Primary Accredited Calibration Services
BKSV-DPLA, a Designated Institute Participating in the CIPM MRA

The Danish Primary Laboratory of Acoustics (DPLA) at Brüel & Kjær Sound and Vibration Measurement A/S (BKSV) offers primary accredited calibration of vibration transducers that serve as Reference Standards and Working Standards for measurement laboratories and other users within the field of vibration.

Uses

Features
• Laboratory accredited by DANAK according to ISO 17025:2005 requirements
• Primary vibration calibration by laser interferometry (ISO 16063–11:1999, Method 3)
• DC calibration by Earth’s gravitation (ISO 16063–16:2014)
• Comparison measurements (ISO 16063–21:2003)
• Both magnitude and phase shift are measured
• International equivalence of calibration through key comparisons as defined in the CIPM Mutual Recognition Agreement (CIPM MRA)
• Certificate of calibration specifying all test and instrument details

About BKSV-DPLA
BKSV-DPLA is a Designated Institute that is part of the Danish National Metrology System and accredited by DANAK according to ISO 17025:2005. Members of our staff have chaired many of the standardization working groups within IEC and ISO.

BKSV-DPLA is active in research on the calibration of accelerometers at the highest international level. The laboratory has taken part in several international calibration projects (under CIPM, BCR, EUROMET/EURAMET and IEC), participating in the CIPM MRA with calibration and measurement capabilities listed in the BIPM key comparison database (KCDB).

BKSV-DPLA Capabilities
Practically all types of vibration transducers can be calibrated if they have either a charge output (piezoelectric types) or a voltage output (with either built-in or separate preamplifiers), or if they have a direct voltage output.

Velocity and displacement transducers can also be calibrated with similar uncertainties.

Calibration of Reference Standard Accelerometers
The calibration of Reference Accelerometers and Preamplifiers, if included, is performed using a laser interferometric method that is internationally recognized and standardized in ISO 16063–11:1999 to determine the motion of the accelerometer generated by an exciter.

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>Measurement Capability</th>
<th>Method Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vibration Sensitivity V/(ms⁻²) or C/(ms⁻²)</td>
<td>0.1 Hz to &lt;0.2 Hz</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>0.2 Hz to 5 kHz</td>
<td>0.4%</td>
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<tr>
<td></td>
<td>&gt;5 kHz to 10 kHz</td>
<td>0.6%</td>
</tr>
<tr>
<td>Vibration Sensitivity: Phase Shift Degrees (°)</td>
<td>0.1 Hz to 5 kHz</td>
<td>0.3°</td>
</tr>
<tr>
<td></td>
<td>&gt;5 kHz to 7 kHz</td>
<td>0.5°</td>
</tr>
<tr>
<td></td>
<td>&gt;7 kHz to 10 kHz</td>
<td>1.0°</td>
</tr>
<tr>
<td>Vibration Sensitivity V/(ms⁻²)</td>
<td>DC</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
Ordering Information

The following services are for the most common reference accelerometers and similar. For calibration of other types of transducers, individual offers can be given. Fees for calibration of triaxial accelerometers are twice that of calibration for a single axis.

<table>
<thead>
<tr>
<th>Order Number</th>
<th>Service</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>ET-2041</td>
<td>Single-point calibration, single axis*</td>
<td>Calibrated at either: • 160 Hz, or • Customer-defined point in the range: 16 Hz to ≤1 kHz</td>
</tr>
<tr>
<td>ET-2043</td>
<td>Additional measurement points†</td>
<td>Maximum of 7, in the range: 0.1 Hz to ≤2 kHz</td>
</tr>
<tr>
<td>ET-2042</td>
<td>Multi-point calibration, single axis*</td>
<td>10 Hz to 10 kHz 1/3-octave increments</td>
</tr>
<tr>
<td>ET-2044</td>
<td>10 Hz to 5 kHz 1/1-octave increments</td>
<td></td>
</tr>
<tr>
<td>ET-2045</td>
<td>1 Hz to 20 Hz 1/3-octave increments</td>
<td></td>
</tr>
<tr>
<td>ET-2046</td>
<td>0.5 Hz to 20 Hz 1/3-octave increments</td>
<td></td>
</tr>
<tr>
<td>ET-2047</td>
<td>0.1 Hz to 20 Hz &lt;5 Hz: 1/1-octave increments ≥5 Hz: 1/3-octave increments</td>
<td></td>
</tr>
<tr>
<td>ET-2048</td>
<td>0.1 Hz to 200 Hz 1/3-octave increments, includes DC-measurement</td>
<td></td>
</tr>
<tr>
<td>ET-2049</td>
<td>DC-measurement, single axis‡</td>
<td></td>
</tr>
<tr>
<td>ET-2050</td>
<td>Instrument check, accelerometer‡</td>
<td>• Capacitance (charge types) • Resonance frequency • Weight • Transverse sensitivity</td>
</tr>
<tr>
<td>ET-2051</td>
<td>Investigation</td>
<td>Service charged by the hour</td>
</tr>
<tr>
<td>ET-2052</td>
<td>Comparison calibration, single axis**</td>
<td>≥0.1 Hz to ≤20 kHz; Low frequency: ≤200 Hz or High frequency: ≥5 Hz</td>
</tr>
</tbody>
</table>

* Accredited Primary DPLA accelerometer calibration according to ISO 16063–11:1999
† According to ISO 16063–16:2014
‡ This service is not sold individually, but in conjunction with calibration services
** Traceable DPLA calibration according to ISO 16063–21:2003

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