LEC COMPANY LIMITED

● Low temperature / Fiber optic radiation thermometer

FL-8

FOR SPECULAR SURFACE
TEMPERTURE MEASUREMENT

INFRARED THERMOMETER

200

FUNC   E 1.00

HI
GO
LO
AL

CONT   PEAK   VALLEY   ENT
                          HOLD

FIBER IN   BEAM OUT

BEAM SW

LEC COMPANY LIMITED   FL-8

Radiation thermometer best suited for surface thermometers of specular materials.
Enables low temperature and micro surface measurement, and realizes the fastest 0.01sec response.

FL-8
Low temperature / fiber optic radiation thermometer

FL-8 is a radiation thermometer using fluoride fiber.
Fluoride fiber has transmissivity in a wide range of 4 μm from visible light as wavelength characteristics and Low temperature measurement that could not be achieved with the optical fiber system became possible.
Furthermore, It is also possible to measure the surface temperature of those (mirror surface state) with low emissivity.

■FEATURE

● Fastest 0.01sec sampling measurement.
● Measurement of small area is possible (φ1.0)
● Low temperature range of 100 to 800℃ can be measured because fluoride fiber is used.
● As the sensor unit is only an optical system, it is resistant to adverse environments.
● High precision measurement, control and calculation realized by built – in microcomputer.
● Various internal setting values are stored in non-volatile memory, so there is no concern that the data will disappear.
● Easy – to – see digital LED display for temperature display.
● High safety and reliability due to complete isolation between external input and output.

■USE
Metal roll / Aluminum extrusion / Soldering / Microwave heating / Mold / Other, Surface temperature measurement of mirror surface material.
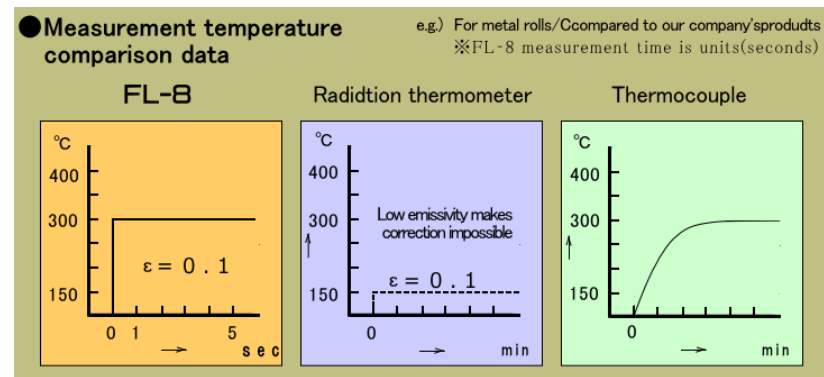
■MEASUREMENT TEMPERATURE RANGE
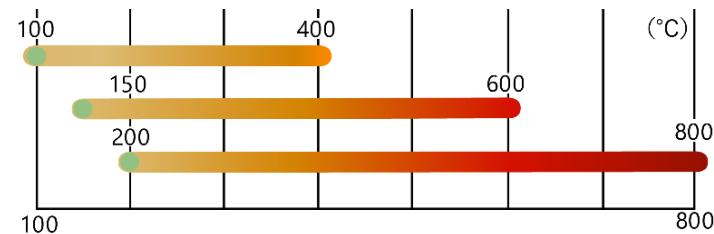
■MAIN FUNCTION

● High precision temperature measurement display	⋯⋯	Digital 3digit display, Resolution 1℃.
● Three measurement mode	⋯⋯	CONT, PEAK, VALLEY.
● CONT (Continuous)	⋯⋯	View constant temperature reading.
● PEAK (Maximum value)	⋯⋯	Display the maximum value during measurement.
● VALLEY (Minimum value)	⋯⋯	Display the minimum value during measurement.
● HOLD function	⋯⋯	Fix the measured value display.
● Upper / lower limit comparison contact output	⋯⋯	Lo, Go, Hi, Relay output, a contact.
● Abnormal alarm output	⋯⋯	AL, Relay output, a contact.
● Recording analog output	⋯⋯	DC1mV – 1℃, DC4-20mA.
● RS232C Communication function	⋯⋯	You can connect to a computer.

Achieved calibration and high speed by newly developed circuit.

In the case of low temperature measurement,
Thermal response sensor (thermopile system) or light response sensor (PbS) have been used since before.
In the thermal response sensor, there was a problem in response speed.
In low temperature measurement of FL-8 adopt a reliable PbS light response sensor, moreover achieved higher repeatability by sequential comparison type detection method of PbS.
High precision, high reliability fiber optic radiation thermometer.

● Measurement temperature comparison data

e.g.) For metal rolls/Ccompared to our company'sprodudts
※FL-8 measurement time is units(seconds)

SENSOR HEAD

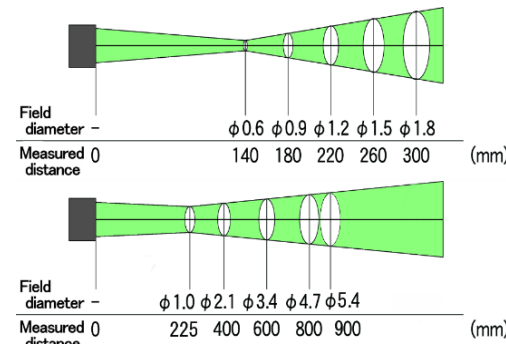**SH-7A-64/77**

SH-7B-113

Fiber integrated type

SH-7C-60

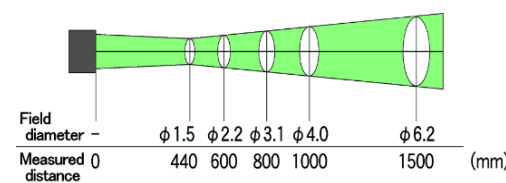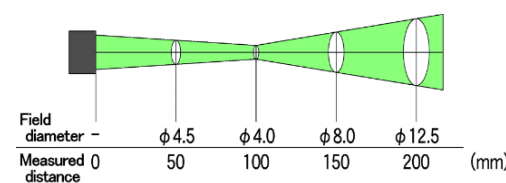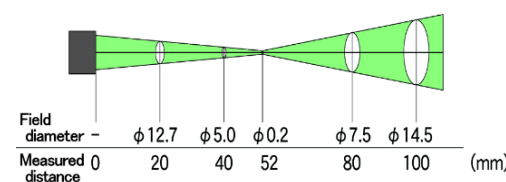### MEASUREMENT DISTANCE / MEASUREMENT AREA

Short distance minute area

Long distance minute area

FD Head

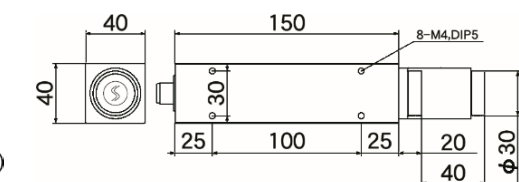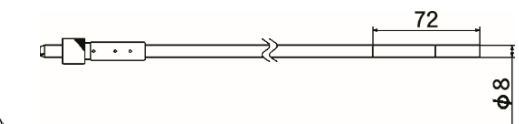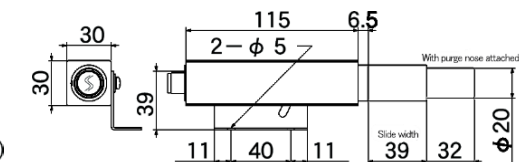**Short distance minute area**

EXTERNAL VIEW
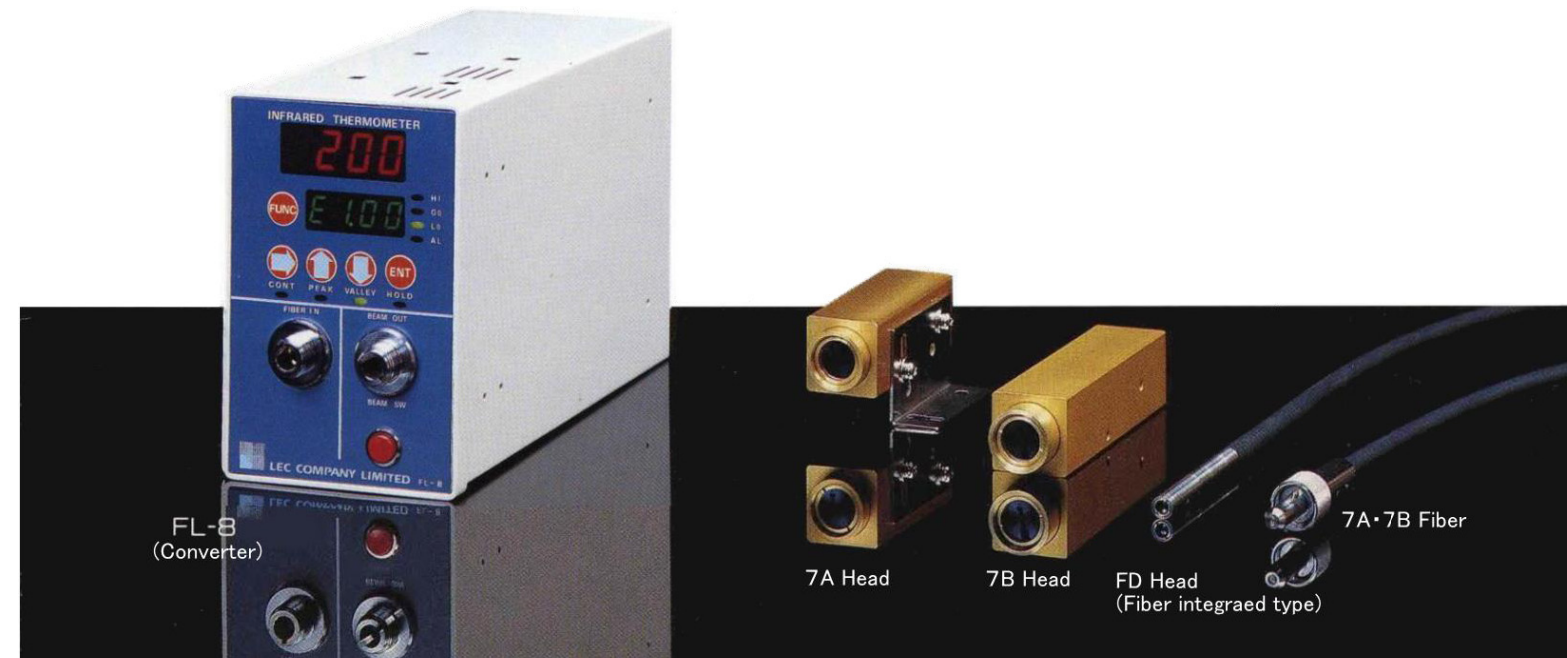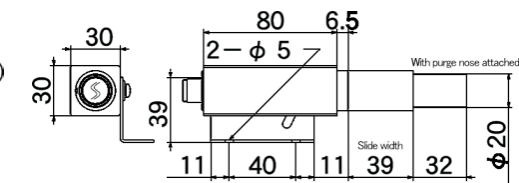
■SPECIFICATION

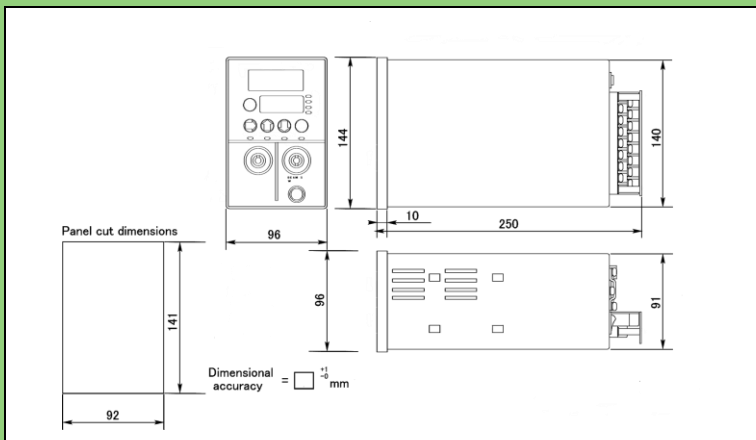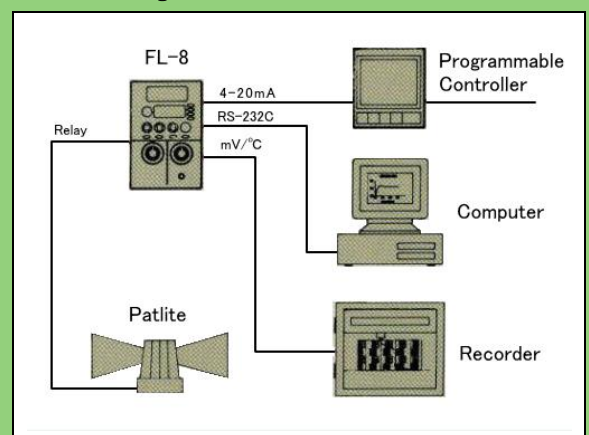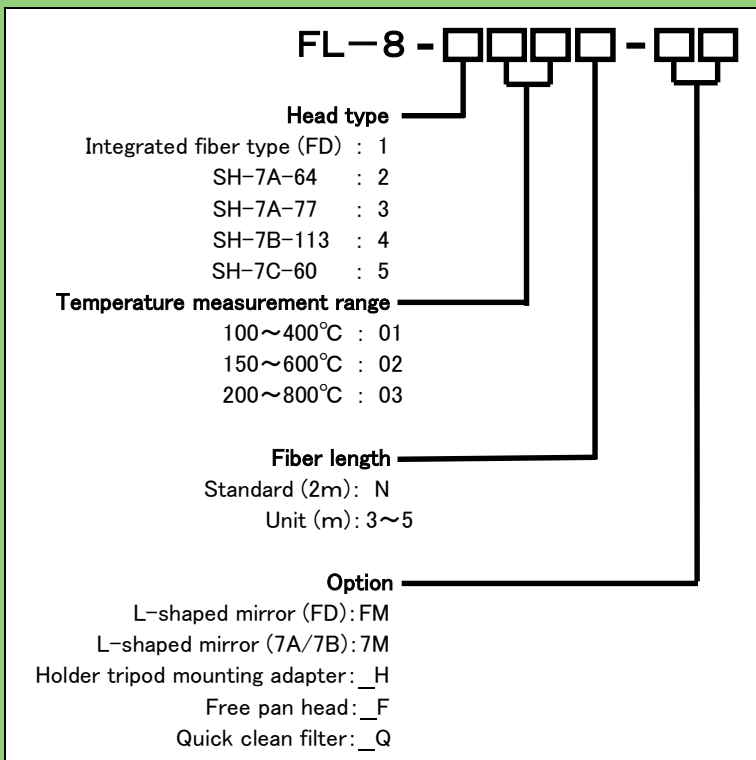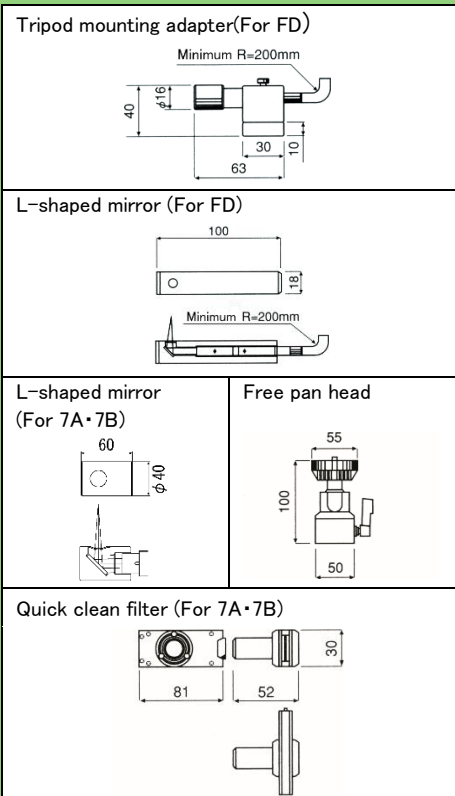|			
Product name	Optical fiber-type infrared radiation thermometer	Upper and lower limit Comparison output	Hi, Go, Lo　Relay a contact output 1circuit each
Model	FL-8	Self-diagnosis	AL Relay a contact output 1circuit When internal abnormality is ON
Measurement temperature range	100~400[℃]/150~600[℃] /200~800[℃]	Relay output rating	AC100[V] 0.5[A], DC30[V] 2[A] (Resistive load)
Detection element	Electronic cooling type PbS infrared detector	Analog output	DC4-20[mA]（Load resistance 500Ω or less）,DC1[mV] -1[℃]
Measurement wavelength	2.0~3.0[μm]	Communication function	RS232C standard equipment Baud rate switchable 75~9600 baud rate
Measurement accuracy	Less than 250[℃] ±3[℃] or less 250[℃] or more ±2[℃] or less (ε=1.0)	Power-supply voltage	AC90~110[V] 50/60[Hz]
Emissivity correction range	ε=0.10~1.00	Power consumption	15[VA]
Sampling period	0.01[sec]~1.00[sec] variable Initial value 0.1seconds	Operating temperature limit	Converter 5~40[℃] Sensor head MAX100[℃]
Measured value display	P.V. digital 4dight LED Character height 14.2 mm	External dimensions	144 mm[W]×96 mm[H]×250 mm[D]
Setting value display	S.V. digital 4dight LED Character height 10 mm	Panel cut dimensions	141 mm×92 mm -0 mm +1[mm]
Setting method	Set each function by front 5 key switch	Mounting method	Panel mounting with dedicated mounting bracket(accessories)
Product name	Nonvolatile memory protects various setting contents	Weight	3[kg]

■EXTERNAL VIEW

●FL-8（Converter）

●Connection diagram

●Order requirements

FL-8-□□□□-□□

Head type
Integrated fiber type（FD）：1
SH-7A-64　：2
SH-7A-77　：3
SH-7B-113　：4
SH-7C-60　：5

Temperature measurement range
100~400℃ ： 01
150~600℃ ： 02
200~800℃ ： 03

Fiber length
Standard（2m）：N
Unit（m）：3~5

Option
L-shaped mirror（FD）：FM
L-shaped mirror（7A/7B）：7M
Holder tripod mounting adapter：_H
Free pan head：_F
Quick clean filter：_Q

●Option（Accessories）

Tripod mounting adapter(For FD)

L-shaped mirror (For FD)

L-shaped mirror (For 7A・7B)

Free pan head

Quick clean filter (For 7A・7B)

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※Please note that these specifications are subject to change without notice.