

IR-CA SERIES BY USES



■ MODEL

General type:

- IR-CAB (Low temp / Long wavelength)
- IR-CAE (Low temp / Short wavelength)
- IR-CAP (Low/Medium temp)
- IR-CAW (Ultra-wide)

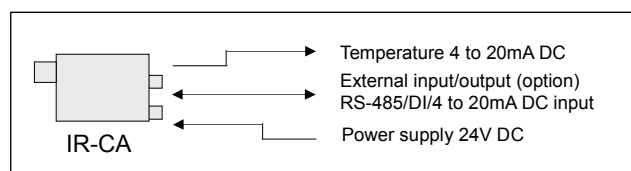
Application type:

- IR-CAN (for polyester film)
- IR-CAM (for polythene film)
- IR-CAR (Intra-furnace substances)
- IR-CAG (for glass)
- IR-CAT (for silicon wafer)
- IR-CAU (for gallium arsenic wafer)



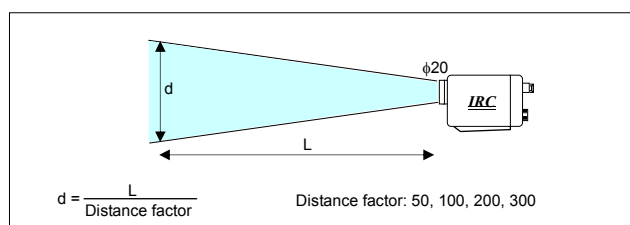
IR-CA series is a non-contact radiation thermometer with a digital display of temperature, parameter setting keys, and a direct viewfinder. The low temperature type; low / medium temperature type; ultra-wide type etc. 4 general types, and 6 application types, (for film, in-furnace, glass, semiconductor etc.) are added.

■ BASIC CONFIGURATION

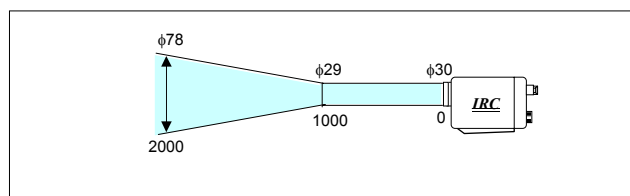


■ Measuring distance to measuring diameter relation

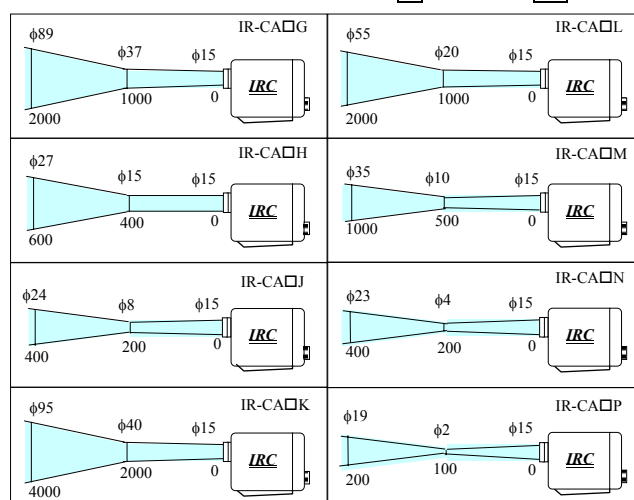
- Focusable type: IR-CAE, IR-CAP, IR-CAR, IR-CAG, IR-CAT, IR-CAU



- Fixed focus type: IR-CAWV



- Fixed focus type: IR-CA^B, IR-CA^E, IR-CA^N, IR-CA^M



MODELS

General type

Low temp. / Long wavelength

D/L	Model
φ37/1000mm	IR-CABG
φ15/400mm	IR-CABH
φ8/200mm	IR-CABJ
φ40/2000mm	IR-CABK
φ20/1000mm	IR-CABL
φ10/500mm	IR-CABM
φ4/200mm	IR-CABN
φ2/100mm	IR-CABP
Special	IR-CABZ

Low temp. / Short wavelength

Distance factor	Model
200	IR-CAE 2

Application type

Polyester film

D/L	Model
φ37/1000mm	IR-CANG
φ15/400mm	IR-CANH
φ8/200mm	IR-CANJ
Special	IR-CANZ

Glass

Distance factor	Model
50	IR-CAG 0
100	IR-CAG 1
200	IR-CAG 2

Intra - furnace

Distance factor	Model
100	IR-CAR 1
200	IR-CAR 2

Low temp. / Short wavelength

D/L	Model
φ37/1000mm	IR-CAEG
φ15/400mm	IR-CAEH
φ8/200mm	IR-CAEJ
Special	IR-CAEZ

Low / Medium temp.

Distance factor	Model
50	IR-CAP 0
200	IR-CAP 2
300	IR-CAP 3

Ultra - wide

D/L	Model
φ29/1000mm	IR-CAWV
Special	IR-CAWZ

Polythene film

D/L	Model
φ37/1000mm	IR-CAMG
φ15/400mm	IR-CAMH
φ8/200mm	IR-CAMJ
Special	IR-CAMZ

Silicon

Distance factor	Model
100	IR-CAT 1
200	IR-CAT 2

Gallium arsenic

Distance factor	Model
100	IR-CAU 1
200	IR-CAU 2

COMMON SPECIFICATION

SPECIFICATION	Emissivity compensation	Emissivity setting ... 1.999 to 0.050
	Signal modulation	DELAY, PEAK
	Display	Temp. & Parameter ... LCD4 digits
	Analog output:	4 to 20mA DC Isolated output
	Computation function	Zero/span adjustment, auto emissivity computation, output correction
	Self-diagnosis	Thermometer temp. abnormal, parameter error
	Working temp.	0 to 50°C
	Power supply	24V DC (allowable voltage fluctuation: 22 to 28V)
	Connection	Terminal or connector
	Case material	Aluminum
OPTION	Weight:	About 1.3kg
	CE marking	EN61326
	Communications Interface *	RS-485, Measured data transmission, Transmission and receiving of parameters
	Analog input *	4 to 20mA DC; Emmisivity remote setting or auto emissivity computation
	Contact output *	1 point, High(low) limit or error signal, Photo-coupler 30V DC, Max. 500mA
	Contact input *	1 point, Peak hold reset or sample hold, Dry-contact or open collector
	Laser spot function	Semi-conductor laser spot built-in Laser: 1mW or lower (645nm),

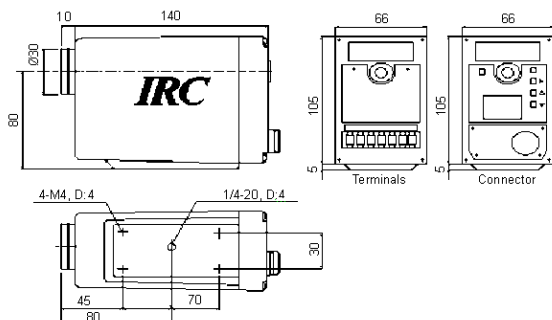
* Either 1 is to be selected.

SPECIFICATIONS (General type)

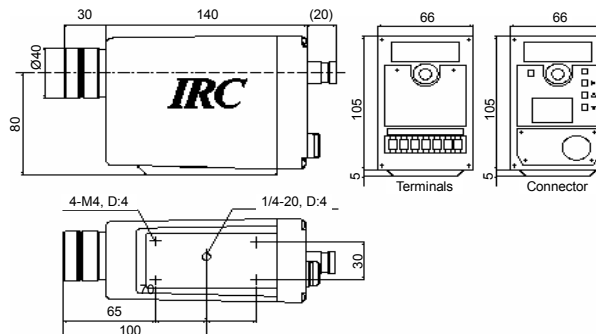
Model		IR-CAB	IR-CAE		IR-CAP	IR-CAW
Function		High accuracy at lower temperature measuring	High speed at lower temp. measuring for metal.		Measurable from 80°C Low temp. metal or object through glass window	Using one unit measurable temp. from 20-3000°C
SPECIFICATION	Measuring method	Wideband IR-thermometer	Narrowband IR-thermometer			Wide/Narrow-band IR-thermometer
	Element	Pyroelectric	PbSe		PbS	TP/InGaAs/Si
	Wavelength	8 to 13 μm	4μm		2μm	8-13/1.55/0.9 μm
	Measuring range	-50 to 100°C (G, H, J) 20-1000°C (K, L, M, N, P)	30-200°C (G, H, J)	100-500°C (200)	80-250°C (50) 150-450°C (200) 200-800°C (200, 300)	20-3000°C (V)
	Accuracy rating	±0.8°C Lower than: 200°C...±2°C Higher than: 200°C...±1% of readings	±2°C;	±3°C	Lower than: 500°C ...±3°C Higher than: 500°C ...±5°C	Lower than 1000°C...±5°C 1000°C-1500°C... ±5% of readings 1500°C-2000°C... ±1% of readings Higher than 2000°C...±2% of readings
	Repeatability	0.2°C or lower 1°C or lower	0.5°C or lower	1°C or lower	1°C or lower	
	Temperature drift:	Lower than 100°C...0.05°C/°C 100°C - 700°C ...0.05%/°C of readings Higher than 700°C ...0.025%/°C of readings	0.15°C/°C		Lower than 500°C ...0.15°C/°C Higher than 500°C ...0.25°C/°C	Lower than 1000°C ...0.2°C/°C Higher than 1000°C ...0.02%/°C of readings
	Resolution	0.1°C	1°C	0.1°C	1°C	
	Response time(95%)	2s	0.2s	0.02s		0.1s
	Optics	Fixed focus lens type		Focusable lens type		Fixed focus lens type
	Measuring diameter (mm)	φ37/1000, φ20/1000, φ15/400, φ10/500, φ8/200, φ4/200, φ40/2000, φ2/100,	φ37/1000, φ15/400, φ8/200	Measure distance/ Distance factor Distance factor = 200	Measure distance / Distance factor Distance factor = 50, 200, 300	φ29/1000
	Sighting	Laser spot, no viewfinder		Direct viewfinder		
	Lens aperture	φ15mm		φ20mm		
	Power consumption	Maximum 5VA		Maximum 10VA		Maximum 3VA

DIMENSIONS

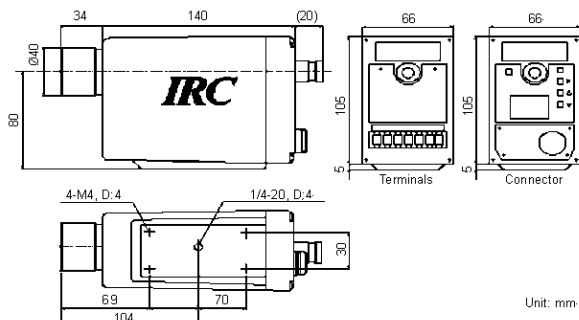
● IR-CAB, IR-CAE (Focusable type), IR-CAN, IR-CAM



● IR-CAE (Focusable type), IR-CAP, IR-CAR, IR-CAG, IR-CAT, IR-CAU



● IR-CAW



Unit: mm



CAUTION

- Please do not aim or direct laser toward faces.
- On measurement of targets like as glossy metal, be careful with influences by the reflection from it.

SPECIFICATIONS (Application type)

Model		IR-CAN	IR-CAM	IR-CAR	IR-CAG	IR-CAT	IR-CAU
Function		Using polyester's specific absorption band to measure temp. in high accuracy	Using polythene's specific absorption band of hydrocarbon to measure temp. unaffected on color or thickness	Measuring the temp. of object inside furnace unaffected on combustion gas.	Measuring temp. on glass surface unaffected on transmittance or reflection of glass	Using wavelength in opaque band of silicon, measuring temp. of wafer unaffected on heater	Using wavelength in opaque band of gallium arsenic, measuring temp. of wafer with high accuracy
SPECIFICATION	Measuring method	Narrowband IR-thermometer					
	Element	Pyroelectric	PbSe		MCT	Si	
	Wavelength	8μm	3.43μm	3.8μm	5μm	0.6-0.96 μm	0.6-0.9 μm
	Measuring range	0-300°C (G, H, J)	30-300°C (G, H, J)	300-1100°C (100) 400-1300°C (200) 500-1500°C (200)	100- 800°C (50) 200-1800°C (100) 400-2800°C (200)	400- 800°C (V) 500-1000°C (V) 600-1200°C (V)	400-800°C (V) 500-1000°C (V)
	Accuracy rating	Lower than: 200°C...±2°C Higher than: 200°C...±1% of readings		Lower than: 1000°C...±5°C Higher than: 1000°C...±0.5% of readings	Lower than: 1000°C... ±5°C 1000-1500°C ...±0.5% of readings 1500-2000°C ...±1% of readings Higher than: 2000°C...±2%	Lower than 600°C...±3°C Higher than 600°C...±0.5% of readings	
	Repeatability	1°C or lower					0.5°C or lower
	Temperature drift:	0.15°C/°C		Lower than 1000°C...0.2°C/°C Higher than 1000°C...0.02%/°C of readings		Lower than 700°C...0.1°C/°C Higher than 700°C...0.015%/°C of readings	
	Resolution	1°C					0.5°C
	Response time	1s		0.02s	0.1s	0.04s	
	Optics	Fixed focus lens type		Focusable lens type			
	Measuring diameter (mm)	φ37/1000 φ15/400 φ8/200		Measure distance/ distance factor Distance factor ...100, 200	Measure distance /distance factor Distance factor = 50, 200, 300	Measure distance/ distance factor Distance factor ...100, 200	
	Sighting	Laser spot, no viewfinder		Direct viewfinder			
	Lens aperture	φ15mm		φ20mm			
	Power consumption	Maximum 5VA	Maximum 10VA				

ε ≒ 1.0 under the reference operating conditions: temperature 23°C±5°C, relative humidity 35-75%.

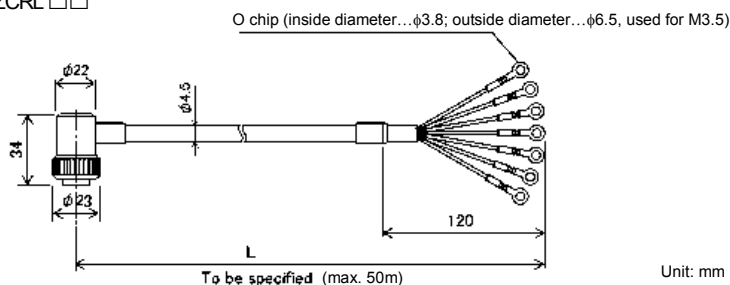
Accessories

• Lens

Model	Distance	Application IR model
IR-VAD30A	190 - 300mm	IR-CAI, IR-CAS, IR-CAQ, IR-CAP, IR-CAU, IR-CAT
IR-VAD30G	190 - 300mm	IR-CAE (Focusable type), IR-CAG, IR-CAR
IR-VAD60A	270 - 600mm	IR-CAI, IR-CAS, IR-CAQ, IR-CAP, IR-CAU, IR-CAT
IR-VAD60G	270 - 600mm	IR-CAE (Focusable type), IR-CAG, IR-CAR

• L type connection cable

IR-ZCRL □ □



Unit: mm

Setting Indicator IR-GZ (option)

Combine to the radiation thermometer IR-CA series (with RS-485 option), it can sets the emissivity; displays the measuring value;



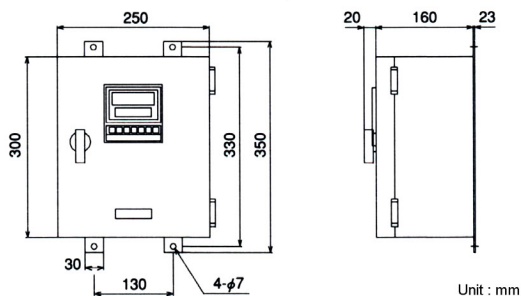
■ MODELS

IR-GZ01 □

Communication interface
N: nothing (standard)
R: RS-232C
S: RS-485

■ Accessories

Wall-mount box IR-ZGBW



Unit: mm

■ GENERAL SPECIFICATIONS

Emissivity (ratio) setting	: 1.999 - 0.050,
Radiation thermometer input	: RS-485
Connectable IR thermometer	: max. 31 units
Input signal modulation	:
DELAY ...	Tracing of average value
PEAK ...	Tracing maximum value
Display	:
Temperature; thermometer's number ; status signal	
Analog output	:
2 points; 4-20mADC (Load resistance:750Ω or lower)	
Event output	:
2 points; Maximum value, Minimum value, average	
Communications interface	: RS-232C, RS-485 (option)
Sensor power source	: 24V DC 0.45A
Power supply	: 100 to 240VAC, 50/60Hz
Power consumption	: About 20VA
Working temperature	: 10 to 50°C
Working humidity	: 20 to 90%RH or lower (no dew condensation)
Mounting	: Panel mounting
Weight	: About 6kg
CE marking	: EN61326 Group 1 Class A En61010 - 1
Accessory	: Wall-mount Box

Specifications subject to change without notice. Printed in Japan (I) 2003. 4

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