

Product information

A leader in precious metal thermocouples for over 30 years, BASF has applied its technological expertise to optical based temperature measurement.

Exactus instruments incorporate BASF technological breakthroughs which provide significant performance advantages in non-contact temperature measurement.

- Low-temperature measurements (25°C and higher) using short wavelengths
- High precision with resolution up to 0.01°C and accuracy of 1.5°C
- Speeds up to 1,000 readings per second
- Broad dynamic range at any given wavelength



Applications

Exactus optical pyrometers are suitable for a wide range of applications. Ultra-sensitive electronics, precision optics and the ability to measure low temperatures using short wavelengths allow for tighter process control, less emissivity errors and improved overall performance.

Semiconductor processing

BASF's innovative technology offers numerous advantages in controlling wafer-to-wafer uniformity in both temperature and film thickness. The highly sensitive electronics and advanced optics mean shorter wavelength detectors can be used to measure radiant energy. This decreases errors from both wafer transmission and emissivity. Plus, the instrument's high speed and high resolution provide better control and noise suppression. The result is better monitoring of wafer temperature and improved process results.

Glass processing

BASF Exactus optical thermometers provide critical glass process information that can drive better process yields and increased plant profitability.

Industrial heating

The sensors' stability, size, and speed solves or improves many problems encountered in difficult industrial heat-treating applications, such as galvanneal, vacuum annealing, casting and high speed induction heat treating.

About BASF

As the world's leading chemical company, BASF's portfolio ranges from chemicals, plastics, performance products, agricultural products and fine chemicals to crude oil and natural gas. BASF's intelligent system solutions and high-value products help its customers to be more successful. BASF develops new technologies and uses them to open up additional market opportunities. It combines economic success with environmental protection and social responsibility, thus contributing to a better future.

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The Chemical Company

Exactus Specifications

Measurement Ranges	65 – 1150°C (0.7 to 1.6 μm measurement wavelength). 100 – 1900°C (1.55 μm measurement wavelength). 120 – 3000°C (0.7 to 1.6 μm measurement wavelength). 280 – 2200°C (0.9 μm measurement wavelength). 350 – 3000°C (0.9 μm measurement wavelength). 500 – 3000°C (0.65 μm measurement wavelength). Specialized optics allow for measurements to 200°C at 0.90μm and 25°C at 0.7 to 1.6 μm.	
Accuracy	Greater of 1.5 °C or 0.15% of reading	
Resolution	up to 0.001 °C	
Repeatability	0.1 °C	
Drift	0.1 °C / year plus 0.05 °C / °C change in ambient temperature	
Speed	Up to 1000 readings per second, 1ms response time	
Target sizes	Standard target size is Focal Distance / 40.0 Small target size is Focal Distance / 200.0 Custom optics available	
Maximum environment temperature without cooling	10-60 °C for electronics and standard optics If Fiber optic cable is used: < 70°C for standard fiber optic cable < 250°C for high temperature fiber optic cable	
Measurement wavelengths	0.65 μm 0.7 – 1.6 μm	0.90μm 1.55μm

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