

Digital Laser Doppler Vibrometer

Vector-Series



OptoMET Laser Doppler Vibrometers (LDV) are very fast and easy-to-operate vibration measuring instruments. They are used for precise, non-contact, and non-reactive measurements of mechanical and acoustic parameters such as vibration displacement, velocity and acceleration.

Thanks to our innovative digital signal processing technology and the highest optical sensitivity, our instruments provide quick and simple vibration measurements of even the most challenging systems, including high vibration frequencies, large working distances, small vibration amplitudes, high linearity, and high accelerations or velocity.

COST EFFICIENT AND MODULAR

The Vector-series are the universal vibrometers which cover a large number of vibration measurement applications. They are specially suitable for measurements on reflective surfaces or through water, as well as in applications where the smallest possible size of the laser spot is important.

The vibrometer has a modular design and can be individually matched to any measuring task with different objectives and decoders.

Ideal for:

- Reflective surfaces
- Small objects
- Measurement through water or glass, etc.

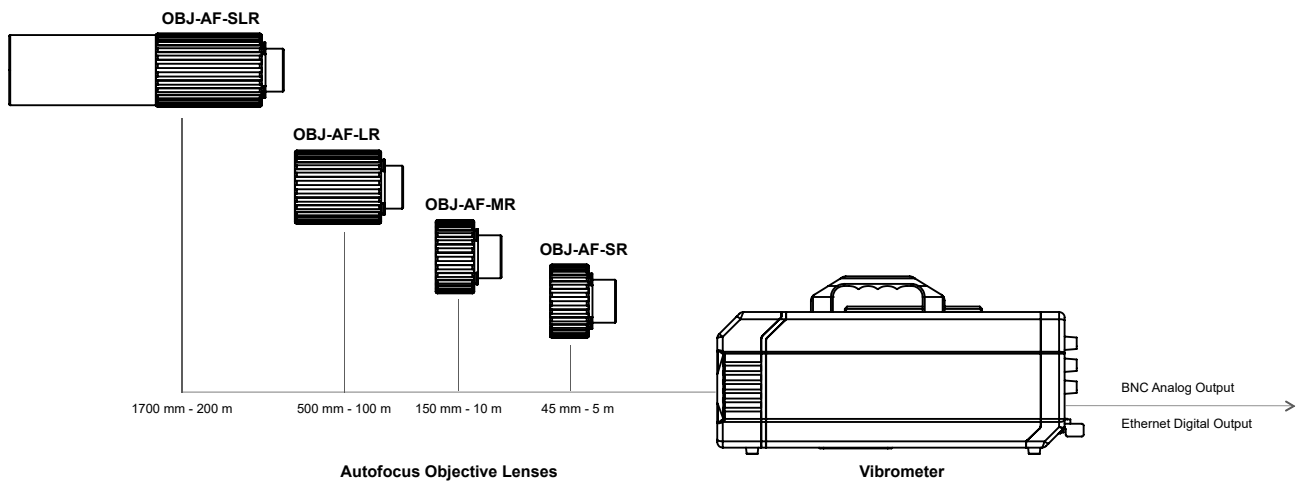
General data

Measured quantity	Velocity, displacement, acceleration
Frequency bandwidth	0 Hz - 10 MHz
Signal processing	Digital (OptoMET UltraDSP)
Source impedance	50 Ohm
Working distances	Variable working distance from 5 mm to >100 m
Laser wavelength	632.8 nm, visible, red laser beam
Laser safety class	Output power: <1 mW, class II, eye-safe
Optics	Auto- and manual focusing
User interface output	Color screen 3.5" + 20 segment LED bargraph
User interface input	Touch screen, knobs with push-button, key switch (power)
Operating temperature range	+5 to 40°C
Dimensions	Length x width x height (excluding handle and lens): 380 x 180 x 148 mm
Weight	8 kg + objective lens
Power supply	110 -240 V AC (50-60Hz) or 12 V DC
BNC analog output	- Up to 3 BNC analog outputs - Data rate: 160 MSamples/s @ 16-bit - Output voltage range: ± 2 V
Ethernet digital output	- Data rate: 1 GBit (53.3 MSamples/s @ 16-bit) - With a data acquisition and analysis software - Remote control feature

Configuration

Specification	Vector-Basis	Vector-Sense	Vector-Speed	Vector-HF	Vector-Master
Frequency range	DC - 500 kHz	DC - 1 MHz	DC - 2.5 MHz	DC - 10 MHz	DC - 10 MHz
Velocity-decoder	D-VD-1	D-VD-2	D-VD-3	D-VD-4	D-VD-5
Velocity measuring ranges	10 mm/s - 2 m/s	1 mm/s - 2 m/s	10 mm/s - 10 m/s	10 mm/s - 5 m/s	1 mm/s - 10 m/s
Number of velocity measuring ranges	8	11	11	9	14
Displacement-Decoder	D-DD-1	D-DD-2	D-DD-3	D-DD-4	D-DD-5
Displacement measuring ranges	± 50 nm - ± 50 mm				
Number of Displacement measuring ranges	19				
Displacement high pass filter	25 Hz / 20 kHz	25 Hz / 20 kHz	25 Hz / 20 kHz	25 Hz / 20 kHz	25 Hz / 20 kHz
Acceleration-Decoder	D-AD-1	D-AD-2	D-AD-3	D-AD-4	D-AD-5
Acceleration measuring ranges	160 g - 640000 g	1.6 g - 1.28 Mg	160 g - 16 Mg	160 g - 32 Mg	1.6 g - 16 Mg
Number of Acceleration measuring ranges	8	11	11	9	14
Low pass filters	2.5, 5, 10, 20, 50, 100 kHz				
Trackingfilter	slow / fast				

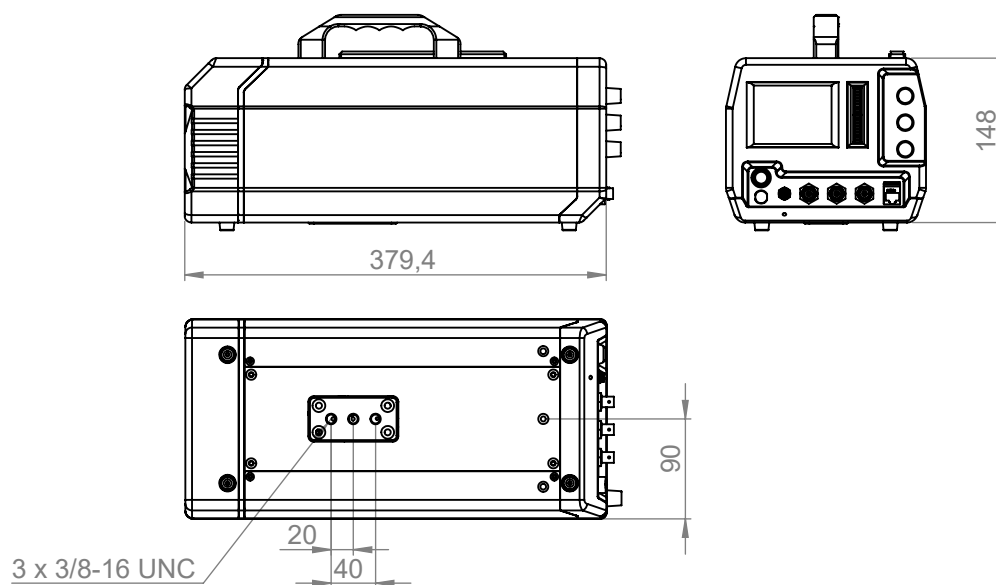
Set-up



Objective lens

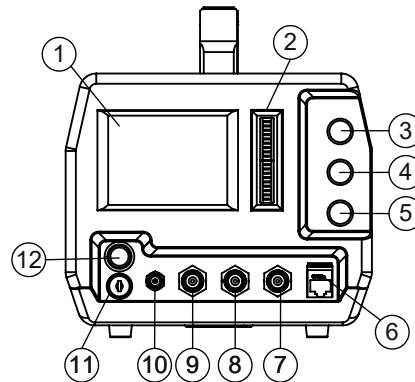
Specification	Short-Range Autofocus	Mid-Range Autofocus	Long-Range Autofocus	Super-Long Range Autofocus
Focal length (mm)	25	50	100	200
Min. stand-off distance (mm)	45	150	500	1700
Min. Spot size in μm	50	60	130	170
Working distance	45 mm ... 5 m	150 mm ... 10 m	500 mm ... 100 m	1.7 m ... 200 m

Dimension of the Vibrometer



Indicator / operating

1	Touch screen LCD 3.5-Inch
2	Signal Level
3	Displacement measuring ranges
4	Velocity measuring ranges
5	Acceleration measuring ranges
6	Ethernet
7	Output acceleration
8	Output velocity
9	Output displacement
10	Power
11	Lock
12	Laser



Laser product label

DO NOT STARE INTO BEAM Class 2 Laser Product

Laser CLASS 2: visible, red laser beam, 632.8 nm, output power: ≤ 1 mW



DO NOT STARE INTO BEAM
CLASS 2
visible, red laser beam
output power: ≤ 1 mW