



## **Ultrafast FPGA-based Digital Signal Processing**

Optomet Vibrometers feature an end-to-end FPGA-based digital signal processing allowing a fully digital read-out of the measurement data. Digital signal processing avoids any drawbacks of analog demodulation which may result from component aging, temperature dependencies, noise and non-linearities. Significantly higher sensitivity, better resolution, and stability are the benefits of OptoMET's end-to-end digital signal processing. Extremely low noise levels produce precise results even from poorly reflecting measurement objects.

## **HIGHLIGHTS:**

- Digital decoder
- 7 velocity measuring ranges
- Frequency range: 0 Hz 100 kHz
- Max. velocity up to 2.5 m/s
- Resolution down to 12 nm s<sup>-1</sup>/VHz
- Max. linearity error: 0.5 %

## **Start Velocity Decoder**

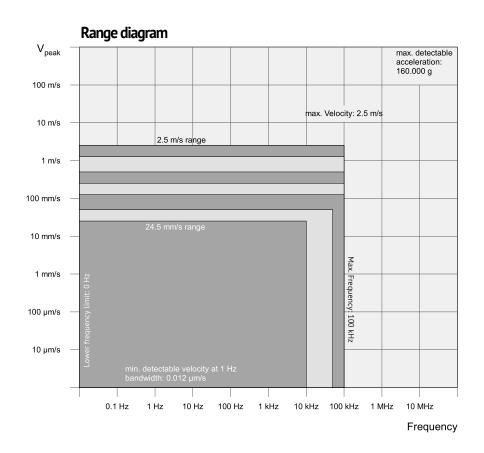
All vibrometers series feature by default a velocity decoder and can be supplemented with a suitable displacement and/or acceleration decoder.

The D-VD-ON velocity decoder is the versatile solution for various types of non-contact vibration metrology tasks. With its 8 velocity measuring ranges, it can measure up to 100 kHz and thus well above the audible acoustic range. Digital signal processing provides excellent linearity and measuring accuracy.

## Technical data

Pos.	Full Scale Output (Peak)	Typical Resolution*1	Signal Frequency Range	Max. Acceleration
	m/s	$\mu m$ s $^{-1}$ / $\sqrt{Hz}$	kHz	g
1	0.0245	0.012	25	392
2	0.049	0.018	50	1,560
3	0.1225	0.024	100	7,800
4	0.245	0.05	100	15,600
5	0.49	0.10	100	31,300
6	1.225	0.20	100	78,400
7	2.5	0.29	100	160,000

<sup>\*1</sup> The resolution is defined as the signal amplitude (rms) that produces 0 dB signal/noise ratio with 1 Hz spectral resolution at 50 % fmax.



<sup>\*2</sup> In Scan-Mode: max. frequency 80 kHz

<sup>\*3</sup> In Scan-Mode