

RAYOMATIC 16

Miniature 8-14 µm process infrared thermometer with optional high-ambient sensing head and touch screen

IRtec Rayomatic 16 series is a miniature process infrared thermometer with separate electronics modules measuring from -20°C to 1000°C according to the different models.

The sensing head of JA and HA models withstands ambient temperatures up to 120°C and 180°C without cooling.

- 8 to 14 µm
- Miniature sensing head and configurable electronics module
- Optional touch screen for temperature indication and configuration
- Optional IP65 sensing heads withstanding up to 120°C or 180°C without cooling
- Optional datalogging to MicroSD
- Sensing head cable resistant to interference from movement
- 4-20 mA, RS485 Modbus or 24 V alarm relay outputs in option
- MIN / MAX / AVG values, peak / valley hold

Description

IRtec Rayomatic 16 Series is a range of miniature non-contact infrared temperature sensors with separate electronics modules measuring from -20°C to 1000°C.

All models have an adjustable emissivity setting and are capable of measuring a wide variety of target materials, including food, paper, textiles, plastics, leather, tobacco, pharmaceuticals, chemicals, rubber, coal and asphalt.

The optional touch screen interface provides temperature indication, alarms, sensor configuration and data logging to MicroSD Card. The optional high-temperature sensing head may be used in ambient temperatures of up to 180°C without cooling. The low-noise cable on high ambient temperature models is resistant to interference from movement, so it is ideal for mounting on moving objects such as robot arms.

A choice of optics are available to measure small or large targets at short or long distances, and there is a choice of 4-20 mA, RS485 Modbus and alarm relay outputs.

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- Miniature sensing head and configurable electronics module
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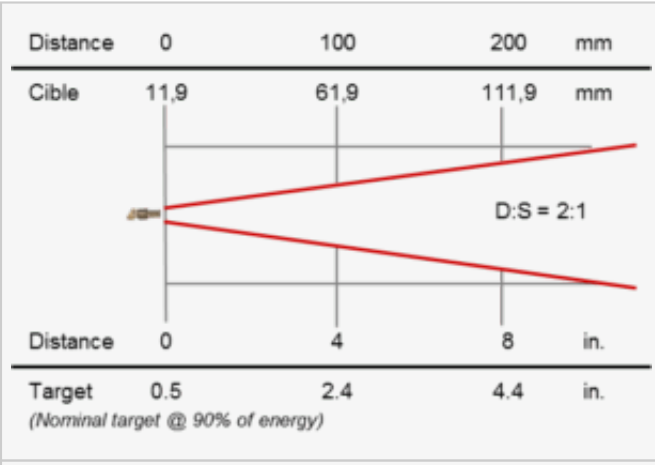
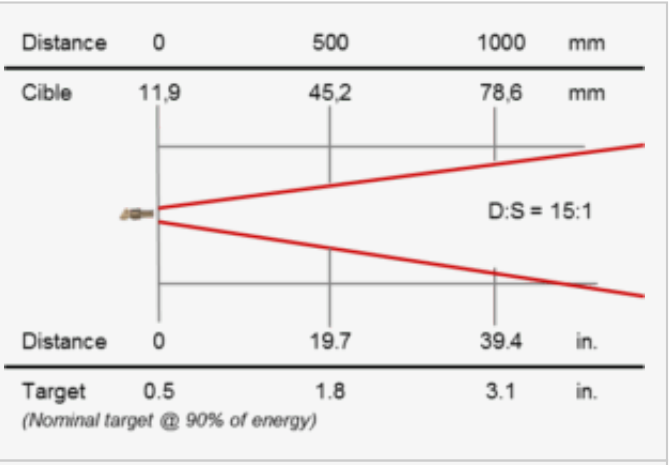
Specifications

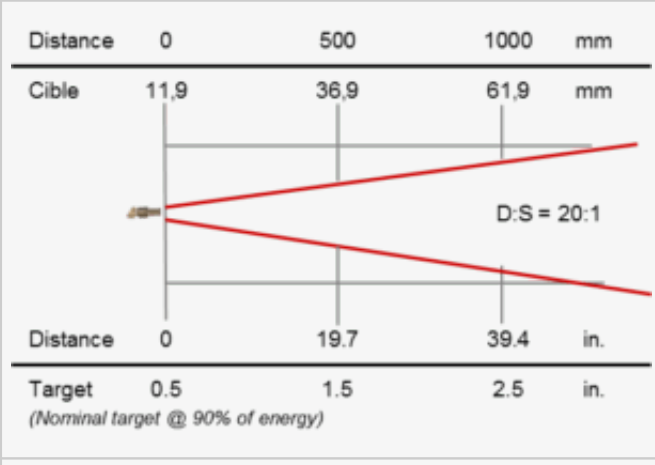
Infrared temperature measurement

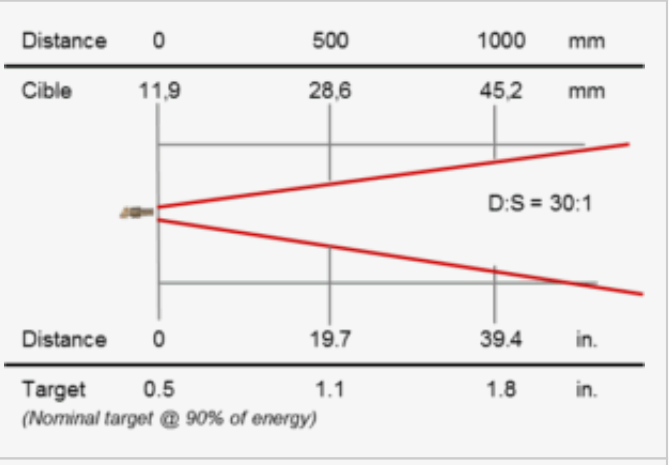
Model	LT	MT	HT	XT	CT
Temperature range	-20 to 100°C	0 to 250°C	0 to 500°C	0 to 1000°C	-20 to 1000°C configurable
Spectral response	8 - 14 µm				
Emissivity	Adjustable from 0.2 to 1.0				
Accuracy	±1% RDG or 1°C				
Repeatability	±0.5% RDG or 0.5°C				
Response time	240 ms (90%)				

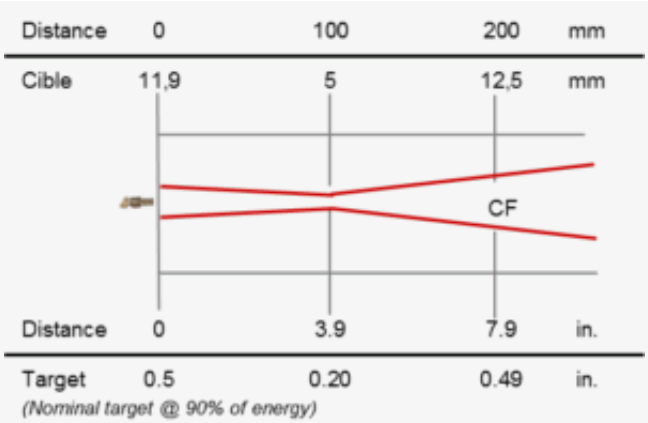
Optics









Further features

Datalogging	Rayomatic 16 models -CRT and -BRT include a MicroSD card slot for data logging, which can be configured via the touch screen interface. The user can select the sample rate and the number of samples to be taken and schedule the data logging to start at a certain time. With a 2 GB card, the user can store 28.4 million readings. Data is stored on the MicroSD card in .csv format and can be viewed and edited easily using spreadsheet software. Readings are time and date stamped using the sensor’s internal clock.
Alarms	In alarm conditions, the display changes colour to provide an immediate and obvious alarm indication. Alarm modes and levels can be configured via the touch screen.

General specifications

Size L x l x h	Electronic module: 98 x 64 x 36 mm Sensing head: Ø 18 x 45 mm Thread mounting: M16 x 1 mm
Weight	390 g with cable
Materials	Head: IP65 stainless steel Electronic module: Die-cast aluminium
Touch screen	Resistive touch TFT 2.83", 320x240 px
Power supply	24 VDC, 100 mA max
Loop impedance	900 Ω Max

Environmental specifications

Reference conditions	0°C to +70°C (95% non-condensing)

Environmental rating	IP65

Models and accessories

Instrument:

Ordering code structure: 16-AA-BB-CC-DDD-E/MAN
Please select the required options from tables A, B... below to define the right device reference.
16 Rayomatic 16
Delivered in standard with:

- Instruction manual in English

Table AA	**Sensing head operating range**
MA	Sensing head 0 - 60°C
JA	Sensing head 0 - 120°C (20:1 optics only)
HA	Sensing head 0 - 180°C (20:1 optics only)
Table BB	**Optics - Distance to target**
2	Optics 2:1, 61.9 mm @ 100 mm
15	Optics 15:1, 45.2 mm @ 500 mm
20	Optics 20:1, 36.9 mm @ 500 mm
30	Optics 30:1, 28.6 mm @ 500 mm
CF	Close focus lens, 5 mm @ 100 mm
Table CC	**Temperature range**
LT	-20°C – 100°C
MT	0 – 250°C
HT	0 – 500°C
XT	0 – 1000°C
CT	-20 – 1000°C configurable (-CRT, -BB, -BRT models only)
Table DDD	**Outputs**
CB	4-20 mA output, no screen
CRT	CB option + 2 alarm relay outputs, with touchscreen
BB	RS485 Modbus output, no screen
BRT	BB option + 2 alarm relay outputs, with touchscreen
Table E	**Calibration certificate**
0	None
1	Factory traceable calibration certificate with data

Accessories:

Digimax 180	6-channel touch screen hub for -BB, -BRT and NET models
MSD	2GB MicroSD Card with SD Card adapter (-BRT and -CRT models) for storage and transfer of logged data
FBS	Fixed mounting bracket for compact sensors
ABS	Adjustable mounting bracket for compact sensors
APSW	Air purge collar for compact 2:1 sensors

APSN Air purge collar for compact 15:1, 30:1 and close-focus sensors
LSTS Laser sighting tool for compact sensors
DLSBFS Dual laser sighting bracket, fixed, for compact sensors
DLSBAS Dual laser sighting bracket, adjustable, for compact sensors
DLSBCE Extended cable for Dual Laser Sighting Bracket - 1 m
PWS Protective plastic window in stainless steel holder (8-14 µm model only)
PMCE Extended sensing head cable (-MA model), 1 m, up to 29 m extension
PMCEHT Extended sensing head cable, high temperature (-HA and -JA models), 1 m, up to 29 m extension
CALCERT A Calibration certificate
CALCERT B Re-calibration and certificate
MBAC Change of Modbus address in factory (Sensors are supplied with Modbus address 1 as standard). Please specify the required Modbus address for each sensor at the time of ordering.