

# LOW-FREQUENCY ACCELEROMETER CALIBRATION OPTION

**PERFORMANCE – SYSTEM**

Expanded Measurement Uncertainty				[0]
0.25 to 0.5 Hz	%	3.0		[1]
0.5 to 1.0 Hz	%	1.1		[1]
1.0 to 10 Hz	%	0.8		[1]
10 to 100 Hz (ICP Reference Accelerometer Only)	%	1.0		[1]

**LONG-STROKE AIR BEARING SHAKER**

Manufacturer/Model	TMS	2129E025		[2]
Frequency Range	Hz	0.1 to 500		
Maximum Acceleration				
0.1 to 0.25Hz	g <sub>pk</sub>	0.005 to 0.032		[3]
0.25 to 0.5 Hz	g <sub>pk</sub>	0.032 to 0.128		[3]
0.5 to 1.0 Hz	g <sub>pk</sub>	0.128 to 0.51		[3]
1.0 to 10 Hz	g <sub>pk</sub>	0.51 to 2		[3]
Maximum Displacement	in <sub>pk-pk</sub> (mm <sub>pk-pk</sub> )	10 (255)		
Maximum Payload	kg	2		

**REFERENCE OPTICAL ENCODER**

Scale Tape Pitch	µm	20		
Measurement Resolution	nm	10		
Scale Linearity	µm/m	+/- 3		
Scale Thermal Sensitivity	ppm/K	10		[5]

**ICP® REFERENCE ACCELEROMETER**

Manufacturer/Model	PCB Piezotronics	301M26		[2]
Sensitivity (+/- 10%)	mV/g	500		
Low Frequency Range (-5%)	Hz	0.035		
Sensing Element Material		Quartz		
Discharge Time Constant	sec	>15		
Broadband Resolution	mg rms	0.15		

**ICP® VERIFICATION ACCELEROMETER**

Manufacturer/Model	PCB Piezotronics	Q353B51		[2][4]
Sensitivity (+/- 5%)	mV/g	500		
Low Frequency Range (-5%)	Hz	0.1		
Sensing Element Material		Quartz		
Discharge Time Constant	sec	>10		
Settling Time	sec	>300		
Broadband Resolution	mg rms	0.4		

*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.*

**MISCELLANEOUS**

9155D-779 available as option to 9155D system, includes 2129E025 Long-stroke shaker with integrated optical encoder reference sensor hardware for calibrations from 0.1 to 10 Hz. The 779 option also includes a reference sensor for back-to-back calibrations from 10-500 Hz. 9155D-779 software provides seamless integration of low-frequency data acquired with optical displacement reference and mid-frequency data acquired with accelerometer reference. Higher frequency data may be included using alternative shaker hardware such as supplied with the 9155D-830 air bearing shaker option.

**NOTES:**

- [0] Uncertainty below 0.25 Hz, above 100 Hz, is undefined.
- [1] Per ISO with k=2 coverage factor using Q353B51.
- [2] See manufacturer data for full specifications.
- [3] At max displacement 10 in<sub>pk-pk</sub>, max acceleration level dependent on payload.
- [4] Q prefix for extended discharge time constant.
- [5] Nominal.

**SUPPLIED ACCESSORIES:**

- PCI Data Acquisition Card
- Shielded Connector Block
- PCIe Ethernet Card
- Verification Accelerometer
- Reference Accelerometer

Project Engineer:	Product Manager:	Mkt Team Leader:	Spec Number:
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Date: 10/22/2014	Date: 6/22/14	Date: 10/23/14	
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