	Discipline			NEB	B In	strun	nent	Ma	ster	List (Ef	fec	tive J	anuar	y 1, 2	.024)					/sj		\$/ st/	\$5 - SII	i ida	ille	
Function			RANGE						ACCURACY						RESC	OLU	TION							No	otes	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	×	х	C	x	X]]]	12 Months
Air	Air Velocity Instrument for Pitot Traverse		100 0.50	fpm m/s	to to	3500 20	fpm m/s	± ±	5% 5%	of reading of reading	±	7	fpm m/s	1 0.01	fpm m/s				×	х	(x	x		- 	12 Months
	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						x				 	12 Months
	Digital Direct Reading Hood		100 50	cfm I/s	to to	2000 944	cfm I/s	±	5% 5%	of reading of reading	±	7	cfm I/s	1	cfm I/s					x x	(x	x		I I	12 Months
Temperature	Air Meter with probe		-20	°F °C	to to	200 100	°F °C	±	0.5% 0.5%	of reading of reading	+	2.0	°F °C	0.1	°F °C				×	x		x	x]]]	12 Months
·	Immersion Meter with probe		-20	°F °C	to to	200 100	°F °C	±	0.5%	of reading of reading	+	1.0	°F °C	0.1	°F °C					x		x	x		i	12 Months
Humidity	Humidity Meter (w/Probe, if req'd)		10	% RH	to	90	% RH	±	3%	RH				1%						x		x	x		I I	12 Months
Electrical	Amperage Measurement Voltage Meter - True RMS		0.1	AC Ampere VAC	to to	100 600	AC Amperes VAC		2% 2%	of reading of reading	±	5	digits	0.1	AC Ampere Volt				┫	x		x	x]] [12 Months
Rotation	Rotation Measurment		60	rpm	to	5000	rpm		2%	of reading	±	2	rpm	1	rpm					x		x	x		 	12 Months
Hydronic	Pressure Measurement		0.4	psi kPa	to to	200 1400	psi kPa		2% 2%	of reading of reading	±	1 7	psi kPa	0.1 1.0	psi kPa					x		x	x		I	12 Months
,,,,,,	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					x		x	x		į Į	12 Months
	Receptacle Circuit Tester		125	VAC		ı				Not App	plicabl	e			Not	Appli	icable					x				Not Required
RCx Instruments	Voltage Detector		50	VAC	to	1000	VAC		l	Not App	plicabl					Appli	icable	1				x			i	Not Required
	Light Level Measurement		0	FC lx	to to	4000 40000	FC Ix	±	3% 3%	of reading of reading	+	5% 5%	full scale full scale	1.0	FC Ix							x			į	Per Manufacturer's Requirements
BET / RCx Instruments	Temp Documentation Thermal Camera		-4 -20	°F °C	to to	450 232	°F °C	±	2%		or or	3.6 2.0°C	°F °C	0.1 @ 8		&	160 x		×			x		•	*8	Per Manufacturer's Requirements

	Discipline			NEB	B In	strur	nent	Ma	aster	List (Ef	fect	tive J	anuar	y 1, 2	.024)				//			RC COUR	July julia just	
Function		RANGE						ACCURACY						RESC	DLU	TION						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 Ix	to to	3000 30000	FC Ix	±	10 100	FC Ix				0	FC Ix						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				Ħ		x		Qty = 2	See Note 5
	Static Pressure - Low		0	in wc	to	0.25	in wc	±	1%	full scale				0.01 0.1 2.5	in wc in wc	< > <	1 1 250	in wc in wc			x		Qty = 1	See Note 5
Data Loggers			0	Pa in wc	to	6.00	Pa in wc	±	1%	full scale				25 0.01	Pa in wc	> <	250 1	Pa in wc						
	Static Pressure - High		0	pa	to	1500	Pa	±	1%	full scale				0.1 2.5 25	in wc Pa Pa	> < >	1 250 250	in wc Pa Pa			x		Qty = 1	See Note 5
	Water Pressure		0	psi kPa	to	100 700	psi kPa	±	1%	of reading of reading	+-+			1.0 0.1	psi kPa				$\ \cdot \ $		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	@	77 25	°F °C			x		Qty = 8	See Note 5
	Humidity		10	% RH	to	90	% RH	Ì	2.5%	RH				1%	RH						x		Qty = 8	See Note 5
	Event			Not	Applic	able			Not Applicable						Not Applicable						x		Qty = 2	Not required
	Thermal Infrared Thermometer		-4 -20	°F °C	to	500 260	°F	±	2% 2%	of reading		4	°F °C	0.5	°F °C						x			Per Manufacturer's Requirements
RCx Instruments	TDS Meter		0	μ	to	1000	μ	±	2%	full scale				1.0%							x			Per Manufacturer's Requirements
	Capacitance Moisture Meter		0%	ppm	to	1000	ppm	±	5%	full scale				0.75	inches	Р	enetratio	n			x			Per Manufacturer's Requirements
CPT Instruments	Particle Counter			pe shall pro						to count and 8.3 L/min (1.0										x			*7	12 Months

		NEBB Instrument Master List (Effective January 1, 2024)													/şi					
	Function			RAN	GE				ACCU	RACY			RESOI	LUTION			ĺ		Notes	Calibration Requirements
	Aerosol Photometer	OPTIONS	The instrument shall have a threshold sensitivity of 10 ⁻³ micrograms/liter of challenge aerosol particles and be capable of measuring concentrations over a range of 105 times the threshold sensitivity. Sample flow rate shall be 28.3 L/min (1 cfm). Readout shall be either linear with an accuracy of 1% of full scale of the selected range. ± 2% of reading ± 0.1 psi 0.04 psi (US)													1	x		*1 & *7	12 Months or 400 operating hours
CPT Option 1	Pneumatic Aerosol Generator	7	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 nozzle(s) type, thermal generator, atomizer, etc.													1	x		*1	Not Required
	Thermal Aerosol Generator		A devi	A device that can aerosolize oil medium to serve as an artificial challenge for filter integrity testing of systems of 3,000 to 60,000 cfm												1	x		*1	Not Required
	Optical Particle Counter for Scan Test	ONLY 1 OF THE	A particle counter should have a 1.0 cfm flow rate with a threshold sensitivity of at least 0.3 µm. The counter must have an audible alarm for every particle that is counted. The particle counter shall have a continuous counting mode or a sample time that exceeds the time required to completely scan the area of the filter under test. This counter may also be used for Cleanliness Classification above.													,	x		*1 & *7	12 Months
CPT Option 2	Diluter	CHOOSE OF	A device used with the scanning particle counter to sample the aerosol challenge upstream of a filter under test. The dilution ratio shall be between 300 – 1,000:1. The resulting counts after dilution should not exceed 100,000 particles.													1	x		*1	12 Months
	Aerosol Generator	СНС		A device that can aerosolize oil or microsphere medium to serve as an artificial challenge for filter integrity testing. A low output (defined as one which supplies of $< 5 \times 10^{-9}$ particles /min of ≥ 0.3 um in size) or a normal output generator may be used.												2	x		*1	Not Required
	Tracer gas Detector		Minim shall b hexaflu gas, an	um detection rar um response tim e configured to n uoride (SF6), or o d display in conc rement units (PP	e: 1 secono neasure sul ther appro entration	l The units fur	±	10%	of reading whichever	or 0.02	5 ppm	0.01 ppm					x			12 Months
	Detection Calibrator		instrur	used to calibrate nent in accordan acturer's specific	ce with the			Not Applicable Not Applicable									x			12 Months When Required
	Local Challenge Source		neutra	that can generat lly buoyant smok al velocity.		-			Not Ap	plicable					x			Not Required		
FHT	Large Challenge Source		neutra	that can generat lly buoyant smok al velocity.				Not Applicable Not Applicable									x			Not Required
Instruments	Ejector w/critical orifice		indicat PS. Se	onform to the re- ed in the current e appendix D for cations	edition of	NEBB FHT			Not Ap	Not A	pplicable			x			Not Required			
	Orifice Calibrator	Flow Meter	0	I/m to	10	I/m	±	3%				0.1	I/m				x		*2	Calibrate to appropriate tracer gas
		Mechanical Device	0	I/m to		I/m	±	0.1	I/m			0.1	I/m							12 Months
	Tracer Gas		(Minim	Hexafluoride Cor num purity of 999 ement gas	_				Not Ap	plicable			Not A	oplicable			x			SDS Required
	Mannequin		be clot various	hed with a lab co hood configura	oat. The he	ight must bacandard ber	e adji nch ho	rms and shall be of reasonable human proportions and eadjustable to meet the height requirements of the ch hood, ADA height, floor mounted, etc. Probe shall on the various heights.									x			Not Required
BET Instruments	Digital pressure flow measurement system		Not Ap	plicable			±	4%	of reading			0.	1 Pa (0.0004	inwc, 0.002 psf)	х					Per Manufacturer's Requirements

	Discipline	NEBB In	strument N	\$\\\ \$\\\ \$\\\ \$\\\ \$\\\ \$\\\ \$\\\ \$\\										
	Function	RANG	E		ACCURACY	RESC	LUTION						Notes	Calibration Requirements
	Sound Level Meter & Octave	Sound Level Meters (SLM's) with time averaging and full octave band filters	with time averaging and full and 3-1.2.3 which conforms to which conforms Appendix A of the NFRR Instrument List											
Sound Instruments	Band Analyzer	Full Octave Filters	As listed in table 3-1.2.2 (which conforms withAl Specification for Octave Fractional-Octave-Band Filters	NSI S1.11 -Band and	which conforms Apper				x		*3	12 Months		
	Acoustic Calibrator	As listed in Table 3-1.1 (v	As listed in Table 3-1.1 (which comforms to ANSI S1.40 Specification for Acoustical Calibrators											12 Months
Vibration Instruments	Vibration Analyzer / Meter, Real Time Analyzer & Spectrum Analyzer Accelerometers / Transducer	Velocity – 0.0005 to 1 Acceleration – 0.0001 Frequency Range – at Frequency Resolution Lines of resolution ≥ 8 Detection - Peak, Peak FFT Windowing- Hann Averaging – exponent Shall have the following r Sensitivity (± 20%) ≥ 1	100 mils (0.0001 to 0.1 0 in/sec to 30 G's least 1 to 1000 Hz (60 t – at least 1.25 Hz (75 F 00to-Peak, RMS ing at least ial or time and selectab minimum specifications .00 mV/G typical = ± 20 G peak or greate	to 60,000 RPM RPM) Minimun le to at least for:	n							x	*4	12 Months 12 Months
NOTES	CPT Option - choose only Option 1 OR Opt			n (All instrume	ents in any of the chosen is required)	1	1							
*2				,	. ,									
*3	Refer to Appendix A for complete instrum	nentation requirements for Sound Me	asurement (SM)											
*4					·									
*5				n associated o	calibration form showing calibration re	adings from both the c	alibrated instrument an	d the d	ata log	ger. I	f a data	a logge	r is out of c	alibration and cannot be
*6	adjusted, the logger must be sent back to Accuracy of an instrument is either stated	<u> </u>	•	na NEDD has	chacan parcentage of reading due to 1	hoing a more accurate	roading Since a % of re	adine s	arror b	00000	e emel	lor oc	ou road ==	or the lowest part of the
•	scale the instrument resolution and accura		_	-		_	_							
	readings we are never operating at the ex		-	5			J			.,				. ,
*7	Calibrated per Industry/Manufacturer sta	ndards.												
*8	Timis may own or rent remp Botamentat		•											
*9	_	•	•					sufficie	nt for I	NEBB S	Sound	and Vib	ration wor	k.
*10	· · · · · · · · · · · · · · · · · · ·		•	and/or acceler	ration DO NOT meet NEBB minimum r	equirements for Vibrat	ion instrumentation.	\perp			$\perp \downarrow \downarrow$		-	
	These types of meters may only be used if	<u> </u>	allow for their usage.											
General Note:		electrician for any electrical readings												
Calibration														
Requirement:	Instruments require a 3-point calibration,	traceable to National Institute of Sta	ndards and Technology	(NIST) or Nat	ional Metrology Institute (NMI) unles	otherwise noted.								