

Model Number  
**K394B30**

# CALIBRATION SHAKER SYSTEM – AIR BEARING SHAKER

Revision: D  
ECN #:

**PERFORMANCE**

|   | <u>English</u>                 | <u>SI</u>               |     |
|---|--------------------------------|-------------------------|-----|
| Stroke                                      | 0.4 in pk-pk                   | 10 mm pk-pk             |     |
| Frequency Range, frequency response testing | 2 to 15000 Hz                  | 2 to 15000 Hz           |     |
| Frequency Range, resonant search testing    | Up to 50 kHz                   | Up to 50 kHz            |     |
| Acceleration Level (sinusoidal)             |                                |                         |     |
| Continuous (25 to 10000 Hz)                 | 8.5 g pk                       | 83 m/s <sup>2</sup> pk  |     |
| Intermittent (35 to 10000 Hz)               | 40 g pk                        | 392 m/s <sup>2</sup> pk |     |
| Maximum Payload                             | 17.6 oz                        | 500 gm                  | [1] |
| Lifting Spring                              | Lorentz – force coil           | Lorentz – force coil    |     |
| Air Supply Specifications                   |                                |                         |     |
| Pressure                                    | 30 to 60 psi                   | 2 to 4 bar              |     |
| Recommended flow supply to regulator        | 1.5 ft <sup>3</sup> /min       | 0.7 L/s                 |     |
| Air-bearing flow rate (typical)             | 0.15-0.20 ft <sup>3</sup> /min | 0.07-0.09 L/s           |     |
| ISO 8573.1 Quality                          | Class 3                        | Class 3                 |     |
| Armature                                    | Aluminum                       | Aluminum                |     |
| Insert                                      | Beryllium                      | Beryllium               |     |
| Total mass                                  | 2.2 oz                         | 62 gm                   | [2] |
| Sensor mounting thread size                 | ¼-28 UNF                       | ¼-28 UNF                | [3] |
| Transverse Motion                           |                                |                         |     |
| <921 Hz                                     | 5%                             | 5%                      | [4] |
| <10000 Hz                                   | 10%                            | 10%                     | [4] |
| <15000 Hz                                   | 30%                            | 30%                     | [4] |
| Shaker Dimensions                           | 6.5 x 5.25 inch                | 165 x 133 mm            |     |
| Shaker Weight                               | 22.3 lbs                       | 10.1 kg                 |     |

**System Components**

- 396C10: Air bearing shaker
- 080A200: Beryllium insert (1/4-28 mount) with internal reference accelerometer [2]
- 482A21: ICP® sensor signal conditioner
- 2100E21-C: SmartAmp™ AC power amplifier with integrated DC supply and air regulator
- 003C10: Reference accelerometer sensor cable
- 012A03: Signal conditioner output cable
- 012A01 (Qty 2): Shaker cable

**Included Accessories**

- Air filter assembly, includes filter and appropriate couplings
- Sensor mounting adapter kit, includes typical mounting adaptor studs and plates
- Primary calibration of internal reference accelerometer via laser interferometer for ultra low uncertainty of 0.2% at 100 Hz and 159 Hz
- Rack mount brackets for 2100E21 SmartAmp
- Power cables
- Spare fuses

**ELECTRICAL**

|                         |                   |                   |
|-------------------------|-------------------|-------------------|
| Drive-Coil Resistance   | 1.0 Ohm (nominal) | 1.0 Ohm (nominal) |
| Lorentz-Coil Resistance | 2.8 Ohm (nominal) | 2.8 Ohm (nominal) |

**INTERNAL REFERENCE ACCELEROMETER**

|                           |                   |                          |
|---------------------------|-------------------|--------------------------|
| Type                      | Quartz Shear ICP® | Quartz Shear ICP®        |
| Sensitivity               | 10 mV/g           | 1.02 mV/m/s <sup>2</sup> |
| Frequency Range (+/- 3dB) | 0.35 to 30000 Hz  | 0.35 to 30000 Hz         |
| Resonant Frequency        | >70 kHz           | >70 kHz                  |

**POWER AMPLIFIER**

|                     |           |           |     |
|---------------------|-----------|-----------|-----|
| Output Voltage, max | 38 V rms  | 38 V rms  | [5] |
| Current Limit       | 18 A peak | 18 A peak | [6] |
| Output Power        | 400 W     | 400 W     | [7] |
| DC Current Supply   | 1.75 Amp  | 1.75 Amp  |     |

**NOTES**

- [1] DC coil payload limit. See manual for dynamic frequency response limits.
- [2] 080A200 is standard armature insert supplied. Other units available include 080A199 (10-32 thread), 080A205 (M6 x 0.75 – 6H thread), and 080A206 (M8 x 1.0 – 6H thread).
- [3] Typical, tested to ISO 16063-21:2003 recommendations
- [4] These are typical values. TMS performs 100% acceptance testing to the suggested specifications of ISO 16063-21-2003.
- [5] At 4 Ω load impedance, 1 kHz, THD 0.1%.
- [6] Typical, over-current protection limited
- [7] At 4 Ω load impedance, 1 kHz, THD 0.6%.

*All specifications are at room temperature unless otherwise specified.*

ICP® is a registered trademark of PCB Piezotronics, Inc.

*In the interest of constant product improvement, specifications may change without notice.*



|   |  |  |                                |
|---|--|--|--------------------------------|
| Project Engineer:<br><i>[Signature]</i> | Product Manager:<br><i>[Signature]</i> | Mkt Team Leader:<br><i>[Signature]</i> | Spec Number:<br><b>PS-0095</b> |
| Date: <i>9/23/21</i>                    | Date: <i>9/23/21</i>                   | Date: <i>9/23/21</i>                   |                                |

**THE MODAL SHOP**  
AN AMPHENOL COMPANY

10310 Aerohub Boulevard  
Cincinnati, OH 45215

800-860-4867 Fax (513) 458-2172  
513-351-9919

[info@modalshop.com](mailto:info@modalshop.com)  
SAM-F020 revNR 04/04/03