

## Portable 2-Color or Single Color Infrared Thermometers for Non-contact Temperature Measurement

*M90R highly accurate portable 2/color model independent of emissivity  
M90V with high accuracy, precision targeting and high optical resolution*

### Accurate; Easy-to-use

The M90R and M90V portable infrared thermometers provide maximum operator convenience for rapid and dependable data gathering in high temperature applications, such as metal production, foundries, annealing, glass making, forging, induction heating, refractory, ceramic kilns and semiconductor processing. They can be hand-held for spot checks or tripod mounted for long term monitoring.

### Model M90R 2-Color Infrared Thermometer

This unique version utilizes the 2-color principle, in which the temperature measurement is made by ratioing the radiation intensities of two adjacent wavelengths rather than from absolute intensity as with single band (or single color) instruments. For surfaces behaving as grey bodies, this design approach eliminates a number of factors that degrade the accuracy of conventional instruments. For example, temperature measurements with the M90R are:

- Independent of emissivity
- Unaffected by dust and other contaminants in the field of view
- Unaffected by dirty viewing windows

### Model M90V Single Color Infrared Thermometer

The M90V is the modern replacement for the optical pyrometer or disappearing filament pyrometer (DFP). It requires no operator judgment to make accurate readings and the data obtained is directly comparable to that obtained with the DFP, because it measures at the same wavelength, 0.65 microns. With its built-in data collection capability, the M90V can perform repeated measurements at ease and avoids the fatigue and potential for carelessness associated with the need to take many successive readings such as are required in many industrial applications.

These exceptional instruments feature through-lens sighting for sharp focussing on targets from 50cm (20") to infinity. Temperature is indicated on a large display in the viewfinder and in a window on the rear of the instrument.

### Other features include:

- Peak, Valley, Hold and Average functions selected by push-button
- Data Collection Capability
- Digital (RS232C) computer interface
- Digital emissivity/slope setting
- Communication software



## Built-in Data Logging

The M90 can store up to 40 single reading in non-volatile memory. The readings are stored using the RUN/HOLD switch. Each time the button is pressed, the unit goes from RUN mode to HOLD mode, and the reading is stored. The button is pressed again to return to RUN and the counter is automatically incremented so the next reading may be stored in the next location. The user may single-step through the stored readings to review them. This allows for "snap-shot" readings to be taken in the field and analyzed in the lab or office.

## Unconditional Warranty

Every M90 Series Infrared Sensor is covered for all defective material and workmanship for one full year after shipment.

## Made in U.S.A.

The M90 Series is designed and built by Mikron, the leading innovator in infrared thermometry. Manufacturing facility is located in Oakland, New Jersey.



With the portable M90R or M90V system the operator can conveniently carry the instrument throughout his survey, continuously collecting his readings for processing at a later time.

## GENERAL SPECIFICATIONS

**Focussing:** 50cm (20") to infinity.

**View Finder:** 9° sighting, eye piece adjustable, illuminated temperature display in viewfinder. High temperature eye protection filter, built-in and selectable in high temperature models.

**Operating Modes:** Run, Peak, Valley, Average, Hold.

**Emissivity Range:** 0.1 to 1.00 in 0.01 steps, digitally set.

**Slope Adjust:** 0.850 to 1.150 in 0.001 steps, digitally set, for M90R Series only.

**Digital Output:** RS-232, 2400 baud, computer.

**Ambient Operating Temperature:** 0°C to 50°C (32°F to 122°F). 0 to 90% R.H. non-condensing.

**Storage Temperature:** -20°C to 65°C (-5°F to 150°F).

**Battery Type:** Rechargeable Ni-Cad, type AA.

**Battery Life:** Continuous operation: 16 hours.

**Weight:** 1.1kg (2.5 lbs.) with lens and batteries.

**Mounting:** Built-in tripod socket 1/4-20 tapped hole.

**Size:** 165mm x 187mm x 76mm (6.5"W x 7.3"L x 3.0"H)

## Standard Accessories

High-impact plastic fitted carrying case

Ni-Cad batteries type AA

Battery charger

Power supply: 100 or 115 or 220VAC

Lens cap

Instruction Manual



## Optional Accessories

Communication software

RS232C output cable to link up with PC

Dust-proof soft case

Shoulder strap

Metal housing in lieu of plastic for harsh environment

Typical Applications	Model	Temperature Range °C/°F (Field Selectable)	Spectral Response (µm)	Field of View for Measurement	Accuracy (See note 1.)	Temperature Resolution	Response Time
Hot and molten metals, foundries, glass making, forging, annealing, induction heating, refractory and kilns, semiconductor processes	M90V	800°C to 3000°C 1472°F to 5432°F	0.65 (same as optical pyrometers)	300:1(1/5°)	±0.25% of reading	1°	0.5 sec.
	M90R-1	700°C to 2000°C 1292°F to 3632°F	2-color near 0.9(µm)	60:1(1°)	±0.70% of reading		
	M90R-2	900°C to 3000°C 1652°F to 5432°F		180:1(1/3°)			

**Note 1.** Certificate of Calibration traceable to NIST is optionally available upon request.



ISO 9001



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