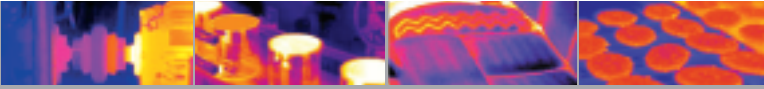




The Global Leader in Infrared Cameras

ThermoVision™ A40V

INDUSTRIAL AUTOMATION



The ThermoVision A40 Series of infrared cameras are affordable, accurate and intelligent solutions for industrial product and process monitoring, product verification and security applications.

Rugged and ultra-compact, the A40V is a fully-integrated system that provides high-resolution infrared images, clearly illuminating otherwise undetectable thermal discrepancies.



- > Real-time Digital Video Output
- > Multiple I/O Options
- > Multiple Target Spots and Alarms
- > FireWire or Ethernet Connection
- > Affordable Infrared Thermal Imaging Solution
- > Maintenance-free, Uncooled, Microbolometer Detector
- > LabView and C++ / Visual Basic Support
- > Multiple Users can Access Multiple Cameras Anywhere, Anytime

Quickly Find Faults

Subtle temperature variations, undetectable by any other means, stand out clearly in a thermal image. Finding and resolving problems early can improve product quality and cut down on scrap or warranty expense – saving thousands of dollars.

Outstanding Imaging and High Thermal Sensitivity

The A40V features an advanced, uncooled microbolometer FPA detector technology that delivers crisp, longwave images in a multitude of palettes. Each thermal image is built from 76,800 individual picture elements that are sampled 60 times per second by the camera's on-board software and electronics, which can discriminate temperature variations as small as 0.8° C. Real-time image acquisition at standard video rates (60 Hz) can reveal rapid, thermally transient events and generate clear images of moving objects.

Fast Plug-and-play Setup

The A40V features plug-and-play setup. You can simply connect the camera to a standard monitor and immediately produce high quality, real-time thermal images that accurately show heat patterns and thermal anomalies.

Easy to Configure and Operate

The user-intuitive A40V is extremely easy to operate. Its onboard logic and menu-driven configuration controls enables you to select and control target spots, temperature range, image color palettes and more, quickly and easily.

Ultra-compact, Rugged and Lightweight

Built to operate unattended for long periods in harsh industrial environments, the A40V has an IP40 rating. Its compact design and light weight (less than 3 lbs.) allow it to be mounted in remote locations that may be optimal for data collection. Fully configurable I/O functionality allows the A40V to be integrated quickly and easily into your control systems.

Extensive Connectivity Options

The A40V is available in FireWire (IEEE 1394) or RJ-45 Ethernet models that are ideal for individual or networked multiple camera installations. Each A40V can be equipped with its own IP address allowing it to be addressed independently via its network connection. This provides instant access to A40V thermal images by any authorized user via the LAN, WAN, or the Internet using a Web browser. The camera can be configured via the network, or with its on-board soft button interface.

Multiple Programming Options

The A40V can be easily leveraged to control a process with LabVIEW and FLIR's LabVIEW Developers toolkit — to turn the A40V into a powerful machine vision tool with a minimal investment in machine vision software development.

Or, work in your own programming environment with the ThermoVision System Developers Kit (SDK) based on ActiveX and Visual Basic C++. The SDK provides full access to Camera Control and Digital Video functionality that will dramatically reduce the time it takes to program a custom solution.

ThermoVision™ A40V Technical Specifications

Imaging Performance	
Field of view/min focus distance	24° x 18° / 0.3 m
Detector type	Focal plane array (FPA) uncooled microbolometer
Spectral range	7.5 to 13 µm
Spatial resolution (IFOV)	1.3 mrad
Thermal sensitivity @ 50/60Hz	0.08° C at 30° C
Focusing	Built-in focus motor
Image Presentation	
FireWire/Ethernet output	8-bit monochrome and 8-bit color
Video output	RS170 EIA/NTSC or CCIR/PAL composite video
Supplementary Lenses*	
Field of view/min. focus distance	7° Telescope (7° x 5.3°/4m) 12° Telescope (12° x 9°/1.2m) 45° Wide angle (45° x 34°/0.1m) 80° Wide angle (80° x 60°/0.1m) Close-up: 64/150 mm (FOV=64 x 48 mm at 150 mm); 34/80 mm (FOV=34 x 25 mm at 80 mm) Macro: 50 micron (14.3 to 18.7 mm focus; FOV=14.3 x 10.8 mm at 14.3 mm; FOV=15.1 x 11.2 mm at 18.7 mm; IFOV=45 µm at 14.3 mm; 47 µm at 18.7 mm)
Lens recognition	Automatic lens recognition and measurement corrections

Power Source	
AC operation	AC adapter 110/220 VAC, 50/60Hz (included)
DC operation	8-30V nominal, <6W
Environmental	
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 10% to 95%, non-condensing
Encapsulation	IP 40 (Determined by connector type)
Shock	Operational: 25G, IEC 68-2-29
Vibration	Operational: 2G, IEC 68-2-6
Physical Characteristics	
Weight	1.4 kg (3.0 lbs)
Size	207mm x 92mm x 109mm (8.1" x 3.6" x 4.3")
Tripod mounting	1/4" - 20

User Configuration Table		
TYPE	FUNCTION	REMARK
Digital Input	TTL level • Shutter disable	Isolation and relay function in external module
Digital Output	TTL level • Internal temperature sensor ALARM • V-sync	Isolation and relay function in external module
Analog Output	• Spot/Area out: 0-5V • Internal temperature sensor out: 0-5V	Scaled to T _{low} - T _{high} Isolation in external module

CAMERA INTERFACES

Digital I/O ports—jackable screw terminal
3 output/1 input, 1 input/output selectable;
function is user configurable**

Analog I/O ports—jackable screw terminal
2 output/1 input; function is user configurable**

RS-232 (DB-9)—connection to PC
Camera control

DC power in—2-pin jackable screw terminal
8-30V nominal



8-button keyboard

Ethernet jack (RJ45) or FireWire jack (IEEE-1394)
Digital image output (8 and 16 bit), camera control

BNC—C-Video (NTSC/PAL)

2.5 mm DC power in
8-30V Nominal; camera needs only one power source

*All attach to standard built-in 24° lens
**See Configuration Table above



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