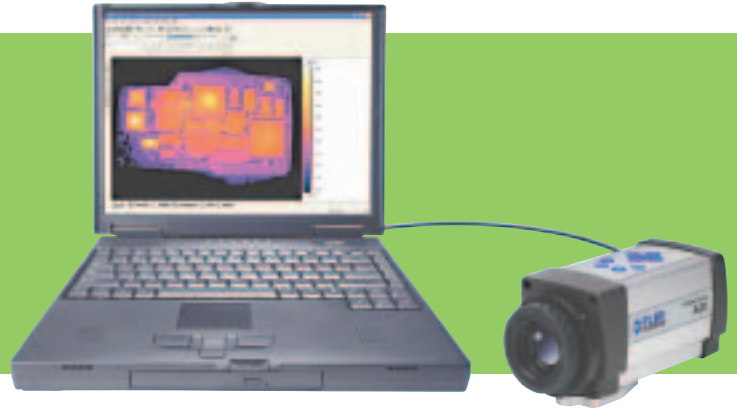


The ThermoVisionTM A20M Researcher infrared cameras are affordable, accurate and intelligent solutions for Research and Development applications – enabling the detection of subtle temperature variations that can signify potential component or design problems. Extremely easy-to-use, these thermal imagers clearly display the thermal characteristics of products and processes – delivering critical information needed to cost-effectively solve design problems and improve reliability.



- > Precision Temperature Measurement
- > Affordable IR Imaging Solution
- > Integrated ResearcherTM Software
- > Maintenance-free, Uncooled, Microbolometer Detector
- > Longwave Imaging Performance
- > LabView and C++ / Visual Basic Support
- > FireWire Image and Data Transfer

Affordable Research Package

The ThermoVision A20M + Researcher Package consists of a rugged IR camera and the ThermoCAM Researcher Software. It provides an affordable, flexible and powerful solution for real-time thermal analysis.

Precision Non-contact Temperature Measurement and Excellent Image Quality

The ThermoVision A20M allows you to see temperature differences as small as 0.12° C in a range from -20° C up to +900° C. It produces crisp high-resolution images (320 x 240 pixels) offering more than 76,800 individual measurement points per image at a refresh rate of 50/60 Hz.

IEEE-1394 FireWire Output

Enhanced connectivity options include composite video and IEEE-1394 interface for superfast image and data transfer of real-time, fully radiometric 16-bit images.

Easy Operation: Plug and Play

Simply connect the camera to a PC or a monitor and produce high-quality real-time radiometric images. The camera can be fully controlled either from the PC or with the integrated keyboard.

Integrated Keyboard

For those applications where the infrared camera and the PC are a distance away from each other, the ThermoVision A20M has an integrated keyboard. With a few buttons, conveniently placed at the top of the camera, you can control all features.

Ultra-compact, Rugged and Lightweight

Compact and extremely lightweight, this portable yet powerful research device fits easily on your bench. It can be carried to other test or hard-to-access locations for fast, mobile data acquisition and analysis in the lab or on the manufacturing floor.

Tailored to Your Application

As with all its products, FLIR Systems offers a complete series of accessories, including close-up and wide-angle lenses, to suit the most demanding applications.

ThermoCAM Researcher: Powerful, Real-time Storage and Analysis Software

ThermoCAM Researcher has been developed for use in scientific environments where detailed thermal analysis of dynamic events is required. It offers powerful built-in measurement and analysis functions (isotherms, spot measurements, line profiles, area histograms, image subtraction capability, etc.) for fast and extensive temperature analysis.

ThermoVision™ A20M Researcher Technical Specifications

Imaging Performance	
Field of view/min focus distance	19° x 14° / 0.3 m
Spatial resolution (IFOV)	2.7 mrad
Thermal sensitivity	0.12° C at 30° C
Focusing	Manual, external motor focus optional
Detector type	Focal Plane Array (FPA), uncooled microbolometer
Spectral range	7.5 to 13 µm
Image Presentation	
FireWire output	16-bit monochrome, 50/60 Hz, 320 x 240 pixels
Video output	RS170 EIA/NTSC or CCIR/PAL composite video
Measurement	
Temperature ranges	Range 1: -20° C to +100° C (-4 to +212° F) Range 2: -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	Select for individual measurement functions
Measurement corrections	Reflected ambient, distance, relative humidity, external optics. Automatic, based on user input
Lenses (optional)	
Field of view/min. focus distance	9° Telescope (9.1° x 6.75° / 1.2m) 34° Wide angle (34.1° x 25.5° / 0.1m)

Power Source	
AC operation (included)	AC adapter 110/220 VAC, 50/60Hz
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	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 • FW trig	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 Tlow - Thigh Isolation in external module
Analog Input	• External temperature sensor in: 0-5V	Scaled to Tlow - Thigh 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

FireWire jack (IEEE-1394)

BNC—C-Video (NTSC/PAL)

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

*See Configuration Table above