to be master and others to be slave(s) for applications that call for more than one camera to cover the object or for stereoscopic applications.

General Purpose Input/Output (GPIO)
One output that can be used to control other equipment and one input to read the status from the same equipment.

Wide temperature range
The FLIR A35 visualizes temperatures between −40°C and +550°C.

High sensitivity < 50 mK
< 50 mK thermal sensitivity captures the finest image details and temperature difference information.

FLIR A35

Technical specifications

Imaging and optical data

IR resolution	336 × 256 pixels
Thermal sensitivity/NETD	< 0.05°C @ +30°C (+86°F) / 50 mK
Minimum focus distance	Fixed
FOV (Field of view) / Focal length	25° (H) x 19 (V) with 19mm lens
	48° (H) x 39 (V) with 9 mm lens
	lenses are not interchangeable and need to be specified at time of order
Spatial resolution (IFOV)	1.32 mrad for 19 mm lens
	2.78 mrad for 9 mm lens
F-number	1.25
Image frequency	60 Hz
Focus	Fixed

Detector data

Focal Plane Array (FPA) / Spectral range	Uncooled VOX microbolometer / 7.5–13 µm
Detector pitch	17 µm
Detector time constant	Typical 12 ms

Measurement

Object temperature range	−40 to +160°C (−40 to 320°F)
	−40 to +550°C (−40 to +1022°F)

Ethernet

Ethernet	Control and image
Ethernet, type	Gigabit Ethernet
Ethernet, standard	IEEE 802.3
Ethernet, connector type	RJ-45
Ethernet, communication	GigE Vision ver. 1.2
	Client API GenICam compliant
Ethernet, image streaming	8-bit monochrome @ 60 Hz
	- Signal linear/ DDE
	- Automatic/ Manual
	- Flip H&V
	14-bit 336 × 256 pixels @ 60 Hz
	- Signal linear/ DDE
	GigE Vision and GenICam compatible
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 0 Power
Ethernet, protocols	TCP, UDP,ICMP, IGMP, DHCP, GigEVision

Digital input/output

Digital input, purpose	General purpose
Digital input	1× opto-isolated, "0" < 2, "1"=2–40 VDC
Digital output, purpose	General purpose Output to ext. device (programmatically set)
Digital output	1× opto-isolated, 2–40 VDC, max 185 mA
Digital I/O, isolation voltage	500 VRMS
Digital I/O, supply voltage	2–40 VDC, max 200 mA
Digital I/O, connector type	12-pole M12 connector (shared with Digital Synchronization and External power)
Synchronization In, purpose	Frame sync In to control camera
Synchronization In	1×, non-isolated
Synchronization In, type	LVC Buffer @3.3V, "0" <0.8 V, "1">2.0 V.
Synchronization Out, purpose	Frame sync Out to control another Ax5 camera
Synchronization Out	1×, non-isolated
Synchronization Out, type	LVC Buffer @ 3.3V, "0"=24 MA max, "1"= −24 mA max.
Digital Synchronization, connector type	12-pole M12 connector (shared with Digital I/O and External power)

Power system

External power operation	12/24 VDC, < 2.5 W absolute max
External power, connector type	12-pole M12 connector (shared with Digital I/O and Digital Synchronization)
Voltage	Allowed range 10–30 VDC

Environmental data

Operating temperature range	−15°C to +50°C (+5°F to +122°F)
Storage temperature range	−40°C to +70°C (−40°F to +158°F)
Humidity (operating and storage)	IEC 60068-2-30/24 h 95% relative humidity +25°C to +40°C (+77°F to +104°F)
EMC	EN 61000-6-2 (Immunity)
	EN 61000-6-3 (Emission)
	FCC 47 CFR Part 15 Class B (Emission)
Encapsulation	IP 40 (IEC 60529)
Bump	25 g (IEC 60068-2-29)
Vibration	2 g (IEC 60068-2-6)

Physical data

Weight	0.200 kg (0.44 lb.)
Camera size (L × W × H)	106 × 40 × 43 mm (4.2 × 1.6 × 1.7 in.)
Tripod mounting	Optional with Accessory T198349, Base support
Base mounting	4 × M3 thread mounting holes (bottom)
Housing material	Magnesium and aluminum

Scope of delivery

Packaging, contents	Cardboard box , Infrared camera with lens, Downloads brochure, Focus adjustment tool, Printed Getting Started Guide, Printed Important Information Guide, Service & training brochure, User documentation CD-ROM, Registration card