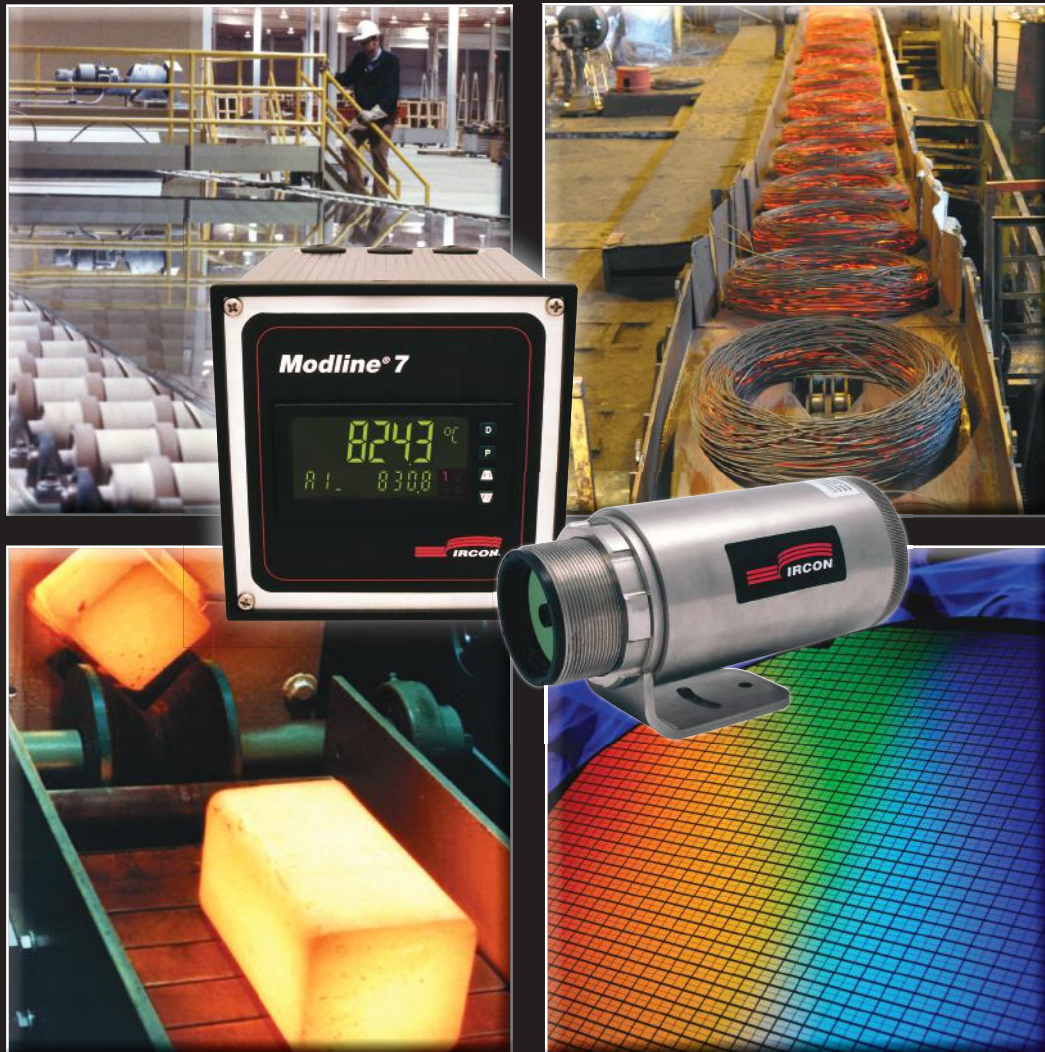
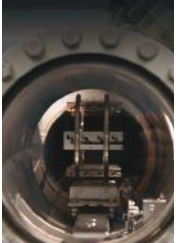









# Modline® 7 Infrared Thermometers



Noncontact temperature sensors to serve  
a wide range of applications

7V Series	72 Series	7G Series	76 Series	75 Series	77 Series	78 Series	74 Series
400 to 1200°C 0.9 – 0.97 µm	400 to 3000°C 1.0 µm	300 to 2250°C 1.6 µm	100 to 600°C 2.4 µm	250 to 2250°C 3.9 µm	250 to 2250°C 4.8 – 5.2 µm	300 to 900°C 7.9 µm	-40 to 800°C 8-14 µm
Silicon wafer MBE, silicon and gallium arsenide wafer deposition	Semiconductor, metals forging, molten glass	Ferrous, non ferrous and unoxidized metals, galvanizing lines and steel annealing	Small, low temperature targets, wire coating and annealing, as well as plastic tubing extensions	Furnace refractory, flame hardening and brazing	Glass surface temperature for bending, tempering, annealing and sealing	Ultra-thin drawn glass	Low temperature applications, such as thick plastics, food, carpeting, coated paper and thermoforming
							

## Modline® 7 Highlights

Designed for rugged industrial environments, the Modline 7 sensors have 8 different series to choose from (7V, 72, 7G, 76, 75, 77, 78, 74). All sensor components are sealed within an IP65 (NEMA 4) enclosure featuring standard motorized focus control, as well as through-the-lens and laser sighting. Also included is an integral stainless steel water cooled enclosure. All Modline 7 systems are backed with a 5 year warranty.

The sensing head can operate as a stand-alone sensor, providing simultaneous analog and digital outputs of process temperatures.

Sensor setup and monitoring can be accomplished either through the optional PROC-7 processor box, the rear panel of the sensor or through the Modview Pro software, allowing the user to perform PC-based temperature monitoring, trending and archiving with an intuitive graphical user interface.

### Alarms:

A programmable relay output can be triggered by:

- Product Temperature (process alarm)
- Sensor Internal Temperature (sensor alarm)
- Manually

### Communications:

- Bi-directional RS-485 communications
- Windows ModView Pro Software
- Field Calibration software

### Features:

- Broad temperature range -40°C to 3000°C
- Spot size down to 1 mm

## Performance

### Accuracy

7V	± (0.5% of reading + 1°C)	
72-1716	± (2% of reading + 2°C) for Tmeas < 450°C	± (0.3% of reading + 1°C) for Tmeas > 450°C
72-3030	± (2% of reading + 2°C) for Tmeas < 650°C	± (0.3% of reading + 1°C) for Tmeas > 650°C
7G-1116	± (0.3% of reading + 2°C)	
7G-2230	± (0.3% of reading + 1°C)	
76	± 1% of reading for Tmeas > 150°C	± 5°C for Tmeas < 150°C
75	± 2°C or ± 2%* for Tmeas < 350°C	± 1% of reading for Tmeas > 350°C
77/78	± 1% of reading	
74	± 2°C for Tmeas < 0°C	± 1% of reading or ± 1°C* for Tmeas > 0°C

\*whichever is greater

### Repeatability

7V	± (0.1% of reading + 1°C)	
72-1716	± (0.1% of reading + 1°C) for Tmeas > 450°C	± (1% of reading + 1°C) for Tmeas < 450°C
72-3030	± (0.1% of reading + 1°C) for Tmeas > 650°C	± (1% of reading + 1°C) for Tmeas < 650°C
7G	± (0.1% of reading + 1°C)	
76/75/77/78/74	± 0.5% of reading or ± 0.5°C*	

\*whichever is greater

### Temperature Resolution

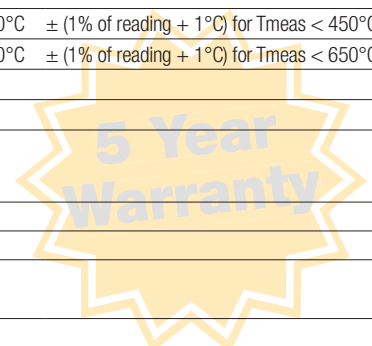
72-3030/7G-2230	0.2°C
All other models	0.1°C

## Electrical

Power Supply	24 VDC ± 20%, 500 mA
Outputs Analog	0 - 20 mA, 4 - 20 mA, 14 bit resolution, max. current loop impedance: 500 ohms.
Digital RS-485	Networkable to 32 sensors, Baud rate: 300, 1200, 2400, 9600, 19200, 38400, 57600, 115200. 4-wire mode (full-duplex) or 2-wire mode (half duplex), (2-wire: max. 38400 Baud), (Proc-7 requires 38400 2-wire mode)
Relay	Contacts max. 48 V, 300 mA, response time < 2 ms, (software programmable)
Display	5 digit backlit LCD display
External Input Voltage	0 to 5 VDC functions: trigger, ambient background temperature compensation, emissivity setting, or laser ON/OFF switching

## Environmental

Environmental rating	IP 65
EMI	CE compliant to IEC 61326
Relative Humidity	10% to 95% non-condensing
Storage Temperature	-20°C to 70°C
Ambient Temperature	without cooling: 5°C to 65°C with integral cooling: air cooling 10°C to 120°C water cooling 10°C to 175°C with high temperature waterjacket cooling: 10°C to 315°C
Vibration	MIL-STD-810D (IEC 68-2-6) 2G's, 10 - 150 Hz, 3 axis
Mechanical Shock	MIL-STD-810D (IEC 68-2-27) 5G's, 11 ms duration, 3 axis
Weight	1.8 kg



## PROC-7 Processor Box

The processor box is a self-contained control unit designed to operate all Modline 7 sensors independent of Modview™ Pro software. Remote set-up and operation can be done through the digital panel when the sensor is located in hard-to-reach or hazardous locations. Configure, monitor and perform system health checks from a safe location through menu commands via RS-485 serial communication. Easily set temperature alarms, change temperature display from °F to °C, change emissivity levels, focus the sensor and turn on or off filters, such as peak hold, valley hold and averaging through a push button display. All Modline 7 menu commands are easy-to-use and ready to communicate right out of the box.



Additional features:

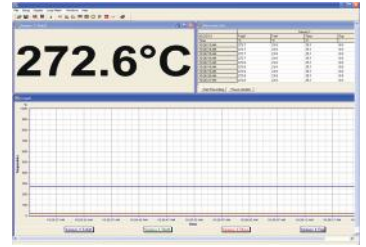
- IP65 rated
- Panel mount capable
- Sensor alarm
- Universal power input (100–240 VAC) 50/60 Hz
- Power supplied to sensor (24 VDC)
- Analog output (0 to 20mA)
- Auxiliary analog signal input for remote emissivity adjustment, background temperature compensation, valley/peak hold reset and laser ON/OFF.

### PROC-7 Enclosure Specifications

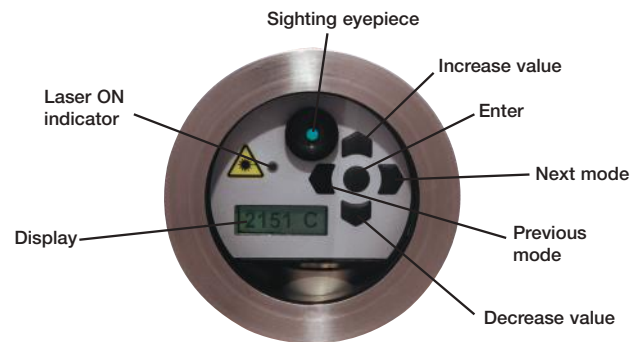
Environmental rating	IP65
Panel Ambient Temperature Rating	0°C to 50°C
Construction	Aluminum/Stainless Steel
Vibration	IEC 60068-2-6
EMI	EC 61326

## ModView Pro Software

ModView Pro PC based software with built-in user interface displays target temperature and allows for sensor parameter adjustment to configure or fine tune your sensor remotely. Easily configure individual alarms for early warning detection, change temperature display from °F to °C, set or change emissivity levels, scale the range, focus the sensor, and turn on or off filters, such as peak hold, valley hold, and averaging, as well as save data for future reference, graphing or quality record keeping



## Easy-to-Use Interface



### Modline 7 sensor with standard integral water cooling

The Modline 7 sensor with integral water cooling enclosure enables use in ambient temperatures up to 175°C.

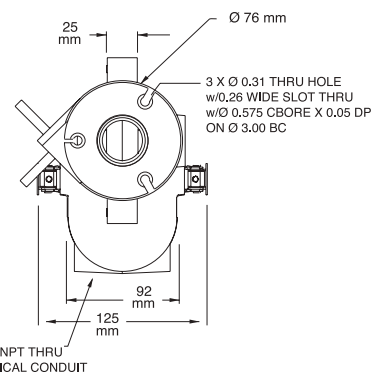
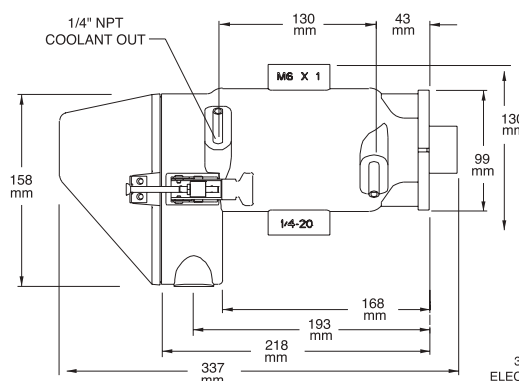
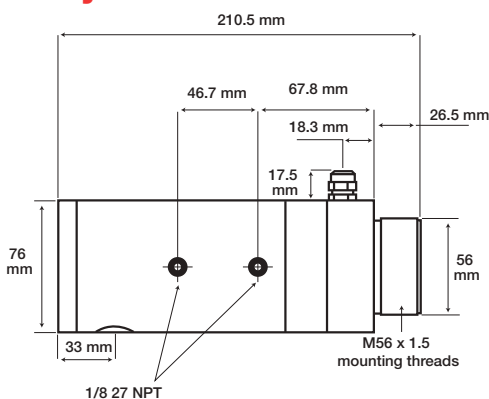


### Modline 7 sensor with optional high temperature water jacket accessory

For high ambient temperature applications, the Modline 7 with high temperature water jacket and integrated air purge enables use in ambient temperatures up to 315°C.



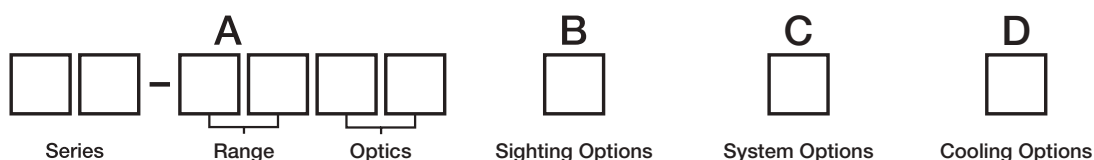
## Physical Dimensions



Modline 7 sensor with integral water cooling and optional air purge collar

Modline 7 high temperature water jacket





Block A	Temperature Range	Spectral Range	Optical Resolution (measured at focal point)	Response Time	Primary Applications
<b>7V-1002</b>	400-1000°C	0.9–0.97µm	D/20	100 ms	Specifically developed for MBE, silicon and gallium arsenide wafer deposition
<b>7V-1205</b>	450-1200°C	0.9–0.97µm	D/50	10 ms	
<b>72-1716</b>	400-1740°C	1.0 µm	D/160	2 ms	Semiconductor, metals forging, molten glass
<b>72-3030</b>	540-3000°C	1.0 µm	D/300		
<b>7G-1116</b>	300-1100°C	1.6 µm	D/160	2 ms	Ferrous, non ferrous and unoxidized metals, galvanizing lines and steel annealing
<b>7G-2230</b>	450-2250°C	1.6 µm	D/300		
<b>76-0607</b>	100-600°C	2.4 µm	D/70	20 ms	Small, low temperature targets, wire coating and annealing, as well as plastic tubing extensions
<b>75-1107</b>	250-1100°C	3.9 µm	D/70	120 ms	Furnace refractory, flame hardening and brazing
<b>75-2207</b>	450-2250°C				
<b>77-1607</b>	250-1650°C	4.8–5.2 µm	D/70	60 ms	Glass surface temperatures for bending, tempering, annealing and sealing
<b>77-2207</b>	450-2250°C				
<b>78-0910</b>	300-900°C	7.9 µm	D/100	120 ms	Ultra-thin drawn glass
<b>74-0807</b>	-40-800°C	8-14 µm	D/70	120 ms	Low temperature applications, such as thick plastics, food, carpeting, coated paper and thermoforming

#### Block B Sighting Options

**0** Visible/Laser Sighting

#### Block C System Options

**0** Stand Alone Sensor

**1** Processor Box with integrated digital panel meter and power supply in IP65 rated enclosure

#### Block D Cooling Options

**0** Sensor with integral water cooling for ambient temperatures up to 175°C

**1** Sensor supplied with WJ-7 waterjacket accessory for ambient temperatures up to 315°C

## Accessories

**PROC-7** Processor box with integrated digital panel meter and power supply in IP65 rated enclosure  
(PBAK-7 required when replacing the Modline® 3 processor box if panel mounted)

**DPM-7** Digital panel meter (Individual unit only)

**PBAK-7** Processor box adaptor kit (panel mount)  
(Used when replacing an existing Modline® 3 processor box with a Modline 7. Kit consisting of mounting brackets & hardware)

**APA-7** Aluminum air purge collar

**APS-7** Stainless steel air purge collar

**RAM-7** Stainless steel adjustable bracket

**WJMB-7** Adjustable mounting base for water jacket

**WJMFST-7** Mounting flange for use with sighting tubes

**WJST12** 30cm (12") Stainless steel sight tube (up to 800°C)

**POI-7** Power supply (24VDC, 100/240VAC input) & terminal block mounted in a NEMA 4 (IP65) enclosure

**PS-7** 24VDC 1.2A Industrial power supply, DIN rail mount (100/240VAC input)

**TSP-7** Spare terminal block accessory

## The Worldwide Leader in Noncontact Temperature Measurement

**IRCON**  
Worldwide Headquarters  
Santa Cruz, CA USA  
Tel: +1 800 227 8074 (USA and Canada, only)  
+1 831 458 3900  
info@ircon.com

**European Headquarters**  
Berlin, Germany  
Tel: +49 30 4780080

**China Headquarters**  
Beijing, China  
Tel: +8610 6438 4691

To find an IRCON office near you, please visit [www.ircon.com](http://www.ircon.com)

#### Worldwide Service

IRCON offers services, including repair and calibration.

For more information, contact your local office or e-mail [info@ircon.com](mailto:info@ircon.com)

[www.ircon.com](http://www.ircon.com)



© 2012 Ircon (4162449 Rev. B, A4) 10/2012  
Ircon, the Ircon logo and Modline are registered trademarks of Ircon, Inc.  
Specifications subject to change without notice.