

# OL 480

## Blackbody Calibration Standard



The [OL 480 Blackbody Calibration Standard](#) provides an accurate, high temperature (100° to 1200°C) source of infrared radiation. It is specifically designed for calibrating infrared radiometric and spectroradiometric measurement systems.

The blackbody features a unique, uniformly heated recessed cone cavity with an emissivity of  $0.99 \pm 0.01$ . Accuracy of calibration is ensured by the use of a NIST-traceable platinum vs. platinum 10% rhodium thermocouple. An 8-position aperture wheel provides a convenient means of controlling the flux radiated by the blackbody (Table 1). The small aperture sizes enable the source to be used as a point source target at a finite working distance, while the larger apertures allow direct calibrations for radiance.

A convenient microprocessor-based, self-tuning digital PID controller holds the selected temperature to within  $\pm 0.05\%$  of full scale. The controller has dual displays with the lower display indicating the desired set point and the upper display indicating the actual blackbody source temperature.

## Design Features



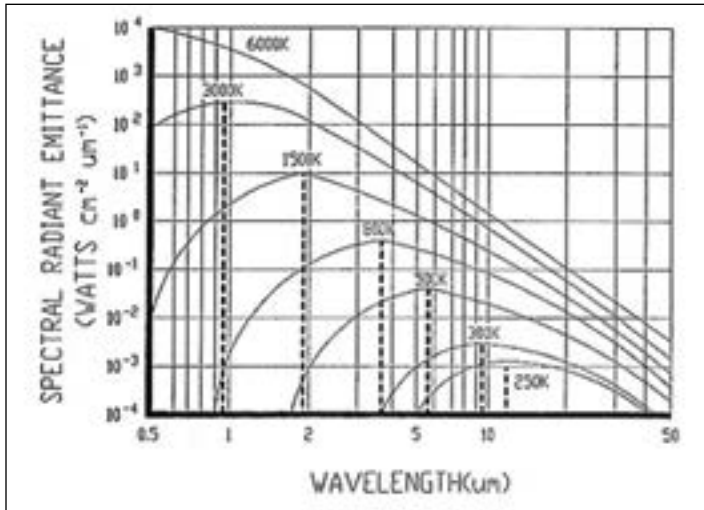
- Digital Controller
- Direct Mount Modulators Available
- 16 Interval Ramp and Hold from Front Panel
- Two (2) Customer Configured Alarm Relays
- One (1) Year Warranty
- RS-232C/422A/485 or IEEE-488 (Optional)

SPECIFICATIONS	
<b>Source</b>	
<b>Temperature Range</b>	50°C to 1200°C 50° to 1050°C (Optional)
<b>Accuracy</b>	$\pm 0.2\% \pm 1$ Digit
<b>Resolution</b>	0.1°C
<b>Overall System Stability</b>	$\pm 0.02\%$ of Full Scale Per 24 Hour Period
<b>Cavity Opening</b>	1.0" (25mm)
<b>Cavity Type</b>	Recessed 20° Cone
<b>Emissivity</b>	$0.99 \pm 0.01$
<b>Sensing Element</b>	Type S Thermocouple Platinum/Platinum -10% Rhodium Special 0.01% Tolerance, Matched to Sensing T/C
<b>Max. Aperture Temp Rise</b>	30°C
<b>Max. Housing Temp Rise</b>	20°C
<b>Dimensions</b>	11.75" x 8" x 11.4" (29.85 cm x 20.32 cm x 28.96 cm)
<b>Net Weight</b>	17 lbs. (7.71 kg)
<b>Control Module</b>	
<b>Dimensions</b>	5.1" X 12" X 13.4" (12.95 cm x 30.48 cm x 34.04 cm)
<b>Net Weight</b>	9 lbs. (4.08 kg)
<b>Warm-Up time</b> (Ambient to 1200°C)	50 Minutes
<b>Operating temperature</b>	0 - 50°C
<b>Controller</b>	Digital Auto-Tune PID
<b>Cooling</b>	Fan Cooled
<b>Power Requirement</b>	110 - 120 VAC, 50/60Hz, 1 Phase 5.0 Amp Max 220 VAC Option Available (Installed Internally)

**TABLE 1 APERTURE SIZES**

Inches	Millimeters
1.000*	25.40*
0.600	15.2
0.400	10.2
0.200	5.1
0.100	2.5
0.050	1.3
0.025	0.6
0.0125	0.4

\*Cavity Opening

*Blackbody Spectral Radiant Emittance At Various Temperatures*

**OPTRONIC<sup>®</sup>**  
LABORATORIES

**Data Sheet: B104 Dec 2020 | Rev A**

As part of our policy of continuous product improvement, we reserve the right to change specifications at any time.