ADJUSTABLE MODEL IRt/c DATA SHEET

HIGHLIGHTS

- Self powered
- High temperature ranges (up to 5000 °F (2760 °C))
- Measure wide variety of materials, including metals
- Field calibrated for the best performance and accuracy
- Specialized optics available (focused models and up to 100:1 FOV)
- Slot spot models available to measure small rectangular spots
- Intrinsically Safe
- Hermetically sealed (NEMA 4X, IP67)
- Built in air purge with cooling capacity to 400 °F (204 °C)
- True thermocouple output with t/c wire
- Reliable
- Stable and minimal drifting
- Fast response time
- LoE filters reduce errors due to emissivity variations
- Compensation for reflective errors
- Two-Color Pyrometry

APPLICATIONS

- Plastic Extrusions
- Induction Heating
- High temperature gases and liquids
- Flame detection
- Molten metals

GENERAL SPECIFICATIONS	
ENVIRONMENTAL RATING	NEMA 4X, IP67
AMBIENT TEMPERATURE **WITHOUT COOLING** **WITH COOLING**	 212 °F (100 °C) 400 °F (204 °C)
HOUSING	Stainless steel, hermetically sealed, Intrinsically Safe, cable shield grounded to housing and electrically isolated from signal.

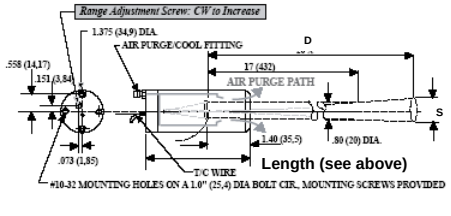
ELECTRICAL SPECIFICATIONS	
OUTPUTS	J, K, or RS thermocouple output
POWER SUPPLY	NONE required, Self Powered
OUTPUT IMPEDANCE	5 to 20 kohms
CABLE	Twisted shielded pair of base thermocouple material (J, K, etc.), 3 ft (0.9 m) std length, teflon sheathed, rated to 392 °F (200 °C) continuous service

MEASUREMENT SPECIFICATIONS	
SPECTRAL RESPONSE **HiE** **LoE**	 2 to 20 um 0.1 to 5 um
ACCURACY	±2% (or ± 2 C) of reading, whichever is greater
REPEATABILITY	< 0.01 °C (0.02 °F)
RESOLUTION	0.0001 °C
RESPONSE TIME CONSTANT	0.1 seconds

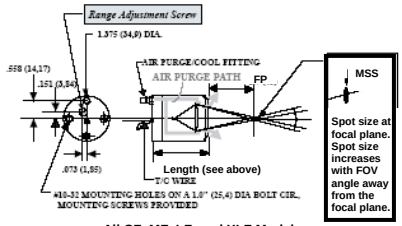
MECHANICAL SPECIFICATIONS

	IRt/c.10A	IRt/c.20A	IRt/c.100A	IRt/c.2ACF	IRt/c.2/15ACF	IRt/c.4ACF	IRt/c.8ACF
Sensing Range HiE (non metals coated metals)	-50 to 2500 °F (-45 to 1370 °C)	500 to 3000 °F (260 to 1650 °C)	1000 to 5000 °F (540 to 2760 °C)	500 to 2500 °F (260 to 1370 °C)	0 to 2500 °F (-18 to 1370 °C)	0 to 2500 °F (-18 to 1370 °C)	NA
LoE (metals)	500 to 2500 °F (260 to 1370 °C)	1000 to 3000 °F (540 to 1930 °C)	1500 to 5000 °F (820 to 2760 °C)	1000 to 2500 °F (540 to 1370 °C)	500 to 2500 °F (260 to 1370 °C)	600 to 2500 °F (320 to 1370 °C)	300 to 2500 °F (150 to 1370 °C)
Optimum Range Selections	One model each J,K: adjustable over entire sensing range, output tables available		One model each RS: adjustable over entire sensing range, output tables available	One model each J,K: adjustable over entire sensing range, output tables available			
Minimum Spot Size (MSS) at Focus Pt. (FP)	0.8" (20 mm) at< 7" (180 mm) 0.5" (13 mm) at <3.5" (90 mm) 0.25" (6 mm) at <1" (25 mm)	0.8" (20 mm) at< 16" (400 mm) 0.5" (13 mm) at <9" (230 mm) 0.25" (6 mm) at <3.5" (90 mm)	0.8" (20 mm) at < 80" (2000 mm) 0.5" (13 mm) at <50" (1270 mm) 0.25" (6 mm) at <25" (635 mm)	At focus: 0.11" (2.9 mm) at 1.7" (43 mm) from sensor	At focus: 0.11" (2.9 mm) x 0.35" (2.9 x 8.7 mm) at 1.7" (43 mm) from sensor	At focus: 0.20" (5.0 mm) at 1.7" (43 mm) from sensor	At focus: 0.33" (8.5 mm) at 1.7" (43 mm) from sensor
Field of View(D:S) (non-focus)	10:1 (6°) approximately	20:1 (3°) approximately	100:1 (0.6°) approximately	2:1 (30°) approximately	4:1 (13°) approximately	5:1 (11°) approximately	12:1 (5°) approximately
Length (see drawing below for complete dimensions)	3.34" (85 mm)	4.15" (105 mm)	10.5" (265 mm)	2.02" (51.3 mm)	2.02" (51.3 mm)	2.02" (51.3 mm)	2.02" (51.3 mm)
Weight	8.0 oz (230 g) with cable	8.7 oz (248 g) with cable	20 oz (570 g) with cable	6.8 oz (192 g) with cable	6.8 oz (192 g) with cable	6.8 oz (192 g) with cable	6.8 oz (192 g) with cable

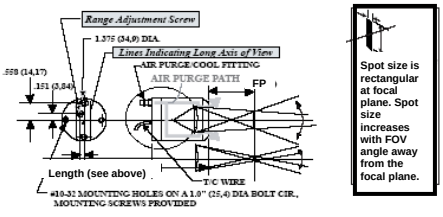
	IRt/c.2/18AMF	IRt/c.3AMF	IRt/c.6AMF	IRt/c.12AMF	IRt/c.2/15ALF	IRt/c.4ALF	IRt/c.7ALF	IRt/c.2AXLF	IRt/c.4AXLF
Sensing Range HiE (non metals coated metals)	0 to 2500 °F (-18 to 1370 °C)	500 to 2500 °F (260 to 1370 °C)	0 to 2500 °F (-18 to 1370 °C)	N/A	700 to 3000 °F (370 to 1650 °C)	700 to 3000 °F (370 to 1650 °C)	300 to 3000 °F (150 to 1650 °C)	1100 to 3500 °F (590 to 1930 °C)	1700 to 3500 °F (930 to 1930 °C)
LoE (metals)	600 to 2500 °F (320 to 1370 °C)	1100 to 2500 °F (590 to 1370 °C)	700 to 2500 °F (370 to 1370 °C)	400 to 2500 °F (200 to 1370 °C)	1200 to 3500 °F (650 to 1930 °C)	1200 to 3500 °F (650 to 1930 °C)	900 to 3500 °F (480 to 1930 °C)	2200 to 3500 °F (120 to 1930 °C)	1700 to 3500 °F (930 to 1930 °C)
Optimum Range Selections	One model each J,K: adjustable over entire sensing range, output tables available							One model each RS: adjustable over entire sensing range, output tables available	
Minimum Spot Size (MSS) at Focus Pt. (FP)	0.18 x 0.5" (4.5 x 12.8 mm) at 3" (76 mm) from sensor	0.15" (3.7 mm) at 3" (76 mm) from sensor	0.26" (6.5 mm) at 3" (76 mm) from sensor	0.48" (11.1 mm) at 3" (76 mm) from sensor	0.12 x 0.28" (3 x 7.2 mm) at 4.1" (105 mm) from sensor	0.14" (35 mm) at 4.1" (105 mm) from sensor	0.28" (7.2 mm) at 4.1" (105 mm) from sensor	0.07" (1.8 mm) at 8" (200 mm) from sensor	0.19" (4.8 mm) at 8" (200 mm) from sensor
Field of View (D:S) (non-focus)	4:1 (13°) approximately				5:1 (11°) approximately			12:1 (5°) approximately	
Length (see drawing below for complete dimensions)	2.97" (75.3 mm)				3.34" (84.8 mm)			8.375" (213 mm)	
Weight	6.8 oz (192 g) with cable				8.7 oz (248 g) with cable			20 oz (570 g) with cable	



IRtc.10A, IRtc.20A, IRt/c.100A



All CF, MF, LF, and XLF Models



All CF, MF, LF, and XLF Models with slot spots

ORDERING INFORMATION: (Model) - (Thermocouple Type) - (HiE or LoE)
Select the model for (1) temperature range, (2) spot size, and (3) target surface material (non-metal or uncoated metal). The finally (4) select the thermocouple type (J, K, or RS).
EXAMPLE: IRt/c.10A-K-HiE

ADJUSTABLE IRt/c OPTIONS

Adjustable IRt/c models are also available, Pre-Calibrated, from Exergen with NIST traceability for quick multiple same sensor installations for factory automation and OEM's. Also, millivolt signal output curves and mv tables are available for all sensor models and special calibrations.