LOW-FREQUENCY ACCELEROMETER CALIBRATION OPTION

PERFORMANCE – SYSTEM

Expanded Measurement Uncertainty
0.25 to 0.5 Hz % 3.0 [0]
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[pk] 0.005 to 0.032 [3]
0.25 to 0.5 Hz g[pk] 0.032 to 0.128 [3]
0.5 to 1.0 Hz g[pk] 0.128 to 0.51 [3]
1.0 to 10 Hz g[pk] 0.51 to 2 [3]

Maximum Displacement ln[pk-pk] (mm[pk-pk]) 10 (255)

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

MISCELLANEOUS

8155D-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.
8155D-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.
[3] At max displacement 10 T[pk-pk], max acceleration level dependent on payload.

SUPPLIED ACCESSORIES:
PCI Data Acquisition Card
Shielded Connector Block
PCle Ethernet Card
Verification Accelerometer
Reference Accelerometer

All specifications are at room temperature unless otherwise specified.

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

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