

Advanced optical capabilities

Superior temperature resolution

Reliable operation in extremely hostile environments

Accurate monitoring of thermal processes

Infrared Ratiating Pyrometer

KT81R

Accurate, Non-contact, High Temperature Measurements with long term stability

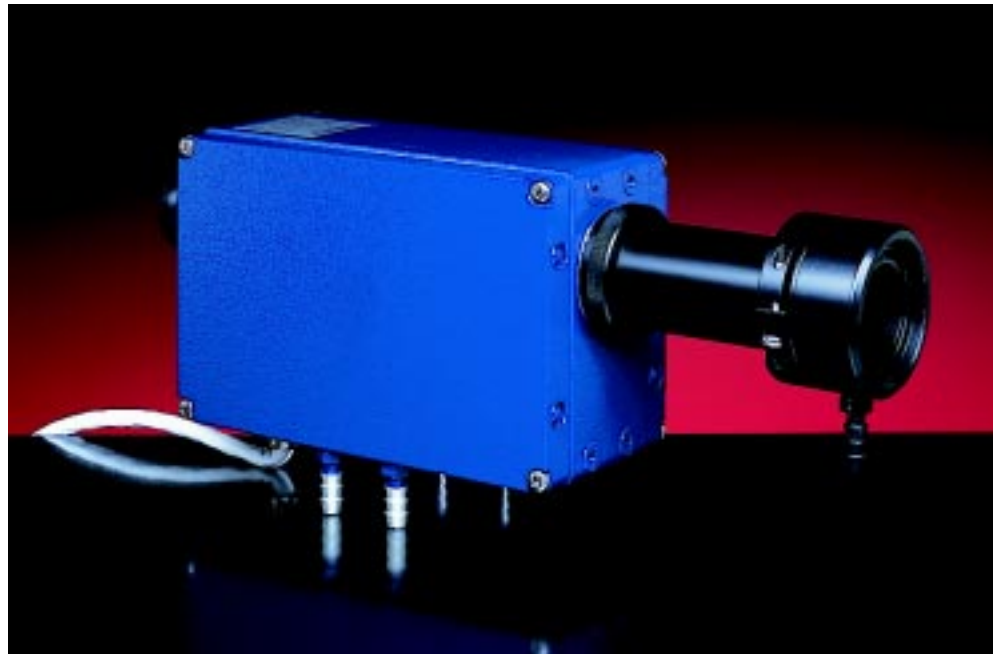
If you are looking for an expert partner in non-contact temperature measurements with more than 40 years of experience and an installed base of infrared Pyrometers and systems with thousands of customers worldwide, HEITRONICS is the right address to help you with your specific application.

Today's manufacturing processes require highly reliable non-contact measurement of surface temperatures to prevent over- or under-heating and to maintain controlled temperatures. KT81R infrared Pyrometers measure product temperature directly and continuously with dependable repeatability. What's more, these precision instruments feature advanced engineering refinements, quality optics, precise temperature resolution and are built to satisfy rugged industrial requirements.

The instrument offers:

- a Silicon, photovoltaic detector responding in the spectral region of 0.7 to 1.2 micron. Heating/ cooling action of a Peltier element incorporated into the detector housing maintains a constant temperature to optimize signal level and stability of the detection.
- a Linear outputs proportional to temperature directly from the sensing head. A variety of models covering a temperature range of 1300°F-5400°F (700°C -3.000°C) collectively a Through-the-lens sighting for precise aiming and ease of set-up.
- a Standard accessories to satisfy most applications; customization also available.

Because HEITRONICS offers a choice of devices, you may select the infrared Pyrometer that's just right for your particular production requirements. For example, the KT 81R is ideal for molten metals and applications with sight path obscuration. Other standardly available focusing offers larger spot diameters for use on metal slabs and billets or molten glass.



Temperature Meter MS20



Pipe bending application with Ratiating Pyrometer KT81R

HEITRONICS

Infrarot Messtechnik

The KT81R

can be configured to send an output signal to an indicator, to a computer for logging of data, or to a controller for maintenance of temperature based on a pre-set control point.

Because of its ratio measurement method, HEITRONICS's KT81R two-colour infrared pyrometer is ideal for difficult high-temperature applications where objects are partly obliterated, moving in the field of view, or where emissivity varies. KT81R measurements are insensitive to varying grey body emissivity.

For non-grey body applications, the ratio of emissivity adjustment is made on the KT 81R. The KT 81R is typically used with materials such as: molten iron, steel alloys, tantalum, copper and tungsten.

KT81R features include:

Ratio method of measurement of the KT81R is "forgiving" in that it tolerates sight path obstructions, such as those found in cement and lime kiln applications, as well as dirty windows in pressure and vacuum furnace applications. At 1500°F (800 °C) as much as 95 percent obscuration of the object is tolerable.

Ratio measurements of the KT 81R can take temperatures of objects that partially fill or wander within the field of view. For example, tungsten wire with 50 micron diameter can be measured as low as 1800 °F (1000 °C). Background temperatures must be cooler than the object.

Adjustable lens stop

will effectively cut off unwanted energy surrounding the target. It is capable of blocking up to 95% of the field of view.

General Specifications

KT 81R Specifications Temperature Range

1300 to 2200°F- 700 to 1200°C
1600 to 2900°F- 900 to 1600°C
1800 to 3600°F- 1000 to 2000°C

Field of view: See diagram.

Spectral Response: Ratio of two wavebands between 0.7 to 1.2µm
Calibration Accuracy: ± 0.5% of target temperature plus ± 5.5°F (3°C).

Temperature Resolution (in % of target temperature): ± 0.14%

Repeatability (in % of target temperature): ± 0.3%

Response Time: (To reach 90% of full scale value):

Standard: 1 sec., Option: 100 msec., 300 msec., 3 sec.

Ratio of Emissivity: Adjustable from 0.93 to 1.08.

Analog Output: Standard: Linear 4 to 20 mA (max. load 500 ohm)
Option: Linear 0 to 20 mA or 0 to 1 V (others on request).

Power Requirements: 24VDC or 24VAC ± 10% 50/60 Hz, max. 400 mA.

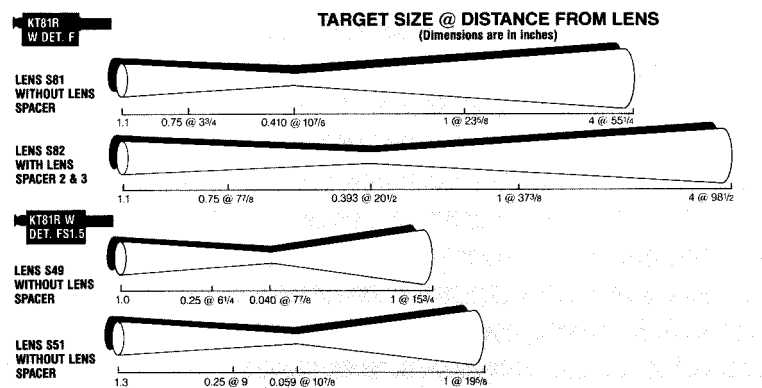
Operating Ambient Temperature: 32 to 140°F (0 to 60°C).

With water-coolable accessories up to 300°F (150°C).

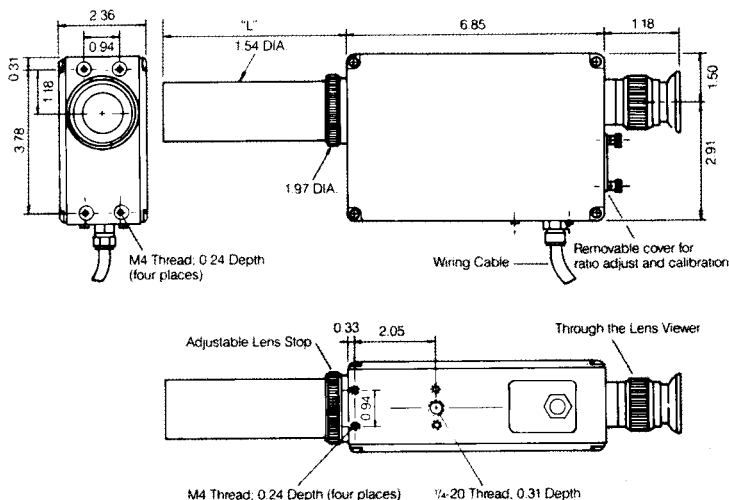
Storage Temperature: - 4 to + 158°F (-20 to +70°C)

Housing Protection: NEMA 4 equivalent (IP54)

Weight: 2.6 lb. without accessories.



Housing Dimensions in inch



Dimensions in inches except for thread size in millimeters where noted (ie: M4 = 4mm)

Housing material: Zinc-Aluminum alloy

Finish: Blue epoxy coating

ACCESSORY DATA:

Tube fittings: For flexible tubing with 1/4 inch diameter

Air purge fitting: Used to keep lens clean. 4-5 psi instrument air required. Nitrogen may also be used.

Air purge fitting clamps onto front of lens.

Water coolable sideplates and water coolable lens collar: Used when ambient temperature exceeds 140°F (60°C). A water flow rate of 8-10 gallons per hour at not more than 86°F (30°C) is adequate for ambients up to 300°F (150°C). Maximum allowable water pressure is 90 psi.

Caution: Do not allow temperatures of KT81R to drop below dew point.