OPTEX

OPTEX Product Information

Non-Contact Measurement of Temperature from 400 to 1200˚C Equipped with Optical Fiber

Non-Contact Thermometer

THERMO-HUNTER

BUILT-IN2

Fiber Optic Sensor: BF-30G series

Optical Fiber employed for precise measurement in harsh environments

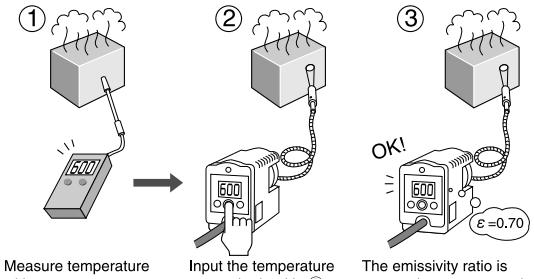
Noise-Resistant A two-meter long optical fiber gives accessibility to areas under the influence of noise.

Heat-Resistant The optical fiber and its head withstand up to 150˚C ambient temperature.

Space-Saving Compact optical head allows installation in small confined spaces.

ε-TEACH function for automatic emissivity adjustment

Input just once the temperature measured by a contact-type thermometer (thermocouples, etc.), and the intelligent ε-TEACH function automatically calculates and memorizes the emissivity ratio.

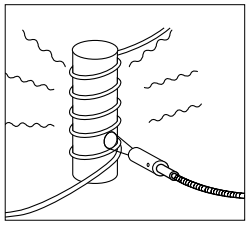


① Measure temperature with any contact-type thermometer.

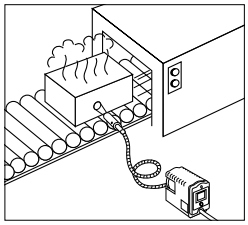
② Input the temperature value obtained in ①.

③ The emissivity ratio is automatically calculated and stored in memory.

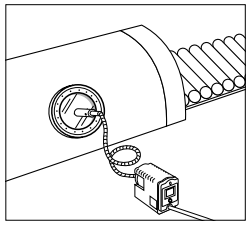
Application examples



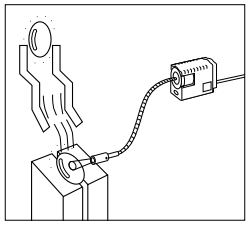
High-Frequency Heat Treatment



Temperature Measurement of Induction Hardening and Annealing



Temperature Measurement of Furnace Interior



Temperature Control of Hot Glass

Main Features

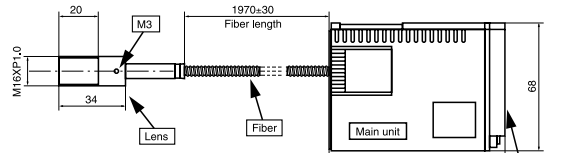
- Measuring Temperature Range
  G0-type: 400~800˚C; G1-type: 600~1200˚C
- Rapid Response: 200msec.
- Analog Output
  A-type: 4-20 mA; V-type: 1mV/˚C
- Integrated Digital Display

CE

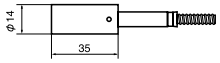
THERMO-HUNTER Non-Contact Thermometer
BUILT-IN2
Optical Fiber
BF-30G Series

Dimensions

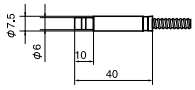
■Main Unit <with BFL-30/Standard lens>



<with BFL-01/02/Optional lens>

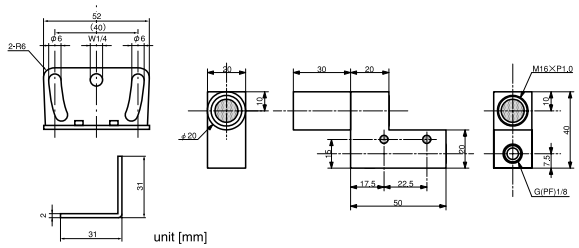


<without lens>



unit [mm]

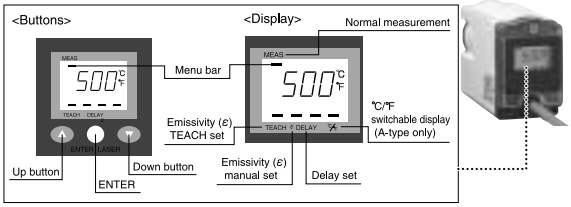
■Fixture



unit [mm]

■Operation and Display Parts

LCD monitor is located on the back of the unit so that display values can be verified at site.



CAUTION

To avoid possible damage to the fiber optic cable, please observe the following instructions:

1 DO NOT PULL THE FIBER
2 DO NOT APPLY ANY SHOCK
3 BENDING RADIUS = min. 30mm

Environmental Warnings

❶**KEEP THE THERMOMETER AWAY FROM DIRECT SUNLIGHT, DUST, HIGH TEMPERATURES AND HIGH HUMIDITY DURING USE AND STORAGE.**
This may cause irreparable damage or incorrect measurement.

❶**DO NOT EXPOSE THE THERMOMETER TO SUDDEN TEMPERATURE CHANGES.**
Sudden temperature change of the environment may cause incorrect measurements. In such cases, wait until the thermometer reaches steady temperature before taking actual measurements.

❶**KEEP THE THERMOMETER AWAY FROM STRONG ELECTROMAGNETIC SOURCES, CORROSIVE OR EXPLOSIVE GASES.**
This may cause irreversible damages and incorrect measurements.

Usage Warnings

⃠**AVOID MEASURING SHINY SURFACES.**
Shiny surfaces reflect radiation from surrounding objects. Although the emissivity ratio can be adjusted to compensate for this problem, accurate measurement is difficult.

⃠**USE THE CORRECT VOLTAGE.**
Applying voltages other than 12-24 VDC may cause short-circuit, damages, fire or injury. In such cases, turn the power off immediately.

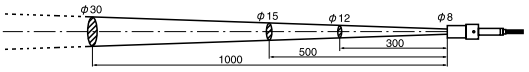
❶**DO NOT LET THE THERMOMETER TOUCH THE OBJECT THAT IS BEING MEASURED.**
The unit is a non-contact thermometer. Touching or getting too close to the objects with high temperatures may cause irreparable damage or incorrect measurement.

⃠**DO NOT TOUCH THE LENS.**
Do not touch the lens with anything hard or things with sharp points, which may damage the lens. A damaged lens causes incorrect measurement.

❶**KEEP THE THERMOMETER AWAY FROM CHARGED OBJECTS.**
This may cause irreparable damage and incorrect measurements.

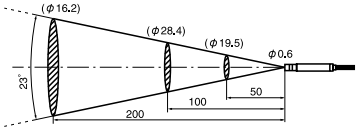
Field of View

●BFL-30/standard lens

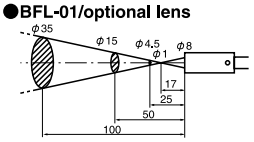


*Calibration at the factory is done with a BFL-30 standard lens.

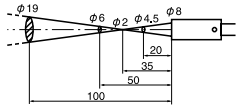
●without lens



●BFL-01/optional lens



●BFL-02/optional lens



unit [mm]

*The optional resolution values stated in "Field of View" are at 90% energy. The size of object measured should be sufficiently larger than the field of view (spot size) shown in the above illustration.

SPECIFICATIONS

Models	BF-30G0-A	BF-30G0-V	BF-30G1-A	BF-30G1-V
Measuring Temperature Range (display)	400 to 800˚C (390 to 810˚C)		600 to 1200˚C (590 to 1210˚C)	
Field of View	φ30/1000mm (with Standard lens, BFL-30)			
Optics	Infrared fiber optics			
Sensing Element	Ge／1 to 1.6μm			
Response Time	200ms／90%			
Measuring Accuracy	±2% of reading value			
Repeatability	±0.5% of reading value			
Display Resolution	1˚C			
Analog Output	4-20mA	1mV/˚C	4-20mA	1mV/˚C
Output Resolution	0.2˚C			
Emissivity Ratio (ε) Adjustment	0.10～1.20 (0.01/step)			
Delay Function	Normal 1 (0.2 sec.) to 200 (10 sec.) variable			
Power Supply	DC12~24V±10%／Max. 60mA			
Ambient Temperature	0 to 50˚C(Amplifier unit) 0 to 150˚C(Fiber unit)			
Environmental Humidity	35～85%RH (without dew condensation)			
Storage Temperature	-10 to 60˚C			
Vibration Resistance	3G (20~50Hz according to JIS C0911)			
Water Resistance	IP65			
Materials	Amplifier Unit: Ring case: glass-containing PBT; Rear cover: PC Fiber Unit: SUS; Lens attachment: BS / Ni-M			
Weight	500g			

Accessories: Attachment x 1, M4 screw x 2, Nut for lens (M16) x 2
Optional accessories: Lens attachment (BFL-01, BFL-02), Air purge collar (BF-AP2)

*Design and specifications are subject to change for product improvement without prior notice.
Products mentioned in this catalog are equipped with a fiber optic cable. Since some countries do not allow the export of such products or require documentation in case of re-export to designated countries, please confirm the relevant regulations.

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