

V875LS-440 Shaker



# Configuration and System Performance

# V875LS-440<sub>metric</sub> SHAKER

## Performance Parameters

Armature diameter	440 mm
Sine force peak	35585 N
Random force rms	35585 N
Half sine peak bump force <sub>3</sub>	106752 N
Armature resonance (f <sub>n</sub> )	2100 Hz
Usable frequency range	d.c. - 3000 Hz
Mass of moving element	32.4 kg
Velocity sine peak - full field	1.8 m/s
Acceleration sinepeak	1098 m/s <sup>2</sup>
Acceleration random rms	981 m/s <sup>2</sup>
Displacement (cont.) pk-pk	76.2 mm

LDS amplifier SPA8-40K

## Characteristics

Suspension axial stiffness	0 kN/m
Suspension cross-axial stiffness	10000 kN/m
Suspension rotational stiffness	346 kNm/rad
Solid trunnion operation*	≥ 1 Hz
Lin-E-Air body resonance	< 5 Hz
Shaker body mass	2260 kg
Internal load support capability	600 kg
Stray magnetic field <sub>1</sub>	< 1.0 mT
Low gauss option <sub>1</sub>	< 0.8 mT
Cooling air flow Shaker	0.57 m <sup>3</sup> /s
Cooling air flow Amplifier	0.65 m <sup>3</sup> /s
Compressed air supply required	6.9 bar
Total electrical requirements Amplifier, FPS and blower	64.8 kVA

## Environmental Data

### Working ambient temperature range

Shaker	0 ° to 30 °C
Amplifier	1 ° to 30 °C

### Acoustic noise at 1 metre distance<sub>1</sub>

Shaker <sub>4</sub>	113 dBA
Amplifier	72 dBA
Blower	99 dBA

### Total heat dissipation

Shaker - radiated from body	1.86 kW
Amplifier	4.9 kW
Blower	25.0 kW

- <sup>1</sup> Measured at 150 mm above armature table, full field
- <sup>2</sup> Measured at a distance of 1 m and 1.6 m above floor level in enclosed cell
- <sup>3</sup> Due to the complex nature of shock pulses, LDS has sophisticated software to evaluate the performance. Please contact your local representative.
- <sup>4</sup> Max. noise when running at full level bare table performance

\* Contact LDS for further detail

## V875LS-440 Shaker Options

- Alternative armature size
- Armature Insert Selection M8
- 3/8"UNC/UNF
- M10

### Mounting Selection

- Trunnion mounted with Lin-E-Air isolation and body rotation gearbox
- Base mounted
- Solid Trunnion
- Base mounted with airglide mobility
- Base mounted with V-groove casters

### Other Options

- Combination shaker/slip-table base
- Seismic base slip table
- Low gauss kit
- Silencer, shaker cooling fan -3 dBA reduction
- Acoustic enclosure -8 dBA
- Chamber floor support option
- Thermal barrier



Systems are available in various forms to meet a customer's exact requirements - mounted in an air isolation trunnion with body rotation gearbox (standard item), combined with a horizontal oil-film slip table, or base mounted for under chamber operation.

### Key

- Standard - available on shortest delivery
- Option - stocked item available on short delivery
- Special option - non-stocked item

System Performance	V875LS-440 SPA8K	V875LS-440 SPA16K	V875LS-440 SPA24K	V875LS-440 SPA32K	V875LS-440 SPA40K
Sine Force (pk)	7.7 kN	15.4 kN	23.2 kN	30.9 kN	35.6 kN
Max Acceleration Sine (pk)	238 m/s <sup>2</sup>	478 m/s <sup>2</sup>	716 m/s <sup>2</sup>	954 m/s <sup>2</sup>	1098 m/s <sup>2</sup>
Random Force (rms)	8.5 kN	17.0 kN	25.6 kN	34.1 kN	35.6 kN
Max Acceleration Random (rms)	236 m/s <sup>2</sup>	473 m/s <sup>2</sup>	708 m/s <sup>2</sup>	944 m/s <sup>2</sup>	981 m/s <sup>2</sup>
Velocity (pk) - full field	1.8 m/s	1.8 m/s	1.8 m/s	1.8 m/s	1.8 m/s





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## SPA-K Series Amplifier Characteristics

<b>Power range</b>	8 - 40 kVA in 8 kVA increments
<b>Total harmonic distortion</b>	Typically 0.15 % when measured into resistive load
<b>Input impedance</b>	10 kOhm nominal
<b>Input sensitivity</b>	1 V rms input for 100 V rms output (Differential Input). Compatible with all standard controllers
<b>Signal-to-noise ratio</b>	> 68 dB
<b>Amplifier efficiency</b>	> 90 %
<b>Switching frequency</b>	150 kHz
<b>Modulation range</b>	d.c. to 10 kHz
<b>Rated output voltage</b>	100 V rms (sine)
<b>Continuous output current</b>	80 A rms (sine and random) per 8 kVA increment
<b>Transient output current</b>	240 A for 100 ms per 8 kVA increment
<b>Full power bandwidth</b>	20 Hz to 3 kHz

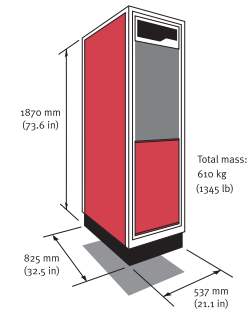
<b>Module efficiency</b>	93 %
<b>Protection</b>	Integral protection to prevent the output devices working outside their specification limits
<b>Safety</b>	Complies with the Essential Health and Safety requirements of the Machinery Directive 98/37/EC and the Low Voltage Directive 73/23/EEC
<b>EMC</b>	EN50081-2 Emissions EN50082-2 Immunity

Some of the features listed are available as standard, others as options. Please contact LDS for advice on the optimum specification to meet your system needs. Specifications are correct at the time of publication. LDS reserves the right to amend specifications without prior notice.

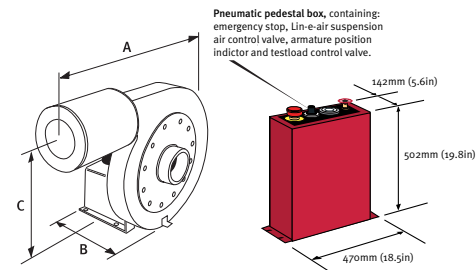
### Make our experience your advantage

From application engineering, installation and training through to maintenance, spares and repairs, LDS offer 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. LDS offers a comprehensive range of vibration, measurement and analysis equipment. Please consult our website for details.

## SPA-K Amplifier with integral FPS



## V875LS-440 Shaker Cooling Fan

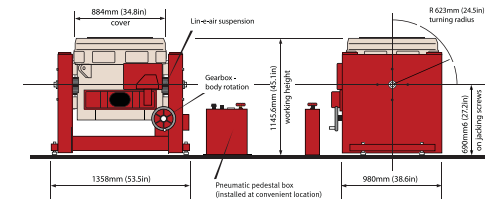


## Cooling Fan - V875LS-440

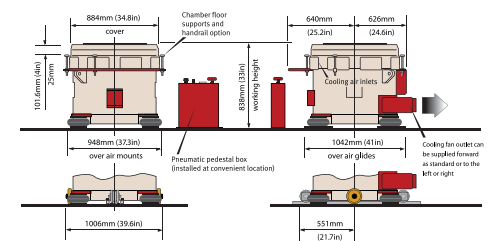
	Weight	dim A (mm)	dim B (mm)	dim C (mm)
<b>V875LS - 50 Hz</b>	181 kg	1320	610	1120
<b>V875LS - 60 Hz</b>	172 kg	1215	565	990

## V875LS-440 Shaker

V875LS-440 Trunnion Mounted  
Total mass: 2930 kg



V875LS-440 Base Mounted  
Total mass: 2230 kg



## Armature Insert pattern - V875LS-440

Armature	pcd mm	pcd mm	pcd mm	pcd mm	pcd mm
Centre	101.6	203.2	304.8	406.4	406.4
<b>Inserts</b>	<b>1</b>	<b>4</b>	<b>8</b>	<b>8</b>	<b>8</b>

\* Optional insert pattern - 8 inserts on 152.4 mm pcd

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