



Vibration Controllers

Powerful, Flexible and Economical Vibration Controllers

- *LASER_{USB}* and *COMET_{USB}* bring vibration test into the new era of USB connectivity!

LASER_{USB}

- Full capability for vibration control, data reduction, and signal analysis
- Multi-channel with 2 to 16 channels for multi-point control or analysis
- 24-bit resolution gives wide dynamic range to control highly dynamic structures
- Fast and safe with 100 millisecond loop time
- Amplifier and thermal chamber interfaces for seamless lab integration

COMET_{USB}

- Very economical yet suitable for random, sine and shock tests
- Simplified or advanced user interfaces are suitable for different operators and tests
- Set-up wizard for quick and sure test setup



LASER_{USB}™ VIBRATION CONTROL SYSTEM

Delivering what Test Engineers Demand: Convenience, Performance, Flexibility and Safety

LASER_{USB} brings vibration test into the new era of USB 2.0 connectivity. Combining convenience, performance, flexibility and safety, *LASER_{USB}* is the ideal controller for your test lab. It has 24-bit precision with wide control dynamic range, and fast loop times to provide superb control for your most challenging tests. *LASER_{USB}* is also a very flexible answer for your test needs with full capability control and analysis software applications for random, swept sine, resonance dwell, classical shock, random, sine on random, shock SRS, and field data replication.

COMET_{USB}™ VIBRATION CONTROL SYSTEM

Economical for Production Test with the Performance for R&D Testing

Offering high performance at a very affordable price, the *COMET_{USB}* Vibration Controller is an ideal solution to the everyday demands of your shock and vibration testing. *COMET_{USB}* provides the flexibility to do random, swept sine, and shock testing on both electrodynamic and hydraulic shakers. Easy to use software together with extensive automation features make it a perfect fit for vibration stress screening and production test applications.



LASER_{USB} has a USB 2.0 interface for easy PC connectivity and its multiple DSP processors handle the control loop independent of the PC host.



COMET_{USB} offers the convenience of USB 2.0 connectivity and it is an economical controller for random, sine and shock testing.

Amplifiers

Power Amplifiers for LDS or 3rd Party Shakers

SPA-K and DPA-K Power Amplifiers

- Scalable power in 8 kVA increments, allows future upgrade of shaker without replacing the amplifier
- Complete control of shaker system possible from control room using amplifier remote control and shaker control in *COMET_{USB}TM* or *LASER_{USB}TM*
- Energy efficient Class 'D' amplifier design (greater than 90%) with additional Economy Running mode reduces system operating costs
- Space efficient design minimizes floor real estate
- Low Distortion, wide bandwidth (20 Hz to 3 kHz), and signal to noise ratio better than -3 dB
- Configurable interlocks provide multiple safety mechanisms
- Can be used as an alternative to 3rd party amplifiers

PA Series Power Amplifiers

- Compact (4U high, bench or 19" rack mounted), linear power amplifiers
- Available in 50 W, 150 W, 500 W and 1000 W units
- Total Harmonic distortion typically less than 0.5%
- Signal to Noise Ratio greater than 75 dB

POWER AMPLIFIERS

Power on Demand

LDS' modular approach to power amplifier design delivers a cost effective and future-proofed solution for your vibration test capabilities. Extra power modules can be added into the SPA-K and DPA-K amplifiers in the event that you need a larger shaker or have a different test requirement in the future. It also minimizes support costs as individual power modules can easily be replaced as required.

The whole test system can be controlled remotely, using an amplifier remote control unit for the SPA-K and DPA-K amplifiers, and the *COMET_{USB}* or *LASER_{USB}* controllers for the shaker. Extensive safety interlocks enable the system to be automatically and safely shut down in the event of a fault.

The amplifiers are designed with both power and space efficiency in mind. The compact designs maximize cabinet space yet deliver the power required with up to 90% efficiency.

The PA series amplifiers provide the power to drive smaller shakers, with output power up to 1000 W. These amplifiers incorporate energy efficient designs in a compact format.

All amplifiers can also be used to control 3rd party shakers.



8 kVA modules in cabinet. This approach maximizes system availability and allows for future upgrades.



Shaker Model	SPA-K	DPA-K
Power Range	8-56kVA in 8kVA increments	8-280kVA in 8kVA increments
Total Harmonic Distortion	up to 0.4%	up to 0.5% at full load
Input Impedance	10 k ohm nominal	
Input Sensitivity	1 V rms input for 100 V rms output (Differential Input). Compatible with all standard controllers	
Signal to Noise Ratio (dB)	>65	
Switching Frequency (Hz)	150,000	
Modulation Range (Hz)	DC - 10,000	
Rated Output Voltage - Sine (V rms)	100	
Continuous Output Current (A rms)	80 A rms (Sine and Random) per 8kVA increment	
Transient Output Current (A)	240 A for 100 ms per 8kVA increment	
Full Power Bandwidth (Hz - kHz)	20-3,000	
Protection	Integral protection to prevent the output devices working outside their specified limits	