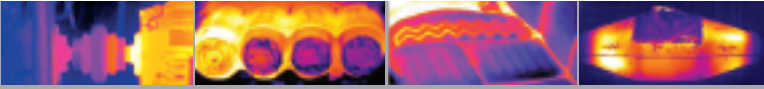




The Global Leader in Infrared Cameras

ThermoVision™ A20M

INDUSTRIAL AUTOMATION



The ThermoVision A20M is an affordable, accurate, intelligent infrared imaging and temperature measurement camera for industrial process monitoring, product verification, and security applications.



- > Precision Temperature Measurement
- > Affordable IR Imaging Solution
- > Real-time Digital Video Output
- > Maintenance-free, Uncooled, Microbolometer Detector
- > Multiple Target Spots and Alarms
- > LabView and C++ / Visual Basic Support
- > FireWire or Ethernet Connection
- > Multiple I/O Options

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.

Instant Non-contact Temperature Measurement

The A20M was designed from the ground up to deliver accurate radiometric imaging and repeatable temperature measurement. Each thermal image is built from 19,000 individual picture elements that are sampled 60 times per second by the camera's on-board electronics and software to measure temperature. The data can then be used by the operator to monitor or control a production process, or can be processed by the camera's on-board intelligence to autonomously generate multiple independent digital alarms or even control process equipment.

Outstanding Imaging and High Thermal Sensitivity

The A20M features an advanced, uncooled microbolometer FPA detector technology that delivers crisp, longwave images in a multitude of palettes that allow you to see temperature variations as small as 0.12° C. Real-time image acquisition at standard video rates (60 Hz) can reveal rapid, thermally transient events and generate clear images of moving objects.

Extensive Connectivity Options

The A20M is available in FireWire (IEEE 1394a) or RJ-45 Ethernet models that are ideal for individual or networked multiple camera installations. Each A20M can be equipped with its own IP address allowing it to be addressed independently via its network connection. This provides instant access to A20M 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.

Fast Plug-and-play Setup

The A20M features plug-and-play setup. You can simply connect the camera to a standard monitor and immediately produce high quality, real-time radiometric thermal images that accurately show heat patterns and thermal anomalies.

Easy to Configure and Operate

The user-intuitive A20M is extremely easy to operate. Its onboard logic and menu-driven configuration controls enables you to select and control multiple target spots, temperature range, image color palettes, multiple alarms and more, quickly and easily.

Ultra-compact, Rugged and Lightweight

Built to operate unattended for long periods in harsh industrial environments, the A20M has an IP40 rating. Its compact design and light weight (less than 1.7 lbs.) allow it to be mounted in hard-to-access locations that may be optimal for data collection. Fully configurable I/O functionality allows the A20M to be integrated quickly and easily into your control systems.

Multiple Programming Options

The A20M can be easily leveraged to control a process with LabVIEW and FLIR's LabVIEW Developers toolkit. This SDK allows programmers to access numerous measurement functions that can then be used to turn the A20M 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 measurements and includes source code examples that will dramatically reduce the time it takes to program a custom solution.

ThermoVision™ A20M Technical Specifications

Imaging Performance	
Field of view/min focus distance	25° x 19° / 0.3 m
Detector type	Focal plane array (FPA) uncooled microbolometer
Spectral range	7.5 to 13 µm
Spatial resolution (IFOV)	2.7 mrad
Thermal sensitivity @ 50/60Hz	0.12° C at 30° C
Focusing	Manual, external motor focus optional
Image Presentation	
FireWire/Ethernet output	8/16-bit monochrome and 8-bit color
Video output	RS170 EIA/NTSC or CCIR/PAL composite video
Measurement	
Temperature ranges	Range 1: -20° C to +250° C (-4 to +482° F) Optional: +120° C to +900° C (+248 to +1652° F)
Accuracy (% of reading)	± 2° C or ± 2%
Measurement modes	Spot, Area, Difference
Automatic emissivity correction	Variable from 0.1 to 1.0
Individual emissivity settings	Individually settable
Measurement corrections	Reflected ambient, distance, relative humidity, external optics. Automatic, based on user input
Supplementary Lenses*	
Field of view/min. focus distance	12° Telescope (12° x 9"/1.2m) 45° Wide angle (45° x 34"/0.1m)
Lens recognition	Automatic lens recognition and measurement corrections

Power Source	
AC operation	AC adapter 110/220 VAC, 50/60Hz (included)
DC operation	12/24V 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	0.8 kg (1.7 lbs)
Size	157mm x 75mm x 80mm (6.2" x 2.9" x 3.1")
Tripod mounting	1/4" - 20

User Configuration Table		
TYPE	FUNCTION	REMARK
Digital Input	TTL level • Shutter disable • Store image • Batch enable	Isolation and relay function in external module
Digital Output	TTL level • Spot/Area threshold ALARM • 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
Analog Input	• External 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**
12/24V nominal



- 8-button keyboard**
- Ethernet jack (RJ45) or FireWire jack (IEEE-1394)**
- BNC—C-Video (NTSC/PAL)**
- 2.5 mm DC power in**
12/24V Nominal; camera needs only one power source

*See Configuration Table above



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