

# PRODUCT DATA

## LDS V830 Shakers Metric

### Performance Parameters\*

	V830-185	V830-335
LDS Amplifier	SPA 8–16 K	
Armature Diameter	185 mm	335 mm
Sine Force (peak)	8.90 kN	9.81 kN
Random Force (rms)†	5.78 kN	9.81 kN
Maximum ½-sine Shock Force‡	16.4 kN	25.1 kN
Armature Resonance (f <sub>n</sub> )	3.1 kHz	2.25 kHz
Usable Frequency Range	d.c. – 3.5 kHz	d.c. – 3 kHz
Mass of Moving Element – raised inserts	7.48 kg	12.83 kg
Mass of Moving Element – flush inserts	6.98 kg	12.05 kg
Velocity (sine peak) – full-field	2.0 m/s	
Acceleration (sine peak)	120 g	75 g
Acceleration (random rms)	75 g	60 g
Displacement (pk–pk) – continuous	50.8 mm	
Internal Load Support Capacity	160 kg	

### Characteristics

	V830-185	V830-335
Suspension Axial Stiffness	Nil	
Suspension Cross-axial Stiffness	5.25 kN/mm	
Suspension Rotational Stiffness	41.8 kN m/rad	67.8 kN m/rad
Shaker Body Mass (M <sub>b</sub> )	616 kg	
Lin-E-Air Body Resonance	<5 Hz	
Air Isolation Mounts Resonance	<10 Hz	
Compressed Air Supply	6.9 bar	
Stray Magnetic Field‡	<0.5 mT	
Cooling Airflow – Shaker	0.25 m <sup>3</sup> /s	
Cooling Airflow – Amplifier	0.42 m <sup>3</sup> /s	
Max. Required Input: Amplifier, FPS, Fan	28.1 kVA	

LDS V830 series shakers are ideal for vibration and mechanical shock testing using sinusoidal, random or transient excitation.

Systems are available in various forms to meet customers' exact requirements: mounted in an air isolation trunnion with body rotation gearbox; combined with a horizontal oil-film slip table; or for under-chamber operation.

### System Performance

	V830-185 with SPA 8K	V830-185 with SPA 16K**	V830-335 with SPA 8K	V830-335 with SPA 16K**
Sine Force (peak)	6.78 kN	8.90 kN	6.54 kN	9.81 kN
Max. Acceleration (sine peak)	99 g	120 g	55.3 g	75 g
Random Force (rms)	5.77 kN	5.78 kN	7.60 kN	9.81 kN
Max. Acceleration (random rms)	75 g	75 g	60 g	60 g
Velocity (sine peak)	2.0 m/s	2.0 m/s	2.0 m/s	2.0 m/s

### Armature Insert Pattern

V830-185 (PCD)	V830-335 (PCD)
Centre: 1	Centre: 1
76.2 mm: 4	76.2 mm: 4
152.4 mm: 8	152.4 mm: 8
	304.8 mm: 8



\* Force and velocity ratings depend on the amplifier driving the shaker. The sine force, random force and velocity parameters detailed here are based on the shaker when driven by the SPA 16 K amplifier.

† Random and shock ratings assume a payload approximately twice the mass of the armature; shock pulse 2 ms. For advice on specific test requirements, contact Brüel & Kjær.

‡ Theoretical maximum, measured 150 mm above table, full-field, at normal operating temperature

\*\* Armature mass and acceleration with lightweight flush-fitting load attachment inserts

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

### SPA-K Amplifier Characteristics

Power Range	8 – 16 kVA in 8 kVA increments
Signal-to-noise Ratio	>68 dB, with respect to 100 V rms output, 10 kΩ input termination and rated resistive load connected
Input Impedance	10 kΩ nominal
Total Harmonic Distortion	0.5 – 0.8% at rated output into rated resistive load
Input Sensitivity	1.0 V for 100 V rms output
Modulation Range	d.c. – 10 kHz
Switching Frequency	150 kHz
Efficiency	>90% (not including Field Power Supply)
Rated Output Voltage	100 V rms (sine)
Continuous Output Current	80 A rms (sine and random) per 8 kVA increment
Full Power Bandwidth	20 Hz – 3 kHz
Transient Output Current	240 A per 8 kVA increment for 100 ms
Module Efficiency	93%
Protection	Integral protection to prevent output devices from working outside their specification limits

### Health and Safety

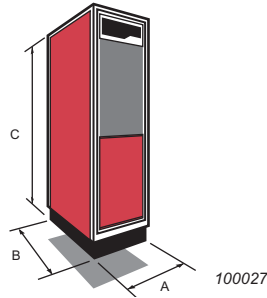
Complies and designed in accordance with these EU directives:	Machinery: 2006/42/EC
	Low voltage: 2006/95/EC
	EMC: 2004/108/EC
	EN 61010 – 1:2001

### 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.

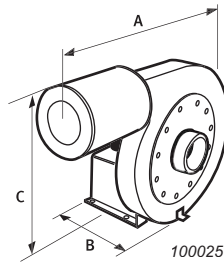
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### SPA-K Amplifier Dimensions

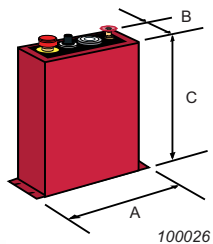


Dimension A (mm)	537
Dimension B (mm)	825
Dimension C (mm)	1870
Weight (kg)	494

### Cooling Fan + Optional Silencer and Pneumatic Box



Fan:	50 Hz	60 Hz
Dimension A (mm)	1085	991
Dimension B (mm)	449	431
Dimension C (mm)	711	621
Weight (kg)	85	72



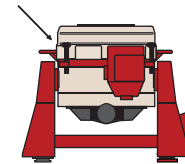
Pneumatic Pedestal Box†:	
Dimension A (mm)	470
Dimension B (mm)	142
Dimension C (mm)	502
Weight (kg)	20

† Pneumatic Pedestal Box includes Emergency stop, Lin-E-Air suspension air control valve, armature position indicator and load support control

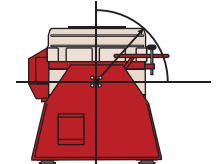
### V830 Series System Environmental Data

<b>Working Ambient Temperature Range:</b>	
Shaker and Fan	7 – 30° C
Amplifier	5 – 30° C
<b>Acoustic Noise at 1 m Distance*:</b>	
Shaker (max. at full level)	110 dBA
Amplifier	69 dBA
Fan	88 dBA
<b>Total Heat Dissipation:</b>	
Shaker to air (from body)	1.0 kW
Amplifier	1.5 kW
Fan	9.8 kW 10.3 kW

Chamber floor supports and handrail option



R 432mm (16.6in) turning radius



110080

	Trunnion:	Solid	Lin-E-Air
Height (mm)		838	838
Width (mm)		1005	942
Depth (mm)		772	782
Weight (kg)		616	616

### Shaker Options

Armature Insert Selection:			
M8	◆	3/8" UNC	◆
Mounting Selection:			
Solid Trunnion	◆	Lin-E-Air Body Isolation and Guidance	●
Trunnion with Air Glide	●	Trunnion with V-groove Casters	●
Thermal Barrier	●		
Combo Shaker/ Slip Table Base	●	Air Isolation Mounts	●
Rubber Isolation Mounts	●	Silencer, Cooling Fan (-3 dBA)	●
Acoustic Enclosure (-8 dBA)	●	Chamber Floor Support	●

### Key:

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

