



## POWERED SMART IRt/c SERIES DATASHEET

### SmartIRt/c HIGHLIGHTS

- Smart air purge assures maintenance free long term accuracy
- Smart continuous auto calibration
- All digital system
- Smart housing resists mechanical and thermal shocks
- Smart emissivity shift and ambient radiation correction
- Easy plug and play installation
- Lowest cost air purged, linearized sensor on the market
- Optics from 3:1 to 40:1 available
- Outputs of 0-5V, 0-10V, 4-20mA, & RS232
- Temperature ranges from 0—1000C
- LOW impedance, results in no offset errors due to leakage current in your input device
- Custom scaling and programming for low emissivity materials available



**SmartIRt/c.3 (3:1 FOV) & SmartIRt/c.5 (5:1 FOV)**

3.71" x 1.37" x 0.76" (94.3 x 34.9 x 19.4 mm)



**SmartIRt/c.20 (20:1 FOV) & SmartIRt/c.40 (40:1 FOV)**

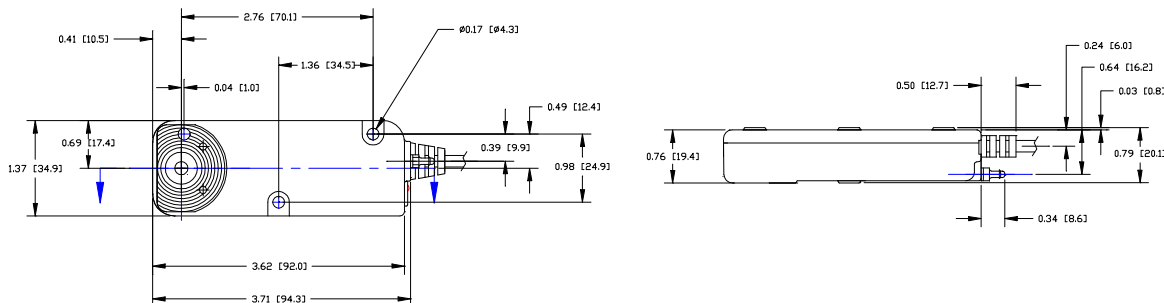
SmartIRt/c.20: 3.71" x 1.37" x 0.76" (94.3 x 34.9 x 19.4 mm) & 1.63" (41.3 mm) x 0.75" diameter snout

SmartIRt/c.40: 3.71" x 1.37" x 0.76" (94.3 x 34.9 x 19.4 mm) & 2.19" (55.6 mm) x 0.75" diameter snout

### MEASUREMENT SPECIFICATIONS

	Temperature Range	Accuracy	Repeatability	Interchangeability
<b>SmartIRt/c.3</b>	0-100 °C & 0-250 °C	±1 °C or 1%	± 1 BIT 0-100 °C = ± 0.1 °C 0-250 °C = ± 0.25 °C 0-500 °C = ± 0.5 °C 0-1000 °C = ± 1 °C	±1 °C (1.8 °F) or 0.5%
	0-500 °C	± 1.5 °C or ± 1.5%		± 1.5 °C or ± 1.5%
<b>SmartIRt/c.5</b>	0-100 °C, 0-250 °C & 0-500° C	± 1.5 °C or ± 1.5%		±1 °C (1.8 °F) or 0.5%
	0-1000 °C	± 2.0 °C or ± 1.5%		± 1.5 °C or ± 1.5%
<b>SmartIRt/c.20</b>	0-100 °C, 0-250 °C, & 0-500 °C	± 1.5 °C or ± 1.5%		±1 °C (1.8 °F) or 0.5%
	0-1000 °C	± 1.5 °C or ± 2.0%		± 1.5 °C or ± 1.5%
<b>SmartIRt/c.40</b>	0-100 °C, 0-250 °C, & 0-500 °C	± 1.5 °C or ± 1.5%		±1 °C (1.8 °F) or 0.5%
	0-1000 °C	± 2.0 °C or ± 2.5%		± 1.5 °C or ± 1.5%

### OUTLINE DRAWING



## ELECTRICAL SPECIFICATIONS

	SmartIRt/c.3	SmartIRt/c.5	SmartIRt/c.20	SmartIRt/c.40
<b>LINEAR TEMPERATURE RANGES</b> <small>(custom scaling also available upon request)</small>	0-100 °C (32-212 °F), 0-250 °C (32-482 °F), 0-500 °C (32-932 °F)		0-100 °C (32-212 °F), 0-250 °C (32-482 °F), 0-500 °C (32-932 °F), 0-1000 °C (32-1832 °F)	
<b>OUTPUT</b>	0-5V, 0-10V (24VDC power only), 4-20mA (50 ohm max), RS232 (12VDC power only)			
<b>UPDATE TIME</b>	Approximately 250 msec.			
<b>FIRST READING UPON POWER UP</b>	Approximately 2 seconds			
<b>EMISSIVITY SETTING</b>	0.90 (custom low emissivity settings available for metals, etc. upon request)			
<b>SPECTRAL RESPONSE</b>	5.5 to 20 microns (other ranges available for specific applications)			
<b>POWER</b>	12 or 24 VDC (10%). Shuts off when voltage is functionally low.			
<b>OUTPUT IMPEDANCE</b>	750 ohms on 0-5V and 0-10V models			
<b>MINIMUM LOAD IMPEDANCE</b>	100 kohms			
<b>MAXIMUM LOOP IMPEDANCE</b>	50 ohm max			
<b>POWER CONSUMPTION</b>	< 800 mW at 24 VDC and < 600 mW at 12VDC			

## MECHANICAL SPECIFICATIONS

	SmartIRt/c.3	SmartIRt/c.5	SmartIRt/c.20	SmartIRt/c.40
<b>Minimum Spot Size</b>	0.12" (3.0 mm)	0.12" (3.0 mm)	0.625" (15.9 mm)	0.625" (15.9 mm)
<b>Ambient Temperature Range</b>	0 to 70 °C (32 to 158 °F)			
<b>Storage Temperature</b>	-10 to 70 °C (14 to 158 °F)			
<b>Construction</b>	Heavy Duty Alloy Casting			
<b>Weight</b>	Approximately 8 oz. (227 g)			
<b>Relative Humidity</b>	95% non condensing			
<b>Air Purge</b>	Integral built in air purge with small sized aperture and heat exchanged which minimizes drift for superb accuracy			
<b>Cable</b>	3 ft (0.9 m) of 5 conductor, tinned copper, twisted pair, polypropylene, insulated with shielded wire			
<b>Ratings</b>	NEMA , IP54 (with air on)			

## ORDERING INFORMATION

### SmartIRt/c-F-P-O-T

F	FIELD OF VIEW	P	POWER	O	OUTPUT	T	TEMPERATURE RANGE
.3	3:1	12V	12 VDC	05	0-5V	100C	0-100C
.5	5:1	24V	24 VDC	010	0-10V	250C	0-250C
.20	20:1			420	4-20 mA	500C	0-500C
.40	40:1			232	RS232	1000C	0-1000C

**OPTION:** Add Ta to any part # to add ambient temperature option to output ambient temperature

**NOTE:** 0-10V only available in 24VDC and RS232 only available in 12VDC

**Example:** SmartIRt/c.3-24V-420-250C (with 4-20mA output measuring target temperature from 0-250C) or  
SmartIRt/c.3-24V-420-250C-Ta (with 4-20mA outputting target temperature and ambient temperature from 0-250C)