Calibrate non-contact IR temperature instruments quickly and accurately
the Wahl with Black Body Calibration Sources.

Black Body Calibration Sources are used for calibration and verification of infrared thermometers, optical pyrometers, area-measuring thermometers, and thermal imaging cameras.

Wahl's Black Body Calibration Sources offer a variety of choices to suit your application. Select the Black Body with a target area larger than the spot size diameter of the instrument to be checked. With stable, repeatable results, Wahl Black Body Calibration Sources allow the user to ensure uniformity.
**Black Body Calibration Sources**

**Surface Hot Plate Type**

Wahl Black Body Temperature Calibration Sources are controlled and predictable, featuring targets with dull, black surfaces for an emissivity as close to 1 as possible.

Built-in or stand-alone digital temperature controllers with each unit provide accurate, stable temperatures while displaying the temperature readings of the calibration source. The heated plate or cavity provides a target of known temperature and emissivity, and virtually any infrared thermometer with a spot size diameter less than the cavity size can be calibrated.

All Models can utilize the optional RS485/RS232 communication port for PC programming to control temperature set points for automatic test applications.

For accurate results the temperature of the target area must fully stabilize before beginning calibration.

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**Specifications - Surface Plate Type**

<table>
<thead>
<tr>
<th>Plug Type</th>
<th>Low Temperature Portable Unit</th>
<th>High Temperature Unit</th>
<th>Low Temperature Unit</th>
<th>Mid Temperature Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEMA 5-15P US (JP)</td>
<td>CBB20Z15 110 V AC, 50 Hz, 35W</td>
<td>CBB30D15 110 V AC, 50 Hz, 1000W</td>
<td>CBB12D15 110 V AC, 50 Hz, 350W</td>
<td>CBB21D15 110 V AC, 50 Hz, 900W</td>
</tr>
<tr>
<td>NEMA 5-15P US</td>
<td>CBB20Z16 110 V AC, 60 Hz, 35W</td>
<td>CBB30D16 110 V AC, 60 Hz, 1000W</td>
<td>CBB12D16 110 V AC, 60 Hz, 350W</td>
<td>CBB21D16 110 V AC, 60 Hz, 900W</td>
</tr>
<tr>
<td>CEE 7/7 Europe</td>
<td>CBB20Z25 220 V AC, 50 Hz, 35W</td>
<td>CBB30D25 220 V AC, 50 Hz, 1000W</td>
<td>CBB12D25 220 V AC, 50 Hz, 350W</td>
<td>CBB21D25 220 V AC, 50 Hz, 900W</td>
</tr>
<tr>
<td>NEMA 6-15P US</td>
<td>CBB20Z26 220 V AC, 60 Hz, 35W</td>
<td>CBB30D26 220 V AC, 60 Hz, 1000W</td>
<td>CBB12D26 220 V AC, 60 Hz, 350W</td>
<td>CBB21D26 220 V AC, 60 Hz, 900W</td>
</tr>
</tbody>
</table>

**Working Temperature**
- Tamb +5°C to 50°C
- 50°C to 500°C
- -20°C to 60°C
- Tamb +5°C to 300°C

**Environment Temperature**
- 0°C to 40°C
- 0°C to 40°C*
- 0°C to 40°C

**Temperature Stability**
- ± 0.1 to 0.2°C per half hour
- ± 0.1 to 0.5°C per hour
- ± 0.1 to 0.3°C per hour

**Aperture Size**
- 2.75 x 2.75 in (70 x 70 mm)
- 3.9 inches (100 mm)
- 3.9 inches (100 mm)
- 3.9 inches (100 mm)

**Aperture Type**
- Ambient - Square
- Uncooled - Round
- Cooled - Round
- Uncooled - Round

**Temperature Resolution**
- 0.1°C
- 0.1°C
- 0.1°C
- 0.1°C

**Measuring Accuracy**
- ± 0.2°C @ 40°C
- ± 0.3% of full scale + 1.0°C
- ± 0.3% of full scale + 1.0°C
- ± 0.3% of full scale + 1.0°C

**Emissivity**
- ε = 0.97
- ε = 0.96 ± 0.02
- ε = 0.97 ± 0.02
- ε = 0.97 ± 0.02

**Dimensions**
- W 4.33 x H 4.72 x D 7.08 in (110 x 120 x 180 mm)
- W 10.82 x H 19.09 x D 11.61 in (275 x 485 x 295 mm)
- W 9.25 x H 14.76 x D 11.6 in (235 x 375 x 295 mm)
- W 9.25 x H 15.35 x D 9.25 in (235 x 390 x 235 mm)

**Weight**
- 4 lbs (1.8 kg)
- 36.37 lbs (16.5 kg)
- 30.86 lbs (14 kg)
- 19.84 lbs (9 kg)

**Anti-Frost Shield**
- NA
- NA
- CBB-B: 8.66 x 8.66 x 6.49 (220 x 220 x 165 mm)
- NA

**Certifications**
- Long Form Certificate of Conformance included, NIST Traceable Certificate of Conformance optional

*Ambient temperature is ≤ 20°C when working at low temperatures.

**With handle.**

Specifications subject to change without notice. Verify all specs before ordering. Optional RS485/RS232 Port available for all models.
# Black Body Calibration Sources

**Surface Hot Plate Type with External Temperature Controller**

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<table>
<thead>
<tr>
<th><strong>Specifications - Surface Plate Type with External or Integrated Controller</strong></th>
<th>Low Temperature Unit</th>
<th>Low Temperature Unit</th>
<th>Large Area, Mid Temperature</th>
<th>Large Area, Low Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NEMA 5-15P US (JP)</strong></td>
<td>CBB12E15 110 V AC, 50 Hz, 900W</td>
<td>CBB11C15* 110 V AC, 50 Hz, 550W</td>
<td>NA</td>
<td>CBB10F15 110 V AC, 50 Hz, 1500W</td>
</tr>
<tr>
<td><strong>NEMA 5-15P US</strong></td>
<td>CBB12E16 110 V AC, 60 Hz, 900W</td>
<td>CBB11C16* 110 V AC, 60 Hz, 550W</td>
<td>NA</td>
<td>CBB10F16 110 V AC, 60 Hz, 1500W</td>
</tr>
<tr>
<td><strong>CEE 7/7 Europe</strong></td>
<td>CBB12E25 220 V AC, 50 Hz, 900W</td>
<td>CBB11C25* 220 V AC, 50 Hz, 550W</td>
<td>CBB21Y25 220 V AC, 50 Hz, 3000W</td>
<td>CBB10F25 220 V AC, 50 Hz, 1500W</td>
</tr>
<tr>
<td><strong>NEMA 6-15P US</strong></td>
<td>CBB12E26 220 V AC, 60 Hz, 900W</td>
<td>CBB11C26* 220 V AC, 60 Hz, 550W</td>
<td>CBB21Y26 220 V AC, 60 Hz, 2300W</td>
<td>CBB10F26 220 V AC, 60 Hz, 1500W</td>
</tr>
</tbody>
</table>

- **Working Temperature**: -20° to 60°C
- **Environment Temperature**: 0° to 40°C
- **Temperature Stability**: ± 0.01° to 0.05°C per hour
- **Aperture Size**: 5.90 inches (150 mm)
- **Aperture Type**: Cooled - Round
- **Temperature Resolution**: ± 0.01% of full scale ± 0.5°C
- **Measuring Accuracy**: ± 0.3% of full scale ± 0.5°C
- **Temperature Resolution**: ± 0.01° per hour
- **Measuring Accuracy**: ± 0.3% of full scale ± 0.5°C
- **Emissivity**: Blackbody: 0° to 40°C Controller: 0° to 40°C
- **Temperature Stability**: ± 0.1° to 0.3°C per hour
- **Aperture Size**: 3.15 inches (80 mm)
- **Aperture Type**: Cooled - Round
- **Temperature Resolution**: ± 0.03° per hour
- **Measuring Accuracy**: ± 0.3% of full scale ± 1.0°C
- **Emissivity**: Blackbody: 0° to 40°C Controller: 0° to 40°C
- **Temperature Stability**: ± 0.1° to 0.3°C per hour
- **Aperture Size**: 11.81 x 11.81 in (300 x 300 mm)**
- **Aperture Type**: Uncooled - Square
- **Temperature Resolution**: ± 0.03° per hour
- **Measuring Accuracy**: ± 0.3% of full scale ± 1.0°C
- **Emissivity**: Blackbody: 0° to 40°C Controller: 0° to 40°C
- **Temperature Stability**: ± 0.1° to 0.3°C per hour
- **Aperture Size**: 11.81 inches (300 mm)
- **Aperture Type**: Cooled - Round
- **Temperature Resolution**: ± 0.03° per hour
- **Measuring Accuracy**: ± 0.3% of full scale ± 1.0°C
- **Emissivity**: Blackbody: 0° to 40°C Controller: 0° to 40°C
- **Temperature Stability**: ± 0.1° to 0.3°C per hour
- **Aperture Size**: 11.81 x 11.81 in (300 x 300 mm)**
- **Aperture Type**: Uncooled - Square
- **Temperature Resolution**: ± 0.03° per hour
- **Measuring Accuracy**: ± 0.3% of full scale ± 1.0°C
- **Emissivity**: Blackbody: 0° to 40°C Controller: 0° to 40°C
- **Temperature Stability**: ± 0.1° to 0.3°C per hour
- **Aperture Size**: 11.81 inches (300 mm)
- **Aperture Type**: Cooled - Round

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**Certifications**

- Long Form Certificate of Conformance included, NIST Traceable Certificate of Conformance optional

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* Additionally equipped with a water tank.
** Accuracy tolerances in center 8 x 8 area.
*** with handle.

Specifications subject to change without notice, verify all specs before ordering.

Optional RS485/RS232 Port available for all models.
## Black Body Calibration Sources
### Cavity Type

<table>
<thead>
<tr>
<th>Plug Type</th>
<th>Ultra High Temperature Unit</th>
<th>Ultra High Temperature Unit</th>
<th>High Temperature Unit</th>
<th>High Temperature Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEMA 5-15P US (JP)</td>
<td>NA</td>
<td>NA</td>
<td>CBB31B15</td>
<td>CBB31B15</td>
</tr>
<tr>
<td></td>
<td>110 V AC, 50 Hz, 1000W</td>
<td></td>
<td>110 V AC, 50 Hz, 1000W</td>
<td></td>
</tr>
<tr>
<td>NEMA 5-15P US</td>
<td>NA</td>
<td>NA</td>
<td>CBB31B16</td>
<td>CBB31B16</td>
</tr>
<tr>
<td></td>
<td>110 V AC, 60 Hz, 1000W</td>
<td></td>
<td>110 V AC, 60 Hz, 1000W</td>
<td></td>
</tr>
<tr>
<td>CEE 7/7 Europe</td>
<td>CBB32A25</td>
<td>220 V AC, 50 Hz, 3500W</td>
<td>CBB33A25</td>
<td>CBB33A25</td>
</tr>
<tr>
<td></td>
<td>220 V AC, 50 Hz, 2500W</td>
<td></td>
<td>220 V AC, 50 Hz, 1000W</td>
<td></td>
</tr>
<tr>
<td>NEMA 6-15P US</td>
<td>CBB32A26*</td>
<td>220 V AC, 60 Hz, 3500W</td>
<td>CBB32A26</td>
<td>CBB32A26</td>
</tr>
<tr>
<td>(except CBB32A26*)</td>
<td>220 V AC, 60 Hz, 2500W</td>
<td></td>
<td>220 V AC, 60 Hz, 1000W</td>
<td></td>
</tr>
<tr>
<td>Working Temperature</td>
<td>800° to 1200°C</td>
<td>800° to 1600°C</td>
<td>300° to 990°C</td>
<td>50° to 500°C</td>
</tr>
<tr>
<td>Environment Temperature</td>
<td>0° to 40°C</td>
<td>0° to 40°C</td>
<td>0° to 40°C</td>
<td>0° to 40°C</td>
</tr>
<tr>
<td>Temperature Stability</td>
<td>± 1°C per hour</td>
<td>± 1°C per hour</td>
<td>± 0.1 to 0.5°C per hour</td>
<td>± 0.1 to 0.3°C per hour</td>
</tr>
<tr>
<td>Aperture Size</td>
<td>1.18 in inches (30 mm)</td>
<td>1.18 inches (30 mm)</td>
<td>1.97 inches (50 mm)</td>
<td>1.97 inches (50 mm)</td>
</tr>
<tr>
<td>Aperture Type</td>
<td>Cooled - Round</td>
<td>Uncooled - Round</td>
<td>Uncooled - Round</td>
<td>Uncooled - Round</td>
</tr>
<tr>
<td>Temperature Resolution</td>
<td>1°C</td>
<td>1°C</td>
<td>0.1°C</td>
<td>0.1°C</td>
</tr>
<tr>
<td>Measuring Accuracy</td>
<td>± 0.4% of full scale</td>
<td>± 0.4% of full scale</td>
<td>± 0.3% full scale + 1°C</td>
<td>± 0.3% full scale + 1°C</td>
</tr>
<tr>
<td>Emissivity</td>
<td>$e = \geq 0.99$</td>
<td>$e = \geq 0.99$</td>
<td>$e = \geq 0.99$</td>
<td>$e = \geq 0.99$</td>
</tr>
<tr>
<td>Communication</td>
<td>Optional RS485 Port</td>
<td>Optional RS485 Port</td>
<td>Optional RS485 Port</td>
<td>Optional RS485 Port</td>
</tr>
<tr>
<td>Dimensions</td>
<td>W 13.38 x H 24.21 x D 19.09 in (340 x 615 x 485 mm)</td>
<td>W 22.24 x H 41.14 x D 24.40 in (565 x 1045 x 620 mm)</td>
<td>W 11.02 x H 19.09 x D 16.33 in (280 x 485 x 415 mm)</td>
<td>W 9.25 x H 14.76 x D 15.55 in (235 x 375 x 395 mm)</td>
</tr>
<tr>
<td>Weight</td>
<td>79.36 lbs (36 kg)</td>
<td>288.80 lbs (131 kg)</td>
<td>39.68 lbs (18 kg)</td>
<td>36.37 lbs (16.5 kg)</td>
</tr>
<tr>
<td>Anti Frost Shield</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Certifications</td>
<td>Long Form Certificate of Conformance included, NIST Traceable Certificate of Conformance optional</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* CBB32A26 comes supplied with a NEMA 6-20P US plug.  ** including foot height.

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