

# IR-BA SERIES HIGH-SPEED COMPACT RADIATION THERMOMETER



The IR-BA series is a non-contact and high-speed compact radiation thermometer. The card sized detector with built-in converting function of 4-20mA output signal can easily be installed in narrow places, production lines and small equipment.

A standard speed type and a high speed type (50ms/95%) are respectively available for these standard type and small-target/short-distance type and small-target/long-distance type, and also various applicable types like as Glass, Lamp-anneal, Film and Burning gas.



## ■ FEATURES

- **High response:** Standard: 100ms, High-speed: 50ms
- **Compact & light-weight:** W32 x H56 x D100 mm, 220g
- **Detector built-in signal conversion**
- **More accurate environment temp. compensation**
- **Emissivity setting by digital switch**
- **Various peripheral units are prepared.**

(Indicator with power supply, converter with reflection compensation, etc.)



IR-GBG2

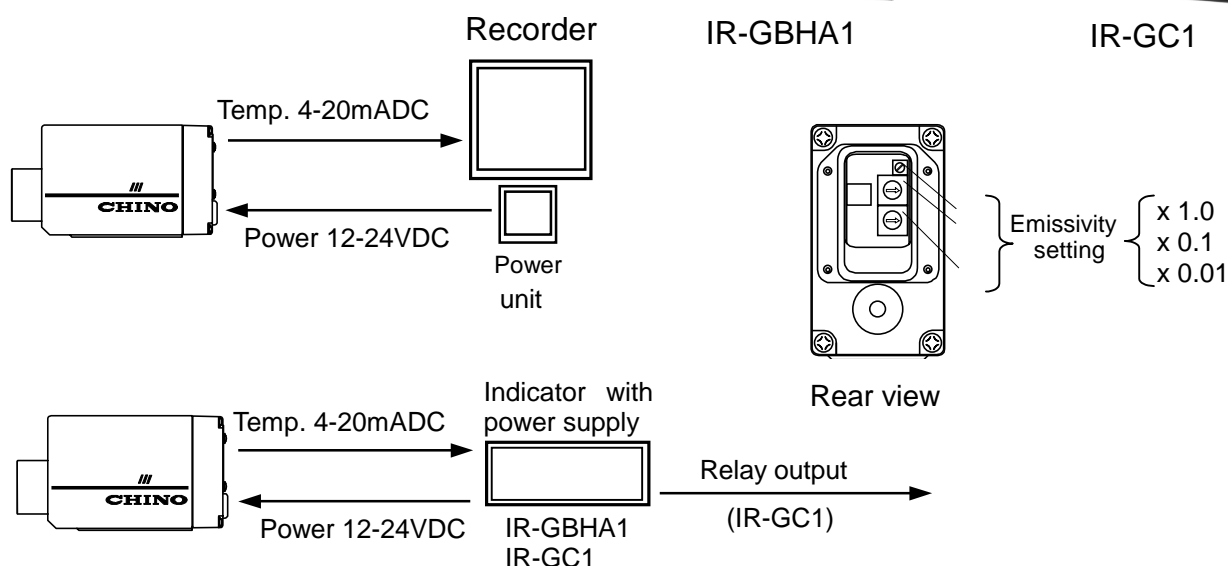


IR-GBHA1



IR-GC1

## ■ SYSTEM



## ■ MODELS AND SPECIFICATIONS

T y p e s		Models	Range	Response	D / L (Ref. No)	Accuracy	Wavelength
General	Standard	IR-BAT1A	0-300°C	100ms	φ40/500mm (1)	Less than 300°C: ±3°C	8-14μm
		IR-BAT1B	0-600°C				
	Small target / Short distance	IR-BAT2A	0-300°C		φ5/80mm (2)		
		Small target/ Long distance	IR-BATSA		0-300°C	φ40/1000mm (3)	
	IR-BATSB		0-600°C				
High-speed type	Standard	IR-BAT1M	0-300°C	50ms	φ40/500mm (1)	300°C or more: ±1%	
		IR-BAT1P	0-600°C				
	Small target / Short distance	IR-BAT2M	0-300°C		φ5/80mm (2)	(ε =1.0)	
		Small target/ Long distance	IR-BATSM		0-300°C		
	IR-BATSP		0-600°C				
Usage	Glass	IR-BAXG1	100-400°C	1s	φ20/150mm (4)	±4°C	4.6-5.2μm
	Lamp anneal	IR-BAXL1	400-1300°C	1s	φ40/500mm (1)	1%	3.43μm half-band width 120nm
	Polyethylene	IR-BAXF1	80-250°C	1s	φ40/500mm (1)	±4°C	
	Polyester	IR-BAXF2	50-150°C	1s	φ40/500mm (1)	±4°C	7.6-8.4μm
	Burning gas	IR-BAXH1	500-1300°C	10s	φ100/1000mm (5)	1.5%	4.3μm

## ■ COMMON SPECIFICATIONS

Measurement	Wide-band system (general type, high-speed type) Narrow-band system (Usage type)
Element	Thermopile
Resolution	0.2°C (0-300°C) } for General type 0.5°C (0-600°C) } High-speed type
Repeatability	±0.2°C (0-300°C) } for General type ±0.3°C (0-600°C) } High-speed type
Optics	Ge lens
Emissivity	1.99-0.10 by digital switch
Analog output	4-20mA DC (Load : less than 280Ω)
Working temp.	0-50°C
Power	12-24V DC
Current consumption	Less than 60mA
Connecting cable	Standard 2m (Max.200m) 5m for IR-BAXH1
Casing	Diecast Aluminum
Water proofing	JIS C-920 Drip-proof II, IP-X2
Mounting	Fixing 2 x M4 screws or tripod
Weight	About 220g

## ■ MODELS

### •General & High-speed types

IR-BAT□□

D/L

- 1: Standard φ40/500mm  
2: Small target/Short distance φ5/80mm  
S: Small target/Long distance φ40/1000mm

Measuring range • Response

A: 0-300°C, 100ms

B: 0-600°C, 100ms \*1

M: 0-300°C, 50ms

P: 0-600°C, 50ms \*1

\*1: Available for standard type and small target/long distance types

### •General & High-speed types

IR-BAX□□

Usage

G1: Glass

L1: Lamp anneal

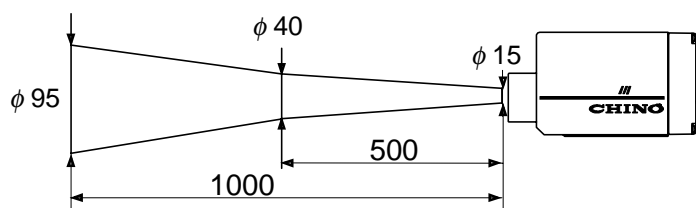
F1: Polyethylene film

F2: Polyester film

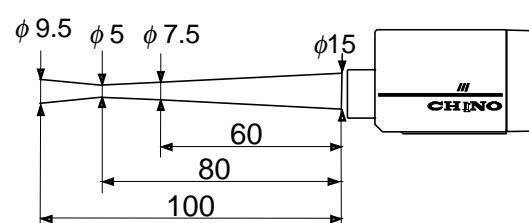
H1: Burning gas

## ■ MEASURING DIAMETER AND MEASURING DISTANCE

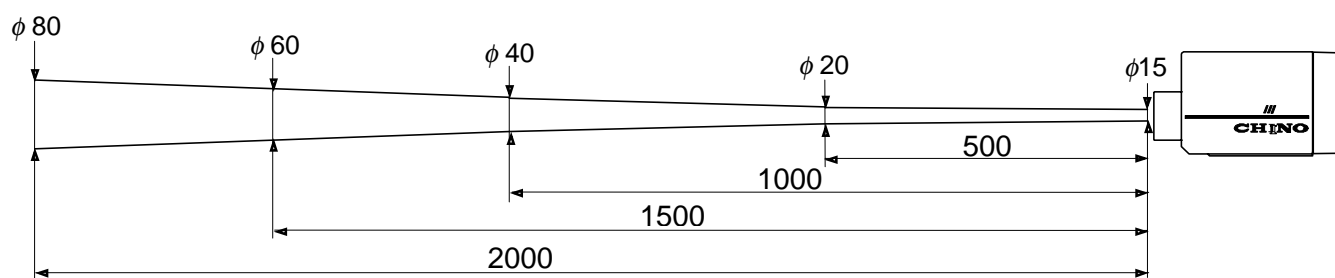
### (1) IR-BAT1, -BAT1M, -BAXL1, -BAXF1, -BAXF2



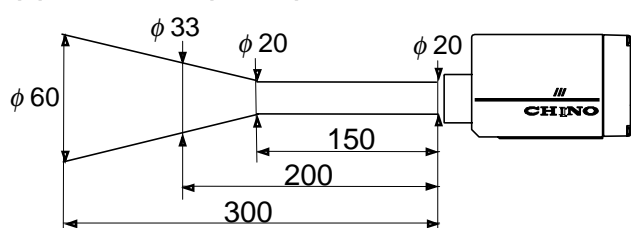
### (2) IR-BAT2, -BAT2M



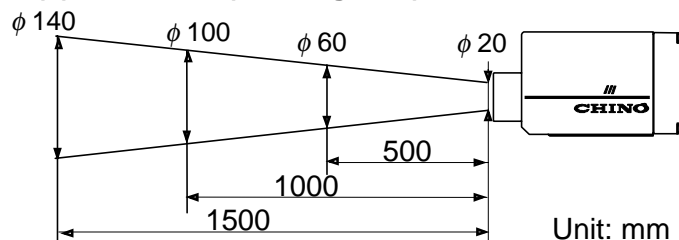
### (3) IR-BATS, -BATSM



### (4) IR-BAXG1 (Glass)



### (5) IR-BAXH1 (Burning Gas)



Unit: mm

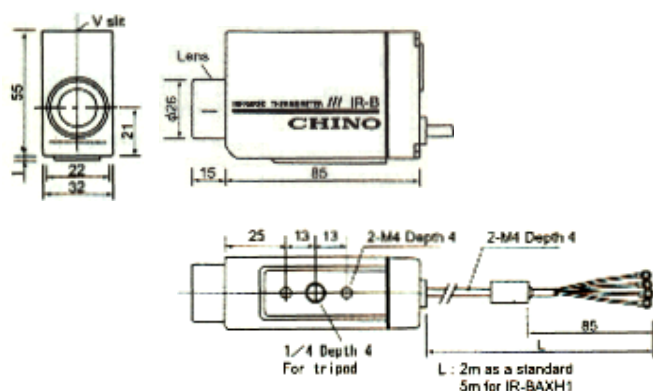
## ■ INDICATOR WITH POWER SUPPLY CONVERTER WITH REFLECTION COMPENSATION

	Indicator with power supply		Converter with reflection compensation
View			
Model	IR-GBHA1	IR-GC1	IR-GBG2
Input	4-20mADC		4-20mADC (Background radiation source: Pt100 or 4-20mADC)
Power to Detector	24VDC 80mA	24VDC 100mA	12VDC 60mA
Digital indication	3 digits		3 1/2 digits
Output (isolated)	4-20mADC		
Alarm	-	Provided	Provided
Modulator	-	Provided	
Reflection compensation	-		Provided
Sensor compensation	-		Provided
Working temp. hum.	0-50°C, less than 85%RH	0-50°C, less than 90%RH	-10-50°C, Less than 90%RH
Power voltage	100VAC, 50/60Hz	100-240VAC, 50/60Hz	
Power consumption	Max. 7VA	Ma. 20VA	Max. 15VA
Weight	About 500g	About 400g	About 600g

unit:mm

## ■ EXTERNAL DIMENSIONS

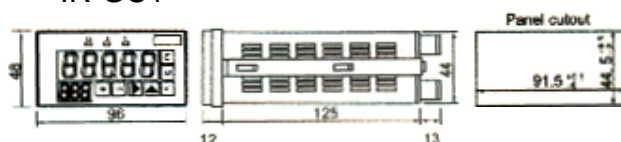
- Detector
- IR-BA



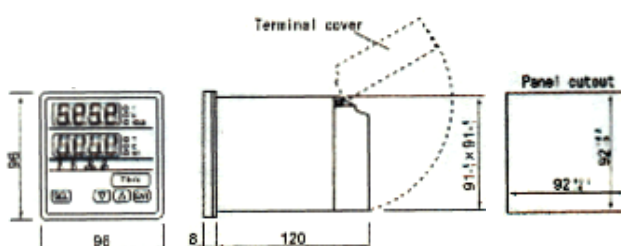
- Indicator with power supply
  - IR-GBHA1



- IR-GC1

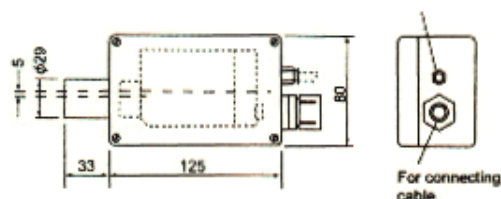


- Converter with reflection compensation
  - IR-GBG2

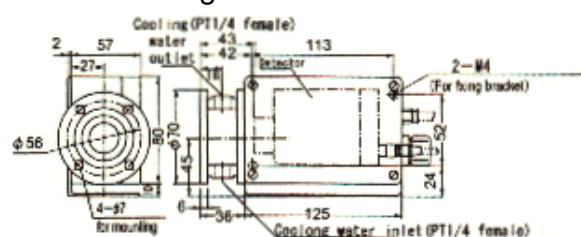


- Protective Case
  - IR-ZBCSH

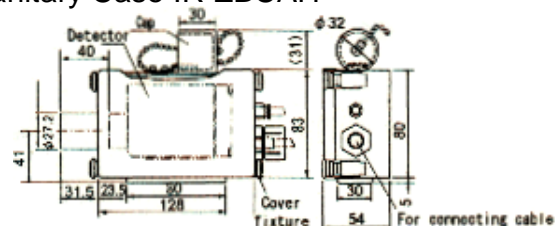
Purge-air inlet  
( $\phi 60D$   $\phi 4ID$   
Nyrontube connection)



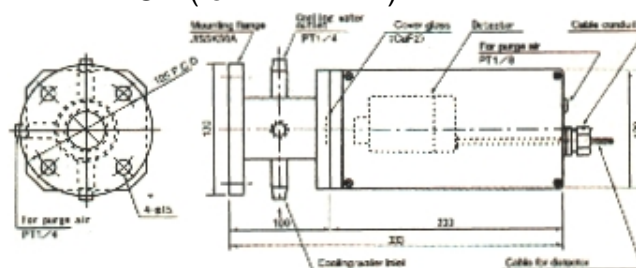
- Water Cooling Jacket IR-ZBCWH



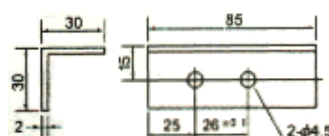
- Sanitary Case IR-ZBCAH



- IR-ZBCH (for IR-BAXH1)



- Mounting L bracket
- IR-ZBML



Specifications subject to change without notice. Original 2001.5

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