RCx Required Instrumentation (Effective January 1, 2025)

Discipline / Function			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		
														1	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 Measurment		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			

Discipline / Function		RCx Required Instrumentation (Effective January 1, 2024)																		
			RANGE					ACCURACY						RESOLUTION					Notes	Calibration Requirements
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 0.1	in wc in wc	< >	1 1	in wc in wc	**Qty = 1**	**See Note 5**
			0	Pa	to	60	Pa	±	1%	full scale				2.5 25	Pa Pa	< >	250 250	Pa Pa		
	Static Pressure - High		0	in wc	to	6.00	in wc	±	1%	full scale				0.01 0.1	in wc in wc	< >	1 1	in wc in wc	**Qty = 1**	**See Note 5**
			0	pa	to	1500	Pa	±	1%	full scale				2.5 25	Pa Pa	< >	250 250	Pa 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**

Discipline / Function		RCx Required Instrumentation (Effective January 1, 2024)																		
			RANGE					ACCURACY						RESOLUTION					Notes	Calibration Requirements
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.