

Infrared Radiation Pyrometer

KT 15 0

A Quantum Step in Accuracy

Non-Contact Temperature Measurements in the most Advanced Technology

Compact size,
Rugged,
Long term stability

Surviving in extremely
hostile environmental
conditions

Freely programmable
functions
and parameters

Precise monitoring
of thermal production
processes



*Temperature measurements
in chemical plants*



*Temperature measurements during
compact disc production*



*Temperature monitoring
in paint processing*



*Temperature monitoring
in paper mill*

HEITRONICS
Infrarot Messtechnik

KT15D-Series: Highest performance in a small package



KT15D:
Digital flexibility

„D“-The Entrance Label to a Digital World

The KT15D-Series is the result of a consequent miniaturization made possible by most advanced microprocessor technology. This innovative design is the "up-to-date" asset for any automated production process.

Digital signal processing is the key for an optimum adaptation of all instrument and process parameters to virtual any measuring condition with an unequalled operating comfort and highest flexibility. All programmed configurations are safely secured in a dedicated E²PROM-memory.

The different models of this series cover temperature ranges from -50 to 3,000 °C with the following parameters freely selectable:

- Temperature span of analog output
- Choice of analog output
- Format and data rate of serial interface
- Emissivity setting
- Response time
- Surrounding temperature at location of measured object
- Temperature unit

KT15D with protective and coolable housing for extremely environmental conditions with high temperatures

The performance features of the instruments are supported and enhanced by additional functions:

- Continuous readout and data transfer
- Permanent monitoring routines with error signals
- Calibration routine
- Remote monitoring of instrument housing temperature
- Checking of all selected instrument parameters

Variety of Models

A variety of 19 separate models with specific spectral response characteristics are available to match the full range of different applications and physical properties of measured materials. Several detector sizes and numerous lens variations allow optical system configurations required for high spatial resolution and optimum target definition.



KT15D is the synonym for a digital, compact, freely programmable, and extremely reliable series of Infrared Radiation Pyrometers, equipped with comprehensive and flexible functional modes for accurate temperature determination and control.

Digital Technology provides

- Extended Temperature Measuring Ranges
- Variable Response Times
- Free Programming of Parameters
- Scaling of Temperature Spans
- Choice of Analog Output

Another accomplishment after 4 decades of experience in Infrared Radiation Pyrometry.

Accessories

A variety of standardized accessories facilitate easy installation and provide protection against hostile environmental conditions in critical applications. The list of useful accessories includes:

- Protective and coolable housing for elevated ambient temperatures
- Explosion-proof housing in dangerous atmospheres
- Optical sighting devices and laser sights for aiming onto target
- Air purge attachments to keep optical surfaces free of contaminants
- Mechanical mounting assemblies and adapters
- Blackbody calibration sources
- Temperature meter, signal conditioner and data logger

The SC11 Autoscan Deflection extends the KT15D to a complete line scanning system for measuring and monitoring temperature profiles.



Accessories of the KT15D-Series: Vacuum tight lenses, Blackbody calibration sources, 90°-Deflection, Air purge fitting

Application Menu from "A" like Automotive Parts to "Z" like Zirconia

The versatility of different models in the full range of the infrared spectrum, the digital flexibility of the KT15D-Series, and the extensive available accessories, allow an application menu covering the entire alphabet from A to Z. Starting with the temperature measurement of automotive parts, construction materials, drying processes, glass forming, metal smelting, paper printing and laminating, paint curing, plastic extrusion, textiles stretching, water surface monitoring, and ending with the temperature control of a zirconium furnace.

Almost unlimited are the applications in environmental protection and scientific research programs and in industrial R&D laboratories.



Laserpointer to facilitate aiming on target

How to Select the Correct Model?

Primary selection criteria for the choice of the most suitable instrument are primarily the specific radiation properties of the measured material, the desired temperature measuring range, and any transmitting media in the optical path (atmosphere, gases, windows).

For energy reasons, models with a spectral response in the longer infrared spectrum are to be preferred for measurements of lower temperatures.

Selection Guide

To help you find the best suited instrument for your specific application, we have compiled a selection guide on the last page of this data sheet. Once you have decided the most important parameters

- what is the material to be measured? and
- what is the temperature range of your process?

enter the last two columns of the selection guide and find the appropriate instrument(s).

An example is given to illustrate the selection process: Low to medium temperatures (ambient to 250°C) to be measured in an automated paint drying/curing installation. The selection guide shows the KT15.82D, temperature capabilities - 50 to 1,000 °C as the best suited instrument.

Inevitably, you will have more and detailed questions about our products and services. Please, do not hesitate to contact us directly. Our staff in our custom oriented application labs are waiting to assist you with all our available resources to find the best solution for your non-contact temperature measuring problem.

**HEITRONICS -
We are on your wavelength**

Selection Guide: Infrared Radiation Pyrometers KT15D-Series

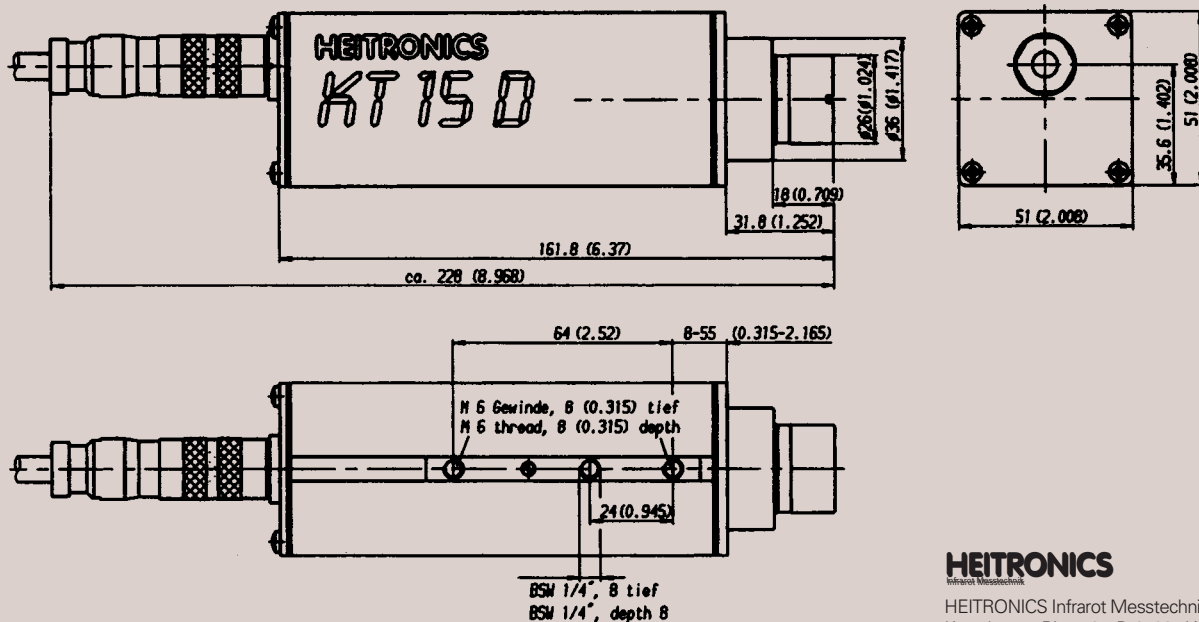
Model	Spectral Response (µm)	t _{min} ... t _{max} /°C	Application
KT15.01D	2.00 ... 2.70	300 ... 2,400	metals, metal oxides, ceramics, glass volume
KT15.02D	2.00 ... 4.50	150 ... 2,500	metals, metal oxides, glass volume (low temperatures)
KT15.21D	3.43 ± 0.15	80 ... 350	plastic film with CH-band, coating materials (oil, paints)
KT15.22D	5.70 ± 0.10	40 ... 400	photographic film carrier material
KT15.23D	6.80 ± 0.15	0 ... 400	thin film plastics, e.g. PE, PP, PVC
KT15.24D	7.93 ± 0.15	0 ... 400	thin film plastics, e.g. PET, PA, fluor carbon
KT15.25D	8.05 ± 0.15	0 ... 400	thin film plastics, e.g. PTFE, PET, PVC,
KT15.41D	3.90 ± 0.10	250 ... 2,500	glass volume, measurements through hot gases and flames
KT15.42D	4.90 ... 5.50	100 ... 2,500	glass (processing), quartz
KT15.43D	7.50 ... 8.20	0 ... 2,500	glass (thin plates), quartz, ceramics
KT15.61D	4.26 ± 0.13	400 ... 2,500	hot gases and flames (CO ₂ -band)
KT15.62D	4.50 ± 0.10	400 ... 2,500	hot gases and flames (CO ₂ - and CO-band)
KT15.63D	4.66 ± 0.10	400 ... 2,500	hot gases and flames (CO-band)
KT15.64D	5.30 ± 0.10	400 ... 2,500	hot gases and flames (NO-band)
KT15.69D	x ... y	400 ... 2,500	hot gases in incinerators and fossil fuel fired utility boilers, rotary kiln
KT15.81D	8 ... 10	0 ... 1,000	paper, textiles, rubber, wood, ceramics, thicker plastics (>1mm), painted or coated surfaces, asphalt, building materials electronic components, food, liquids
KT15.82D	8 ... 14	-50 ... 1,000	
KT15.83D	8 ... 20	-50 ... 1,000	
KT15.85D	9.6 ... 11.5	-25 ... 200	meteorological, biological, agricultural studies, large measuring distances

General Specifications

Temperature range	Depends on model, minimum and maximum measuring temperature, see table above
Temperature resolution (NETD)*	Depends on model, detector size, measuring temperature and response time; typical value ±0.2°C
Accuracy	±0,5°C plus 0.7 % of the difference between target temperature and housing temperature
Long-term stability	Better than 0.01 % of the absolute measured temperature in Kelvin/month
Lenses*	Several far-focus and close-focus lenses with different optical characteristics
Field of view*	Depends on model, detector and lens type. For close-focus lenses: from 0.8 mm diameter at < 20 mm distance; for far-focus lenses: typically 11 to 30 mm diameter at distances > 1,000 mm
Aiming options*	Several optical and mechanical options are available, e.g. laserpointer
Emissivity setting	Adjustable from 0.1 to 1.0; by switch or externally programmable in 0.01, respectively 0.001 increments
Response time	Programmable: t ₉₀ = 50 msec, 100 msec, 300 msec, 1 sec, 3 sec, 10 sec
Analog output	4 scalable output signals: linear voltage or current, 0...1 V, 0...10 V, 0...20 mA or 4...20 mA (programmable)
Serial Interface	RS-232 interface, bi-directional, baud rate 1,200 bis 19,200, for free programming and data transfer
Thermal switch	Monitoring housing temperature
Power requirements	22...30 VDC or 24 VAC ± 10%, 48...400 Hz, ≤ 130 mA with 24 VDC
Permissible ambient temperature	0°C...60°C with protective and coolable housing 320°C
Storage temperature	-20°C...70°C
Housing protection, weight	IP 65 (DIN 4005) NEMA 4 equivalent, approx. 0.56 kg (HD version 1.9 kg)

*) Please ask for our additional literature (temperature ranges, temperature resolution, field of view):
 "Technical Data", "Field of View Diagrams", "Options and Accessories".

Housing dimensions in mm (inches)



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