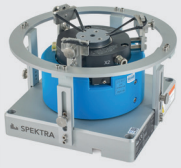
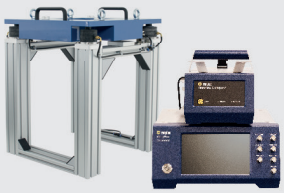
CS Q-LEAP™ P-SINE with SE-09

Primary calibration system with high frequency vibration exciter

	HERO™ vibration controller incl. signal conditioners
	CS Q-LEAP™ software • sine calibration • sine sweep • vibration measurement • vibration generation • more on demand
	SE-09 high-frequency vibration exciter
	Power amplifier PA 500 DM
	all-digital laser vibrometer incl. vibration isolation and positioning device for the laser head

Typical DUT

- PE transducer
- IEPE transducer
- VC transducer
- PR transducer
- digital transducer with SPI, I2C, DTI, and many other interfaces
- vibration meter
- laser vibrometer
- vibration calibrator

Standards

- ISO 16063 -11: Primary calibration of vibration transducers
- ISO 16063 - 21: Calibration of vibration transducers by comparison to a reference transducer
- ISO 16063 - 41: Calibration of laser vibrometers
- ISO 17025: General requirements for the competence of testing and calibration laboratories

Key features

- Frequency range 5 Hz ... 20 kHz (50 kHz)
- Traceable to PTB (German National Metrology Laboratory)
- Calibration of vibration sensors, measurement systems and calibrators
- 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

sales@spektra-dresden.com | +49 351 400 24 0

Frequency range	5 Hz…20 kHz (…50 kHz without traceability)
Acceleration, max.	400 m/s² (40 g_n) peak
Velocity, max.	0.5 m/s (19.7 inch/s)
Displacement, max.	7.5 mm (0.3 inch)
DUT Weight, max.	350 g (12 oz)
Sensitivity of ref. accel.	1 mV / m/s⁻² (~10 mV / g_n)
Laser vibrometer	Class 2 helium-neon laser with 632.81 nm wavelength; digital interface between laser and vibration controller

Frequency range		**Max. recommended payload**	**Expanded measurement uncertainty** [2]	
from	**to**		**magnitude** [3] **/ phase** [1]	**display deviation (ref. laser vibromter)**
5 Hz	< 20 Hz	200 g	0.5 % / 0.5°	0.2 %
20 Hz	1 000 Hz		0.3 % / 0.5°	
> 1 000 Hz	5 000 Hz		0.5 % / 0.5°	
> 5 000 Hz	10 000 Hz	50 g	1.0 % / 1.0°	0.3 %
> 10 000 Hz	15 000 Hz		2.0 % / 2.0°	0.4 %
> 15 000 Hz	20 000 Hz		2.5 % / 3.0°	0.5 %
Reference frequencies: 80 Hz, 100 Hz, 160 Hz		200 g	0.3 % / 0.5°	0.2 %

Recommended excitation amplitudes (peak values)	
Minimum	0.1 m/s²
Maximum (high payload) [4] (displacement, velocity, acceleration)	**4 mm** in the range **5 Hz…12 Hz** **0.3 mm/s** in the range **12 Hz…53 Hz** **100 m/s²** in the range **53 Hz…40 kHz**
Maximum (low payload) [5] (displacement, velocity, acceleration)	**4 mm** in the range **5 Hz…12 Hz** **0.3 mm/s**in the range **12 Hz…106 Hz** **200 m/s²** in the range **106 Hz…20 kHz**

1) Requires software option for phase response measurements
2) 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.
3) Valid for electrical sensor signals ≥ (1 mV or 1 pC)
4) Maximum vibration amplitude for maximum payload (DUT)
5) Maximum vibration amplitude without any payload (DUT)