



**ONYX™-MCE**  
**MULTI-CHANNEL OPTICAL FIBER PYROMETERS**  
**WITH ACTIVE EMISSIVITY COMPENSATION**

PRECISION TEMPERATURE MEASUREMENT  
FOR DEMANDING INDUSTRIAL APPLICATIONS





**Accurate,  
repeatable,  
and reliable**  
temperature  
measurement

## Onyx™-MCE MULTI-CHANNEL OPTICAL FIBER PYROMETERS WITH ACTIVE EMISSIVITY COMPENSATION

The new Onyx™ series meets the most demanding accuracy and repeatability requirements over a broad temperature range. Based on over 20 years of pyrometry and optical temperature measurement experience in some of the world's most demanding applications, the Onyx series provides measurement precision, repeatability, and reliability for industrial applications.

### EXPAND YOUR APPLICATION OPTIONS

Onyx-MCE pyrometers are available in a 919 nm measurement wavelength. This wavelength falls in the near-infrared range and ideally suits a variety of industrial materials and applications, such as metals, graphites, silicon carbon (SiC), carbon fiber, and ceramics.

- Multi-channel, in-situ, non-contact measurement
- Real-time emissivity measurement and compensation
- Remote location of electronics for exceptionally harsh conditions
- Separate optical sensors with fiber optic cables



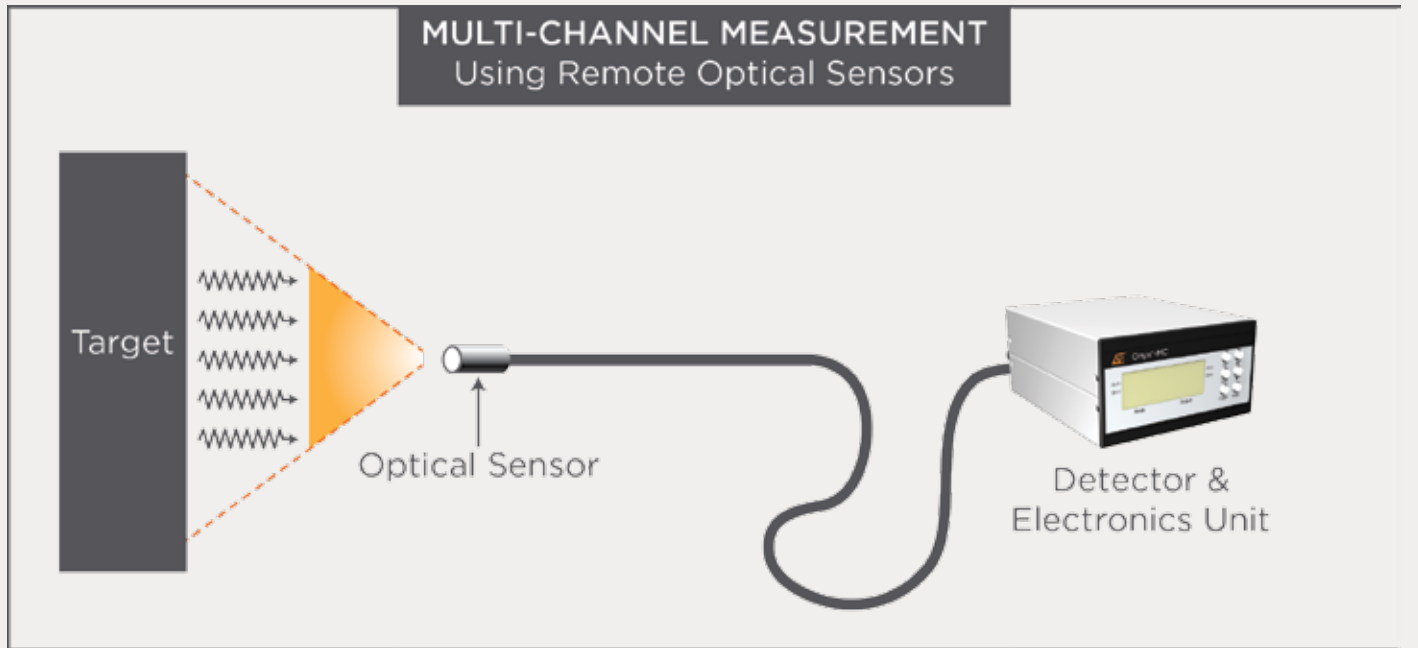


### STABILITY ACROSS MULTIPLE MEASUREMENT POINTS

The Onyx-MCE pyrometer offers up to two independent channels that can even contain different measurement wavelengths and temperature ranges for different sections of a process. This enables maximum flexibility and cost-effective multi-point measurement for high uniformity.

### REMOTE SENSOR/CABLE DESIGN FOR HARSH CONDITIONS OR SPACE CONSTRAINTS

For applications with limited space or exceptionally harsh conditions, independent lensed optical sensors and fiber optic cables deliver the sensor signal, enabling remote location of the measurement detector and electronics.



### ACCURATE MEASUREMENT REGARDLESS OF ENVIRONMENTAL CONDITIONS

Proprietary ambient-temperature calibration technology ensures ongoing temperature measurement accuracy across a wide range of ambient temperature variation (5 to 40°C) by continuously monitoring each unit's internal temperature and automatically compensating for any temperature variation.

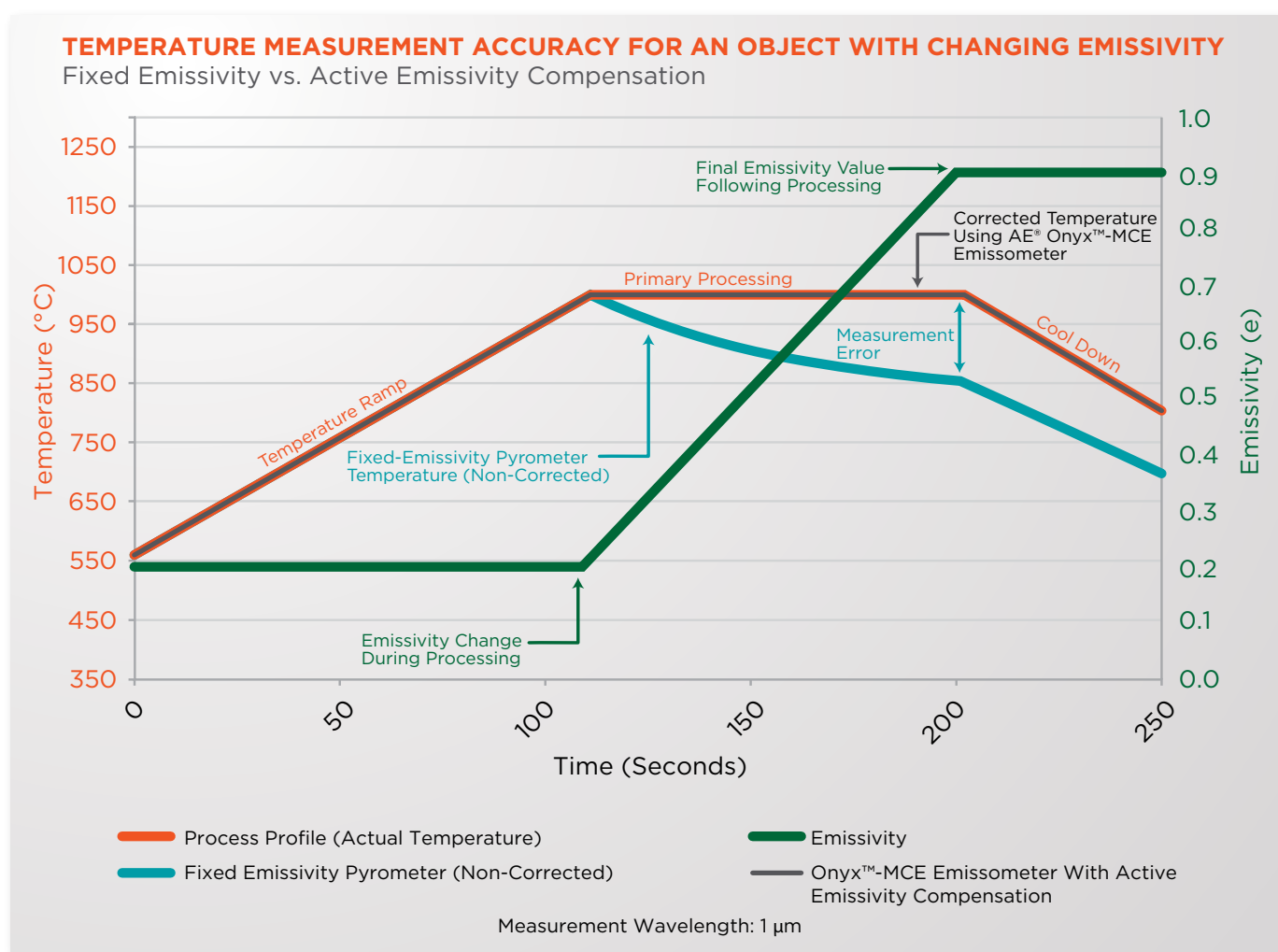
## ACCURATE MEASUREMENT DESPITE CHANGING EMISSIVITY

### SUBSTRATE EMISSIVITY AND MEASUREMENT ACCURACY

Material surface properties often change during the manufacturing process as a result of oxidation or through the introduction of coatings. This change affects the emissivity of the material being measured, which is a critical parameter for accurate pyrometer temperature measurement.

### ACTIVE EMISSIVITY COMPENSATION

Compared to pyrometers that use a fixed emissivity value, Onyx-MCE emissometers enable much better accuracy and repeatability by continuously measuring substrate emissivity and correcting for changing values.

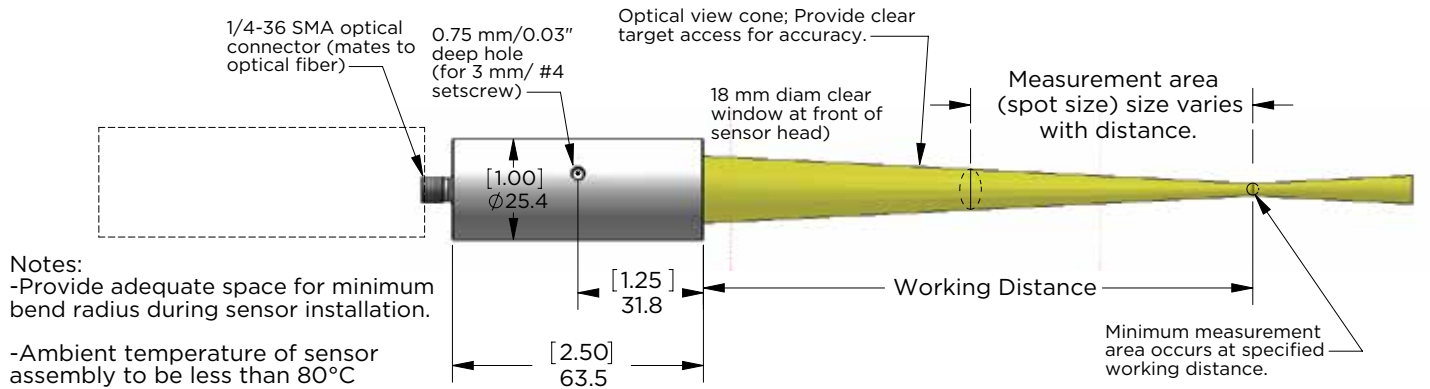


**Real-time, active emissivity measurement and compensation ensure greater accuracy, especially in applications in which material properties change during processing.**



SPECIFICATIONS	ONYX™-MCE PYROMETER
<b>Configurations/Channels</b>	1 to 2 channels
<b>Measurement</b>	
<b>Temperature Range</b>	200 to 2200°C, configurable based on measurement wavelength
<b>Emissivity</b>	0.03 to 1.0
<b>Read Rate</b>	Up to 2 kHz (temperature) Up to 500 Hz (real-time, emissivity-corrected temperature) Up to 250 Hz (emissivity, 2 channel)
<b>Spectral Range</b>	919 nm
<b>Response Time</b>	Up to 2 kHz, based on channel configuration
<b>Accuracy</b>	±1.5°C of reading in °C or 4°C
<b>Resolution</b>	Up to 0.001°C
<b>Focus Range</b>	150 mm to 2 m
<b>Communication</b>	
<b>Analog Out</b>	0 to 10 V, 4 to 20 mA
<b>Digital Interfaces</b>	Standard: RS-232 Available: Modbus®
<b>Environmental</b>	
<b>Ambient Temperature</b>	0 to 45°C
<b>Relative Humidity</b>	5 to 85% (non-condensing)
<b>Storage Temperature</b>	-25 to 85°C
<b>Electrical</b>	
<b>Power Supply</b>	+24 VDC nominal, +15 to +30 VDC
<b>Compliance</b>	CE
<b>Physical</b>	
<b>Display</b>	Internal, 4 x 20 LCD with keypad entry
<b>Dimensions</b>	219 mm x 152 mm x 89 mm
<b>Weight</b>	2 kg
<b>Warranty Period</b>	12 months

## OPTICS

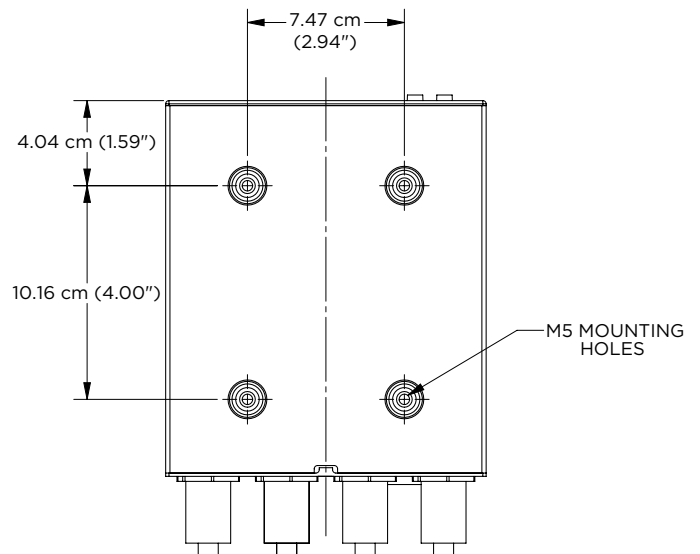
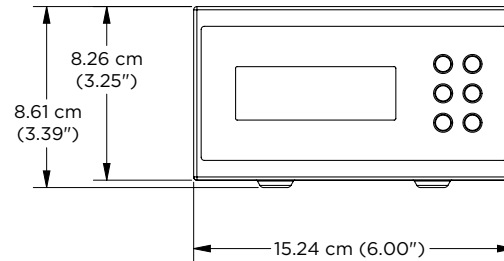
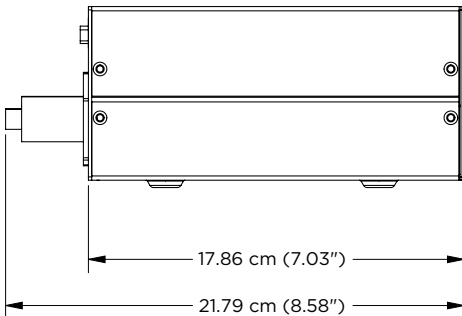


Fiber Appearance	Fiber Core Diameter (um)	Minimum Bend Radius (mm)/[in]
	600x7 bundle	100 [3.9]

Standard fiber length 3 meters (9.8')

### NOTES:

- Measurements are shown in inches [millimeters], except where noted.
- Provide adequate space for minimum bend radius during sensor installation.
- Ambient temperature of sensor assembly to be < 80°C (176°F).





For international contact information, visit  
[advanced-energy.com](http://advanced-energy.com).