

M7800M

Economical, Fully Radiometric, Hand-Held
Thermal Imager with Visual Camera for Mid-Wave Infrared



Features

- 320 x 240 Resolution UFPA Detector
- Resolution of 0.06°C (at 30°C 60 Hz)
- Temperature Range 150°C to 800°C
- Focus Range of 12" to Infinity
- Weighs 2.9 lbs with Battery
- Digital Visual Recording
- Laser Pointer
- Optional Additional Lenses, Including the SpyGlass™ Lens
- Revolutionary DualVision Image Composite Functionality Now Available
- Transfers Images Using USB 2.0
- 3.5" Articulated LCD

M7800M Sample Images:



Transformer

Kiln

Fuse Clip

Contactur Connector



THE INFRARED PROS

M7800M Thermal and Visual Imager

Mikron's M7800M is an extremely lightweight, high-performance handheld IR camera offering a range of capabilities for an economical price. Completely self-contained in a highly-durable housing, it is both dust-proof and weather resistant, suitable for indoor or outdoor use. The M7800M is ergonomically designed for comfortable one-handed point-and-shoot operation and features 320x240 resolution at a 60Hz refresh rate.

The M7800M measures the passive infrared radiation emitted by the target surface. It then converts the radiation into a two-dimensional image relating to the temperature distribution at the target surface. The resulting temperature distribution can then be viewed in one of several color ranges (including grayscale) on the flip-up 3.5 inch TFT LCD display. The M7800M also offers a visual camera, and laser pointer to more easily visually pin-point problem areas for further analysis.

The on-board diagnostic software provides an intuitive menu system, controlled by a simple button system on the back of the camera. The camera allows you to select up to four areas on the image to select as "regions of interest." These selected areas allow the user to zero in on specific areas of concern. The M7800M can also simultaneously record high-definition 14-bit thermal images with corresponding digital visual images.

The camera is battery operated, uses advanced uncooled UFPA microbolometer technology, and stores images and data to internal flash memory. Saved images and image data can be transferred to an external device using USB 2.0.

In addition to its on-board image processing capabilities, the M7800M is fully compatible with Mikron's M7800M™ Thermal Imaging Software package, which provides fully-comprehensive, post image analysis and report generation features.



DualVision: Visual and Thermal Composite Image Functionality

What is DualVision? DualVision is the ability to display a thermal image over a visual image, on the M7800M's sizable 3.5" LCD. The percentage of the thermal image can be adjusted from 0-100%, over the visual image, allowing the operator to fine-tune the display, and pin-point problems faster! Both types of images can be saved and downloaded to a computer via USB 2.0.

DualVision is an optional additional feature for the M7800M. Ask your sales representative for pricing details, or call 1-888-506-3900.

At right, the M7800M LCD is shown with thermal image overlaid on the visual image. The camera user may adjust the opacity of the thermal image to show the entire thermal image, or just the hottest problem areas.



SpyGlass™ Lens and ViewPort Inspection System



Mikron ViewPort



Mikron Infrared, Inc.

has been an innovative leader in the field of infrared non-contact measurement since 1969. Mikron offers Value Imageering to help customers solve their most challenging application problems.

Value Imageering is a unique turnkey package. It consists of complete engineering, design, software, and installation services to meet the most severe and difficult thermal imaging system requirements.

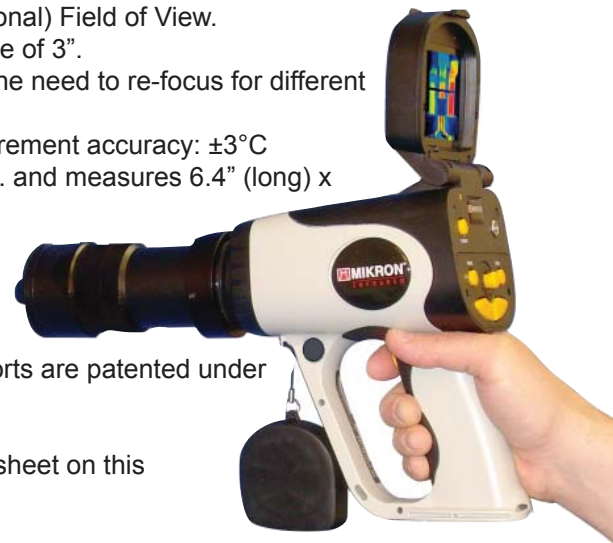
Today, Mikron provides industrial customers and R&D laboratories with accurate instrumentation ranging from convenient portable cameras to complete thermal imaging systems.

Hotspots in electrical cabinets can be quickly pinpointed while circuits are energized and under load, using Mikron's SpyGlass™ Lens and economical ViewPorts.

Raising the safety and convenience standard for thermal inspections, the Spy-Glass™ Lens and ViewPort encourage frequent examinations of electrical switch-gear because – with cabinet doors closed – no downtime is required to de-energize circuits for safety reasons. *In addition, keeping cabinet doors closed reduces the risk of arc flash.*

Characteristics of the solution:

- Permits thermal inspection of electrical switch gear without opening the enclosure and disconnecting circuits.
- Views entire scene through a 0.5" (13mm) diameter hole in the cabinet.
- Offers 53°H x 40°V (66° Diagonal) Field of View.
- Provides minimum focus range of 3".
- Large depth of field reduces the need to re-focus for different cabinet depths.
- Provides Temperature Measurement accuracy: $\pm 3^{\circ}\text{C}$
- The lens weighs only 1.14 lbs. and measures 6.4" (long) x 2.75" (Diameter)
- Attaches to the Mikron 7500, 7600 and 78XX cameras, making the camera a multi-purpose imager.
- SpyGlass™ Lens and ViewPorts are patented under US Patent No. 6,798,587 B2

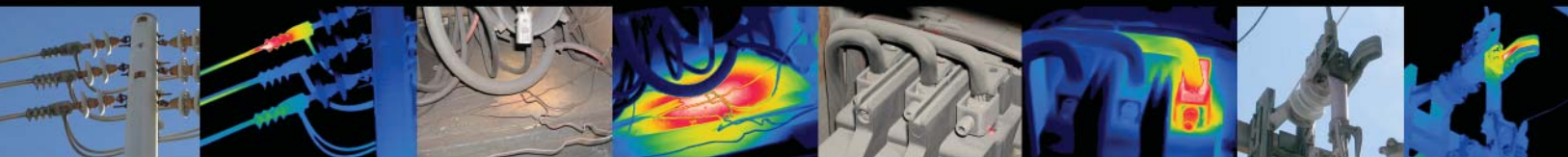


Ask your sales representative for a data sheet on this fantastic inspection combination.

ViewPort Design and Approvals:

All three styles of the patented Mikron ViewPorts have received UL and CSA approval for use in the United States and Canada, and also comply with IEEE Std. C37.20.2-1999. The ViewPorts are designed for use with NEMA Type 1, 2, 3, 3R, 4, 5, 12, 12K, and 13 enclosures.

M7800M Sample Images:



14 kV Connectors

Inductive Heating

Starter Lug

14 kV Switch

Technical Data

M7800M		
Performance	Temperature Range:	Range 1: 150°C to 500°C Range 2: 200°C to 800°C
	Measurement Accuracy:	±2% or 2°C of reading
	Field of View:	21°(H) x 16°(V)
	Focus Range:	30 cm to infinity (12" to infinity)
	Instantaneous FOV / Spatial Resolution:	1.2 mrad
	Image Update Rate:	60 frames per second
	Resolution:	0.06°C (at 30°C 60Hz)
	Detector:	320 x 240 Uncooled Focal Plane Array Microbolometer
	Spectral Band:	3.0 to 5.0 µm
	Visual Camera	Effective Image Pixels:
Field of View:		34.6° (H) x 25.9°(V)
Sensitivity:		1 lux
Fixed Focus Distance:		30 cm to infinity (12" to infinity)
Auto Exposure:		Provided
Laser Pointer	Classification:	CDRH Class II Laser Product
	Type:	650 nm Laser Diode 0.5 mW
Presentation	Display Type:	3.5" color LCD display
	A/D Resolution	14 bit
	B&W/Color Image:	Several palettes available
	Image Zoom:	2:1, 4:1 (with spatial filtering)
	Display:	Date/time; Temperature units °C/°F; Multi-Language; LCD intensity (high/normal/low); Battery Status Indicator; Color Bar; Temperature Range Scale, Isothermal Band Display (max 4 bands)
	Video Output:	NTSC/PAL composite video signal, S-Video
Measurement	Measuring Functions:	Run/Freeze
	Signal to Noise (S/N) Improvement:	Off, S2, S8, S16
	Alarm:	Screen display
	Image Processing Functions:	Variable level/sense; Multi-point temperature display (4 pts); Multi-point emissivity display (4 pts); Temperature difference (@T) display; Max/Min (peak hold) temperature display; Alarm (full screen or specified box); 2x and 4x digital zoom (Run/Freeze); Box setting (max 5 boxes)
	Emissivity Correction:	0.10 to 1.00 (at 0.01 steps)
	Environmental Temperature Correction:	Provided (including interval NUC)
	Background Compensation:	Provided
Auto Functions:	Automatic level and sensitivity; level trace and auto gain control	
Image Processing	On-Board Flash Memory:	Stores up to 1,300 images (dependent upon the camera configuration)
	Image Storage Functions:	Save individual images or thermal/visual composites with or without text annotation; view thermal image gallery (12 thumbnails); replay images; and create, change, delete and rename directories and image files.
	Software:	Downloading and Image Viewing Software included
Interfaces	USB-2:	Transfers images and image data to a personal computer (Requires Windows™ XP)
	Video Output:	Requires standard RCA adapter or S-Video adapter
Environmental	Operating Temperature:	-15°C to 50°C 90% Relative Humidity or less (not condensed)
	Storage Temperature (without batteries):	-40°C to 70°C 90% Relative Humidity or less (not condensed)
	Environmental Protection:	IP 54 (IEC60529)
	Shock:	30G (IEC60068-2-27)
	Vibration:	3G (IEC60068-2-6)
Power Source	Power Consumption:	Approx. 6W (typical)
	Battery Type:	Li-ion; rechargeable, field replaceable (spare battery included)
	Battery Operating Time:	Approx. 2 hours 30 minutes (display shows battery status)
	AC operation:	AC adaptor: 100V to 240V, DC 7.2V (nominal)
	Power Saving:	Manual and/or automatic standby mode
Physical Characteristics:	Camera Dimensions:	203.2 mm x 228.6 mm x 101.6 mm (8" x 9" x 4")
	Camera Weight:	1.3 kg including battery (2.9 lbs. including battery)
	Tripod Mounting:	Standard, 1/4" - 20
Optional	Lenses:	Telephoto 2.0, Wide Angle, SpyGlass™ Lens
	Focus:	Manual Focus Available



Standard Accessories: (2) Li-Ion Batteries, Smart Battery Charger, AC Adapter and DC Interface Cable, USB Cable, Lens Cap, Shippable Carrying Case, Downloader Software, Neck Strap, Operating Manual on CD, Lemo to RCA or Lemo to SVideo Adapter. Several add-on lenses available at additional cost.

Mikron reserves the right to change specifications to reflect the latest changes in technology and improvements at any time without notice. These changes will be reflected in subsequent editions of our literature when warranted.

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