	Discipline		NEB	B In	strur	nent	Ma	aster	List (Ef	fect	ive J	anuar	y 1, 2	025)				/	/si/			of spir	di d	
	Function		R	ANG	E				ACCU	RAC	1			RESC	DLU	TION							Notes	Calibration Requirements
		0	in wg	to	10	in wg		2%	of reading	±	0.001	in wg	0.001	in wg	< >	1	in wg							
	Air Pressure	0	Pa	to	2500	Pa		2%	of reading	±	0.25	Pa	0.10	Pa Pa	< >	250 250	Pa Pa	x	х х	3	K	x		12 Months
Air	Air Velocity Instrument for Pitot Traverse	100 0.50	fpm m/s	to	3500 20	fpm m/s	±	5% 5%	of reading		7	fpm m/s	1 0.01	fpm m/s		230	1 4	x	хх	,	к	x		12 Months
	FHT Air Velocity	25 0.10	fpm m/s	to	2500 12.7	fpm m/s	±	3%	of reading of reading	±	3 0.02	fpm m/s	1 0.01	fpm m/s						x				12 Months
	Digital Direct Reading Hood	100 50	cfm I/s	to	2000 944	cfm I/s	±	5% 5%	of reading of reading	+ +	7	cfm I/s	1	cfm I/s					x x	3	к	x		l 12 Months
_	Air Meter with probe	0 -20	°F °C	to to	200 100	°F °C	±	0.5%	of reading of reading	+	2.0	°F °C	0.1	°F °C				x	x	3	ĸ	x		12 Months
Temperature	Immersion Meter with probe	0 -20	°F °C	to	200 100	°F °C	±	0.5% 0.5%	of reading of reading	+ +	2.0	°F °C	0.1	°F °C					x	3	ĸ	x		12 Months
Humidity	Humidity Meter (w/Probe, if req'd)	10	% RH	to	90	% RH	±	3%	RH				1%						x	3	к	x		12 Months
Electrical	Amperage Measurement	0.1	AC Ampere VAC	to	100 600	AC Amperes VAC		2%	of reading of reading		5	digits digits	0.1	AC Ampere Volt					x	3	к	x		12 Months
Rotation	Voltage Meter - True RMS Rotation Measurment	60	rpm	to	5000	rpm		2%	of reading		2	rpm	1	rpm					х	3	x	x		12 Months
	Pressure Measurement	0.4	psi kPa	to to	200 1400	psi kPa		2%	of reading of reading		1 7	psi kPa	0.1	psi kPa					x	3	к	х		12 Months
Hydronic	Δ Pressure measurement	0.4 3	psi kPa	to to	75 500	psi kPa		2% 2%	of reading of reading	±	0.5 3.5	psi kPa	0.01	psi kPa					x	3	К	x		12 Months
	Receptacle Circuit Tester	125	VAC		ı	1			Not App	plicable				Not	Appli	cable				3	к			Not Required
RCx Instruments	Voltage Detector Light Level Measurement	50 0 0	VAC FC Ix	to to	1000 4000 40000	VAC FC Ix	±	3%	of reading of reading	+	5%	full scale	0.1	FC Ix	Appli	cable				3	ĸ			Not Required Per Manufacturer's Requirements
BET / RCx Instruments	Temp Documentation Thermal Camera	-4 -20	°F	to	450	°F °C	±	2%		or	3.6 2.0°C	°F	0.1 @ 8	86 °F	&	160 x		x		1	к		*8	Per Manufacturer's Requirements

	Discipline		NEB	B In	strur	nent	Ma	aster	List (Eff	fec	ctive J	anuar	y 1, 2	.025)				//	/si/		24 24	ight and	
	Function		R	ANG	E				ACCU	RA	СҮ			RESC	DLU	JTION						Notes	Calibration Requirements
	Carbon Dioxide CO ₂	0	ppm	to	2500	ppm	±	5%	of reading	±	50	ppm	1	ppm						x		Qty = 1	Per Manufacturer's Requirements
	Carbon Monoxide CO	3	ppm	to	1000	ppm	±	10%	of reading	±	7	ppm	1	ppm						x		Qty = 1	Per Manufacturer's Requirements
	Lighting Levels	0	FC lx	to to	3000 30000	FC Ix	±	10 100	FC Ix				2	FC lx						x		Qty = 1	See Note 5
	Electrical	0	VAC Amperes	to to	600 100	VAC Amperes		2% 4%	of reading			VAC Ampere	1.0	VAC Ampere						x		Qty = 2	See Note 5
		0	in wc	to	0.25	in wc	±	1%	full scale			Ampere	0.01	in wc	< >	1	in wc	Ħ					
Data Loggers	Static Pressure - Low	0	Pa	to	60	Pa	±	1%	full scale				2.5 25	Pa Pa	< >	250 250	Pa Pa			X		Qty = 1	See Note 5
Data Loggers	Static Pressure - High	0	in wc	to	6.00	in wc	±	1%	full scale				0.01	in wc	>	1	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 kPa	to to	100 700	psi kPa	±	1% 1%	_	psi kPa			1.0	psi kPa						x		Qty = 1	See Note 5
	Temperature	-4 -20	°F °C	to to	150 65	°F °C	± +	0.63 0.35	°F °C	@ @	32-122 0-50	°F °C	0.05	°F °C	@ @	-	°F °C			x		Qty = 8	See Note 5
	Humidity	10	% RH	to	90	% RH		2.5%	RH				1%	RH			-			x		Qty = 8	See Note 5
	Event		No	Applica	able				Not App	licab	le			Not	Appl	icable				x		Qty = 2	Not required
	Thermal Infrared Thermometer	-4 -20	°F °C	to	500 260	°F °C	±	2% 2%	of reading of reading	±	4 2	°F °C	0.5	°F °C						x			Per Manufacturer's Requirements
RCx Instruments	TDS Meter	0	μ	to	1000	μ	±	2%	full scale	I	2	C	1.0%							x			Per Manufacturer's Requirements
matruments		0	ppm	to	1000	ppm	±	2%	full scale														Requirements
	Capacitance Moisture Meter	0%		to	100%		±	5%					0.75	inches		Penetration	1			x			Per Manufacturer's Requirements
CPT Instruments	Particle Counter								to count and si /min (1.0 cfm)										х			*7	12 Months

	Discipline			NEE	3B I	nstrur	nent	M	laste	r Lis	t (Eff	fective	Januar	y 1, 2	025)				<u> </u>			25 CHE	July July Line	
	Function			F	RAN	GE				-	ACCUI	RACY			RESC	LUTIO	ON				\prod		Notes	Calibration Requirements
	Aerosol Photometer	OPTIONS	minimu	ım range f	from 10		ograms/lit	er. Sa	ample flo	w rate sl	hall be 28	3.3 L/min (1 c	particles and b fm). Readout s							x			*1 & *	12 Months or 400 operating hours
CPT Option 1	Pneumatic Aerosol Generator	2 OPT		e that can tomizer, e		olize oil med	lium to se	rve as	s an artifi	icial chall	lenge for	filter integrit	y testing of sys	tems unde	r 3,000 cfm	n, typicall	y Laskin no	ozzle(s)		x			*1	Not Required
	Thermal Aerosol Generator	OF THE 2	A devic	e that can	n aeros	olize oil med	lium to se	rve as	s an artifi	icial chall	lenge for	filter integrit	y testing of sys	tems of 3,0	000 to 60,0	00 cfm				x			*1	Not Required
	Optical Particle Counter for Scan Test	7	every p	article tha	at is co	unted. The	particle co	unte	er shall ha	ive a con	ntinuous c	ounting mod	t least 0.3µm. e or a sample liness Classifica	time that e	xceeds the			for		x			*1 & *1	12 Months
CPT Option 2	Diluter	CHOOSE ONLY				scanning pa							m of a filter ur	nder test. T	he dilution	ratio sho	uld be bet	ween		x			*1	12 Months
	Aerosol Generator	СНС	A devic	e that can	n aeros	olize oil or m	nicrospher	e me	edium to s	serve as	an artifici	ial challenge i	or filter integr	ity testing.						х			*1	Not Required
	Tracer Gas Detector		Minimu shall be hexaflu gas, an	um respon e configure	nse tim ed to n 6), or o in conc		The units ur	±	109		reading rhichever	or 0.02	5 ppm	0.01	ppm					x				12 Months
	Detection Calibrator		instrun		cordan	e the detecti ce with the ations.	on				Not App	licable			Not	Applicabl	e			x				12 Months When Required
	Local Challenge Source		neutral	_	it smok	te a small rel ke, dischargir					Not App	licable			Not	Applicabl	e			x				Not Required
FHT	Large Challenge Source		neutral		it smok	te a large rel ke, dischargii					Not App	licable			Not .	Applicabl	e			x				 Not Required
Instruments	Ejector w/critical orifice		indicate	ed in the c e appendix	current	quirements a dedition of N instrument					Not App	ilicable			Not .	Applicabl	e			x				Not Required
	Orifice Calibrator	Flow Meter	0	I/m	to	10	I/m	±	3%					0.1	I/m					х			*2	Calibrate to appropriate tracer gas
		Mechanical Device	0 Sulfur I	l/m Hexafluori	to	15 nmercial gra	I/m	±	0.1	. I	/m			0.1	I/m									12 Months
	Tracer Gas		(Minim		of 999	%) or approv					Not App	licable			Not	Applicabl	e			x				SDS Required
	Mannequin		be cloti various	hed with a hood con	a lab co nfigurat	oat. The heig	ght must b indard ber	e adj nch h	justable t 100d, ADA	to meet t A height,	the height	human prop t requiremen unted, etc. P			Not	Applicabl	e			x				Not Required
BET Instruments	Digital pressure flow measurement system		Not Ap	plicable		, 		±	4%	of	reading			0.	1 Pa (0.000	04 inwc, (0.002 psf)		x					Per Manufacturer's Requirements

	Discipline	NEBB In	strument M	laster L	ist (Effective Januar	y 1, 2025)	//	/s/5	131		Surd's	nd Juliana	
	Function	RANG	E		ACCURACY	RESOLUTION						Notes	Calibration Requirements
	Sound Level Meter & Octave	Sound Level Meters (SLM's) with time averaging and full octave band filters (optional third octave band filters)	As listed in Table 3-1.2. 3-1.2.3 which conforms Type 2 requirements sp ANSI S1.4	to Type 1 or	which conforms Append	ix A of the NEBB Instrument List							
Sound Instruments	Band Analyzer	Full Octave Filters	As listed in table 3-1.2.2 a (which conforms withANS Specification for Octave-B Fractional-Octave-Band An Filters	I S1.11 and and	which conforms Append	ix A of the NEBB Instrument List				x		*3	12 Months
	Acoustic Calibrator	As listed in Table 3-1.1(w	hich comforms to ANSI	S1.40 Specifica	tion for Acoustical Calibrators					x		*3	12 Months
Vibration Instruments	Vibration Analyzer / Meter, Real Time Analyzer & Spectrum Analyzer Accelerometers / Transducer	Velocity – 0.0005 to 10 Acceleration – 0.0001 Frequency Range – at Frequency Resolution Lines of resolution ≥ 8t Detection - Peak, Peak FFT Windowing- Hann Averaging – exponenti Shall have the following n Sensitivity (± 20%) ≥ 1	100 mils (0.0001 to 0.1 in 0 in/sec to 30 G's least 1 to 1000 Hz (60 to — at least 1.25 Hz (1 / 75 00 — to-Peak, RMS ing at least al or time and selectable inimum specifications: 00 mV/G typical	60,000 RPM) RPM) Minimu							x	*4	12 Months
	7.0000000000000000000000000000000000000	Frequency Range = 2	= ± 20 G peak or greater to 3000 Hz at ± 3dB										
NOTES													
*1		ion 2 - along with required instrumer	nt for CPT certification (A	All instruments	s in any of the chosen is required)								
*2		antation requirements for Court Add-	scuroment (CBA)										
*4		•											
*5	,	bration may be verified from a calibra	ted instrument with an	associated cali	bration form showing calibration readi	ings from both the calibrated instrument and	the dat	a logge	r. If a d	lata log	ger is	out of cali	bration and cannot be
*6	Accuracy of all illistrament is either stated	acy must be very small to maintain the	accuracy of the reading			ing a more accurate reading. Since a % of reading to maintain a re							
*7													
*8			p Documentation Therm	nal Camera mu	st be owned.								
*9	Sound level meters with vibration integral	tors are <i>NOT</i> acceptable for NEBB app	roved instrumentation f	or making vib	ration measurements. That is, 1/3 octa	ve or full octave vibration readings are not so	ıfficient	for NE	3B Sour	nd and	Vibra	tion work.	
*10				d/or accelerat	ion DO NOT meet NEBB minimum requ	irements for Vibration instrumentation.							-
	These types of meters may only be used if	the contract documents specifically a	llow for their usage.										
General Note:	Some local jurisdictions require qualified of	electrician for any electrical readings											
Calibration													
Requirement:	Instruments require a 3-point calibration,	traceable to National Institute of Stan	dards and Technology (NIST) or Nation	al Metrology Institute (NMI) unless otl	herwise noted.							

	Discipline				BET	Requ	uire	d Ins	trume	nta	tion (I	Effect	ive Ja	nuary	1, 2	2025)		
Fui	nction		F	RANG	E				ACCU	IRAC	Υ			RESC	LUT	ION		Notes	Calibration Requirements
		0	in wg	to	10	in wg		2%	of reading	±	0.001	in wg	0.001	in wg	<	1	in wg		Î Î
	Air Pressure		Ů			Ů			0			, ,	0.01	in wg	>	1	in wg		I 12 Months
Air	All Tressure	0	Pa	to	2500	Pa		2%	of reading	±	0.25	Pa	0.10	Pa	<	250	Pa		I II WOMEN'S
Alf		Ů			2500			270	or reading	_	0.25		1	Pa	>	250	Pa		
	Air Velocity Instrument	100	fpm	to	3500	fpm	±	5%	of reading	±	7	fpm	1	fpm					12 Months
	for Pitot Traverse	0.50	m/s	to	20	m/s	±	5%	of reading	±	0.04	m/s	0.01	m/s					12 MONTHS
Townsystems	Air Meter with probe	0	°F	to	200	°F	±	0.5%	of reading	+	2.0	°F	0.1	°F					12 Months
Temperature	Air Meter with probe	-20	°C	to	100	°C	±	0.5%	of reading	+	1.0	°C	0.1	°C					12 Months
BET / RCx	Temp Documentation	-4	°F	to	450	°F	±	2%		or	3.6	°F	0.1 @	86 °F	&	160 x	120		Per Manufacturer's
Instruments	Thermal Camera	-20	°C	to	232	°C	±	2%		or	2.0°C	°C	0.1 @	30 °C	&	160 x	120		Requirements
BET Instruments	Digital pressure flow measurement system		No	t Applica	able		±	4%	of reading				O).1 Pa (0.00)	04 inwc,	, 0.002 ps	f)		Per Manufacturer's Requirements

- *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

	Discipline					BSC	Requ	ıire	d Ins	trume	nta	tion (I	Effect	ive Ja	nuary	1, 2	2025)		
Fu	nction			R	ANG	E				ACCU	IRAC	Υ			RESC	LUT	ION		Notes	Calibration Requirements
			0	in wg	to	10	in wg		2%	of reading	±	0.001	in wg	0.001	in wg	<	1	in wg		
	Air Pressure													0.01	in wg	>	1	in wg		12 Months
			0	Pa	to	2500	Pa		2%	of reading	±	0.25	Pa	0.10	Pa Pa	>	250 250	Pa Pa		
Air	Air Velocity Instrument		100	fpm	to	3500	fpm	±	5%	of reading	±	7	fpm	1	fpm		250			
	for Pitot Traverse	ŀ	0.50	m/s	to	20	m/s	±	5%	of reading	±	0.04	m/s	0.01	m/s					12 Months
	Digital Direct Reading		100	cfm	to	2000	cfm	±	5%	of reading	±	7	cfm	1	cfm					
	Hood		50	I/s	to	944	I/s	±	5%	of reading	±	4	I/s	1	I/s					12 Months
	Air Madamorith and b		0	°F	to	200	°F	±	0.5%	of reading	+	2.0	°F	0.1	°F					12.Manusha
Temperature	Air Meter with probe		-20	°C	to	100	°C	±	0.5%	of reading	+	1.0	°C	0.1	°C					12 Months
remperature	Immersion Meter with		0	°F	to	200	°F	±	0.5%	of reading	+	2.0	°F	0.1	°F					12 Months
	probe		-20	°C	to	100	°C	±	0.5%	of reading	+	1.0	°C	0.1	°C					12 141011(113
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
Electrical	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
	Pressure Measurement		0.4	psi	to	200	psi		2%	of reading	±	1	psi	0.1	psi					12 Months
Hydronic			3	kPa	to	1400	kPa		2%	of reading	±	7	kPa	1	kPa					
	Δ Pressure measurement	}	0.4	psi	to	75 500	psi kPa		2% 2%	of reading	±	0.5 3.5	psi kPa	0.01	psi kPa					12 Months
			3	kPa	to	500	кча		2%	of reading	±	3.5	кРа	0.1	кча					

- *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 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.

Discipline	BSC Requ	uired Instrumentation (Effecti	ive January 1, 2025)		
Function	RANGE	ACCURACY	RESOLUTION	Notes	Calibration Requirements
	re qualified electrician for any electrical readings				
Calibration Requirement: Instruments require a 3-point	calibration, traceable to National Institute of Standards and Te	chnology (NIST) or National Metrology Institute (NMI) un	less otherwise noted.		

	Discipline		type shall provide for a minimum sampling flow rate of 28.3 L/min (1.0 cfm) and a threshold size discrimination of a minimum of 0.3 micrometer. The instrument shall have a threshold sensitivity of 0.01%-100% of the challenge aerosol particles and be capable of measuring concentrations minimum range from 10 to 90 micrograms/liter. Sample flow rate shall be 28.3 L/min (1 cfm). Readout shall be linear with an accuracy of 1% of of the selected range. ± 2% of reading with a flow rate of 28.3 L/min (1 cfm). A device that can aerosolize oil medium to serve as an artificial challenge for filter integrity testing of systems under 3,000 cfm, typically Laskin type, atomizer, etc.																	
Fu	nction			R	RANG	E				ACCU	IRAC	Υ			RESC	DLUT	ION		Notes	Calibration Requirements
	Air Pressure		0	in wg	to	10	in wg		2%	of reading	±	0.001	in wg					in wg in wg		12 Months
Air	All Tressure		0	Pa	to	2500	Pa		2%	of reading	±	0.25	Pa	0.10				Pa Pa		12 Monais
All	Air Velocity Instrument for Pitot Traverse									-					<u> </u>					12 Months
	Digital Direct Reading Hood		100	cfm	to	2000	cfm	±	5%	of reading	±	7	cfm	1	cfm					12 Months
CPT Instruments	Particle Counter			Ight scattering instrument with display or recording means to count and size discrete particles in air, as defined by ASTM F50-07. Instruments of this ype shall provide for a minimum sampling flow rate of 28.3 L/min (1.0 cfm) and a threshold size discrimination of a minimum of 0.3 micrometer in size														*7	12 Months	
	Aerosol Photometer	SNO	minimu	um range f	rom 10 t	o 90 micro	ograms/lite	er. Sam	ple flow	rate shall be 2	.8.3 L/n			•		-			*1 & *7	12 Months or 400 operating hours
CPT Option 1	Pneumatic Aerosol Generator	OPTIONS				ze oil med	lium to ser	ve as a	ın artificia	al challenge fo	r filter	integrity te	sting of sys	tems unde	r 3,000 cfm	ı, typical	lly Laskin	nozzle(s)	*1	Not Required
	Thermal Aerosol Generator	OF THE 2	A devic	ce that can	aerosol	ze oil med	lium to ser	ve as a	ın artificia	al challenge fo	r filter	integrity te	sting of sys	tems of 3,0	000 to 60,0	00 cfm			*1	Not Required
	Optical Particle Counter for Scan Test	1	every p	article tha	t is cour	ted. The	particle co	unter s	hall have	h a threshold a continuous r may also be	counti	ng mode or	r a sample t	ime that e	xceeds the			m for	*1 & *7	12 Months
CPT Option 2	Diluter	CHOOSE ONLY								ne aerosol cha exceed 100,00			f a filter un	der test. T	he dilution	ratio sh	ould be b	etween	*1	12 Months
	Aerosol Generator	СНС	A devic	ce that can	aerosol	ze oil or m	nicrosphere	e medi	um to sei	ve as an artifi	cial cha	llenge for f	ilter integri	ty testing.					*1	Not Required

- *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 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.

Discipline	CPT Requ	ired Instrumentation (Effecti	ve January 1, 2025)		
Function	RANGE	ACCURACY	RESOLUTION	Notes	Calibration Requirements
Calibration	re qualified electrician for any electrical readings calibration, traceable to National Institute of Standards and Tec	chnology (NIST) or National Metrology Institute (NMI) unl	ess otherwise noted.		

	Discipline					FHT	Requ	uire	d Ins	strume	nta	tion (I	Effect	ive Ja	nuary	1, 2	2025)		
Fu	ınction			F	RANG	E				ACCL	JRAC	Υ			RESC	LUT	ION	Notes	Calibration Requirements
Air	FHT Air Velocity		25 0.10	fpm m/s	to to	2500 12.7	fpm m/s	±	3% 3%	of reading of reading	±	3 0.02	fpm m/s	0.01	fpm m/s				12 Months
	Tracer Gas Detector		Minimi shall be hexaflu gas, an	um detecti um respon e configure uoride (SF6 id display i rement un	nse time: ed to me 5), or oth n concer	1 second asure sulf er approv ntration	The units ur	±	10%	of reading whicheve	or r is grea	0.025	ppm	0.01	ppm				12 Months
	Detection Calibrator		instrun	used to ca nent in acc acturer's s	cordance	with the	on			Not Ap	plicable	e			Not a	Applica	ble		12 Months When Required
	Local Challenge Source		neutra	that can g lly buoyan al velocity.	t smoke,					Not Ap	plicable	9			Not a	Applica	ble		Not Required
FUT leaders and a second	Large Challenge Source		neutra	that can g lly buoyan al velocity.	t smoke,		,			Not Ap	plicable	9			Not a	Applica	ble		Not Required
FHT Instruments	Ejector w/critical orifice		indicat	onform to ed in the o e appendia cations	urrent e	dition of N				Not Ap	plicable	e			Not a	Applica	ble		 Not Required
	Orifice Calibrator	Flow Meter	0	l/m	to	10	I/m	±	3%					0.1	I/m			*2	Calibrate to appropriate tracer gas
	Office Calibrator	Mechanical Device	0	l/m	to	15	I/m	±	0.1	I/m				0.1	I/m				12 Months
	Tracer Gas		(Minim	Hexafluori num purity ement gas						Not Ap	plicable	9			Not a	Applica	ble		SDS Required
	Mannequin	_	clothed hood c	d with a lal onfiguration	b coat. T ons; i.e. s	he height standard b	must be a	djustab I, ADA	ole to me height, flo	e of reasonab et the height oor mounted,	require	ments of th	e various		Not a	Applica	ble		Not Required

- *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 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.

Discipline	FHT Requ	uired Instrumentation (Effect	ive January 1, 2025)		
Function	RANGE	ACCURACY	RESOLUTION	Notes	Calibration Requirements
General Note: Some local jurisdictions requir	e qualified electrician for any electrical readings				
Requirement: Instruments require a 3-point	calibration, traceable to National Institute of Standards and Te	echnology (NIST) or National Metrology Institute (NMI) un	lless otherwise noted.		

	Discipline				RC	x Req	uir	ed In	strum	enta	ation	(Effect	tive Ja	anuar	y 1,	2025	5)		
F	unction		R	ANG	E				ACCU	IRAC	Υ			RESC	LUT	ION		Notes	Calibration Requirements
	Air Pressure	0	in wg	to	10	in wg		2%	of reading	±	0.001	in wg	0.001 0.01	in wg in wg	>	1	in wg in wg		12 Months
A for	All Plessure	0	Pa	to	2500	Pa		2%	of reading	±	0.25	Pa	0.10	Pa Pa	< >	250 250	Pa Pa		12 Months
Air	Air Velocity Instrument	100	fpm	to	3500	fpm	±	5%	of reading	±	7	fpm	1	fpm					12 Months
	for Pitot Traverse	0.50	m/s	to	20	m/s	±	5%	of reading	±	0.04	m/s	0.01	m/s					
	Digital Direct Reading Hood	100 50	cfm I/s	to	2000 944	cfm I/s	±	5% 5%	of reading of reading	±	7	cfm I/s	1	cfm I/s					12 Months
		0	°F	to	200	°F	±	0.5%	of reading	+	2.0	°F	0.1	°F					!
-	Air Meter with probe	-20	°C	to	100	°C	±	0.5%	of reading	+	1.0	°C	0.1	°C					12 Months
Temperature		0	°F	to	200	°F	±	0.5%	of reading	+	2.0	°F	0.1	°F					40.44!
	Immersion Meter with probe	-20	°C	to	100	°C	±	0.5%	of reading	+	1.0	°C	0.1	°C					12 Months
Humidity	Humidity Meter (w/Probe, if req'd)	10	% RH	to	90	% RH		3%	RH				1%						12 Months
et a dad	Amperage Measurement	0.1	AC Ampere	to	100	AC Amperes		2%	of reading	±	5	digits	0.1	AC Ampere					12 Months
Electrical	Voltage Meter - True RMS	1	VAC	to	600	VAC		2%	of reading	±	5	digits	1	Volt				1	12 Months
Rotation	Rotation Measurment	60	rpm	to	5000	rpm		2%	of reading	±	2	rpm	1	rpm					12 Months
	S	0.4	psi	to	200	psi		2%	of reading	±	1	psi	0.1	psi					42.Mansha
Hydronic	Pressure Measurement	3	kPa	to	1400	kPa		2%	of reading	±	7	kPa	1	kPa					12 Months
Hydronic	Δ Pressure measurement	0.4	psi	to	75	psi		2%	of reading	±	0.5	psi	0.01	psi					12 Months
	A Fressure measurement	3	kPa	to	500	kPa		2%	of reading	±	3.5	kPa	0.1	kPa					12 Worth
	Receptacle Circuit Tester	125	VAC				No	t Applicat	ole				Not App	olicable					Not Required
	Voltage Detector	50	VAC	to	1000	VAC	No	t Applicat	ole				Not App	olicable					Not Required
RCx Instruments	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					Icquirements
BET / RCx Instruments	Temp Documentation Thermal Camera	-4 -20	°F °C	to	450 232	°F °C	±	2%		or or	3.6 2.0°C	°F °C	0.1 @	86 °F	& &	160 x		*8	Per Manufacturer's Requirements

					RC	x Req	uir	ed In	strum	enta	ation	(Effect	tive Ja	anuar	y 1,	2025)			
Function			RANGE					ACCURACY							RESOLUTION					Calibration Requirements
	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 Ix	to to	3000 30000	FC Ix	±	10 100	FC lx				2	FC Ix				Qty = 1	See Note 5
	Electrical		0	VAC Amperes	to	600	VAC Amperes	0	2%	of reading			VAC Ampere	1.0	VAC Ampere				Qty = 2	See Note 5
			U	Amperes	ιο	100	Amperes	U	470	orreading			Ampere	0.01	in wc	<	1	in wc		<u> </u>
			0	in wc	to	0.25	in wc	±	1%	full scale				0.1	in wc	>	1	in wc		I I
Data Loggers	Static Pressure - Low		0	Pa	to	60	Pa	±	1%	full scale				2.5	Pa	<	250	Pa	Qty = 1	See Note 5
														25	Pa	>	250	Pa		! !
			0	in wc	to	6.00	in wc	±	1%	full scale				0.01	in wc	<	1	in wc		! !
	Static Pressure - High													2.5	in wc Pa	> <	250	in wc Pa	Qty = 1	See Note 5
			0	ра	to	1500	Pa	±	1%	full scale				2.5	Pa	>	250	Pa	1]]]
	Water Pressure		0	psi	to	100	psi	±	1%	of reading	psi			1.0	psi				Qty = 1	See Note 5
	Trace Hessule		0	kPa	to	700	kPa	±	1%	of reading	kPa			0.1	kPa				αι, - 1	Jee note 3
	Temperature		-4	°F	to	150	°F	±	1	°F	@	32-122	°F	0.05	°F	@	77	°F	Qty = 8	See Note 5
	Humidity		-20 10	°C % RH	to	65 90	°C % RH	± 0	0.35 2.5%	°C RH	@	0-50	°C	0.03	°C RH	@	25	°C	Qty = 8	See Note 5
	Event		10				/0 NH	U	2.3/0			<u> </u>	l	1/0					Qty = 2	
		Not Applicable						Not Applicable						Not Applicable					Not required	

	Discipline				RC	x Req	quired Instrumentation (Effective January 1, 2025)												
F	unction		F	RANG	Ε				ACCL	JRAC	Υ			RESC	LUT	ION		Notes	Calibration Requirements
	Thermal Infrared Thermometer	-4	°F	to	500	°F	±	2%	of reading	±	4	°F	0.5	°F					Per Manufacturer's
		-20	°C	to	260	°C	±	2%	of reading	±	2	°C	0.2	°C					Requirements
RCx Instruments	TDS Meter	0	μ	to	1000	μ	±	2%	full scale				1.0%					Per Manufacturer's	
RCX instruments		0	ppm	to	1000	ppm	±	2%	full scale				1.070						Requirements
	Capacitance Moisture Meter	0%	0	to	100%		±	5%					0.75	inches	Pen	etration			Per Manufacturer's Requirements

- *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.

	Discipline		SM Required Instrumentation (Effective January 1, 2025)											
Fu	nction	RANG	E		ACCURACY	RESOLUTION	Notes	Calibration Requirements						
	Sound Level Meter & Octave Band Analyzer	Sound Level Meters (SLM's) with time averaging and full octave band filters (optional	As listed in Table 3 and 3-1.2.3 which Type 1 or Type 2 re specified in ANSI S:	conforms to equirements	which conforms Append		12 Months							
Sound Instruments		Full Octave Filters	As listed in table 3-1.2 (which conforms with Specification for Octa Fractional-Octave-Bar Filters	ANSI S1.11 ve-Band and	which conforms Appendi	ix A of the NEBB Instrument List	*3	12 Months						
	Acoustic Calibrator	As listed in Table 3-1.1 (w	As listed in Table 3-1.1 (which comforms to ANSI S1.40 Specification for Acoustical Calibrators											

- *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 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: Calibration

Some local jurisdictions require qualified electrician for any electrical readings

Calibration

	TAB Required Instrumentation (Effective January 1, 2025)																			
Function			RANGE						ACCURACY						RESOLUTION					Calibration Requirements
			0	in wg	to	10	in wg		2%	of reading	±	0.001	in wg	0.001	in wg	<	1	in wg		
	Air Pressure		_	8									8	0.01	in wg	>	1	in wg		12 Months
			0	Pa	to	2500	Pa		2%	of reading	±	0.25	Pa	0.10	Pa	<	250	Pa	ļ	
Air														1.0	Pa	>	250	Pa		
	Air Velocity Instrument		100	fpm	to	3500	fpm	±	5%	of reading	±	7	fpm	1	fpm					12 Months
	for Pitot Traverse		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	I/s	to	944	I/s	±	5%	of reading	±	4	I/s	1	I/s					
	Air Meter with probe		0	°F	to	200	°F	±	0.5%	of reading	+	2.0	°F	0.1	°F					12 Months
Temperature	·		-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			-	ļį	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%					i	12 Months
Electrical	Amperage Measurement		0.1	AC Ampere	to	100	AC Amperes		2%	of reading	±	5	digits	0.1	AC Ampere				j	12 Months
Licetrical	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				İ	12 Months
	Pressure Measurement		0.4	psi	to	200	psi		2%	of reading	±	1	psi	0.1	psi					12 Months
Hydronic			3	kPa	to	1400	kPa		2%	of reading	±	7	kPa	1.0	kPa					
•	Δ Pressure measurement		0.4	psi kPa	to to	75 500	psi kPa		2% 2%	of reading of reading	±	0.5 3.5	psi kPa	0.01	psi kPa					12 Months

- *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.

16

- *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

	Discipline	VM Required Instrumentation (Effective January 1, 2025)												
Fu	nction	RANGE	ACCURACY	RESOLUTION	Notes	Calibration Requirements								
Vibration Instruments	Vibration Analyzer / Meter, Real Time Analyzer & Spectrum Analyzer	Shall meet the minimum requirements as specified Displacement − 0.1 to 100 mils (0.0001 to 0.2 Velocity − 0.0005 to 10 in/sec Acceleration − 0.0001 to 30 G's Frequency Range − at least 1 to 1000 Hz (60 frequency Resolution − at least 1.25 Hz (1 / Lines of resolution ≥ 800 Detection - Peak, Peak-to-Peak, RMS FFT Windowing- Hanning at least Averaging − exponential or time and selectate	L inches) to 60,000 RPM) 75 RPM) Minimum		*4	12 Months								
	Accelerometers / Transducer	Shall have the following minimum specifications: Sensitivity (± 20%) ≥ 100 mV/G typical Measurement Range = ± 20 G peak or greate Frequency Range = 2 to 3000 Hz at ± 3dB	er			12 Months								

- *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 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