# LUXTRON M-1000 FLUOROPTIC TEMPERATURE CONVERTER

Fiber optic temperature sensing for semiconductor in etch and deposition applications


The Advanced Energy's Luxtron® M-1000 is the latest FluorOptic® thermometry (FOT) converter platform, featuring an advanced light source and improved ultralow noise electronics. Two new proprietary phosphor formulations VioLux™ and RubiLux™ have been developed to deliver 0.5°C accurary, repeatability, and stability over an extended range -200 to 450°C.

## PRODUCT HIGHLIGHTS

- Measurement range from -200 to 450°C to support advanced etch processes
- Advanced low-noise electronics and algorithms give precision better than 0.05°C
- AccuDisc™ sensors enable sensor to be separate from the probe enabling greater accuracy and repeatability
- Experienced team to support custom probe development for OEMs
- Compact, DIN-rail size to minimize footprint when integrated into tools and equipment
- Immune to electromagnetic interference from EMI, RF, high voltage and microwave sources

## TYPICAL APPLICATIONS

- Plasma etch, electrostatic chuck temperature
- Plasma etch, dielectric window or chamber lid temperature
- Microwave heating
- PEALD, PECVD electrostatic chuck

## AT A GLANCE

### Measurement Range

-200 to 450°C

### Channels

Up to 5

### Accuracy

±0.5°C (mix and match)

### Noise

≤0.05°C

### Interface

ECAT
4 to 20 mA or 0 to 10 V

## OVERVIEW

The complete Luxtron M-1000 series system consists of the electronics module assembly plus probes. The probes are often custom developed. The system uses FluorOptic® technology, based on a temperature sensitive phosphorescent sensor attached to the end of an optical fiber.

The M-1000 use the principles of phosphorescence to provide a wide measurement temperature range with high-accuracy temperature monitoring for critical semiconductor applications.

Custom OEM probe design and quick-turn prototypes are offered by Advanced Energy's experienced engineering team. These probes are designed to provide accurate and repeatable process temperature measurement while still being easy to install into the OEM's equipment.

With the AccuDisc™ option, "non-contact" temperature measurement becomes possible by bonding the low-mass AccuDisc sensor to the object and remotely measuring with a non-contact optical probe. This substantially reduces the thermal offset and enables stable thermal contact even as equipment experiences thermal expansion and contraction, which leads to better accuracy and repeatability of the temperature measurement.

## TECHNICAL DATA

| Measurement Specifications | |
|---|---|
| Measurement Range | -200 to 450°C |
| Channels | Up to 5 |
| Accuracy | ± 0.5°C (mix and match) |
| Noise | ≤ 0.05°C |

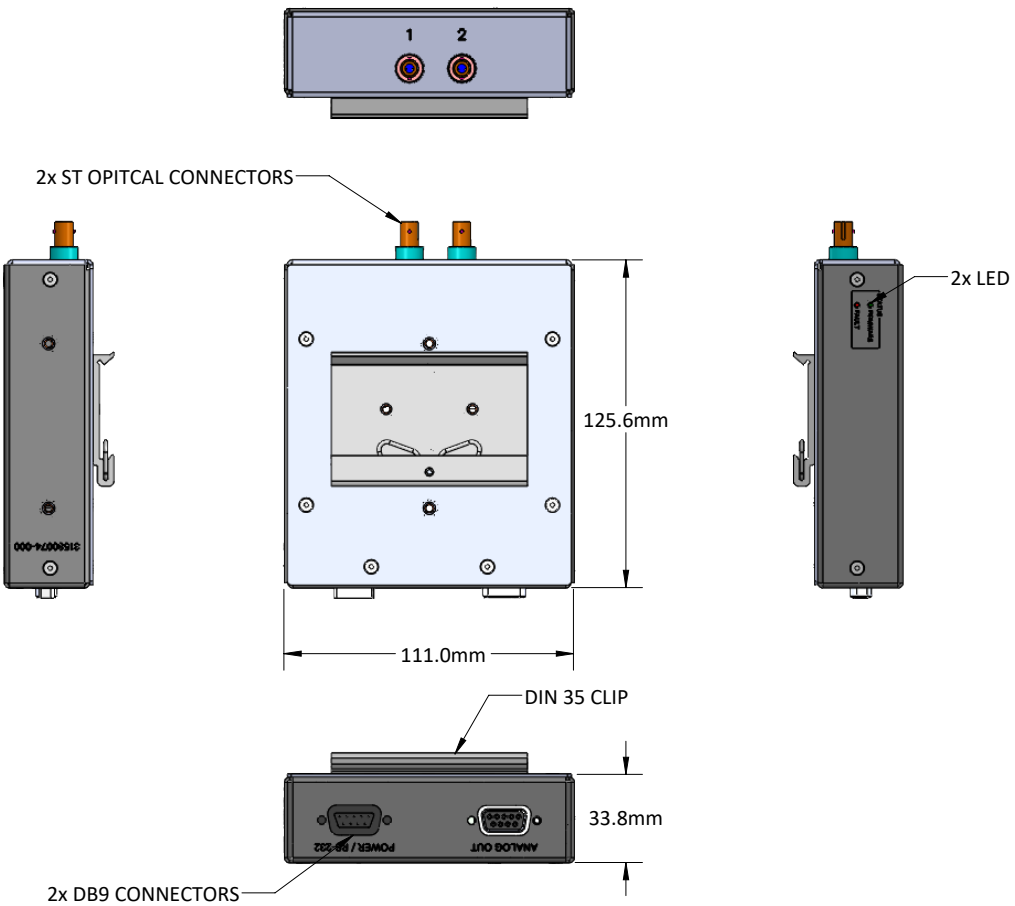
| Environmental Specifications | |
|---|---|
| Electrical Interference | Probes immune to EMI, RF, and microwave |
| Operating Temperature Range | -10 to 60°C |
| Storage Temperature Range | -20 to 75°C (in packaging) |
| Enclosure Dimensions | 34 (H) x 111 (W) x 125 (L) mm |

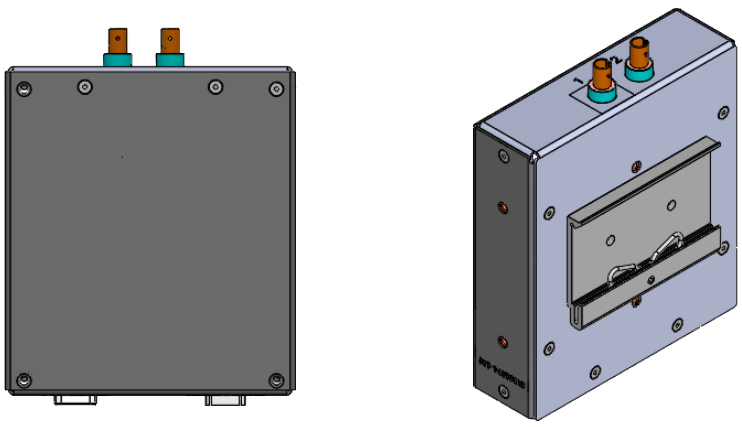
| Communication | |
|---|---|
| Interface | ECAT, 4 to 20 mA or 0 to 10 V |
| Serial Communication | RS232 |
| Protocol | ASCII (RS232) |

## ORDERING INFORMATION

| Product Reference Number | |
|---|---|
| Part Number | Description |
| 31580074-000 | M-1002 FluorOptic Thermometer |

## DIMENSIONS


1
2
2x ST OPITCAL CONNECTORS
2x LED
125.6mm
111.0mm
DIN 35 CLIP
33.8mm
2x DB9 CONNECTORS



## ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.

PRECISION | POWER | PERFORMANCE

For international contact information,
visit advancedenergy.com.

powersales@aei.com (Sales Support)
productsupport.ep@aei.com (Technical Support)
+1 888 412 7832



ENG-M-1000-235-01 07.11.22