The Polytec VibroFlex laser Doppler vibrometer is a modular high-performance solution for non-contact vibration measurement. It offers unrivalled measurement performance and versatility for solving pressing vibration issues in both R&D and industrial quality control.

The VibroFlex family comprises the front-end VibroFlex Connect and a selection of non-contact laser sensor heads. Integrated with the VibSoft data acquisition and analysis software, the vibration measurement system is ready to go. Study acoustics, dynamics and vibrations on nano to macro structures without contact and with laser precision.

Measuring vibrations with the VibroFlex Xtra sensor head assures high-fidelity data from all surfaces – even on dark, biological, rotating or moving objects. This eye-safe laser technology is perfect for challenging applications like NDT, biomedical, longer distance measurements, quasi-static displacement measurement and shaker feedback control.

VibroFlex – the new flexibility of laser vibration measurement.

Highlights

- High-fidelity data from all surfaces – even on dark, biological or moving objects
- From µm-sized to large, distant objects
- High dynamic range up to 30 m/s
- Fast remote and auto focus for best signal quality
- Optional fiber lens for hard to access areas
- Best optical sensitivity and depth of field with a selection of interchangeable lenses

VibroFlex Xtra

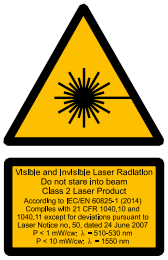
Xtra sensitivity and versatility

Preliminary datasheet

Technical data

General specifications	
Model	**VibroFlex Xtra VFX-I-120**
Weight	4.55 kg
Protection class	IP40
Dimensions [W x H x L]	135 x 100 x 383 mm
Operating temperature	+5 °C ... +40 °C (41 °F ... 104 °F)
Storage temperature	-10 °C ... +65 °C (14 °F ... 149 °F)
Relative humidity	max. 80%, non-condensing
Controller compatibility	VibroFlex Connect
Maximum velocity	± 30 m/s

Optical specifications	
Laser type	Measurement laser: invisible (IR), wavelength 1550 nm, output power <10 mW Targeting laser: visible (green), wavelength 510 - 530 nm, effective output power < 1 mW
Laser class	Class 2, eye-safe, with both lasers in operation
Focus	Auto focus, remote focus, manual focus
Maximum stand-off distance [1]	Up to 100 m (with VFX-O-LRI long range front lens, surface dependent)



Working distance and laser spot size

	Front lenses		Fiber heads for VFX-O-FMI-02	
	VFX-O-SRI short range	**VFX-O-LRI long range**	**VFX-O-100 [2] Mini Fiber Head**	**VFX-O-110 [3] Micro Spot Fiber Head**
Min. stand-off distance [mm] [1]	25	380	60	56±2
Exit beam diameter (1/e²) [mm]	2...4.5	11...12.4	3.3...4.3	14
Typical spot size in µm at				
25 mm	48	–	–	–
50 mm	77	–	–	–
56 mm	81	–		8
60 mm	84	–	28	–
75 mm	91	–	37	–
100 mm	97	–	53	–
300 mm	150	–	180	–
380 mm	184	60	224	–
500 mm	236	81	295	–
1,000 mm	448	171	608	–
2,000 mm	906	349	1,300	–
5,000 mm distance	2,766	898	–	–
Each additional meter add [µm]	–	+183	–	–

[1] Measured from the front edge of the front lens.
[2] Included with VFX-O-FMI-02 Fiber Lens (IR).
[3] Optional available for VFX-O-FMI-02 Fiber Lens (IR).

Compliance with standards		
Laser safety	IEC/EN 60825-1	
Electrical safety	IEC/EN 61010-1	
EMC	IEC/EN 61326-1	
	Emission:	Limit class B IEC/EN 61000-3-2 and 61000-3-3
	Immunity:	IEC/EN 61000-4-2 to 61000-4-6 and IEC/EN 61000-4-11

Please contact your local vibrometer sales engineer or visit our website **www.polytec.com/vibroflex** for more detailed information.

Options and accessories

Optical accessories		
VFX-O-SRI SR Front Lens (IR) VFX-O-LRI LR Front Lens (IR)	Short Range front lens for measuring at short working distances (highest depth of focus). Long Range front lens for measuring at long working distances.	
VFX-O-FMI-02 Fiber Lens (IR) 2 m	Flexible measurements with 2 m fiber cable on small objects or where space is restricted. Includes VFX-O-100 Mini Fiber Head and VIB-A-CAS08 Transportation Case	
VFX-O-100 Mini Fiber Head	Small fiber head (10 mm diameter) with a laser spot size down to 28 µm for VFX-O-FMI-02 Fiber Lens (IR) 2 m	
VFX-O-110 Micro Spot Fiber Head	Small fiber head (24 mm diameter) with a laser spot size of 8 µm for VFX-O-FMI-02 Fiber Lens (IR) 2 m	

Tripods		
VIB-A-T02 Standard Tripod VIB-A-T05 Tripod with Geared Pan/Tilt Head	Easy targeting on the object under test. For precise pointing of the sensor head. The geared pan/tilt head allows quick coarse adjustment and fine adjustment in 3 axes	

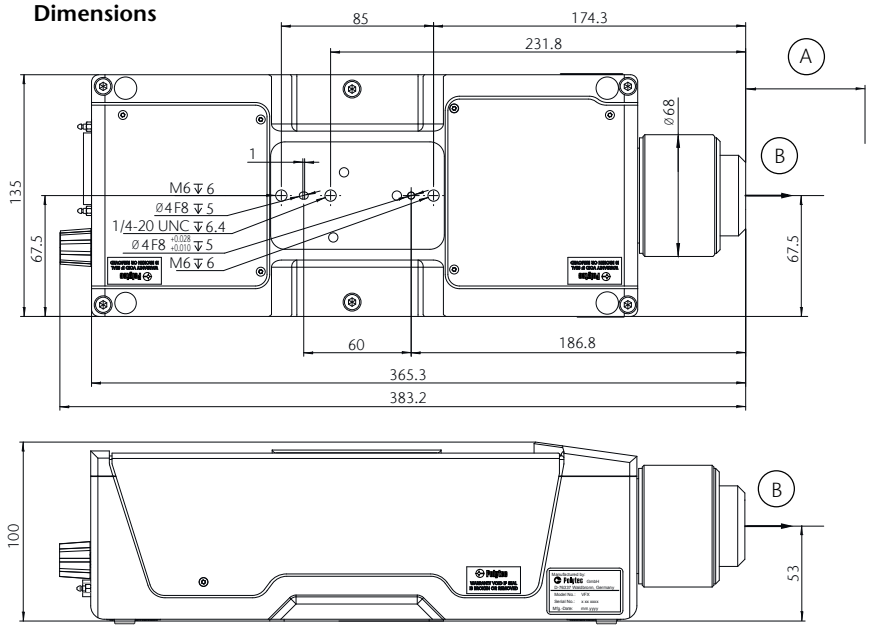
Positioning stages		
VIB-A-P35 Precision 4-Axes Stage	XY-traverse stage featuring 18 mm travel with +/- 5° pan/tilt function for positioning a single 10 mm outer diameter Mini Fiber Head.	
VIB-A-P36 Pan/Tilt Precision Stage	For positioning a single 10 mm outer diameter Mini Fiber Head. Travel range ±5°.	

VIB-A-P01 Tripod Mountable Tilt Stage	The tilt travel is ±9°. Quick release plates to interface with VIB-A-T02 and VIB-A-T05 tripods are included.	
VIB-A-P02 Tripod Mountable Traverse/Tilt Stage	The travel of the traverse stage is 105 mm and the tilt travel is ±9°. Quick release plates to interface with VIB-A-T02 and VIB-A-T05 tripods are included.	
VIB-A-P06 Tripod Mountable X/Y/Tilt	The travel of the x & y traverse is 100 mm along and across laser beam and the tilt stage is ± 9°. Quick release plates to interface with VIB-A-T02 and VIB-A-T05 tripods are included.	

Transportation cases

VIB-A-CAS07 Transportation Case for VibroFlex Xtra (VFX-I-120)	Robust transportation case for the sensor head (included with sensor head)	

Dimensions



All dimensions in mm
if not marked otherwise

(A) Stand-off distance

(B) Beam

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