

Single Fiber Optic Vibrometer



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.

These unique characteristics of OptoMET vibrometers open up numerous applications, ranging from Microsystems and aerospace, from research and development laboratories to automated industrial applications.

Single Fiber Optic Vibrometer

The OptoMET Single Fiber optical Vibrometer consists of a vibrometer Vector-Series and a fiber objective, which is exchangeable with other free-beam objective lenses.

The fiber vibrometer is ideally suited for measurements on small parts, when physical access is difficult or close stand-off-distances are required. With the flexible fiber objektiv the FOV focuses the laser beam to a small point with just a few micrometer in diameter.

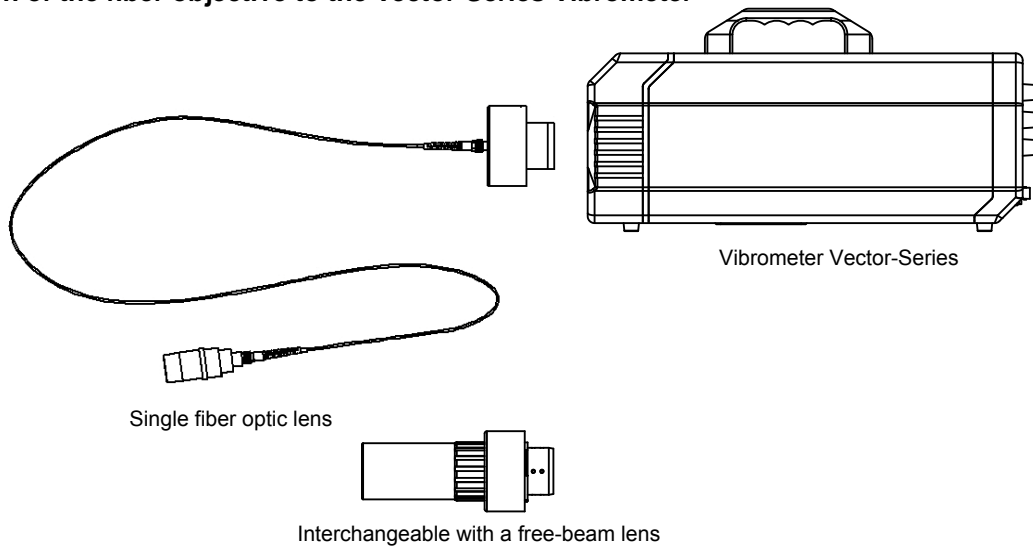
Applications are found in micro systems, electronic components test, medicine, zoology, and automotive manufacturing.

Performance characteristics:

- Compatible with all Vector-series vibrometer
- Exchangeable with a free-beam objective lenses
- Spot size down to 5.8 μm
- Very small fiber head
- High spatial resolution
- Standard fiber length of 2 m

Setup

Connection of the fiber objective to the Vector-Series Vibrometer



Vibrometer general data

| | |
|-----------------------------|---|
| Signal processing | Digital (OptoMET UltraDSP) |
| Output signal | Analog, standard BNC connectors |
| Output voltage range | ± 2 V |
| Source impedance | 50 Ohm |
| Laser wavelength | 633 nm |
| Laser safety class | output power: <1 mW, eye-safe, class II |
| 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 bis 40°C |
| Dimensions | length x width x height (excluding handle and lens): 370 x 120 x 100mm |
| Weight | 8 kg + objective lens |
| Power supply | 110 -240 V AC (50-60Hz) oder 12 V DC |
| Decoder selection | D-VD-1V / D-VD-2V / D-VD-3V / D-VD-4V / D-VD-5V D-DD-1V / D-DD-2V / D-DD-3V / D-DD-4V / D-DD-5V D-AD-1V / D-AD-2V / D-AD-3V / D-AD-4V / D-AD-5V |

Single fiber lenses technical data

| Specification | OBJ-FOH-F40 | OBJ-FOH-F60 | OBJ-FOH-F100 |
|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| | Fix working distance 30 mm | Fix working distance 50 mm | Fix working distance 90 mm |
| Focal length (mm) | 40 | 60 | 100 |
| stand-off distance (mm) | 30 | 50 | 90 |
| Spot size in μm at | | | |
| 30 mm | 5.8 | | |
| 50 mm | | 8.8 | |
| 90 mm | | | 12.9 |