

## Radiamatic II Infrared Sensors

## Model Selection Guide

### Instructions

- Select the Key Number desired. The arrow to the right marks the selections available.
- A dot denotes unrestricted availability. A letter denotes restricted availability.
- A complete Model Number must have the designated number of digits in each table.

Key Numbers      I      II      III      IV      V      VI      Options  
 [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]  
 IRLS      55F      1      B      Y      L      P      0  
 (Example)

### KEY NUMBER

Description	Selection	Availability		
With Fixed Focus	IRFF	▼		
With through the lens sighting for variable focus	IRLS		▼	
FM - Intrinsically Safe - Requires Barrier	IRFM			▼

TABLE I - TEMPERATURE RANGE

Typical Application	Spectral Response	FOV Ratio	Temperature Range					
			°F	°C				
Most Common; Low Temperature High Emissivity.	7-20 A	15:1	-40-200 F		1F	•	•	•
				-40-100 C	2C	•	•	•
General Purpose, including Textile, Printing, Paper, Food, Lamination, Rubber, Thick Plastics, Paints, etc. Rejects Energy from High Intensity Radiant Heating Sources.	8-14 B	15:1	0-200 F		3F	•	•	•
				0-100 C	4C	•	•	•
		30:1	0-500 F		5F	•	•	•
				0-300 C	6C	•	•	•
			0-1000 F		7F	•	•	•
				0-500 C	8C	•	•	•
			200-1800 F		9F	•	•	•
				0-100 C	10C	•	•	•
Low Temperature, Specially suited for Plastic Films, .004" (.1mm) or thicker. Calcium Fluoride window for Vacuum Processes.	7-10 K	15:1	0-500 F		11F	•	•	•
				0-300 C	12C	•	•	•
		30:1	200-1000 F		13F	•	•	•
				100-500 C	14C	•	•	•
Thin Plastic Films, including Polyester, Flourcarbons, etc. & very thin Glass.	7.9 F	15:1	0-500 F		15F	•	•	•
				0-300 C	16C	•	•	•
		30:1	200-800 F		17F	•	•	•
				100-400 C	18C	•	•	•
			300-1100 F		19F	•	•	•
				150-600 C	20C	•	•	•
Thin Plastic Films, such as, Polyethylene, Polystyrene, Polyurethane, & Polypropylene.	Narrow band centered at 3.43 M	5:1	120-400 F		21F	•	•	•
				50-200 C	22C	•	•	•
		8:1	200-600 F		23F	•	•	•
				100-400 C	24C	•	•	•
			300-1000 F		25F	•	•	•
				150-500 C	26C	•	•	•

**TABLE I - TEMPERATURE RANGE****Typical Application (continued)**

Typical Application (continued)	Spectral Response	FOV Ratio	Temperature Range		Selection	Availability		
			<sup>0</sup> F	<sup>0</sup> C		IRFF	IRLS	IRFM
Glass Surface, including Bending, Forming, Tempering, Annealing, Sealing & Lamination etc.	4.8-5.2 E	15:1	200-1000 F		27F	•	•	•
				100-600 C	28C	•	•	•
		30:1	500-1500 F		29F	•	•	•
				300-800 C	30C	•	•	•
			500-1500 F		31F	•	•	•
Sees thru Clean Flames & Hot Combustion Gases, including Reformer Tubes, Chemical Reactors, Kilns, etc.	Narrow Band Centered @ 3.86 D	30:1		300-1300 C	32C	•	•	•
			600-1800 F		33F	•	•	•
				300-1000 C	34C	•	•	•
			800-2600 F		35F	•	•	•
				450-1450 C	36C	•	•	•
Flame Temperature, for Combustion & Pollution Industries, Incinerators, Utility Boilers, Kilns, Chemical Reactors, etc.	CO <sup>2</sup> Absorption Band	30:1	1200-3200 F		37F	•	•	•
				600-1750 C	38C	•	•	•
			600-2200 F		39F	•	•	•
				320-1200 C	40C	•	•	•
			700-2500 F		41F	•	•	•
				400-1400 C	42C	•	•	•
			800-3000 F		43F	•	•	•
				450-1650 C	44C	•	•	•
			800-3500 F		45F	•	•	•
Most Common for High Temperature, such as Metals, Foundries, Hardening, Forging, Annealing, Glass Melting Tanks, Glass Gobs & Semiconductor Processes.	0.78-1.06 H	90:1		450-1900 C	46C	•	•	•
			1500-4000 F		47F	•	•	•
				800-2200 C	48C	•	•	•
			900-1400 F		49F	•	•	•
				500-800 C	50C	•	•	•
		180:1	1100-1800 F		51F	•	•	•
				550-900 C	52C	•	•	•
			1200-2000 F		53F	•	•	•
				600-1000 C	54C	•	•	•
			1300-2500 F		55F	•	•	•
				700-1300 C	56C	•	•	•
			1800-3200 F		57F	•	•	•
				900-1600 C	58C	•	•	•
			2000-4000 F		59F	•	•	•
Medium to High Temperature; for Ferrous & Non-Ferrous Metals, Sees thru Glass, Fast Response	1.0-1.6 Q	30:1		1100-2000 C	60C	•	•	•
			2700-5400 F		61F	•	•	•
				1500-3000 C	62C	•	•	•
			450-800 F		63F	•	•	•
		90:1		220-400 C	64C	•	•	•
			500-1000 F		65F	•	•	•
				300-600 C	66C	•	•	•
		30:1						
		90:1	750-1400 F		67F	•	•	•
				400-800 C	68C	•	•	•
		90:1	1000-2200 F		69F	•	•	•
				500-1100 C	70C	•	•	•

TABLE I - TEMPERATURE RANGE Typical Application (continued)	Spectral Response	FOV Ratio	Temperature Range		Selection	Availability		
			<sup>0</sup> F	<sup>0</sup> C		IRFF	IRLS	IRFM
Medium to High Temperature; for Ferrous & Non-Ferrous Metals.	2.0-2.6 P	30:1	500-900 F		71F	•	•	•
				250-450 C	72C	•	•	•
			600-1000 F		73F	•	•	•
				300-550 C	74C	•	•	•
			700-1300 F		75F	•	•	•
				350-700 C	76C	•	•	•
			800-1600 F		77F	•	•	•
				400-800 C	78C	•	•	•
			1000-2200 F		79F	•	•	•
				500-1100 C	80C	•	•	•
			1400-3000 F		81F	•	•	•
				750-1650 C	82C	•	•	•

TABLE II - FOCAL DISTANCE

Standard - focused at respective FOV ratio distance *	S	•		•
14" to Infinity	1		•	
6" to 14"	2		•	
2" Fixed	3		•	

TABLE III - OUTPUT RESPONSE TIME

See Specifications - 50 mS for Spectral Response 0.78~1.6; 100 mS for all others	S	•	•	•
300 mSec.	A	•	•	
1 sec.	B	•	•	
3 sec.	C	•	•	
10 sec.	D	•	•	

TABLE IV - PROTECTIVE JACKET

None - Not recommended for industrial use			0	•	•	
Without Cooling	P/N 51452729-001		N	•	•	•
With Cooling	P/N 51452729-002		Y	•	•	•

TABLE V - AIR PURGE ASSEMBLY

None - Not recommended for industrial use			0	•	•	
Yes - With cooling	P/N 51452729-003		L	a	a	•

TABLE VI - AIMING FLANGE

None - Not recommended for industrial use			0	•	•	•
Yes - 6" Flange	P/N 51452729-004		P	a	a	•

\* Min. Target Size =  $\frac{\text{Distance to Target}}{\text{Field of View Ratio (FOV)}}$

**TABLE VII - Options**

	Selection	Availability		
		IRFF	IRLS	IRFM
Standard Calibration Certificate	0	•	•	•
NIST Calibration Certificate - 5 point calibration - NIST traceable	C	•	•	•
Peak or Valley Picker - Includes 115 Vac built in power supply	U	•		
Peak or Valley Picker - Includes 220 Vac built in power supply	E	•		

**Accessories & Parts**

	Part Number
Protective Jacket without water cooling	51452729-001
Protective Jacket with water cooling	51452729-002
Air Purge Assembly	51452729-003
Aiming Flange	51452729-004
Mounting Bracket	51452729-005
Gasket	51452729-006
Adaptor Flange - mounts to Radiamatic-I air purge assembly	51452729-007
Pipe Mount Flange for Silicon Carbide Sight tubes	51452729-008
Pipe Mount Flange for all other Sight tubes	51452729-009
Vortex Cooler - Used in lieu of water cooling (air supply 70 to 1000 psi)	51452729-010
Intrinsically Safe Barrier (115 Vac) used with IRFM	51452729-011
Intrinsically Safe Barrier (220 Vac) used with IRFM	51452729-012
IREM Peak Picker with Remote Reset (115 Vac) - Electronic module	51452729-013
IREM Peak Picker with Remote Reset (220 Vac) - Electronic module	51452729-014
Removable Window Mount Assembly - Sapphire	51452729-019

**RESTRICTIONS**

Restriction Letter	Available only with	
	Table	Selection
a	IV	N, Y

**NOTE:**

The model IRFM "Radiamatic-II" has been approved by Factory Mutual (FM) for usage in hazardous environments. When used in conjunction with the optional barriers, the entire system will be rated intrinsically safe. Approvals are for Class I, II or III, Division 1, Group A, B, C, D, E, F and G. At the time of order please specify the IRFM approved version.

The FM approval status requires use of Barriers, the Protective or Cooling Jacket AND Air Purge assembly. Operating the FM approved version without these accessories voids the FM approval for Intrinsic Safety installations.