The IR-CA Product Line of Non-Contact Infrared Thermometers provides a broad selection of units to match your applications and requirements for non-contact temperature measurement. The product line consists of 15 different Series grouped into General Purpose and Application Specific models.

### General Purpose Models

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Series</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Temperature – Long Wavelength</td>
<td>IR-CAB</td>
<td>IR-CAB Series measures temperatures as low as –50°C with an accuracy of ±0.8°C.</td>
</tr>
<tr>
<td>Low Temperature – Short Wavelength</td>
<td>IR-CAE</td>
<td>IR-CAE Series measures temperature as low as 30°C with a very fast response time of 20 milliseconds.</td>
</tr>
<tr>
<td>Low to Medium Temperature and Small Spot Size</td>
<td>IR-CAP</td>
<td>IR-CAP Series measures temperature as low as 80°C, with some models having measuring spot sizes as small as 1mm at a distance of 300mm.</td>
</tr>
<tr>
<td>Medium Temperature – Wide Temperature Range</td>
<td>IR-CAI</td>
<td>IR-CAI Series measures temperature as low as 200°C, provides temperatures spans as wide as 1300°C with ultra fast 3 millisecond response times.</td>
</tr>
<tr>
<td>High Temperature – Wide Temperature Range</td>
<td>IR-CAS</td>
<td>IR-CAS Series measures temperature as low as 500°C, provides temperatures spans as wide as 2400°C with ultra fast 3 millisecond response times.</td>
</tr>
<tr>
<td>Low Temperature- High Speed</td>
<td>IR-CAK</td>
<td>IR-CAK Series measures temperature as low as 50°C with a very fast response time of 1.5 milliseconds.</td>
</tr>
<tr>
<td>World’s Widest Temperature Range Infrared Thermometer</td>
<td>IR-CAW</td>
<td>IR-CAW Series has an ultra wide temperature range of 20 to 3500°C in one single unit.</td>
</tr>
</tbody>
</table>

### Application Specific Models

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Series</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyester Film</td>
<td>IR-CAN</td>
<td>IR-CAN Series is designed to measure polyester films as thin as 12.5μm. This unit operates at a wavelength that matches the PET absorption band. Temperature measurement can be made without affect of thickness and/or color.</td>
</tr>
<tr>
<td>Polyethylene Film</td>
<td>IR-CAM</td>
<td>IR-CAM Series is designed to measure polyethylene films as thin as 12.5μm. This unit operates at a wavelength that matches the Carbon-Hydrogen absorption band. Temperature measurement can be made without affect of thickness and/or color.</td>
</tr>
<tr>
<td>Measurement Inside of Furnace</td>
<td>IR-CAR</td>
<td>IR-CAR Series is designed to look through hot combustion gases inside of a furnace. Its operating wavelength also minimizes background interference from hotter furnace walls.</td>
</tr>
<tr>
<td>Glass Temperature</td>
<td>IR-CAG</td>
<td>IR-CAG Series is designed to measure glass temperature. This unit utilizes a Thermoelectrically Cooled MCT IR Detector to provide a fast and stable temperature measurement.</td>
</tr>
<tr>
<td>Semicon/Silicon</td>
<td>IR-CAT</td>
<td>IR-CAT Series is designed to measure low temperature of Silicon wafers without seeing through the substrate therefore eliminating the interference of heaters/blocks.</td>
</tr>
<tr>
<td>Semicon/InGaAs</td>
<td>IR-CAU</td>
<td>IR-CAU Series is designed to measure low temperature of InGaAs wafers without seeing through the substrate therefore eliminating the interference of heaters/blocks.</td>
</tr>
<tr>
<td>Food Industry</td>
<td>IR-CAFX0</td>
<td>IR-CAFX0 Series is designed to measure Pasteurization temperatures (60 to 100°C) in the food industry, with high-speed (10 milliseconds) and high accuracy.</td>
</tr>
<tr>
<td>Hot Metal Detector</td>
<td>IR-CADAC01</td>
<td>IR-CADAC01 Series is a HMD that detects the presence of hot metal on a production line. An Open Collector output is turned ON when hot metal enters the optical sensing path and exceeds the preset threshold level.</td>
</tr>
</tbody>
</table>
### Specifications

#### Low Temperature/Long Wavelength IR-CAB

- **Measuring System:** Broadband radiation thermometer
- **Element:** PE
- **Measuring Wavelength:** 8 to 13 μm
- **Measuring Range:** -50 to 100°C or 20 to 1000°C
- **Accuracy Rating:**
  - ±0.8°C (-50 to 100°C)
  - ±2°C (100 to 200°C)
  - ±0.1% of measured value (200 to 1000°C)
  (at ε ≈ 1.0 and reference operating conditions)
- **Repeatability:** 0.2°C or less (at -50 to 100°C)
- **Stability:**
  - Temperature drift: Lower than 0.05°C/°C
  - 100 to 700°C: -0.05%/°C of measured value
  - Higher than 700°C: -0.02%/°C of measured value
- **Resolution:**
  - 0.1°C (-50 to 100°C)
  - 1°C (20 to 1000°C)
- **Response Time (95%):** 2 sec (-50 to 100°C)
- **Power Consumption:** Maximum 5VA
- **Connection:**
  - C: Connector
  - T: Terminal

#### Low Temperature/Short Wavelength IR-CAE

- **Measuring System:** Narrow-band radiation thermometer
- **Element:** PbSe
- **Measuring Wavelength:** 4 μm
- **Measuring Range:** 30 to 200°C
- **Accuracy Rating:**
  - ±2°C
  (at ε ≈ 1.0 and reference operating conditions)
- **Repeatability:** 0.5°C or less
- **Stability:**
  - Temperature drift: 0.15%/°C
  - At EMC test environment: ±10% of measuring range
- **Resolution:** 0.1°C
- **Response Time (95%):** 0.02 sec
- **Power Consumption:** Maximum 10VA

#### Relation between Measuring Distance and Diameter

<table>
<thead>
<tr>
<th>Models</th>
<th>Measuring Diameter/Measuring Distance</th>
<th>Measuring Range</th>
<th>Standard Sighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR-CABG</td>
<td>Φ37/1000mm</td>
<td>-50 to 100°C</td>
<td>Laser targeting without viewfinder</td>
</tr>
<tr>
<td>IR-CABH</td>
<td>Φ15/400mm</td>
<td>-50 to 100°C</td>
<td></td>
</tr>
<tr>
<td>IR-CABK</td>
<td>Φ8/200mm</td>
<td>20 to 1000°C</td>
<td></td>
</tr>
<tr>
<td>IR-CABL</td>
<td>Φ4/200mm</td>
<td>20 to 1000°C</td>
<td></td>
</tr>
<tr>
<td>IR-CABM</td>
<td>Φ2/100mm</td>
<td>20 to 1000°C</td>
<td></td>
</tr>
<tr>
<td>IR-CABN</td>
<td>Special Ask CHINO</td>
<td>Special Ask CHINO</td>
<td></td>
</tr>
<tr>
<td>IR-CABP</td>
<td>Special Ask CHINO</td>
<td>Special Ask CHINO</td>
<td></td>
</tr>
</tbody>
</table>

(* The reference operating condition: 23°C ±5°C/°C, 35 to 75%RH)
**Low temperature/short wavelength IR-CAE**

Element: PbSe
Measuring system: Narrow-band radiation thermometer
Measuring wavelength: 4 µm
Measuring range:
- 200 to 500°C (distance factor 200)
- 150 to 450°C (distance factor 200 or 300)
- 200 to 800°C (distance factor 200 or 300)
Accuracy rating:
- Lower than 500°C: ±3ºC
- More than 500°C: ±3ºC
Repeatability: 1ºC or less
Stability: Temperature drift 0.05ºC/ºC
Resolution: 0.5ºC
Power consumption: Maximum 2.4VA
Response time (95%): 0.003 sec
Sighting: Direct viewfinder
Optics: Focusable lens type
Lens aperture: 20mm diameter
Measurement range:
- 200 to 1000°C (distance factor 50)
- 500 to 2000°C (distance factor 500)
- 1000 to 1500°C ---
- 1500 to 2000°C ---
- More than 2000°C ---
Accuracy rating:
- Lower than 1000°C: ±5ºC
- 1000 to 1500°C: ±0.5% of measured value
- 1500 to 2000°C: ±1% of measured value
- More than 2000°C: ±2% of measured value
Stability: Temperature drift 0.2ºC/ºC or 0.015%/ºC of measured value whichever larger
Resolution: 0.5ºC
Response time (95%): 0.003 sec
Sighting: Direct viewfinder
Optics: Focusable lens type
Lens aperture: 20mm diameter
Power consumption: Maximum 2.4VA

**Medium temperature IR-CAI**

Element: InGaAs
Measuring system: Narrow-band radiation thermometer
Measuring wavelength: 1.55 µm
Measuring range:
- 200 to 1000°C (distance factor 50)
- 300 to 1600°C (distance factor 200 or 300)
- 400 to 2000°C (with field diaphragm Ø10, distance factor 200 or 300)
Accuracy rating:
- Lower than 1000°C: ±3ºC
- 1000 to 1500°C: ±0.5% of measured value
- 1500 to 2000°C: ±1% of measured value
- More than 2000°C: ±2% of measured value
Repeatability: 0.2% or less
Stability: Temperature drift 0.1ºC/ºC or 0.015%/ºC of measured value whichever larger
Resolution: 0.5ºC
Response time (95%): 0.003 sec
Sighting: Direct viewfinder
Optics: Focusable lens type
Lens aperture: 20mm diameter
Power consumption: Maximum 2.4VA

**High temperature IR-CAS**

Element: Si
Measuring system: Narrow-band radiation thermometer
Measuring wavelength: 0.9 µm
Measuring range:
- 500 to 2000°C (distance factor 50)
- 600 to 3000°C (distance factor 200 or 300)
- 700 to 3500°C (with field diaphragm Ø10, distance factor 200 or 300)
Accuracy rating:
- Lower than 1000°C: ±5ºC
- 1000 to 1500°C: ±0.5% of measured value
- 1500 to 2000°C: ±1% of measured value
- More than 2000°C: ±2% of measured value
Repeatability: 0.2ºC or less
Stability: Temperature drift 0.1ºC/ºC or 0.015%/ºC of measured value whichever larger
Resolution: 0.5ºC
Response time (95%): 0.003 sec
Sighting: Direct viewfinder
Lens aperture: 20mm diameter
Power consumption: Maximum 2.4VA

**Relation between measuring distance and diameter**

<table>
<thead>
<tr>
<th>Distance factor</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>±10</td>
<td>±20</td>
<td>±40</td>
</tr>
<tr>
<td>300</td>
<td>±17</td>
<td>±34</td>
<td>±67</td>
</tr>
</tbody>
</table>

**Accuracy rating**

<table>
<thead>
<tr>
<th>Temperature</th>
<th>±1% of measuring range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low temperature/short wavelength</td>
<td></td>
</tr>
<tr>
<td>Low to medium temperature</td>
<td></td>
</tr>
<tr>
<td>High temperature</td>
<td></td>
</tr>
</tbody>
</table>

**Connection**

- **C**: Connector
- **T**: Terminal
- **N**: None
- **S**: RS485
- **S**: 4-20mA DC input
- **J**: Contact input (DI)
- **K**: Contact output (DO)
- **L**: Laser targeting (option)
- **Blank**: Without view finder

**Sighting**

- **10**: With view finder (standard)
- **70**: Built-in 200mm close-up lens (option)
- **140**: Laser targeting (option)

**Unit: mm**
**Widest temperature IR-CAW**

- **Measuring system:** Broadband/Narrow-band radiation thermometer
- **Element:** TP/InGaAs/Si
- **Measuring wavelength:** 8-13/1.55/0.9 \( \mu m \)
- **Measuring range:** 20 to 3000ºC
- **Accuracy rating:**
  - Lower than 1000ºC --- ±5ºC
  - 1000 to 1500ºC --- ±0.5% of measured value
  - 1500 to 2000ºC --- ±1% of measured value
- **More than 2000ºC --- ±2% of measured value (at \( \varepsilon \approx 1.0 \) and reference operating conditions)**
- **Repeatability:** 1ºC or less
- **Stability:** Temperature drift
  - Lower than 1000ºC --- 0.2ºC /ºC
  - Higher than 1000ºC --- 0.02%/ºC of measured value
- **At EMC test environment --- ±1% of measuring range**
- **Resolution:** 1ºC
- **Response time (95%):** 0.1 sec
- **Optics:** Fixed focus lens type
- **Sighting:** Direct viewfinder
- **Lens aperture:** 30mm diameter
- **Power consumption:** Maximum 2.4VA

* (* The reference operating condition: 23ºC±5ºC, 35 to 75%RH)

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**Short length/High speed IR-CAK**

- **Measuring system:** Narrow-band radiation thermometer
- **Element:** PbSe (cooling type)
- **Measuring wavelength:** 4 \( \mu m \)
- **Measuring range:** 50 to 400 ºC (displays from 0 ºC but accuracy rating is guaranteed is from 50 ºC)
- **Accuracy rating:** ±3ºC
- **Repeatability:** 1.0ºC or less
- **Stability:** Temperature drift 0.15 ºC/ ºC
- **Resolution:** 1ºC
- **Response time (95%):** 0.0015 sec
- **Emissivity ratio setting:** 1.9999 to 0.050
- **Optics:** Fixed focus lens type
- **Sighting:** Laser targeting without viewfinder
- **Lens aperture:** 30mm diameter
- **Power consumption:** Maximum 12VA

* (* The reference operating condition: 23ºC±5ºC, 35 to 75%RH)

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**Relation between measuring distance and diameter**

<table>
<thead>
<tr>
<th>Models</th>
<th>Measuring diameter/Measuring range</th>
<th>Measuring range</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR-CAWV</td>
<td>φ29/1000mm</td>
<td>20 to 3000ºC</td>
</tr>
<tr>
<td>IR-CAWZ</td>
<td>Special</td>
<td>Ask CHINO</td>
</tr>
</tbody>
</table>

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**IR-CAW**

- **Unit:** mm

---

**IR-CAK**

- **Unit:** mm
Display

- Temperature & parameter --- 4-digit LCD
- Unit --- °C or °F (Key switchable)

Emissivity setting

- 1.9999 to 0.050

Signal modulation

- DELAY --- First-order lag (Time constant: 0.0 to 99.9 sec with 0.1 sec increment or 0.00 to 9.99 sec with 0.01 sec increment)
- PEAK --- Peak tracing (attenuation factor 0, 2, 5, 10°C/sec selectable) Peak hold must be set at 0 sec.

Computation function

- ZERO/SPAN adjustment, automatic emissivity computation, output correction

Analog output

- 4 to 20mA DC isolated output
- Load resistance: Less than 500Ω
- Resolution: 0.04% of output range
- Accuracy rating: ±0.2% of output range
- Scaling: Programmable in measuring range

Parameter setting key

- Operator mode --- Emissivity, signal modulation, alarm, others
- Engineering mode --- Measuring unit, output scaling, ZERO/SPAN, reference temperature for automatic emissivity computation, output correction and other options.

Self-diagnostic

- Thermometer temperature abnormal, parameter error

Working temperature

- 0 to 50°C

Power supply

- 24V DC (allowable voltage fluctuation 22 to 28V DC)
- Recommended power supply unit:
  - IR-ZFEP (S82K-01524)
  - IR-GZ
  - IR-GC

Connections

- Terminal or connector

Casing

- Aluminum

Weight

- Approx 1.3Kg

CE marking (connector connection only)

- EMI directive EN61326+A1
- Immunity Annex A
- * The product complies when in use of exclusive power supply unit and connecting cable up to 30m.
- "The reference operating condition: 23°C±5°C, 35 to 75%RH"

OPTIONS

- Communications interface:
  - RS485: Sending of measuring data, and sending/receiving of parameters
- Analog output:
  - 4-20mA input signal: Selection of emissivity remote setting or automatic emissivity computation
- Contact input:
  - 1 point: Peak hold reset or sample hold. Dry contact or open collector
- Contact output:
  - 1 point: High/low alarm or error signal. Photo coupler 30VDC 50mA max
- Laser targeting:
  - Built-in semiconductor laser emitter. 1mW or lower (645nm), class2. No viewfinder model.

* Only one kind of option to be selected.

CAUTIONS FOR LASER TARGETING MODELS

- Laser may damage your eyes. Don’t stare into a laser beam.
- Make sure to prevent from the reflection when you want to measure an object equivalent to mirror surface like a brilliant metal.

Setting/display part

- Connector type
- Terminal type
- Display
- Viewfinder
- Setup key
- 24V DC output
- 4-20mA DC output for options

Connectivity

- Temperature 4-20mA DC
- External input/output (Option)
- RS485/DS/DD/4-20mA DC input
- Power supply 24V DC

Remote setup system

- Only IR-CAI/CAS/CAQ/CAW can be connected.
- Separate DC power supply is required for other models.

Data Acquisition Software (option)

This PC software records measuring data for the IR-CA.

Model

- IR-VXC1 □
  - J: Japanese
  - E: English

Specifications

<table>
<thead>
<tr>
<th>Environment</th>
<th>OS</th>
<th>Windows 7/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard drive</td>
<td>20MB or more</td>
<td></td>
</tr>
<tr>
<td>Memory</td>
<td>16MB or more</td>
<td></td>
</tr>
<tr>
<td>Drive</td>
<td>Floppy disk drive</td>
<td></td>
</tr>
</tbody>
</table>

Function

- Measuring data display
- Data storing, replay, print
- 1-3 units connectable

Measuring mode

- Real time trend mode

Setting/display part

- Protocol converter
- Software IR-VXC1

Connectivity

- 24V DC ground
- Output power supply
- 4-20mA DC
- Input/output for options
**SPECIFICATIONS**

**Film Temperature IR-CAN, CAM**

Measuring system: Narrow-band radiation thermometer

**Element:**
- IR-CAN --- PE
- IR-CAM --- PbSe

**Measuring wavelength:**
- IR-CAN --- 8 µm
- IR-CAM --- 3.43 µm

**Measuring range:**
- IR-CAN --- 0 to 300ºC
- IR-CAM --- -30 to 300ºC

**Accuracy rating:**
- Lower than 200ºC --- ±2ºC
- More than 200ºC --- ±0.1% of measured value (at ± 1.0 and reference operating conditions)

**Repeatability:**
- 1ºC or less

**Stability:**
- Temperature drift
  - Lower than 700ºC --- 0.15ºC /ºC
  - More than 700ºC --- 0.15% /ºC of measured value

**Film Temperature I**

**IR-CAM:**
- Maximum 10VA

**Power consumption:**
- Maximum 5VA

**Sighting:**
- Laser spot without viewfinder

**Response time (95%):**
- 1 sec

**Resolution:**
- 1ºC

**Optics:**
- Fixed focus lens type

**Lens aperture:**
- 15mm diameter

IR-CAN:

**Power consumption:**
- Maximum 10VA

**IR-CAM --- Maximum 10VA**

(* The reference operating condition: 23ºC ±5ºC, 35 to 75%RH)

**Relation between measuring distance and diameter**

**Measurement Inside Furnace object IR-CAN**

**Measuring system:**
- Narrow-band radiation thermometer

**Element:**
- MCT

**Measuring wavelength:**
- IR-CAT --- 0.6 to 0.96 µm

**Measuring range:**
- IR-CAU --- 400 to 800ºC (distance factor 100)
- IR-CAT --- 400 to 1200ºC (distance factor 200)
- IR-CAU --- 100 to 800ºC (distance factor 50)

**Accuracy rating:**
- Lower than 1000ºC --- ±0.5% of measured value
- More than 1000ºC --- 0.02%/ºC of measured value

**Repeatability:**
- 1ºC or less

**Temperature drift:**
- Lower than 700ºC --- 0.15ºC /ºC
- More than 700ºC --- 0.15% /ºC of measured value

**Resolution:**
- 0.5ºC

**Response time (95%):**
- 0.04 sec

**Optics:**
- Focusable lens type

**Lens aperture:**
- 20mm diameter

**Power consumption:**
- Maximum 10VA

(* The reference operating condition: 23ºC ±5ºC, 35 to 75%RH)

**Relation between measuring distance and diameter**

**Semiconductor IR-CAT, IR-CAU**

**Measuring system:**
- Narrow-band radiation thermometer

**Element:**
- Si

**Measuring wavelength:**
- IR-CAT --- 0.6 to 0.9 µm

**Measuring range:**
- IR-CAT --- 400 to 800ºC (distance factor 100)
- IR-CAT --- 500 to 1000ºC (distance factor 200)
- IR-CAU --- 600 to 1200ºC (distance factor 200)
- IR-CAU --- 400 to 800ºC (distance factor 100)
- IR-CAU --- 500 to 1000ºC (distance factor 200)

(± ε = 1.0 and reference operating conditions)

**Accuracy rating:**
- Lower than 600ºC --- ±3ºC
- More than 600ºC --- ±0.5% of measured value

**Repeatability:**
- 0.5ºC or less

**Temperature drift:**
- Lower than 700ºC --- 0.1ºC /ºC
- More than 700ºC --- 0.15% /ºC of measured value

**Resolution:**
- 0.5ºC

**Response time (95%):**
- 0.04 sec

**Optics:**
- Focusable lens type

**Sighting:**
- Direct viewfinder

**Lens aperture:**
- 20mm diameter

**Power consumption:**
- Maximum 10VA

(* The reference operating condition: 23ºC ±5ºC, 35 to 75%RH)

**Relation between measuring distance and diameter**

**Glass Temperature IR-CAG**

**Measuring system:**
- Narrow-band radiation thermometer

**Element:**
- PbSe

**Measuring wavelength:**
- IR-CAT --- 3.8 µm

**Measuring range:**
- IR-CAT --- 350 to 1100ºC (distance factor 100)
- IR-CAU --- 450 to 1300ºC (distance factor 200)
- IR-CAT --- 500 to 1500ºC (distance factor 200)

**Accuracy rating:**
- Lower than 1000ºC --- ±5ºC
- More than 1000ºC --- ±0.5% of measured value

**Repeatability:**
- 1ºC or less

**Temperature drift:**
- Lower than 700ºC --- ±0.15ºC /ºC
- More than 700ºC --- ±0.1% /ºC of measured value

**Resolution:**
- 1ºC

**Response time (95%):**
- 0.04 sec

**Optics:**
- Focusable lens type

**Sighting:**
- Direct viewfinder

**Lens aperture:**
- 20mm diameter

**Power consumption:**
- Maximum 10VA

(* The reference operating condition: 23ºC ±5ºC, 35 to 75%RH)

**Relation between measuring distance and diameter**

**Relation between measuring distance and diameter**

**Measurement distance:** 0.5m to ∞

**Measuring diameter:**
- Measuring distance/distance factor

**Distance factor**
- 500
- 1000
- 2000

**Distance (mm)**
- 50
- 100
- 200

**Measuring diameter**
- Measuring distance/distance factor

**Distance (mm)**
- 50
- 100
- 200

**Distance factor**
- 500
- 1000
- 2000
Food industry IR-CAFX0□ (non-CE approval)

Measuring system: Narrow-band radiation thermometer
Element: PbSe
Measuring wavelength: 4 μm
Measuring range: 60 to 100ºC
Accuracy rating: 70 to 90ºC --- ±1.0ºC
(Except 70 to 90ºC --- ±2ºC
Repeatability: 0.3ºC
Temperature drift: 0.04ºC /ºC
Resolution: 0.2ºC
Response time (95%): 0.01 sec
Optics: Fixed focus lens type
Power consumption: Maximum 10VA
(* The reference operating condition: 23ºC ±5ºC, 35 to 75%RH)

IR-CAFX01
IR-CAFX02

Models
Polyester film
Models Measuring diameter/Measuring distance Measuring range Standard sighting
IR-CAN□□□ φ37/100mm 0 to 300ºC Laser targeting (without viewfinder)
IR-CANH□□□ φ15/400mm
IR-CANJ□□□ φ8/200mm
IR-CANZ□□□ Special (Ask CHINO)

Polyethylene film
Models Measuring diameter/Measuring distance Measuring range Standard sighting
IR-CAM□□□ φ37/100mm 0 to 300ºC Laser targeting (without viewfinder)
IR-CAMH□□□ φ15/400mm
IR-CAMJ□□□ φ8/200mm
IR-CAMZ□□□ Special (Ask CHINO)

Intrafurnace object
Models Distance factor Measuring range Standard sighting
IR-CAR1□□□ 100 350 to 1100 ºC Direct viewfinder
IR-CAR2□□□ 200 450 to 1300 ºC
IR-CAR3□□□ 500 to 1500 ºC

Glass
Models Distance factor Measuring range Standard sighting
IR-CAT1□□□ 50 100 to 800 ºC Direct viewfinder
IR-CAT2□□□ 100 200 to 1800 ºC
IR-CAT3□□□ 600 to 1200 ºC

Semiconductor/Silicon
Models Distance factor Measuring range Standard sighting
IR-CAU1□□□ 100 400 to 800 ºC Direct viewfinder
IR-CAU2□□□ 200 500 to 1000 ºC

Semiconductor/InGaAs
Models Distance factor Measuring range Standard sighting
IR-CAF□□□ 100 400 to 800 ºC Direct viewfinder
IR-CAF□□□ 200 500 to 1000 ºC

HMD (Hot Metal Detector)
IR-CADAC01 (non-CE approval)

Output is turned ON when hot metal enters the optical sensing path and exceeds the preset threshold level.

Features
- Detect luminance temperature of 100 to 550ºC or equivalent.
- Remote object detection
- External detect level setup by 4-20mA DC

Model
IR-CADAC01

Connectivity
Detection output: Open collector
Remote detection: 4-20mA DC
24V DC power supply
DC power supply unit IR-Z2EP

Specifications
Detection system: Radiation luminance threshold judgement
Detection: Luminance temperature of 100 to 550ºC or equivalent
Response time: 0.1 sec
Output: Open collector, normally OFF
Detection level: Built-in trimmer or external 4-20mA DC
Optics: Fixed focus lens type
Measuring spot size: φ150mm/15m
Targeting: Direct viewfinder (reverse view)
Accessory: Airpurge hood (sold separately)
The IR-GZA is combined with the IR-CA with optional RS485, programs parameters, displays measuring data and supplies 24V DC power to the IR-CA.

**Connectivity**

- **Emittance (ratio) setting:** 1.999 to 0.050
- **Thermometer input:** RS485
- **Signal modulation:**
  - DELAY --- First-order lag (Time constant: 0.0 to 99.9 sec with 0.1 sec increment or 0.0 to 9.99 sec with 0.01 sec increment) Real signal must be set at 0 sec.
  - PEAK --- Peak tracing (attenuation degree 0.1 to 10ºC/sec selectable, 0.1s increment)
- **Analog input:** Remote emissivity setup or Reflection compensation 4 to 20mA
- **Display:** Temperature, Status display
- **Analog output:**
  - Output 1: 4 to 20mA DC IR-GZ output (Load resistance: less than 600 Ω)
  - Output 2: 4 to 20mA DC IR-CA output (Load resistance: less than 500 Ω)
- **Output renewal cycle:** Output 1: 100ms
  - Output 2: Depending on the model of IR-CA
- **Output accuracy ratings:**
  - Output 1: ±0.3% of output range
  - Output 2: Depending on the model of IR-CA
- **Event output:** 2 points
  - Select 2 points within "High temperature alarm", "High-high temperature alarm", "Low temperature alarm", "Low-low temperature alarm" and "self diagnostic function"
- **Relay a-contact:** High, High-high, Low, Low-low
- **Relay b-contact:** Self diagnostic function
- **Contact capacity:** 240V AC 1.5A
  - 30V DC 1.5A

**SPECIFICATIONS**

- **Communications interface:** RS485 (Send measuring data, send/receive each setting parameters, option)
- **Connectable number of IR-CA:** Maximum 1 unit (Up to 2 units for IR-GZA2□□; prepare separate power supply for the second unit)
- **Power supply to IR-CA:** 24V DC 830mA
- **Power supply:** 240VAC Max. 28VA, 240VAC Max. 36VA
- **Working temperature:** -10 to 50ºC
- **Working humidity:** 20 to 90%RH (No dew condensation)
- **Casing:** Nonflammable Polycarbonate
- **Installation:** Panel mount type
- **Weight:** Approx. 0.5Kg
- **CE Marking:**
  - EMC directive EN61326+A1
  - Low voltage EN61010-1+A2
  - Overvoltage category II, Pollution level 2
  - Stability at EMC test environment...±10%

**External dimensions**

Wall-mount box IR-ZGBW (Purchase IR-GZA separately)

**Terminals diagrams**
**ACCESSORIES**

- **Soft protective case IR-ZCCST (terminal type)**
  
  The soft protective case IR-ZCCST is an exclusive accessory for the IR-CA terminal type to protect the thermometer from smoke, dust, etc. at the installation site. This unit provides air purge to remove smoke and dust for keeping the lens clean. Use clean dried air.

- **Hard protective case IR-ZCCHT (terminal type)**
  
  The hard protective case IR-ZCCHT is to protect the IR-CA terminal type from high-temperature, humidity, smoke, dust, fume, etc. This unit provides air purge and water-cooling to operate the thermometer properly in harsh environment.

- **Soft protective case IR-ZCCSC (connector type)**
  
  The soft protective case IR-ZCCSC is an exclusive accessory for the IR-CA connector type to protect the thermometer from smoke, dust, etc. at the installation site. This unit provides air purge to remove smoke and dust for keeping the lens clean. Use clean dried air.

- **Hard protective case IR-ZCCHC (connector type)**
  
  The hard protective case IR-ZCCHC is to protect the IR-CA connector type from high-temperature, humidity, smoke, dust, fume, etc. This unit provides air purge and water-cooling to operate the thermometer properly in harsh environment.
The airpurge hood is used to disperse dust and fume for keeping the light path. It is mounted to the front of the hard protective case IR-ZCCH□. Use clean dried air.

The front water-cooling plate is used when installing the thermometer under high ambient temperature. It is mounted to the front of the hard protective case IR-ZCCH□. It is applicable when the thermal radiation is intense from the front.

The flange mounting unit is used for fixing at the front of hard protective case IR-VCCH□. It is also applicable for mounting the IR-VSW and IR-ZW□.

### Water-cooling flange IR-VSW

- R1/2 (Coolant inlet/outlet)
- PT1/2 (Coolant inlet/outlet)

### Sealing window IR-ZW□

- 0 Quartz
- 1 CaF2
- 2 BaF2

### Connecting cable

IR-ZCRC□□□

- 0.6 6-core shield
- Soft vinyl sheathed cable

IR-ZCRT□□□

- 0.6 6-core shield
- Soft vinyl sheathed cable

IR-ZCRL□□□

- 0 tip for M3.5 (OD 3.8 OD 6.5)

### Close-up lens IR-VAD□□□ (for focussable model)

<table>
<thead>
<tr>
<th>Models</th>
<th>Measuring distance</th>
<th>Applicable model</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR-VAD30A</td>
<td>190 to 300 mm</td>
<td>IR-CAI,IR-CAS,IR-CAQ,IR-CAP,IR-CAU,IR-CAT</td>
</tr>
<tr>
<td>IR-VAD30G</td>
<td>190 to 300 mm</td>
<td>IR-CAE (Focussable model),IR-CAI,IR-CAS,IR-CAP,IR-CAU,IR-CAT</td>
</tr>
<tr>
<td>IR-VAD60A</td>
<td>270 to 600 mm</td>
<td>IR-CAI,IR-CAS,IR-CAQ,IR-CAP,IR-CAU,IR-CAT</td>
</tr>
<tr>
<td>IR-VAD60G</td>
<td>270 to 600 mm</td>
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</tr>
</tbody>
</table>

### Mirror IR-ZCLM

- 0 tip for M3.5 (OD 3.8 OD 6.5)

### Eyepiece filter IR-ZCLF

- 0 tip for M3.5 (OD 3.8 OD 6.5)

### Angle finder IR-ZCLA

- 0 tip for M3.5 (OD 3.8 OD 6.5)

### Tripod IR-ZBMT

- 0 tip for M3.5 (OD 3.8 OD 6.5)

### Universal Head

- Simple type IR-VMS
- Soft type IR-ZMS
- Hard type IR-VMH