

PRODUCT DATA

LDS Imperial V101, V102, V201 and V203 Shakers

Performance Parameters and Characteristics*		
Shaker	V101/2	V201/3
Standard LDS Amplifier	PA25E	
Sine Force (peak) – forced air cooled	–	6 lbf
Sine Force (peak) – naturally cooled	2 lbf	4 lbf
Armature Resonance (f_n)	12 kHz	13 kHz
Useful Frequency Range	5 Hz – 12 kHz	5 Hz – 13 kHz
Effective Mass of Moving Element	0.0143 lb	0.044 lb
Velocity (sine peak)	51.6 in/s	72 in/s
Maximum Acceleration (sine peak) – naturally cooled	140 g	91 g
Maximum Acceleration (sine peak) – forced air cooled	–	136 g
Amplifier Rating	0.048 kVA	0.048 kVA
Displacement (pk–pk) – continuous	0.1 in	0.2 in
Suspension Axial Stiffness	18 lbf/in	16 lbf/in
Aux. Suspension Axial Stiffness	–	70 lbf/in
Shaker Body Mass – base mounted	2 lb	4 lb
Shaker Body Mass – trunnion mounted	–	7 lb
Impedance at 500 Hz	3.0 Ω	2.0 Ω
Cooling Air Flow	–	2.1 ft ³ /min
Armature Diameter	Central spigot	
Armature Insert Pattern: Centre Insert	1	1

This range of permanent magnetic shakers is ideal for vibration testing of components, small assemblies or modal and structural analysis. The shakers' efficient armature design enables them to deliver impressive peak forces and accelerations over a wide frequency range.

The V100 and V200 series are miniature units designed to reproduce a vibration environment under laboratory conditions. They are also suitable as non-seismic pick-ups and are widely used in educational and research establishments to investigate the dynamic behaviour of structures and materials.

Features

- Wide frequency band combined with high peak forces
- Low mass, high performance armature construction
- Base or trunnion mounted
- Powered by compact, quiet and energy efficient amplifiers
- Robust, lightweight suspension system provides excellent torsional and traverse stiffness with minimal impact on system acceleration

Industry Applications


- Modal and structural analysis
- Electronic assembly testing
- Laboratory experiments and various medical purposes
- Fatigue and resonance testing
- Use as velocity transducer or high speed actuator



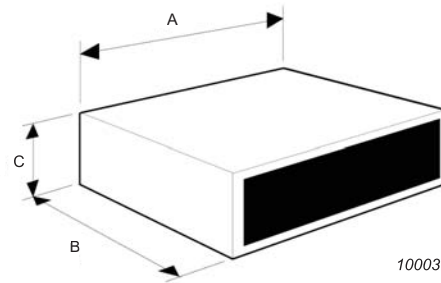
* Shaker ratings are those which can be achieved with a larger amplifier than that supplied as standard.

Some of the features listed are available as standard, others as options. Please contact Brüel & Kjær for advice on the optimum specification to meet your system needs.

System Characteristics

Shaker + PA25E Amplifier	V101/2	V201/3
System Maximum ½-sine Shock Force*	2 lbf	4 lbf
Acoustic Noise at 3.3 ft Distance:†		
Shaker‡	<70 dBA	75 dBA
Amplifier	silent	silent
Total Heat Dissipation:		
Shaker – heat rejected to air	9.5 W	48 W
Amplifier	0.067 kW	0.067 kW
Amplifier Electrical Requirement	0.09 kVA	0.13 kVA
Max. Working Ambient Temperature:		
Shaker	86° F	86° F
Amplifier	95° F	95° F
Health and Safety:		
Complies with the following EU directives:		
• Machinery: 2006/42/EC		
• Low Voltage: 2006/95/EC		
• EMC: 2004/108/EC		
• 		
Designed in accordance with EN 61010 – 1:2001		

PA25E Amplifier Data



Dimensions:

Dim. A (in)	19.2
Dim. B (in)	13.3
Dim. C (in)	3.6
Weight (lb)	20

Protection:

Fast acting current limit

Characteristics:

Rated Sinusoidal Power Output – matched resistive load	48 W (5R3)
Signal-to-noise Ratio	>75 dB
Total Harmonic Distortion – at rated output (10 Hz – 10 kHz)	Typically 0.3%
Input Sensitivity for Maximum Output (400 Hz)	1.0 V rms
Amplifier Efficiency	59%
Voltage Regulation	1%
Maximum Continuous Sinusoidal VA Output (0.5 pf)	48 VA
Frequency Range – at rated power	10 Hz – 10 kHz
Output Current – at rated VA	2.7 A rms
Random Output Current	5.9 A pk
Maximum Output Current	3 A rms
Maximum Output Voltage	16 V rms
Maximum No Load Voltage	24 V rms
Overcurrent Trip Level	4.2 A rms

Shaker Options

Armature Insert Selection:

M4	◆
6/32" UNC (with V102)	◆
10/32" UNC (with V203)	◆

Mounting Selection:

Base Mounting	◆
Support Trunnion (with V201/3)	●

Other Options:

Auxiliary Suspension (with V201/3)	●
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Key:

- ◆ Standard – Available on shortest delivery
- Option – Stocked item, available on short delivery

Make Our Experience Your Advantage

From application engineering, installation and training through to maintenance, spares and repairs, Brüel & Kjær offers a total service approach to keep your system operating efficiently and reliably. All LDS systems (standards and specials) are designed and manufactured to ISO 9001 standard. Brüel & Kjær offers a comprehensive range of vibration, measurement and analysis equipment. Please consult our website for details.

* ½-sine shock force is calculated with the standard payload, 2 ms pulse width, 10% pre/post pulse

† Measured at a height of 63 in above floor level in enclosed cell

‡ Maximum noise when running at full level

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