

LUXTRON M-1100 FLUOROPTIC TEMPERATURE CONVERTER

Fiber optic temperature sensing for semiconductor in etch and deposition applications



The Advanced Energy's Luxtron® M-1100 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 accuracy, 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

Luxtron M-1100 FluorOptic Temperature Converter

OVERVIEW

The complete Luxtron M-1100 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-1100 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	5 to 60°C
Storage Temperature Range	-20 to 75°C (in packaging)
Enclosure Dimensions	6.01 (H) x 2.20 (W) x 4.95 (L) in.

Communication

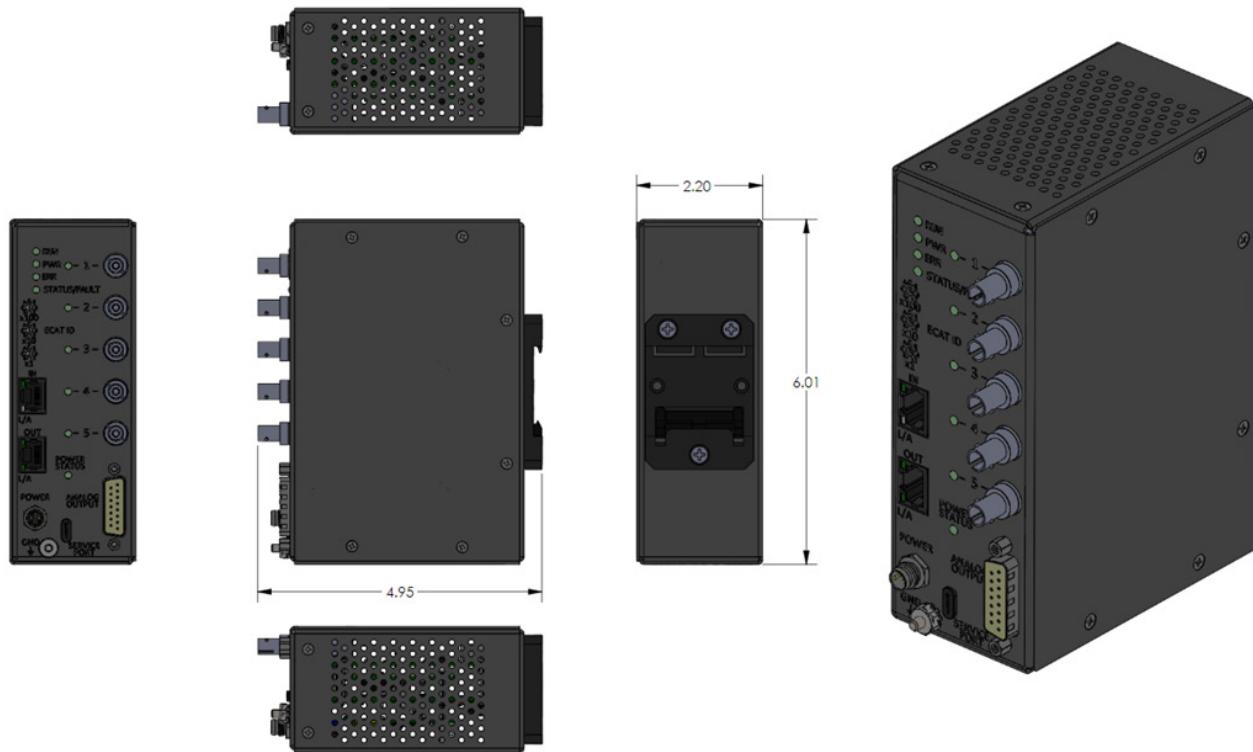
Interface	ECAT, 4 to 20 mA or 0 to 10 V
Serial Communication	RS232
Protocol	ASCII (RS232)

ORDERING INFORMATION

Part number FOT11ABCD-EFGH nomenclature:

FOT-11	A	B	C	D	-	EFGH
Fixed Letters	EtherCAT Communication Option	Analog Communication Option	Temperature Range	Number of Channels		Custom Calibrations Code
	0 = No	0 = No	0 = -200°C to 300°C	1 = 1 Channel		
	1 = Yes	1 = 0 to 10 V	1 = 250°C to 450°C	2 = 2 Channels		
		2 = 4 to 20 mA		3 = 3 Channels		
				4 = 4 Channels		
				5 = 5 Channels		

DIMENSIONS



ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than four 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.



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