

M7800DV

Economical Hand-Held 320 x 240 Resolution Thermal Imager with Visual Camera (DualVision)



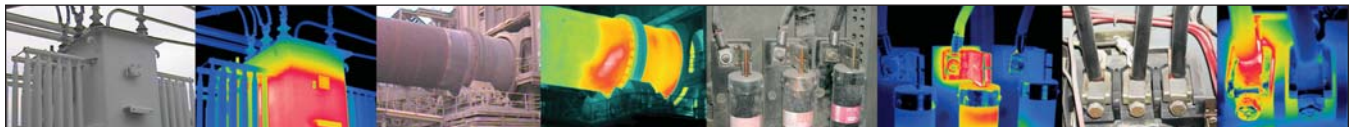
Easy to Use, High Performance Infrared Camera with High-Quality Flip-Up LCD Display, On-Board Laser Pointer and Digital Visual Recording

Key Features

- Fully Radiometric 320 x 240 Resolution Detector (UFPA)
- Resolution of 0.06°C (at 30°C 60 Hz)
- Temperature Range -40°C to 500°C
- Focus Range of 12" to Infinity
- Weighs 2.9 lbs with Battery
- Digital Visual Recording
- Revolutionary DualVision™ Image Composite Functionality *Now Available*
- Laser Pointer
- 3.5" Flip-up LCD
- Transfers Images Using USB 2.0
- Optional Additional Lenses, Including the SpyGlass® Lens



M7800DV Sample Images:



Transformer

Kiln

Fuse Clip

Contacter Connector

M7800 Thermal and Visual Imager

Mikron's M7800 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 M7800 is ergonomically designed for comfortable one-handed point-and-shoot operation and features 320x240 resolution at a 60Hz refresh rate.

The M7800 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 M7800 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 M7800 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. In addition to its on-board image processing capabilities, the M7800 is fully compatible with Mikron's MicroSpec™ 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 M7800's sizable 3.5" LCD. The temperature range of the thermal image over the visual image can be adjusted, 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.

DualVision™ is an optional additional feature for the M7800. Ask your sales representative for pricing details, or call 1-888-506-3900.

At right, the M7800 LCD is shown with thermal image overlayed on the visual image. The camera user may adjust the thermal image to show the entire thermal image, or just the hottest problem areas.



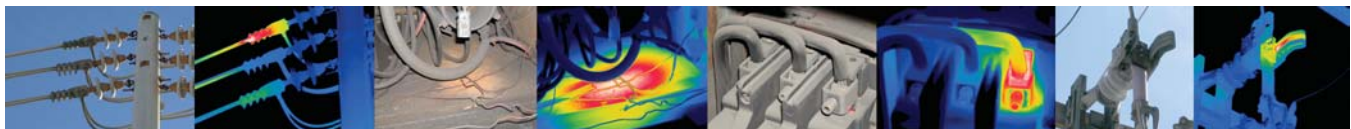
SpyGlass® Lens and ViewPort Inspection System



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.

M7800 Sample Images:



14kV Connectors

Inductive Heating

Starter Lug

14kV Switching

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 SpyGlass® Lens and ViewPort encourage frequent examinations of electrical switchgear 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 M7500, M7600 and M78XX 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.

Technical Data

Performance	Temperature Range	Range 1: -40°C to 120°C (-40°F to 248°F) Range 2: 0°C to 500°C (32°F to 932°F) Range 3: 200 °C to 1000°C (392°F ... 1832°F) (optional)
	Measurement Accuracy Field of View Focus Range Instantaneous FOV/ Spatial Resolution Image Update Rate Resolution Detector Spectral Band	±2% of reading or 2°C 21°(H) x 16°(V) 30 cm to infinity (12"to infinity) 1.2 mrad 8.5 or 60* frames per second 0.06°C (at 30°C 60Hz) 320 x 240 Uncooled Focal Plane Array Microbolometer 8.0 to 14.0 μm
Visual Camera	Effective Image Pixels Field of View Sensitivity Fixed Focus Distance Auto Exposure	752 (H) x 480 (V) pixels 34.6° (H) x 25.9°(V) 1 lux 30 cm to infinity (12" to infinity) Provided
		
Laser Pointer	Classification Type	CDRH Class II 650 nm (red) Laser Diode <1mW
Presentation	Display Type A/D Resolution B&W/Color Image Image Zoom Annotation Display	3.5" color LCD display 14 bit Several palettes available 2:1, 4:1 (with spatial filtering) Text annotation 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); thermal/visual composite images NTSC/PAL composite video signal, S-Video
	Video Output	
Measurement	Measuring Functions Signal to Noise (S/N) improvement Alarm Image Processing Functions	Run/Freeze Off, Σ2, Σ8, Σ16 Screen display Variable level/sense; Multi-point temperature display (4 pts); Multi-point emissivity display (4 pts); Temperature difference (ΔT) 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 Environmental Temp. Correction Background Compensation Auto Functions	0.10 to 1.00 (at 0.01 steps) Provided (including interval NUC) Provided Automatic level and sensitivity; level trace and auto gain control
Image Processing	On-Board Flash Memory Image Storage Functions	Stores up to 1,300 images (dependent upon the camera configuration) 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. Image Viewing Software included
	Software	
Interfaces	USB-2.0	Transfers images and image data to a personal computer (requires Windows® XP or above)
	Video Output	Requires Lemo connector to standard RCA adapter or S-Video adapter
Environmental	Operating Temperature Storage Temperature (w/o batteries) Environmental Protection Shock Vibration	-15°C to 50°C, 90% Relative Humidity or less (not condensed) -40°C to 70°C, 90% Relative Humidity or less (not condensed) IP 54 (IEC60529) 30G (IEC60068-2-27) 3G (IEC60068-2-6)
Power Source	Power Consumption Battery Type Battery Operating Time AC Operation	Approx. 6W (typical) Li-ion; rechargeable, field replaceable (spare battery included) Approx. 2 hours 30 minutes (display shows battery status) AC adapter: 100V to 240V, DC 7.2V (nominal)
Physical Characteristics	Camera Dimensions Camera Weight Tripod Mounting	203.2 mm x 228.6 mm x 101.6 mm (8" x 9" x 4") 1.3 kg including battery (2.9 lbs. including battery) Standard tripod mount, 1/4" - 20
Optional	Lenses Focus	Telephoto 2.0, Wide Angle, SpyGlass® Lens 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, Neck Strap, Operating Manual on CD, Lemo to RCA or Lemo to S-Video Adapter. *Several add-on lenses available at additional cost.*

*The 60 Hz camera is prohibited to be resold, loaned or taken out of the USA unless an export license has been obtained from the US Department of Commerce. Any violation can result in severe criminal penalties.



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