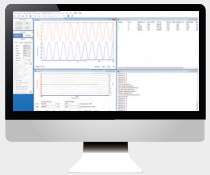
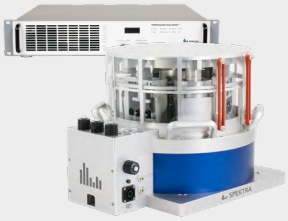
CS Q-LEAP™ P-SINE with SE-13

primary calibration system with vibration exciter

	HERO™ vibration controller incl. signal conditioners
	CS Q-LEAP™ software • sine calibration • sine sweep • vibration measurement • vibration generation • more on demand
	SE-13 vibration exciter for vertical excitation incl. power amplifier
	all-digital laser vibrometer incl. vibration isolation and positioning device for the laser head

Typical DUT

- heavy seismic sensors (seismometers)
- geophones for structure/building vibration measurement
- accelerometers and vibration velocity sensors for the very low frequency range

Standards

- ISO 16063-11: primary calibration of vibration transducers by laser interferometry
- ISO 16063 - 21: calibration of vibration transducers by comparison to a reference transducer
- ISO 17025: general requirements for the competence of testing and calibration laboratories
- DIN 45669: sensors for measurement of vibration immission

Key features

- Frequency range 0.1 Hz…400 Hz
- Traceable to PTB (German National Metrology Laboratory)
- calibration of vibration sensors, seismic sensors and geophones
- integrated sensor database
- integrated software for the generation of calibration certificates (print, PDF,…), easy data exchange with applications like ERP systems or measuring equipment databases

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Get your quote!

Frequency range	0.1 Hz…400 Hz
Displacement [1], max.	25 mm (1 in)
Velocity [2], max.	300 mm/s (12 in/s)
Acceleration [2] [3], max.	60 m/s² (6 g_n) peak
Operation	vertical
Moving element weight	8 kg (18 lbs)
Payload, max.	50 kg (110 lbs)
Table size	Ø 350 mm (14 in)

1) Recommended operation range peak-peak; mechanical stop at 32 mm (1.3 in)
2) Peak sine
3) Interval mode of operation

Frequency range		**Max. recommended payload**	**Expanded measurement uncertainty [1] magnitude [2] / phase [3]**
from	**to**		
0.1 Hz	0.4 Hz	50 kg (110 lbs)	1.5 % / 1.5°
> 0.4 Hz	16 Hz		0.7 % / 1.0°
> 16 Hz	40 Hz		1.5 % / 1.5°
> 40 Hz	100 Hz	20 kg (44 lbs)	2.0 % / 2.0°
> 100 Hz	400 Hz	10 kg (22 lbs)	2.0 % / 2.0°
Reference frequencies: 1 Hz / 4 Hz / 8 Hz / 16 Hz		25 kg (55 lbs)	0.7 % / 1.0°

Recommended excitation amplitudes (peak values)	
Minimum	0.1 Hz…400 Hz: 1.0 mm/s 1 Hz ref. freq.: 0.2 mm/s
Maximum (high payload) [4] (displacement, velocity, acceleration)	**10 mm** in the range of **0.1 Hz…4 Hz** **250 mm/s** in the range of **4 Hz…6.5 Hz** **10 m/s²** in the range of **6.5 Hz…400 Hz**
Maximum (low payload) [5] (displacement, velocity, acceleration)	**10 mm** in the range of **0.1 Hz…4 Hz** **250 mm/s** in the range of **4 Hz…25 Hz** **40 m/s²** in the range of **25 Hz…120 Hz** **40 m/s²…25 m/s²** in the range of **120 Hz…400 Hz**

1) Determined according to GUM (JCGM 100 „Evaluation of measurement data – Guide to the expression of uncertainty in measurement") with k = 2 (coverage factor) for the best possible device under test (DUT). Other devices that are not assumed as ideal must be evaluated with individual contributions.
The measurement uncertainty is specified for the best possible DUT: „Nanometrics Trillium Compact" (plus its mounting adapter) in two configurations: first the DUT and secondly the DUT with additional dummy mass. Best uncertainty values only valid for symmetric centered mounting of the DUT and the mass with a center of gravity <80 mm at 35 kg above exciter table. Any other type of DUT can be calibrated. But they must meet the maximum payload limits given by the data sheet of the vibration exciter. Measurement uncertainties need to be determined individually, especially for frequencies above 20 Hz.
2) Valid for electrical sensor signals ≥ (1 mV or 1 pC)
3) Requires optional software
4) Maximum vibration amplitude for maximum payload (DUT)
5) Maximum vibration amplitude without any payload (DUT)