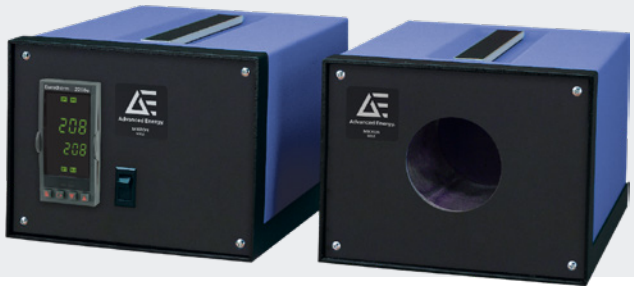
MIKRON M315-HT

Portable, two-piece low temperature blackbody calibration source with a large surface area. Ambient +5 to 450°C (+9 to 842°F).



The Mikron® M315-HT is a two-piece portable blackbody calibration source with a digital indicating temperature controller that can be set at any temperature between ambient 5 to 450°C (9 to 842°F). Once set, the source temperature is controlled to within ±0.3°C by an internal RTD sensor. The unit has an emissivity of 1.00 @ 8 to 14 µm. The M315-HT calibration source and the digital indicating temperature controller are contained in separate housings to allow greater flexibility in positioning the instrument within an installation, e.g. long path calibration.

PRODUCT HIGHLIGHTS

- Excellent general purpose calibration
- High effective emissivity 1.00 @ 8 to 14 µm
- Large aperture (3" diameter)
- High accuracy, high resolution
- Excellent stability ±0.3°C per 8-hour period
- Manufactured and tested to meet rigid quality control standards
- Furnished with certificate of calibration traceable to NIST
- RS232 serial communication included

TYPICAL APPLICATIONS

- Infrared thermal imaging systems
- Spectrophotometers
- Aerial mapping
- Surveillance equipment

AT A GLANCE

Temperature Range

Ambient +5 to 450°C (+9 to 842°F)

Measurement Uncertainty

0.25% of reading ±1°C

Emissivity

1.00 effective emissivity at 8 to 14 µm

Heated Emitter Shape

Flat plate

Aperture Diameter

76 mm (3.00 in)

Warm-up Time

< 30 minutes from ambient to 400°C

OVERVIEW

Blackbody calibration sources are infrared radiators used for calibrating and verifying the output signals of infrared thermometers (pyrometers), thermal imaging systems, heat flux measurement systems, or spectrographic analysis systems. Advanced Energy supplies a unique selection of very precise calibration sources that are traceable to national standards. Quotations for custom designs and variations are available upon request.

Mikron calibration sources have long been the gold standard to calibrate the instruments that keep your operations up and running. These blackbodies are superior because of the emissivity values, homogeneous emission areas, and a wide range of different sized apertures to adapt to the desired target area. In addition, fast heat-up times and high temperature stability are guaranteed. The quality of our calibration sources is guaranteed by tests, burn-in times, and radiometric calibrations. On most models, a certificate is provided to document the traceability to the international temperature scale ITS90 and NIST.

TECHNICAL DATA

Measurement Specifications	
Temperature Range	Ambient +5 to 450°C (+9 to 842°F)
Temperature Uncertainty[1]	0.25% of reading ±1°C
Display Accuracy vs. NIST Calibration	See supplied NIST calibration report
Temperature Resolution	0.1°C
Stability[2]	±0.3°C per 8-hour period
Source Non-Uniformity	Approximate ±1°C @ 250°C, ±2°C @ 400°C
Heated Cavity Shape	Flat plate
Exit Port Diameter	76 mm (3.00 in)
Emissivity ε	1.00 effective emissivity @ 8 to 14 µm
Standard Calibration Method	Radiometric @ 8 to 14 µm
Temperature Sensor	Precision platinum RTD
Warm-up Time	< 30 minutes from ambient to 400°C
Slew Rate to 1°C Stability	Approximately 6 min for + 50°C change
Slew Rate to 0.1°C Stability	Approximately 10 min for + 50°C change

Environmental Specifications	
Operating Ambient Temp	0 to 44°C (30 to 110°F)
Cooling	Fan cooled, air inlet on rear panel
Operating Humidity	90% RH max, non-condensing
Dimensions (H x W x D)	Blackbody: 207.3 mm x 280.4 mm x 266 mm (8.2" x 11" x 10.5")
	Controller: 207.3 mm x 280.4 mm x 266 mm (8.2" x 11" x 10.5")
Weight	Blackbody: 4.9 kg (10.8 lbs)
	Controller: 3.2 kg (7 lbs)
CE Certified	Yes

1 Accuracy calibration performed radiometrically, the uncertainty of emissivity and transfer standard are already included.

2 Provided stable AC mains voltage and minimum air flow across the exit port or emitter plate.

TECHNICAL DATA (CONTINUED)

Communication and Electrical Specifications	
Remote Set Point	Via RS232
Method of Control	Digital PID controller
Power Requirements	115 VAC ±10% 50 and 60 Hz 600 W max (230 V optional)

REFERENCE NUMBERS

PN	Description
14960-4	M315-HT, Ambient 5 to 450°C, 76 mm, 115 VAC @ 50 and 60 Hz
14960-3	M315-HT, Ambient 5 to 450°C, 76 mm, 230 VAC @ 50 and 60 Hz

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.

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