

IRtec Rayomatic 60

Fiber Optic Infrared Thermometer



INFRARED THERMOMETERS

- ▶ 2-wire, 4-20 mA Transmitter
- ▶ Temperature Range from 300 to 2000°C
- ▶ Smart Microcontroller Technology
- ▶ Bi-Directional RS232 Simultaneous
- ▶ Windows™ Software for Remote Setup and Datalogging
- ▶ Integrated Averaging, Peak-Picker and Track&Hold
- ▶ Operative Temperature up to 200°C
- ▶ Built-in Red or Green Laser Pinpointing



Introduction

IRtec Rayomatic 60 is a fiber optic infrared thermometer with miniature optical head and separate electronics. Two different operating wavelength models, optics, and temperature ranges are available to meet most industrial high temperature applications when the ambient operative temperature is very high and the target is not easily accessible.

■ Measuring System

Each **IRtec 60** thermometer consists of three separate and interchangeable parts:

- Single lens optical adapter (head) to collect the IR radiation;
- Flexible fiber optic cable steel coated to transmit the IR radiation from the "head" to the electronic module;
- Microprocessor electronic module to convert the IR radiation in electric signal. The thermometer can be ordered for different measuring ranges as specified in ordering instruction table A.

■ Optical Head

Five different interchangeable optical adapters are available for different target/distance vision cones.

■ Flexible Fiber Optic

You can choose between different fiber optic cable lengths. The fiber is protected by a flexible steel band for environment applications up to 200°C.

■ Fast Lock Connectors

The optic head can be connected and disconnected from the process using a special fast connection system. It allows the quick installing and maintenance of the measuring system

■ Laser Pinpointing System

An optional laser is installed into the electronic module and the spot is projected by the optical head for target alignment. The laser can be switched on and off from remote location.

■ Signal Processing

The instrument includes signal processing features including: Emissivity, Peak-Picker, Valley-Picker, Peak Hold, Valley Hold and Averaging all of which are adjustable on the PC using the IRSetup software.

■ Electronic Module

The electronic module contains a detector, processing electronics, and Bell202 serial communication interface. The Bell202 interface consist of a modem to modulate the digital communication over the 4-20 mA 2-wire current loop. This feature allows you to change the thermometer setting connecting a PC on the signal current loop using an RS232 converter. You can chose between two different emissivity adjustment configuration: manual (from a selector switch on the back panel) or digital (from the serial communication interface).

Software

IR SETUP - Configuration Software

Compatible with WIN 95/98/2000/XP, the IRSetup software package provides for:

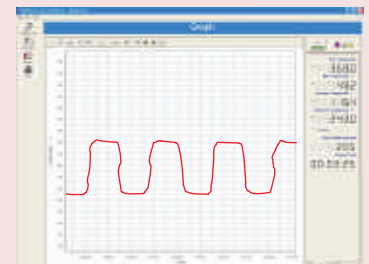
- easy sensor setup and remote controlling via USB or RS232 interface
- adjustment of signal processing functions
- programming of the 4-20mA signal



LogMan - Datalogging Software

Compatible with WIN 98/2000/XP, the LogMan software package provides for:

- automatic data logging for analysis and documentation
- graphic display of temperature trends



BB530207
RS232/USB
adapter for PC



BB530200
RS232 adapter
for PC

Applications

The IRtec Rayomatic 60 series of thermometers are suitable for a wide range of manufacturing and processing industries such as: ferrous and non-ferrous metals, glass, minerals, ceramics, chemicals, incinerators and research and development.

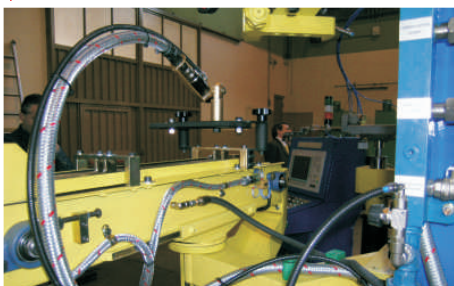
* Steel Production



* Glass



* Heating



* Incinerators



Accessories

EE290054 / EE290055 / EE290056
Fast Lock Optical Head

Table D= 1, 2, 3

EE290027 / EE290042
Threaded Optical Head

Table D= 4, 5

EE280220
Fast Lock to 1/2" BSPM Head Adapter

EE290074
Electronic Mounting Support

Electronics Housing without Laser

Electronics Housing with Laser

Accessories

- BB530200** BELL202/RS232 adapter cable for PC
- BB260195** Rayomatic 60 **Setup** software
- BB260196** Rayomatic 60 **LogMan** software
- BB530207** USB Cable (requires the adapter **BB530200**)
- 4820** Single 24Vdc rail mounting power supply
- 4822** Dual 24Vdc rail mounting power supply

5910 - DigiMax II - Standard Indicator 1/8 DIN
Universal Tcs, RTDs, V, mA Digital Process Indicator



- 96x48 mm, 4 digits, 15mm wide, green LEDs
- Programmable input
- 18Vdc for transmitter P.S.
- Up to 4 alarms with relays
- 4/20 mA analog output
- RS485 serial interface

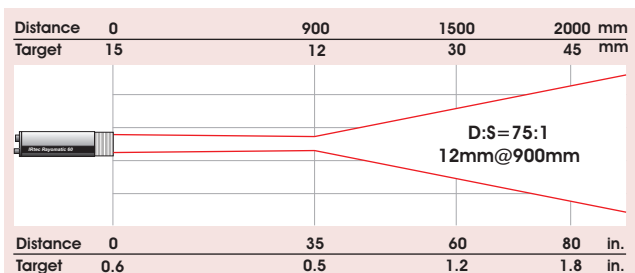
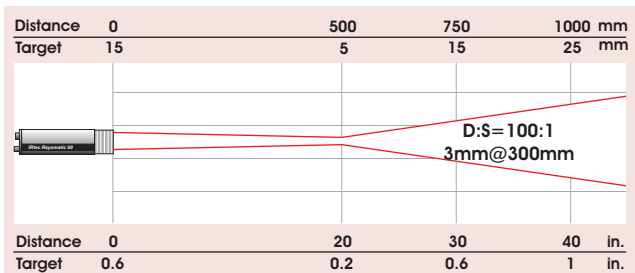
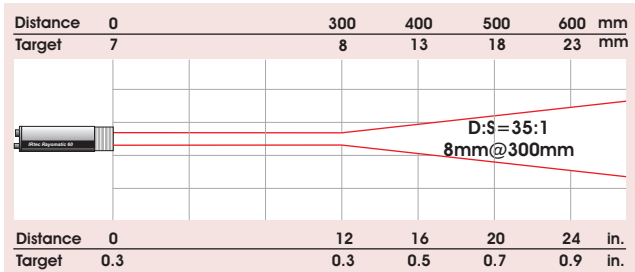
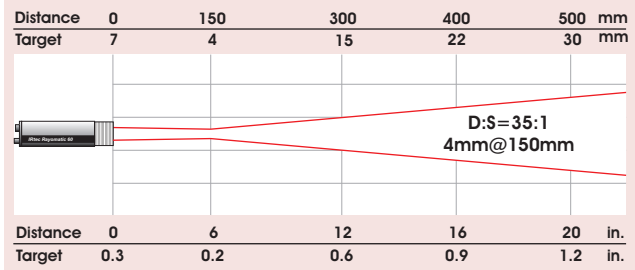
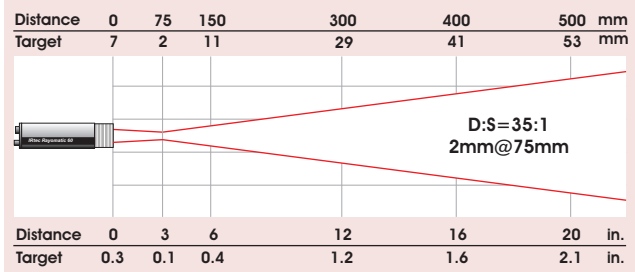
5920 - DigiMax III - Compact Indicator 1/32 DIN
Universal Tcs, RTDs, mV Digital Process Indicator



- 48x24 mm, 4 digits, 10mm wide, green LEDs
- Programmable input
- 18Vdc for transmitter P.S.
- Alarm with relay
- 4/20 mA analog output
- RS485 serial interface
- PID output

Optics

Target size calculated @ 95% of energy



Specifications

Accuracy: $\pm(0.5\%$ of rdg. + 1°C)

Repeatability: $\pm 0.25\%$ of rdg.

Spectral Band:

Series 100: $0.9\ \mu\text{m}$ (Silicon detector)

Series 160: $1.6\ \mu\text{m}$ (InGaAs detector)

Response Time: adjustable by PC from 28ms to 10s

Reference temperature: from $+15$ to $+35^{\circ}\text{C}$

Emissivity: adjustable from 0.30 to 1.00 in 0.01 steps

Digital communication: Bell 202 superimposed on 2-wire current loop - Rs232 with optional adapter

Output signal: 4/20 mA 2-wire current loop - max load 700 W

Environmental rating: IP65 (NEMA-4)

Power supply: from 12 to 32 Vdc

Temperature stability: $<0.05\%$ of rdg./ $^{\circ}\text{C}$ for temperature exceeding the reference band

Working temperature:

Optical head: 200°C max

Optic fiber: 200°C max

Electronic module: from -20 to $+60^{\circ}\text{C}$

Storage temperature: from -30 to $+70^{\circ}\text{C}$

Dimensions:

Electronic module:

ϕ 45x200 mm - Threaded M44x1.5

Optical head:

ϕ 16x52 mm - Fast Lock

ϕ 30x94 mm - Threaded M30x1

Weight: 0.8 kg (electronic module)

Ordering Code

Code

1110 IRtec Rayomatic 60, and instruction manual.

Table A	CWL	Range
100 - 1	$0.9\ \mu\text{m}$	600 - 1600°C (1100 - 2900°F)
100 - 2	$0.9\ \mu\text{m}$	800 - 2000°C (1472 - 3630°F)
160 - 1	$1.6\ \mu\text{m}$	300 - 1300°C (570 - 2350°F)

Table B	Signal Output
2	2 wires linear 4-20mA

Table C	Optic Fiber Length
2	3.5 mt
3	6 mt
4	8 mt
9	special length

Table D	Target / Distance
1	2mm @ 75 mm (fast-lock)
2	4mm @ 150 mm (fast-lock)
3	8mm @ 300 mm (fast-lock)
4	5mm @ 500 mm (threaded)
5	12mm @ 900 mm (threaded)
9	Special

Table E	Options
0	none
1	Red laser pinpointing (650 nm)
2	Green laser pinpointing (532 nm)

Table F	Electrical Connections
1	2m long shielded cable
2	8m long shielded cable
4	2m high temperature (200°C) shielded cable

Table G	Report of Calibration
1	Eurotron Certificate

1110-100-1-2 - 3 - 2 - 1 - 2 - 1 Typical ordering code



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



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Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.