

# **ACTIVE VIBRATION ISOLATION SYSTEM INSTALLATION REPORT**

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# 1. Measurement Details

- **Measurement Date**

May 24, 2016

- **Measurement Devices**

1. LAN-XI Data Acquisition Hardware

- Brüel & Kjær 3050-A-040 (Serial Number: 3050-111438)

2. Data Analysis Software

- Brüel & Kjær PULSE LAB SHOP 14

3. Sensors

- PCB Accelerometer

- Model: 393B05 (Serial Number: 48995, 40626)

- **Measurement Setup**

Bandwidth: 0 – 100 Hz

Lines: 400

Window: Hanning

Averaging: Fast Fourier Transform Spectrum Averaging

Amplitude Units: m/s<sup>2</sup>

Spectral Unit: RMS

- **Measurement Location**

1<sup>st</sup> Floor

## 2. Equipment Information

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- **Manufacturer**

ZEISS

- **Model**

SEM EVO 15

- **Floor Vibration Specification**

The manufacturer specifies that allowable vibration values are less than 6 $\mu$ m/s RMS up to 30 Hz and less than 12  $\mu$ m/s RMS above 30 Hz. Unless otherwise stated, requirements should be assumed to be in three orthogonal axes and in third octaves between 1Hz and 80Hz.

### 3. Vibration Isolation System Information

**Model: DVIA-MB1000**



Platform Dimensions	1140 x 910 x 224 mm	
Load Capacity	500 - 1700 kg	
Actuator	Electromagnetic Actuator	
Maximum Actuator Force	Vertical: 40N, Horizontal: 20 N	
Degrees of Freedom	6 degrees	
Active Isolation Range	0.5 - 100 Hz	
Vibration Isolation at 2 Hz	≥90%	
Vibration Isolation at 10 Hz	≥99%	
Input Voltage (V)	AC100 - 240V / 50 - 60 Hz / 1A	
Power Consumption (W)	Maximum 110W, <50 W in normal operation	
Operating Range	Temperature (°C)	5 - 50 °C
	Humidity (%)	20 - 90%
Required Air Pressure	≥ 0.5 MPa (5 bar)	

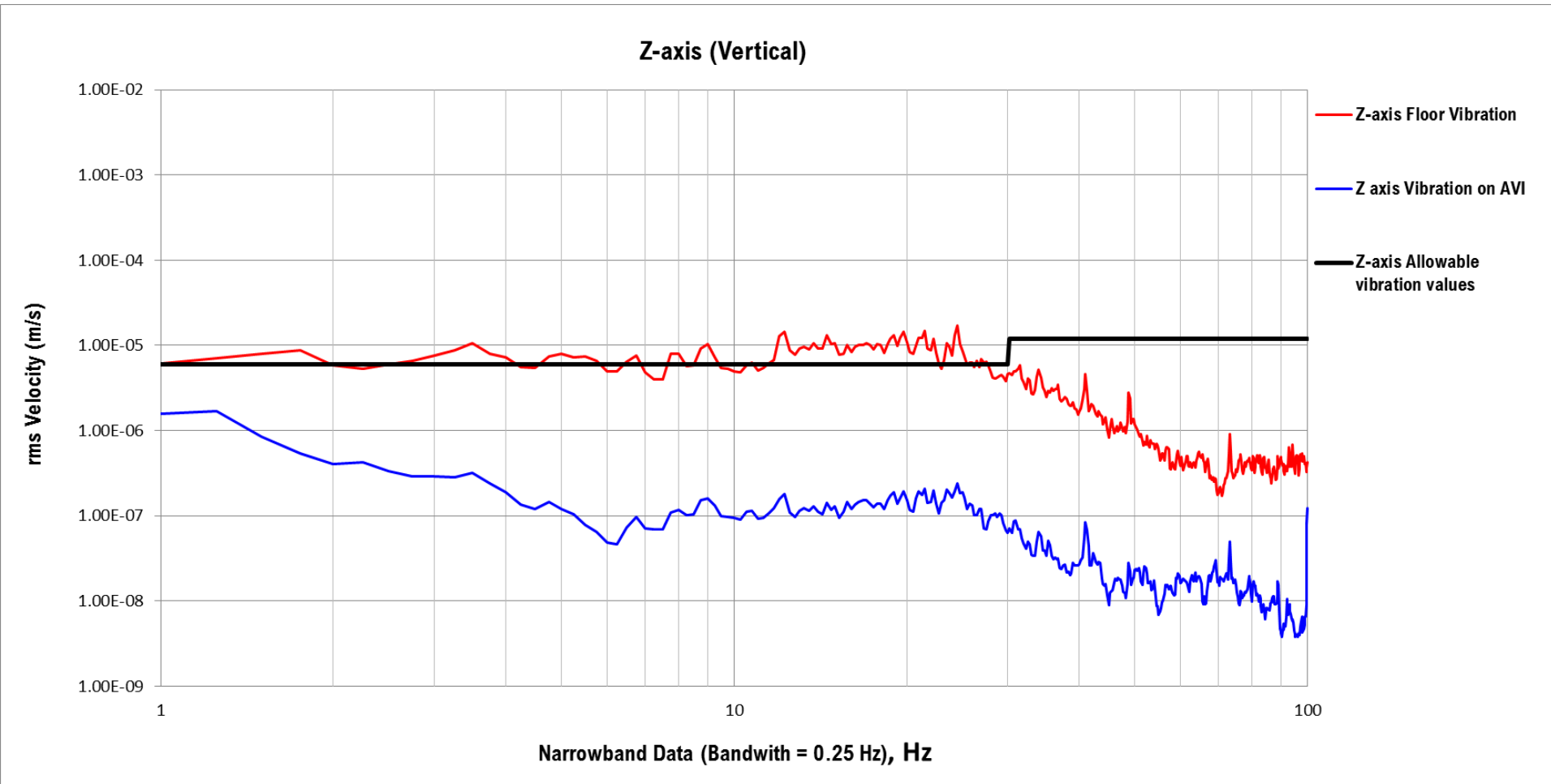
## 4. Installation Photos



## 5. Summary

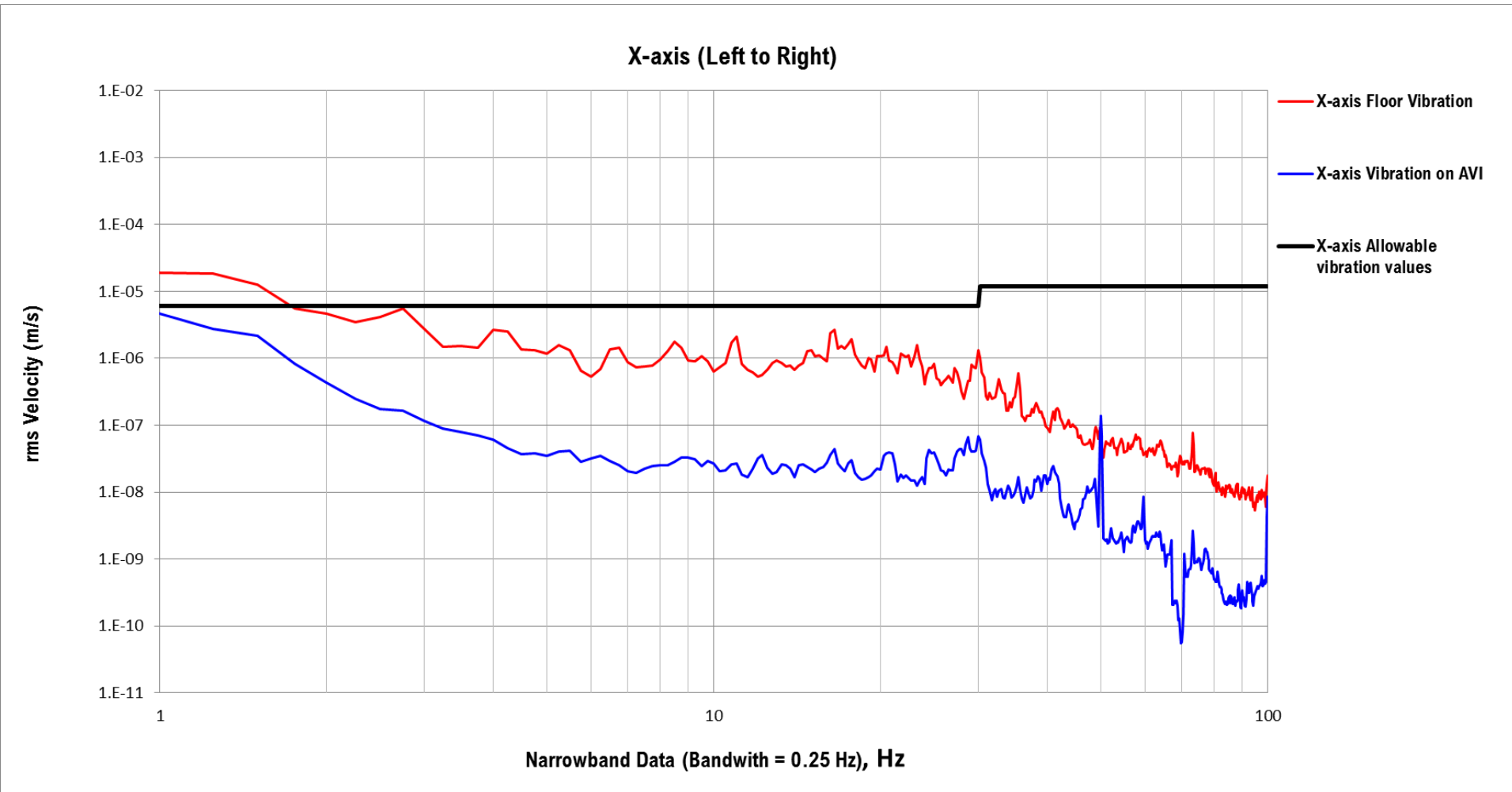
Floor Vibration Specification						
Frequency Range	1 - 30 Hz			Above 30 Hz		
Allowable Vibration Values	6 $\mu\text{m/s}$ RMS			12 $\mu\text{m/s}$ RMS		
Measurement Direction	Z-axis (Vertical)	X-axis (Left to Right)	Y-axis (Front to Back)	Z-axis (Vertical)	X-axis (Left to Right)	Y-axis (Front to Back)
Floor Vibration	Fail	Fail	Fail	Pass	Pass	Pass
Vibration On Active Vibration Isolation System	Pass	Pass	Pass	Pass	Pass	Pass

## 6. Results – Z axis (Vertical)

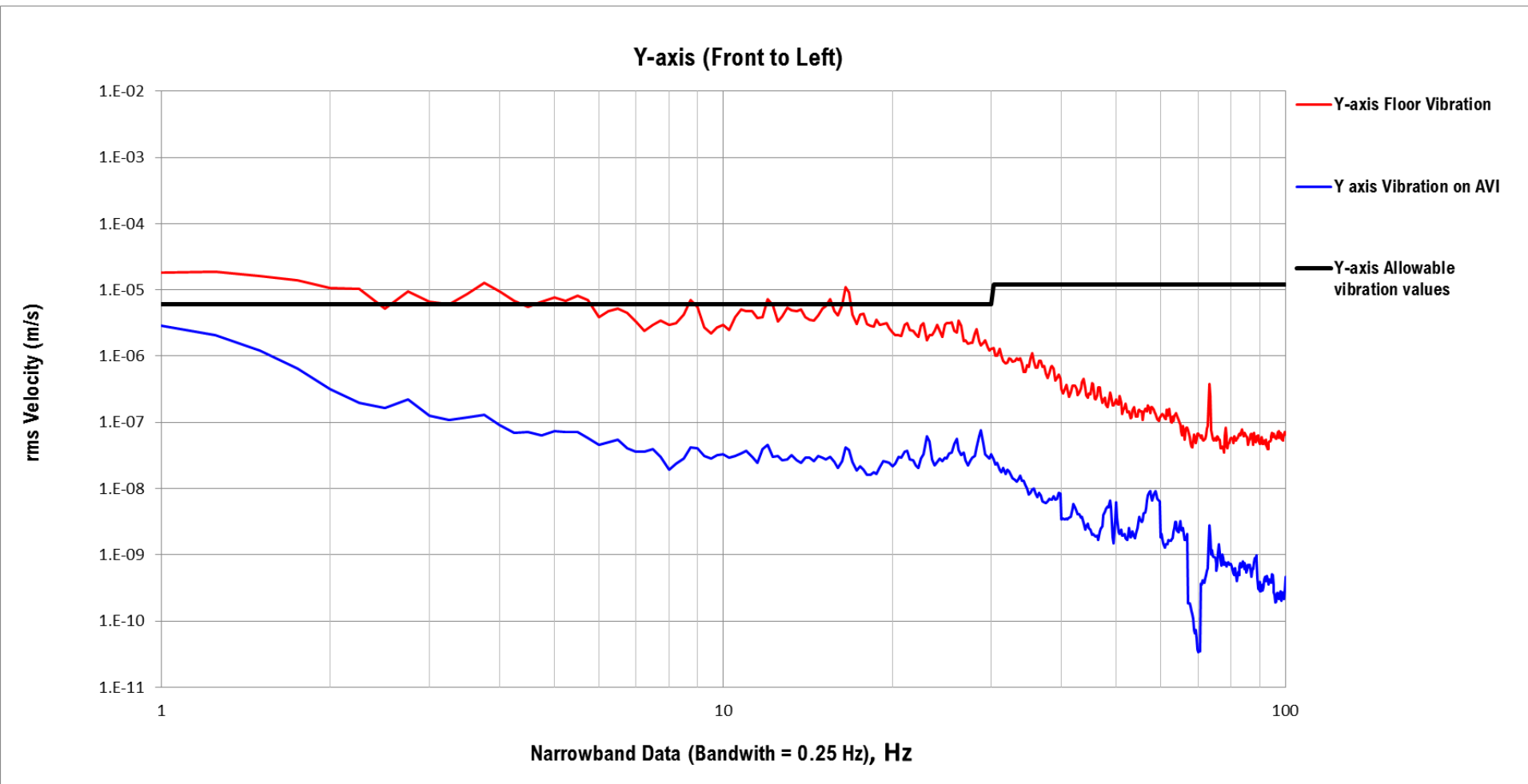




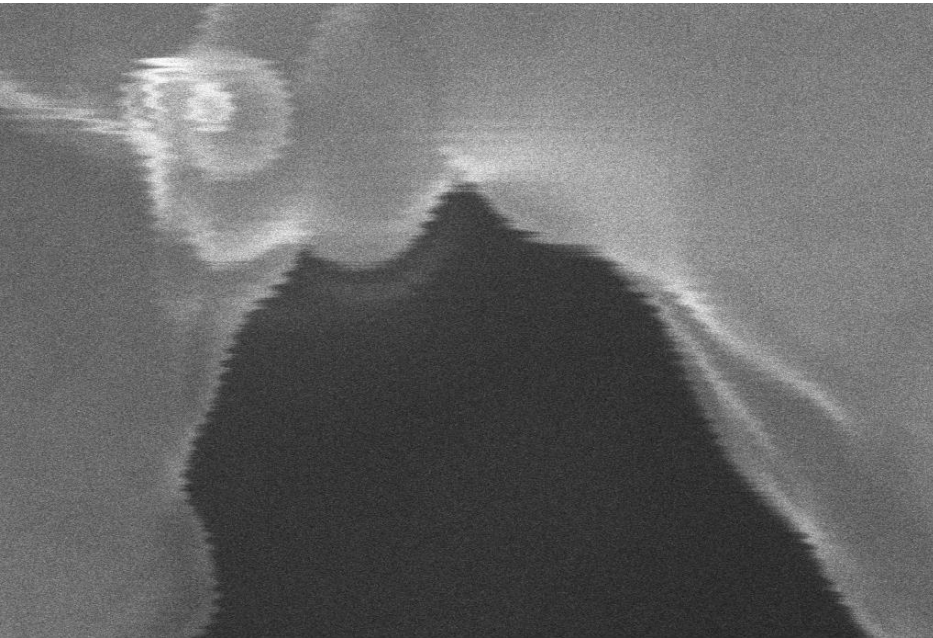
## 6. Results – X-axis (Left to Right)



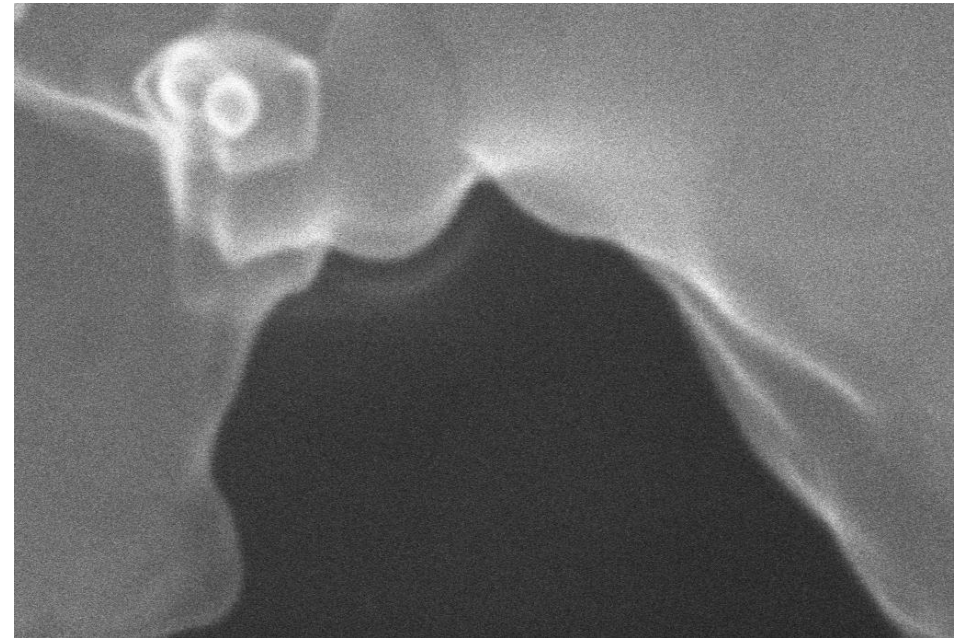
## 6. Results – Y-axis (Front to Back)



## 7. Results – Active **Off** vs Active **On**



Active Vibration Isolation **Off**  
110K



Active Vibration Isolation **On**  
110K