

Discipline Function		VM Required Instrumentation (Effective January 1, 2024)					
			RANGE	ACCURACY	RESOLUTION	Notes	Calibration Requirements
Vibration Instruments	Vibration Analyzer / Meter, Real Time Analyzer & Spectrum Analyzer		Shall meet the minimum requirements as specified below: Displacement – 0.1 to 100 mils (0.0001 to 0.1 inches) Velocity – 0.0005 to 10 in/sec Acceleration – 0.0001 to 30 G's Frequency Range – at least 1 to 1000 Hz (60 to 60,000 RPM) Frequency Resolution – at least 1.25 Hz (75 RPM) Minimum Lines of resolution ≥ 800 Detection - Peak, Peak-to-Peak, RMS FFT Windowing- Hanning at least Averaging – exponential or time and selectable to at least four averages			*4	12 Months
	Accelerometers / Transducer		Shall have the following minimum specifications: Sensitivity (± 20%) ≥ 100 mV/G typical Measurement Range = ± 20 G peak or greater Frequency Range = 2 to 3000 Hz at ± 3dB				12 Months

NOTES

- *1 CPT Option - choose only Option 1 OR Option 2 - along with required instrument for CPT certification (All instruments in any of the chosen is required)
- *2 FHT Orifice Calibrator - Choose only one.
- *3 Refer to Appendix A for complete instrumentation requirements for Sound Measurement (SM)
- *4 Firms may own or rent vibration equipment instrumentation for vibration certification
- *5 Calibration Requirement: Data logger calibration may be verified from a calibrated instrument with an associated calibration form showing calibration readings from both the calibrated instrument and the data logger. If a data logger is out of calibration and cannot be adjusted, the logger must be sent back to the factory for re-calibration or be replaced
- *6 Accuracy of an instrument is either stated as a percentage of full scale or as a percentage of the reading. NEBB has chosen percentage of reading due to it being a more accurate reading. Since a % of reading error becomes smaller as you read near the lowest part of the scale the instrument resolution and accuracy must be very small to maintain the accuracy of the reading. To overcome this the manufactures add a standard offset to the % of reading to maintain a reasonable accuracy at all locations on the scale. Normally for TAB readings we are never operating at the extreme ends of the scale so this has no impact on our work.
- *7 Calibrated per Industry/Manufacturer standards.
- *8 Firms may own or rent Temp Documentation Thermal Camera for RCx. BET Temp Documentation Thermal Camera must be owned.
- *9 Sound level meters with vibration integrators are NOT acceptable for NEBB approved instrumentation for making vibration measurements. That is, 1/3 octave or full octave vibration readings are not sufficient for NEBB Sound and Vibration work.
- *10 Vibration meters, which ONLY acquire and display the overall vibration level, displacement, velocity, and/or acceleration DO NOT meet NEBB minimum requirements for Vibration instrumentation. These types of meters may only be used if the contract documents specifically allow for their usage.

General Note: Some local jurisdictions require qualified electrician for any electrical readings

Calibration

Requirement: Instruments require a 3-point calibration, traceable to National Institute of Standards and Technology (NIST) or National Metrology Institute (NMI) unless otherwise noted.