

Discipline Function		RCx Required Instrumentation (Effective January 1, 2024)																			
		RANGE						ACCURACY						RESOLUTION						Notes	Calibration Requirements
Air	Air Pressure	0	in wg	to	10	in wg		2%	of reading	±	0.001	in wg	0.001	in wg	<	1	in wg			12 Months	
													0.01	in wg	>	1	in wg				
		0	Pa	to	2500	Pa		2%	of reading	±	0.25	Pa	0.10	Pa	<	250	Pa				
	Air Velocity Instrument for Pitot Traverse	100	fpm	to	3500	fpm	±	5%	of reading	±	7	fpm	1	fpm						12 Months	
		0.50	m/s	to	20	m/s	±	5%	of reading	±	0.04	m/s	0.01	m/s							
	Digital Direct Reading Hood	100	cfm	to	2000	cfm	±	5%	of reading	±	7	cfm	1	cfm						12 Months	
50		l/s	to	944	l/s	±	5%	of reading	±	4	l/s	1	l/s								
Temperature	Air Meter with probe	0	°F	to	200	°F	±	0.5%	of reading	+	2.0	°F	0.1	°F					12 Months		
		-20	°C	to	100	°C	±	0.5%	of reading	+	1.0	°C	0.1	°C							
	Immersion Meter with probe	0	°F	to	200	°F	±	0.5%	of reading	+	2.0	°F	0.1	°F					12 Months		
		-20	°C	to	100	°C	±	0.5%	of reading	+	1.0	°C	0.1	°C							
Humidity	Humidity Meter (w/Probe, if req'd)	10	% RH	to	90	% RH		3%	RH				1%						12 Months		
Electrical	Amperage Measurement	0.1	AC Ampere	to	100	AC Amperes		2%	of reading	±	5	digits	0.1	AC Ampere					12 Months		
	Voltage Meter - True RMS	1	VAC	to	600	VAC		2%	of reading	±	5	digits	1	Volt					12 Months		
Rotation	Rotation Measurement	60	rpm	to	5000	rpm		2%	of reading	±	2	rpm	1	rpm					12 Months		
Hydronic	Pressure Measurement	0.4	psi	to	200	psi		2%	of reading	±	1	psi	0.1	psi					12 Months		
		3	kPa	to	1400	kPa		2%	of reading	±	7	kPa	1	kPa							
	Δ Pressure measurement	0.4	psi	to	75	psi		2%	of reading	±	0.5	psi	0.01	psi					12 Months		
		3	kPa	to	500	kPa		2%	of reading	±	3.5	kPa	0.1	kPa							
RCx Instruments	Receptacle Circuit Tester	125	VAC					Not Applicable						Not Applicable							Not Required
	Voltage Detector	50	VAC	to	1000	VAC		Not Applicable						Not Applicable							Not Required
	Light Level Measurement	0	FC	to	4000	FC	±	3%	of reading	+	5.0%	full scale	0.1	FC					Per Manufacturer's Requirements		
		0	lx	to	40000	lx	±	3%	of reading	+	5.0%	full scale	1.0	lx							
BET / RCx Instruments	Temp Documentation Thermal Camera	-4	°F	to	450	°F	±	2%		or	3.6	°F	0.1 @ 86 °F	&	160 x 120			*8	Per Manufacturer's Requirements		
		-20	°C	to	232	°C	±	2%		or	2.0°C	°C	0.1 @ 30 °C	&	160 x 120						

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Data Loggers	Carbon Dioxide CO2	0	ppm	to	2500	ppm	±	5%	of reading	±	50	ppm	1	ppm				Qty = 1	Per Manufacturer's Requirements
	Carbon Monoxide CO	3	ppm	to	1000	ppm	±	10%	of reading	±	7	ppm	1	ppm				Qty = 1	Per Manufacturer's Requirements
	Lighting Levels	0	FC	to	3000	FC	±	10	FC				2	FC				Qty = 1	See Note 5
		0	lx	to	30000	lx	±	100	lx				0	lx					
	Electrical	0	VAC	to	600	VAC	0	2%	of reading			VAC	1.0	VAC				Qty = 2	See Note 5
		0	Amperes	to	100	Amperes	0	4%	of reading			Ampere	0.1	Ampere					
	Static Pressure - Low	0	in wc	to	0.25	in wc	±	1%	full scale				0.01	in wc	<	1	in wc	Qty = 1	See Note 5
		0	Pa	to	60	Pa	±	1%	full scale				0.1	in wc	>	1	in wc		
	Static Pressure - High	0	Pa	to	250	Pa	±	1%	full scale				2.5	Pa	<	250	Pa	Qty = 1	See Note 5
		0	pa	to	1500	Pa	±	1%	full scale				25	Pa	>	250	Pa		
	Water Pressure	0	psi	to	100	psi	±	1%	of reading	psi			1.0	psi				Qty = 1	See Note 5
		0	kPa	to	700	kPa	±	1%	of reading	kPa			0.1	kPa					
	Temperature	-4	°F	to	150	°F	±	1	°F	@	32-122	°F	0.05	°F	@	77	°F	Qty = 8	See Note 5
-20		°C	to	65	°C	±	0.35	°C	@	0-50	°C	0.03	°C	@	25	°C			
Humidity	10	% RH	to	90	% RH	0	2.5%	RH				1%	RH				Qty = 8	See Note 5	
Event	Not Applicable					Not Applicable					Not Applicable					Qty = 2	Not required		

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RCx Instruments	Thermal Infrared Thermometer	-4	°F	to	500	°F	±	2%	of reading	±	4	°F	0.5	°F					Per Manufacturer's Requirements
		-20	°C	to	260	°C	±	2%	of reading	±	2	°C	0.2	°C					
	TDS Meter	0	μ	to	1000	μ	±	2%	full scale				1.0%						Per Manufacturer's Requirements
		0	ppm	to	1000	ppm	±	2%	full scale										
	Capacitance Moisture Meter	0%	0	to	100%		±	5%					0.75	inches	Penetration				Per Manufacturer's Requirements

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.