

M7500E



Fixed-Installation Thermal Imaging Camera for Industrial and Scientific Applications

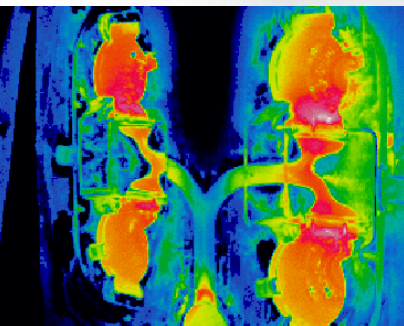
Affordable, high performance, infrared camera with digital image transfer and remote monitoring capabilities for demanding real-time imaging applications



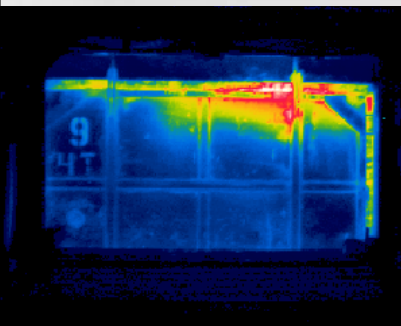
Features:

- Affordable Price
- Real Time Digital Image Transfer 100Base-T Ethernet
- Remote Monitoring via Local Area Network
- NEMA-4 Housing
- Maintenance Free Operation
- Process Control Applications in Factory Production Environment
- Ambient Temperatures to 100°C (212°F) with Optional Cooling
- High Accuracy $\pm 2\%$ or 2°C of Reading
- Standard Long Wavelength, Less Affected by Sunlight and Factory Lighting

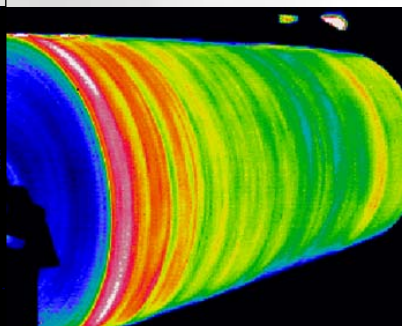
M7500E Sample Images:



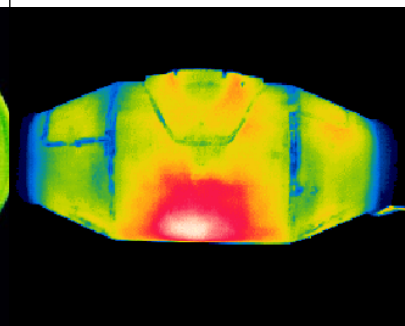
Mold Uniformity



Furnace Door Seal



Paper Wind-Up



Refractory Degradation



M7500E Series (Variations)

Mikron offers a variety of temperature spectrums and configurations for a host of applications.

Specific 7500E Model	Configuration / Temperature Range	Wavelengths
M7500E-L	Range 1: -40°C to 120°C Range 2: 0°C to 500°C	8-14µm 8-14µm
M7500E-HT	200°C to 1600°C	8-14µm
M7500E-HF	400°C to 1600°C	3.9µm
M7500E-HG	400°C to 1600°C	4.8 - 5.2µm
M7500E-M	Range 1: 150°C to 500°C Range 2: 200°C to 800°C	3 - 5µm 3 - 5µm
M7500E-F	200°C to 800°C	3.9µm
M7500E-G	200°C to 800°C	4.8 - 5.2µm

MikroSpec™ Software Multiplies the Value of the M7500E

By using one or more Mikron Infrared M7500E cameras connected to MikroSpec™ R/T software, processes can be measured accurately, ensuring production quality in situations in which individual images are insufficient. The MS Windows-compatible software allows the user to view thermal images in real-time, as well as image sequences previously captured and stored.

One camera does the work of 32! By creating up to 32 Regions of Interest (ROIs) in one of ten shapes, the user can retrieve temperature range details within each ROI. The emissivity (key to accurate radiometric imaging) of each ROI can be set individually. Each ROI has a minimum and maximum alarm set point that can be configured to generate software and digital output alarms. MikroSpec™ R/T can then send corresponding signals to a PLC or SCADA system.

Sophisticated graph tools allow the graph creation of real-time image temperature analysis, while the export to Excel™ feature allows analyzation of the real-time image temperature data in a numerical context.

Other features of the software include multiple color palettes, off-line analysis, image averaging and subtraction, and advanced histogram and charting elements. Data may be exported to Excel and ASCII formats, image sequences to .avi video files.



The Revolutionary M7500E



Mikron Infrared, Inc.

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

Value Imaging 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.

Strong-box Design

The M7500E features advanced maintenance-free electronics, and industrial protective packaging. Optional enclosures are available for high-temperature and/or harsh environments.

Additional Lenses Available

2X Telephoto Lens Option

FOV - 10.9°(H) x 8.2° (V)

Focus Range - 198.1 cm to infinity

Wide-Angle Lens Option

FOV - 53°(H) x 40° (V)

Focus Range - 7.6 cm to infinity

Base of ThermalSpection Systems

The M7500E is the base camera for Mikron's ThermalSpection 724 Systems.

These systems feature infrared monitoring combined with visual cameras, and ultrasound detection, in NEMA 4 industrial enclosures.

Software Multiplies Value

Mikron's own MikroSpec™ R/T Software multiplies the value of one or several M7500E cameras. Via Ethernet, a user can control functionality remotely, selecting camera type, mode range, temperature scale and lens. Customizable Regions of Interest (ROIs) allow the user to monitor specific areas—each with independent settings. See page 2 for more information.

Commissioning and Support

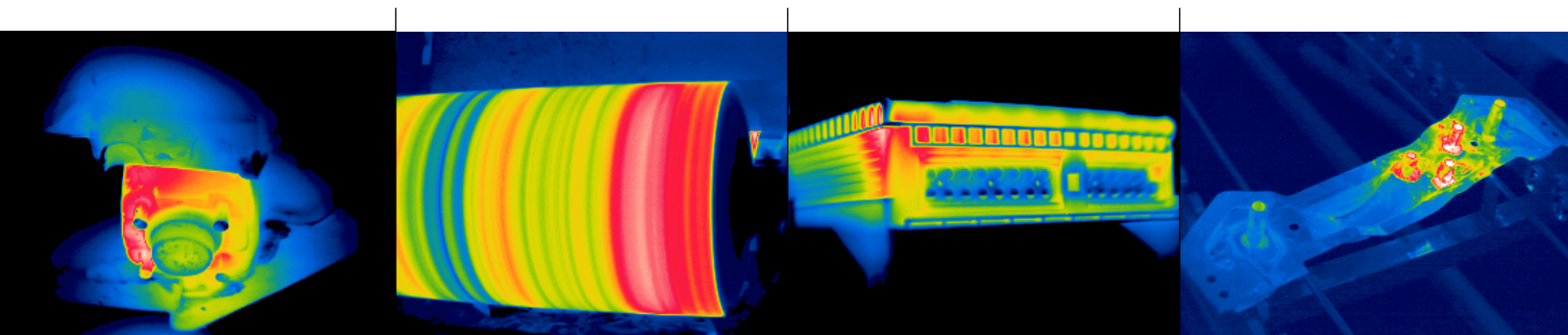
A Mikron technician is available to commission a process control system—installing and configuring the software for use with one or several cameras. Commissioning can also include employee training. In addition, MikroSpec software updates are free for 12 months.



Designed and Built in the United States.

Cameras are designed and built at Mikron's New Jersey location. Engineers, software programmers, and other support staff are available to answer questions, during U.S. business hours.

M7500E Sample Images:



Die Cast Mold

Paper Roll

Injection Mold

Weld Inspection

Technical Data:

M7500E		
Detector Unit	Temperature and Spectral Configurations: Measurement Accuracy: Field of View: Focus Range: Instantaneous FOV: Detector: Image Update Rate: Sensitivity/NETD: A/D Resolution: Ambient Correction: Interface:	Standard: -40°C to 120°C and 0°C to 500°C (See table on pg. 2) Standard: 8.0 to 14.0 μm (See table on pg. 2 for options) ±2% or 2°C of reading 21°(H) x 16°(V) 30 cm to infinity 1.2 mrad 320 x 240 Uncooled Focal Plane Array (Microbolometer) 7.5 Hz 0.08°C @ 30°C 14 bit Provided (Including interval NUC) 100 Base T Ethernet
Environmental	Operating Temperature: Storage Temperature: Shock Resilience: Vibration Resilience:	-15°C to 50°C -40°C to 70°C 30G (IEC60068-2-29/JIS C 0042) 3G (IEC60068-2-6/JIS C 0040)
Electrical	Power Supply: Power Consumption:	12V DC 24W (Nominal) 15W (Typical)
Physical Characteristics	Dimensions: Weight: Remote Camera Control Functionality	3.23" x 3.27" x 7.06" (82mm x 83mm x 179 mm) 3 lbs. (excludes any protective housing) Allows selection of the camera type, mode range, temperature scale and lens. It also allows non-uniformity correction (NUC) to be performed as well as adjustments to be made for focusing, emissivity, ambient calibration, and percentage of transmission loss.
Functionality Available Through On-Line Thermal Image Processing Software	Real-time Image Acquisition: Object Data (Regions of Interest): Alarms: Display Color: Isotherm Overlay: Image Averaging and Subtraction:	Allows large amounts of data to be captured at a user-adjustable capture rate of up to 30 frames per second. Live images can be captured with full temperature data and stored to a sequence file. The maximum number of frames is dependent upon the amount of available memory in the computer. Individual snap shot images can also be stored to files with full temperature data for later analysis. Multiple Regions of Interest (ROIs) allow for processing and computing of the Minimum, Maximum and Average Temperatures for up to 32 Regions of Interest (ROIs). The ROIs can be resized and moved on the live image display. There are 10 different ROI shapes (Point, Line, Broken Line, Free Line, Circle, Annulus, Rectangle, Rotated Rectangle, Polygon, and Region). A custom formula ROI type is also available which allows temperatures to be computed using typical Excel™ formulas. Each ROI has a minimum and a maximum alarm set point that can be configured to generate software and digital output alarms. These alarms can be recorded to a Text or Comma Separated log file for later review. Multiple Color Palettes offer flexibility for optimal image clarity. Provides a visual representation of the temperature breakdown on the image. Three Isotherm channels are offered where temperature ranges can be set to display specific colors on the image display. Allows comparisons to be made of the current input image to that of a snapped or loaded reference image. Allows up to 8-fold averaging of images for noise reduction.

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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