

Miniature infrared thermometer with optional high-ambient sensing head and touch screen

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.

INFRARED
THERMOMETERS



- ▶ Range from 20°C to 1000°C
- ▶ 8 to 14 μm
- ▶ Miniature sensing head and configurable electronics module
- ▶ Optional touch screen for temperature indication and configuration
- ▶ Optional high-ambient sensing heads withstanding up to 120°C or 180°C without cooling
- ▶ Optional datalogging to MicroSD on touch screen models
- ▶ Sensing head 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



CE

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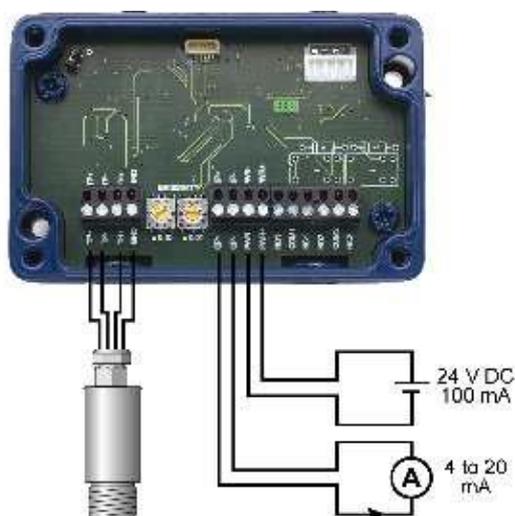
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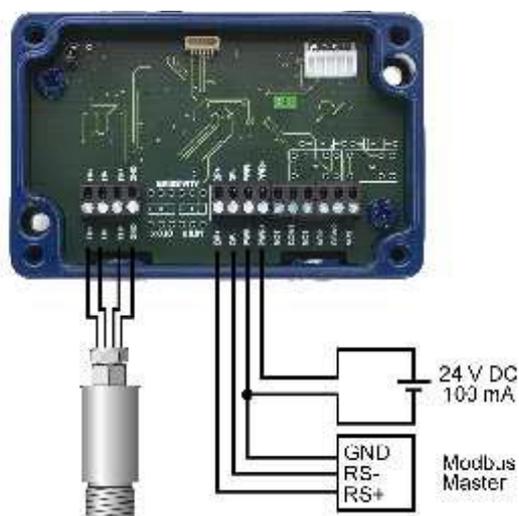
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Connections

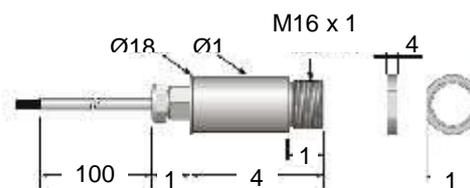
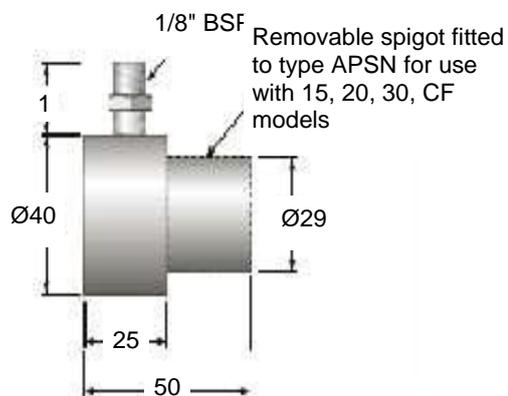
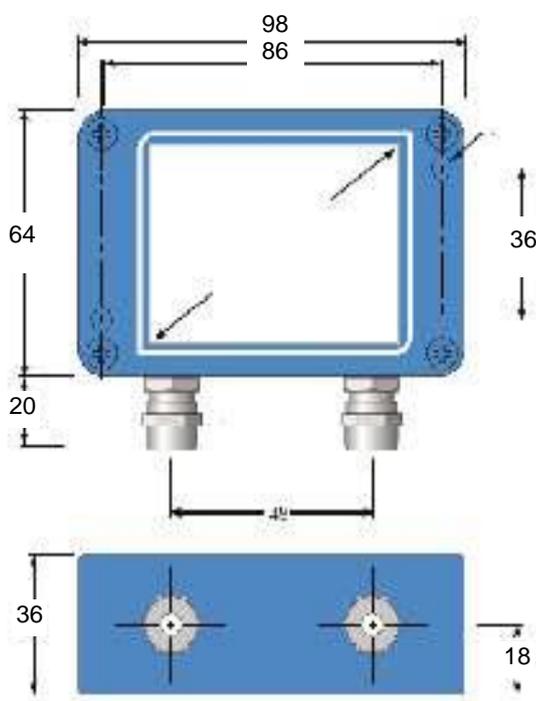
- CB and CRT models



- BB and BRT models



Dimensions

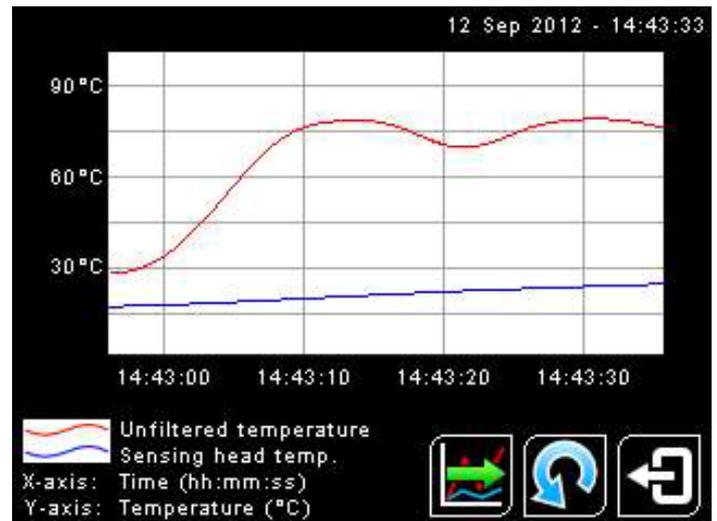


Touch screen

The optional backlit touch screen interface (2.83" resistive touch TFT 320x240 pixels) mounted in the lid of the electronics module provides a large, bright display of the measured temperature, as well as options for full configuration of the sensor.

The graph view shows the history of the measured temperature.

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.



Datalogging

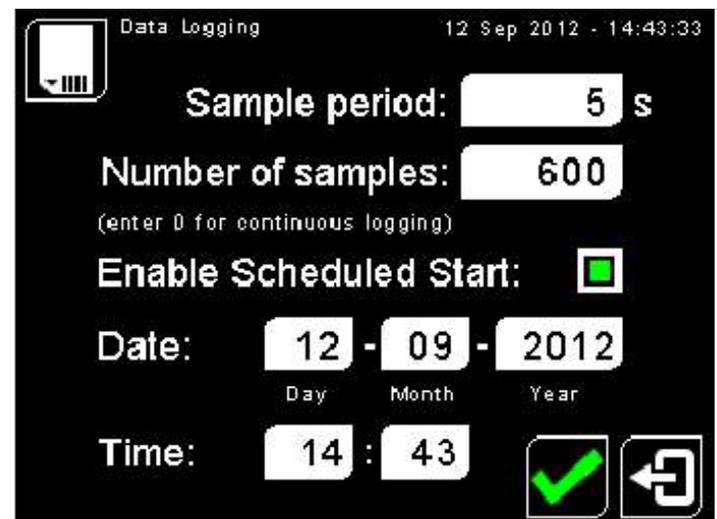
The Rayomatic 16 can be used as a standalone data logger.

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.

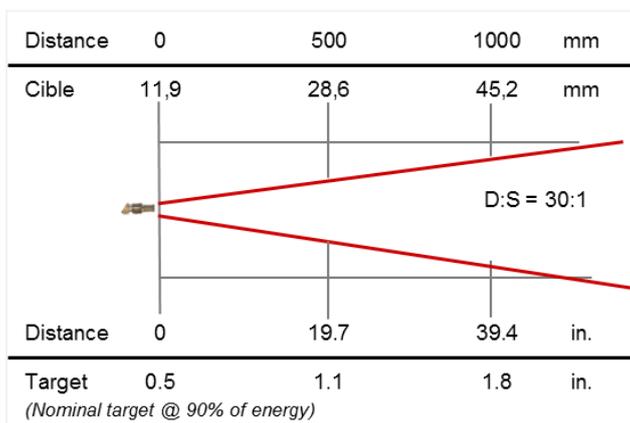
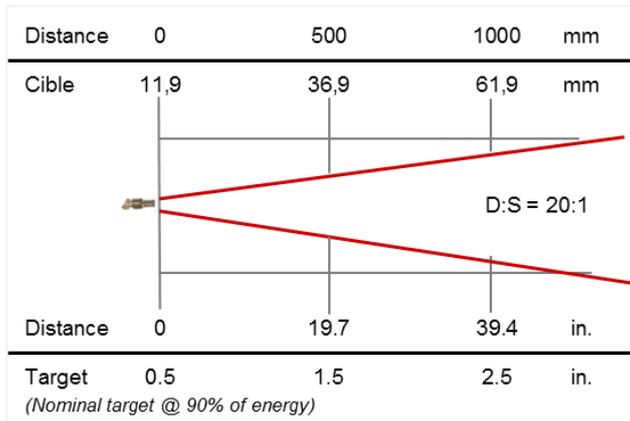
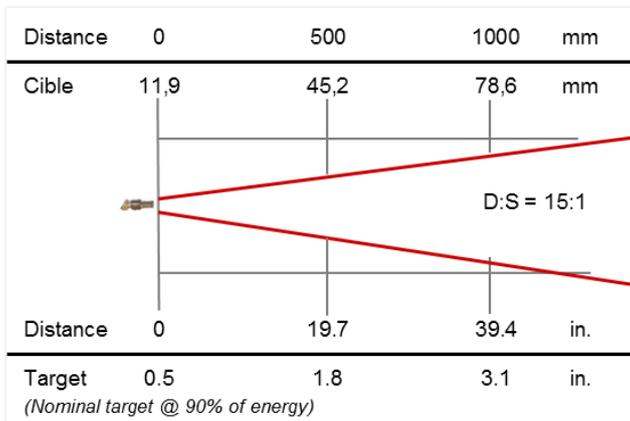
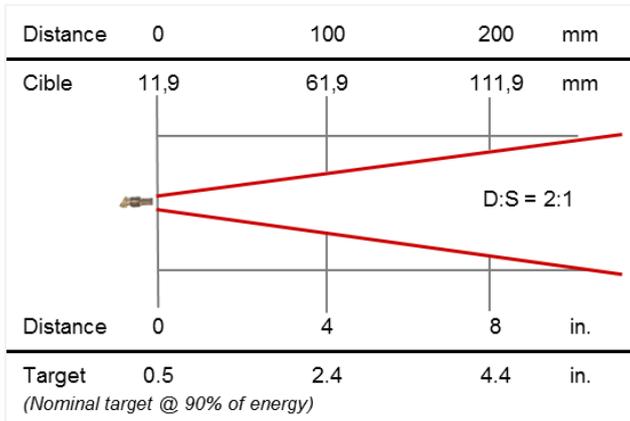
With a 2 GB card, the user can store 28.4 million readings.

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.

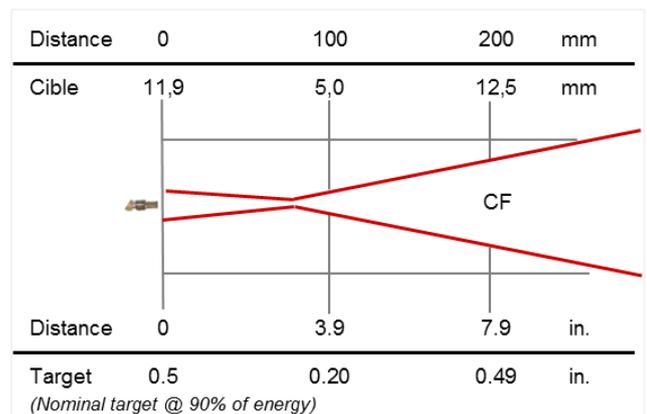


Optics



Technical specifications

Range	LT: -20 – 100°C MT: 0 – 250°C HT: 0 – 500°C XT: 0 – 1000°C CT: -20 – 1000°C
Optics	2:1, 15:1, 20:1, 30:1, CF
Outputs	4-20 mA, RS485 Modbus & relays (24 V DC, 1 A, 500 VDC insulation)
Accuracy	±1% RDG or 1°C
Repeatability	±0.5% RDG or 0.5°C
Emissivity	0.2 to 1.0
Response time	240 ms (90%)
Spectral band	8 – 14 μm
Supply voltage	24 VDC
Current draw	100 mA max
Loop impedance	900 Ω Max
Display	Resistive touch TFT 2.83", 320x240 px
Sensing head	IP65 stainless steel
Electronics module	Die-cast aluminium
Dimensions	Head: Ø 18 x 45 mm Electronics: 98 x 64 x 36 mm
Thread mounting	M16 x 1 mm
Weight	390 g
Cable length	1 m (between head and electronics module)
Working temperature	0 to 70°C (electronics)
Relative humidity	95% non-condensing EN61326-1:2006, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, EN55022A; EN55022B, RoHS
Compliance	



Accessories



FBS Fixed mounting bracket
ABS Adjustable mounting bracket



LSTS Laser sighting tool



DLBFS Dual laser sighting bracket, fixed
DLBAS Dual laser sighting bracket, adjustable
DLBCE Extended cable - 1 m



APSW Air purge collar (2:1)
APSN Air purge collar (15:1, 30:1, CF)



PWS Protective plastic window in stainless steel holder

Ordering instructions

16-AA-BB-CC-DDD-E/MAN

Delivered in standard with instruction manual in English

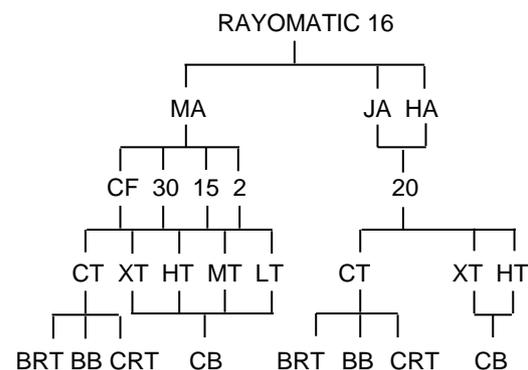
Table AA Sensing head operating range	
MA	Sensing head 0 – 60°C
JA	Sensing head 0 – 120°C (20:1 optics only)
HA	Sensing head 0 – 180°C (20:1 optics only)

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 @ 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

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



Extended sensing head cable, up to 29 m extension

PMCE For MA model – 1 m

PMCEHT For HA and JA high temperature models – 1 m

MSD 2 GB MicroSD card with SD card adapter

DigiMax 180 6-channel touch screen hub for BB, BRT & NET models

MBC Change of MODBUS address in factory