

Report By:

National TAB
1329 E. KEMPER ROAD
SUITE 4210
CINCINNATI, OH 45246



Report: Certified Test, Adjust, and Balance Report

Function: Test, Adjust, & Balance

Date: 08/08/2024

PROJECT

Maverik (Rocklin, CA)

Sunset Blvd & Lonetree Blvd

Rocklin, CA

Client

PARAMOUNT MECHANICAL

8525 23RD AVE

STE 108

SACRAMENTO, CA 95826

National TAB

Project: Maverik (Rocklin, CA)

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Maverik (Rocklin, CA)
PROJECT TEAM MEMBERS

Architect/Engineer/Consultant:

Nielson Engineering, Inc.
156 North 12th Ave
Pocatello, ID, 83201

Mechanical Contractor:

PARAMOUNT MECHANICAL
8525 23RD AVE STE 108
SACRAMENTO, CA, 95826



CERTIFICATION



PROJECT: Maverick (Rocklin, CA)

The data presented in this report is a record of system measurements and final adjustments that have been obtained in accordance with the current edition of the NEBB Procedural Standard for Testing, Adjusting and Balancing of Environmental Systems. The measurements shown, and the information given, in this report are certified to be accurate and complete, at the time and date information was gathered. Any variances from design quantities, which exceed NEBB tolerances, are noted in the TAB report project summary.

NEBB TAB FIRM: National TAB - Kansas City

REGISTRATION NO: 3768

CERTIFIED BY: Will Turnbough

DATE: 7/30/2024

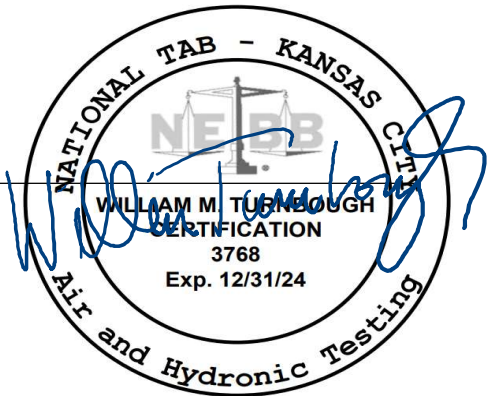
Submitted and Certified by:

NEBB TAB FIRM: National TAB - Kansas City

TAB PROFESSIONAL: Will Turnbough

REGISTRATION NO: CP-24289

CERTIFICATION EXP: 12/31/2024



Project Summary

RTU's (Roof Top Units) w/ Diffusers

Each of the RTU's were measured at their terminal devices or via traverse to establish a total flow for that unit. Each RTU was adjusted to within tolerance of the engineer's design flow. Each outlet was then adjusted to within tolerance of the design flow. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. The outside air damper was adjusted until the airflow was within the design requirements. Any equipment that fell outside of that tolerance is noted throughout the report.

General Exhaust Fans w/ Grilles

The general exhaust fans were measured by reading each air device with a flow hood. The total airflow for each fan is equivalent to the sum of these readings. Fan speed was then adjusted so that the airflow was within tolerance of design. Each terminal device was balanced to within tolerance of the design volume using the installed volume dampers. Any equipment that fell outside of this tolerance is noted throughout the report.

National TAB

Project: Maverik (Rocklin, CA)

System/Unit: AHU/RTU



Asset: RTU-1

AREA:RETAIL

Unit Data		
	Design	Actual
MFG	NA	TRANE
Serial Num	-	224014626L
Model Num	NA	YHC120F3RLA2900D1A1A
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num PreFilter 1	-	2/3
PreFilter Size 1	-	20X30X2/20X25X2

Test Data		
	Design	Actual
SF CFM	3600	3589
SF RPM	-	1115
RA CFM	-	2997
OA CFM	580	592
RL Voltage	-	206
RL Amperage	-	2.7
OA Damper Position	-	17%
Brake Horse Power	-	1.02

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	2.75
Motor Rpm	-	1615
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	7.3
Service Factor	-	NL

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.41"
Fan Suction SP	-	-0.58"
Fan Discharge SP	-	0.17"
Total ESP	0.5	0.58"
Fan Total SP	-	0.75"

Drive Data	
	Actual
Motor Sheave Size	N/A
Motor Bore Size	N/A
Motor Sheave SetPt	N/A
Fan Sheave Size	N/A
Fan Sheave Bore	N/A
Belt CL Distance	N/A
Num of Belts	N/A
Belt Size	N/A

Completed By: Zack Eismin on 07/30/2024

National TAB

Project: Maverik (Rocklin, CA)

AHU/RTU



Diffuser Supply (GRD)

RTU-1/RETAIL

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1-1	RETAIL	E	10X10	400	301	381	95.3
1-2	RETAIL	E	10X10	600	772	595	99.2
1-3	RETAIL	D	12X12	500	421	494	98.8
1-4	RETAIL	D	12X12	500	445	507	101.4
1-5	RETAIL	D	12X12	500	572	482	96.4
1-6	RETAIL	D	12X12	500	581	512	102.4
1-7	RETAIL	D	12X12	600	531	618	103.0
Total				3600	3623	3589	99.69%

National TAB

Project: Maverik (Rocklin, CA)

System/Unit: AHU/RTU



Asset: RTU-2

AREA:RETAIL

Unit Data		
	Design	Actual
MFG	NA	TRANE
Serial Num	-	224014628L
Model Num	NA	YHC120F3RLA2900D1A1A
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num PreFilter 1	-	2/3
PreFilter Size 1	-	20X30X2/20X25X2

Test Data		
	Design	Actual
SF CFM	3600	3689
SF RPM	-	1127
RA CFM	-	3086
OA CFM	580	603
RL Voltage	-	205
RL Amperage	-	2.45
OA Damper Position	-	17%
Brake Horse Power	-	0.95

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	2.75
Motor Rpm	-	1615
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	7.3
Service Factor	-	NL

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.45"
Fan Suction SP	-	-0.63"
Fan Discharge SP	-	0.21"
Total ESP	0.5	0.66"
Fan Total SP	-	0.84"

Drive Data	
	Actual
Motor Sheave Size	N/A
Motor Bore Size	N/A
Motor Sheave SetPt	N/A
Fan Sheave Size	N/A
Fan Sheave Bore	N/A
Belt CL Distance	N/A
Num of Belts	N/A
Belt Size	N/A

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National TAB

Project: Maverik (Rocklin, CA)

AHU/RTU



Diffuser Supply (GRD)

RTU-2/RETAIL

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
2-1	RETAIL	E	10X10	400	457	407	101.8
2-2	RETAIL	E	10X10	600	701	589	98.2
2-3	RETAIL	D	12X12	500	498	510	102.0
2-4	RETAIL	D	12X12	500	603	532	106.4
2-5	RETAIL	D	12X12	500	571	521	104.2
2-6	RETAIL	D	12X12	500	421	519	103.8
2-7	RETAIL	D	12X12	600	631	611	101.8
Total				3600	3882	3689	102.47%

National TAB

Project: Maverik (Rocklin, CA)
System/Unit: AHU/RTU



Asset: RTU-3

AREA:102

Unit Data		
	Design	Actual
MFG	NA	TRANE
Serial Num	-	224011264L
Model Num	NA	YHC074F3RLA2900D1A1A
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37.5X24
Num PreFilter 1	-	4
PreFilter Size 1	-	20X25X2

Test Data		
	Design	Actual
SF CFM	2400	2456
SF RPM	-	775
RA CFM	-	2250
OA CFM	300	289
RL Voltage	-	206
RL Amperage	-	1.05
OA Damper Position	-	15%
Brake Horse Power	-	0.4

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	2.75
Motor Rpm	-	1615
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	7.3
Service Factor	-	NL

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.17"
Fan Suction SP	-	-0.27"
Fan Discharge SP	-	0.16"
Total ESP	0.5	0.33"
Fan Total SP	-	0.43"

Drive Data	
	Actual
Motor Sheave Size	N/A
Motor Bore Size	N/A
Motor Sheave SetPt	N/A
Fan Sheave Size	N/A
Fan Sheave Bore	N/A
Belt CL Distance	N/A
Num of Belts	N/A
Belt Size	N/A

Completed By: Zack Eismin on 07/30/2024

National TAB

Project: Maverik (Rocklin, CA)

AHU/RTU



Diffuser Supply (GRD)

RTU-3/102

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3-1	107	M	12X12	430	322	409	95.1
3-2	107	M	12X12	430	437	421	97.9
3-3	MENS RR	C	10X10	320	324	331	103.4
3-4	WOMENS RR	C	10X10	320	350	341	106.6
3-5	HALL	C	10X10	400	162	422	105.5
3-6	103	C	10X10	300	645	322	107.3
3-7	102	B	10X10	200	320	210	105.0
Total				2400	2560	2456	102.33%

National TAB

Project: Maverik (Rocklin, CA)

System/Unit: FAN - Exhaust



Asset: EF-1

AREA:MENS RR

Unit Data		
	Design	Actual
MFG	NA	GREENHECK
Model Num	NA	CUE-090-VG-1-19-X
Serial Num	-	23626727
Type	CRE UPBLAST	CRE UPBLAST

Test Data		
	Design	Actual
CFM	420	427
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.25	0.29"

Motor Data		
	Design	Actual
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	-	1/10
Motor Rpm	-	1750
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.5
Service Factor	-	NL

Completed By: Zack Eismin on 07/30/2024

National TAB

Project: Maverik (Rocklin, CA)

System/Unit: FAN - Exhaust



Asset: EF-2

AREA:WOMENS RR

Unit Data		
	Design	Actual
MFG	NA	GREENHECK
Model Num	NA	CUE-090-VG-1-19-X
Serial Num	-	23626752
Type	CRE UPBLAST	CRE UPBLAST

Test Data		
	Design	Actual
CFM	420	415
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.25	0.27"

Motor Data		
	Design	Actual
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	-	1/10
Motor Rpm	-	1750
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.5
Service Factor	-	NL

Completed By: Zack Eismin on 07/30/2024

National TAB

Project: Maverik (Rocklin, CA)

System/Unit: FAN - Exhaust



Asset: EF-3

AREA:

Unit Data		
	Design	Actual
MFG	NA	GREENHECK
Model Num	NA	CUE-095-VG-1-19-X
Serial Num	-	23626756
Type	CRE UPBLAST	CRE UPBLAST

Test Data		
	Design	Actual
CFM	800	815
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.25	0.31"

Motor Data		
	Design	Actual
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	-	1/6
Motor Rpm	-	1750
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	2.3
Service Factor	-	NL

Completed By: Zack Eismin on 07/30/2024

Abbreviation List

A = Area (ft ²)	S.F. = Service Factor
AHU = Air Handling Unit	SF = Supply Fan
A _k = Effective Area	SP = Static Pressure
BHP = Brake Horsepower (IP) HP	SR = Supply Register
Btu = British Thermal Unit	T = Temperature
Btu/h = Btuh = BTUH = BTU/Hour	T _{ma} = Mixed Air Temperature
CL = Center Distance (used in belt formula)	T _{oa} = Outside Air Temperature
CD = Ceiling Diffuser	T _{ra} = Return Air Temperature
CF = Correction Factor	H = Head (in wc, ft wc, psi)
CFM = Volumetric Flow: Cubic Feet Per Minute	h = Enthalpy
CO ₂ = Carbon Dioxide	HP = Horsepower
CO = Carbon Monoxide	hr = Hour
C _v = Flow Constant	K _v = Flow constant (SI)
d = Diameter (in.) IP	kW = Kilowatt = 1000 Watts
Δ = Difference or Change (Final - Initial)	LAT = Leaving Air Temperature
DB = Dry Bulb	lb = Pounds
EA = Exhaust Air	LWT = Leaving Water Temperature
EAT = Entering Air Temperature	ma = Mixed Air
EF = Exhaust Fan	MIN = Minimum
Eff = Efficiency	MAX = Maximum
EG = Exhaust Grille	N/A = Not Applicable
ESP = External Static Pressure	NA = No Access
EWT = Entering Water Temperature	NL = Not Listed
°F = Degrees Fahrenheit, °F	NPSHA = Net Positive Suction Head Available
FPB = Fan Powered Box	NS = Not Specified
FLA = Full Load Amps	OA = Outside Air
fpm = Feet per Minute (fpm)	OAT = Outside Air Temperature
ft = Foot	PD = Sheave Pitch Diameter
gal = Gallons	P.D. = Pressure Drop
GPM = Gallons Per Minute (GPM)	PF = Power Factor
h = Enthalpy (BTU/lb dry air)	SG = Supply Grille
P = Pressure	SR = Supply Register
ppm = parts per million	TP = Total Pressure
psi = Pounds Per Square Inch	T _{ra} = Return Air Temperature
psid = PSI Differential	TS = Tip Speed (fpm) IP, (m/s) SI
r = Radius (in)	TSP = Total Static Pressure
% _{ra} = % of Return Air	V = Velocity
RA = Return Air	VAV = Variable Air Volume
RAT = Return Air Temperature	VD = Volume Damper
RF = Return Fan	VFD = Variable Frequency Drive
RG = Return Grille	W = Watt
RH = Relative Humidity	WB = Wet Bulb
RPM = Revolutions Per Minute	wg = wc = water gauge = water column
RTU = Roof Top Unit	WHP = Water Horsepower (IP)
SA = Supply Air	ω = Humidity Ratio



National TAB

Testing, Adjusting, and Balancing Equipment



Function		Range	Minimum Accuracy	Instrument Information	Calibration Date	Date Due
AIR	AIR PRESSURE	0 in wg to 10 in wg	2% +/- 0.001 in wg	TSI EBT731 EBT732117009	9/7/2023	9/7/2024
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	TSI EBT731 EBT732117009	9/7/2023	9/7/2024
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 5 % +/- 7 cfm	TSI EBT731 EBT732117009	9/7/2023	9/7/2024
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/29/2023	9/29/2024
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/29/2023	9/29/2024
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/29/2023	9/29/2024
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/29/2023	9/29/2024
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/29/2023	9/29/2024
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	9/29/2023	9/29/2024
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper SRH77A S/N 100516003	9/29/2023	9/29/2024
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Klein Tools CL800 S/N 1220C-C1	9/29/2023	9/29/2024
	AMPERAGE MEASUREMENT	0 Amperes to 100 Amperes	2 % reading +/- 5 digits	Klein Tools CL800 S/N 1220C-C1	9/29/2023	9/29/2024
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	Shimpo DT 207Lp S/N D1690029R	9/29/2023	9/29/2024



National TAB

Testing, Adjusting, and Balancing Equipment



Report of Calibration

Kansas City Calibration Lab., Inc.
8847 Long Street
Lenexa, Kansas 66215

Telephone: (913) 541-0629 Internet: www.kccl.com Email: service@kccl.com

UNIT UNDER TEST: TSI EBT731 Differential Digital Meter	TEST RESULT: PASS
SERIAL NUMBER: EBT732117009	PERFORMED ON: 9/7/2023
ASSET NUMBER: EBT732117009	DATA TYPE: FOUND-LEFT
PROCEDURE NAME: ADM-XXX / EBT-XXX-XX 2.0% Reading: 1 Yr Cert CPC	TEMPERATURE: 23.8°C
PROCEDURE REV.: 20210930C	HUMIDITY: 44%
CALIBRATED BY: Bart Schwartz	BAROMETRIC: 28.93 inHg
P.O. NUMBER:	Recalibration Date September 07, 2024
CUSTOMER: National TAB 1126 Swift Street NKC, MO 64116	Calibration Number: 0007333
Cal Seals Intact: Yes	Previous Calibration Date: August 12, 2022

K.C. Calibration Lab., Inc. certifies that the above listed instrument meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). This calibration is traceable to the International System of Units (SI), through National Metrology Institutes (NIST, PTB NRC NPL, etc), radiometric techniques, or natural physical constants. This calibration complies with MIL-STD-45662A and ANSI/NCSL Z540-1-1994.

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Note: Any Test Uncertainty Ratio (TUR) that is less than four to one will appear under the "TUR" heading on the data record. If the TUR meets or exceeds four to one, the field is left blank.

REMARKS:

Asset #	Description	Cal Date	Due Date
41001AR6	Mensor CPC6050 Low & Medium Pressure Calibrator	3/15/2023	3/15/2024

Test Description	True Value	Test Result	Lower Limit	Upper Limit	Units	TUR
Vertical Accuracy: ±2.0% ±0.001 Reading INH2O @ 60"						
Reference Documents: M6, Manual						
Internal Barometric Reading: 28.80 inHg						
Version Number is 1.11.1						
** Connector						
0.000 inh20	0.000	-0.0005	-0.0100	0.0100	inh20	Pass
5.000 inh20	5.000	5.1000	4.9000	5.1000	inh20	Pass
10.000 inh20	10.000	10.0300	9.8000	10.2000	inh20	Pass
14.900 inh20	14.900	14.9100	14.6020	15.1980	inh20	Pass
0.000 inh20	0.000	-0.0003	-0.0100	0.0100	inh20	Pass
-5.000 inh20	-5.000	-5.0100	-5.1000	-4.9000	inh20	Pass
-10.000 inh20	-10.000	-10.0200	-10.2000	-9.8000	inh20	Pass
-14.900 inh20	-14.900	-14.9600	-15.1980	-14.6020	inh20	Pass

Report of Calibration for SERIAL NUMBER: EBT732117009 ASSET NUMBER: EBT732117009

Printed On: Thursday, September 7, 2023 Page 1 of 2
Test Results indicate the following: Found-Left: Unit was left as found. As-Left: Unit was left after adjustments.

Test Description	True Value	Test Result	Lower Limit	Upper Limit	Units	TUR
** Connector						
0.000 inh20	0.000	-0.0001	-0.0100	0.0100	inh20	Pass
5.000 inh20	5.000	4.9800	4.9000	5.1000	inh20	Pass
10.000 inh20	10.000	10.0300	9.8000	10.2000	inh20	Pass
14.900 inh20	14.900	14.9100	14.6020	15.1980	inh20	Pass
0.000 inh20	0.000	0.0001	-0.0100	0.0100	inh20	Pass
-5.000 inh20	-5.000	-5.0100	-5.1000	-4.9000	inh20	Pass
-10.000 inh20	-10.000	-10.0300	-10.2000	-9.8000	inh20	Pass
-14.900 inh20	-14.900	-14.9200	-15.1980	-14.6020	inh20	Pass

*****END OF CALIBRATION*****

K.C. Calibration Labs Seal

Signature: *Bart Schwartz*
Bart A. Schwartz, Engineer in Charge

Report of Calibration for SERIAL NUMBER: EBT732117009 ASSET NUMBER: EBT732117009

Printed On: Thursday, September 7, 2023 Page 2 of 2
Test Results indicate the following: Found-Left: Unit was left as found. As-Left: Unit was left after adjustments.

Report of Calibration

Kansas City Calibration Lab., Inc.
8847 Long Street
Lenexa, Kansas 66215

Telephone: (913) 541-0629 Internet: www.kccl.com Email: service@kccl.com

UNIT UNDER TEST: Shimpo DT-2077p Tachometer	TEST RESULT: PASS
SERIAL NUMBER: D1690029R	PERFORMED ON: 9/29/2023
ASSET NUMBER: D1690029R	DATA TYPE: FOUND-LEFT
PROCEDURE NAME: Shimpo DT-20xx: 1 Year Certification	TEMPERATURE: 24.9°C
PROCEDURE REV.: 20210818C	HUMIDITY: 47%
CALIBRATED BY: Bart Schwartz	
P.O. NUMBER:	Recalibration Date September 29, 2024
CUSTOMER: National TAB 1126 Swift Street NKC, MO 64116	Calibration Number: 00077544
Cal Seals Intact: Yes	Previous Calibration Date: August 11, 2022

K.C. Calibration Lab., Inc. certifies that the above listed instrument meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). This calibration is traceable to the International System of Units (SI), through National Metrology Institutes (NIST, PTB NRC NPL, etc), radiometric techniques, or natural physical constants. This calibration complies with MIL-STD-45662A and ANSI/NCSL Z540-1-1994.

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REMARKS:

Asset #	Description	Cal Date	Due Date
MYS900813	Keysight Technologies 33511B Function/Arb Waveform Generator	12/1/2022	12/1/2023

Test Description	True Value	Test Result	Lower Limit	Upper Limit	Units	TUR
RPM						
10.00 RPM	10.0	10	9	11	RPM	Pass
100.00 RPM	100.0	100	99	101	RPM	Pass
1000.0 RPM	1000.0	1000	999	1001	RPM	Pass
10,000.0 RPM	10000.0	10000	9998	10002	RPM	Pass
99,900.0 RPM	99900.0	99902	99893	99907	RPM	Pass

Report of Calibration for SERIAL NUMBER: D1690029R ASSET NUMBER: D1690029R

Printed On: Friday, September 29, 2023 Page 1 of 2
Test Results indicate the following: Found-Left: Unit was left as found. As-Left: Unit was left after adjustments.

Report of Calibration

Kansas City Calibration Lab., Inc.
8847 Long Street
Lenexa, Kansas 66215

Telephone: (913) 541-0629 Internet: www.kccl.com Email: service@kccl.com

UNIT UNDER TEST: Cooper Instrument SRH77A Digital Thermometer	TEST RESULT: PASS
SERIAL NUMBER: 100516003	PERFORMED ON: 9/29/2023
ASSET NUMBER: 100516003	DATA TYPE: FOUND-LEFT
PROCEDURE NAME: Met Temp NIST(SI) 1 Year	TEMPERATURE: 24.1°C
PROCEDURE REV.:	HUMIDITY: 46%
CALIBRATED BY: Bart Schwartz	
P.O. NUMBER:	Recalibration Date September 29, 2024
CUSTOMER: National TAB 1126 Swift Street NKC, MO 64116	Calibration Number: 00077543
Cal Seals Intact: Yes	Previous Calibration Date: August 12, 2022

K.C. Calibration Lab., Inc. certifies that the above listed instrument meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). This calibration is traceable to the International System of Units (SI), through National Metrology Institutes (NIST, PTB NRC NPL, etc), radiometric techniques, or natural physical constants. This calibration complies with MIL-STD-45662A and ANSI/NCSL Z540-1-1994.

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REMARKS:

Asset #	Description	Cal Date	Due Date
2659119	Hart Scientific 1523 Single Chan Reference Thermometer	1/9/2023	1/9/2024
905040	Burns Engineering 5615 Platinum Resistance Thermometer	2/8/2023	2/8/2024
DWS18	Fluke 518 Dry-Block Calibrator	8/28/2023	8/28/2024
MB7103	Hart Scientific 7103 Micro Bath Calibrator	12/8/2022	12/8/2023

Test Description	True Value	Test Result	Lower Limit	Upper Limit	Units	TUR
1075 General Purpose Puncture Probe						
Accuracy ±1.3 deg F / ±0.2 deg C or ±0.5% or reading:						
-10.00	F	-10.08	-8.70	1.38		
32.00	F	32.34	32.70	0.36		
122.00	F	122.71	121.80	-0.91		
212.00	F	211.90	211.10	-0.80		
280.00	F	279.96	280.70	0.74		
4011 Pipe Strip Probe						
Accuracy ±2% Range -25° to 212°F / -32° to 100°C						
0.00	F	0.27	2.10	1.83		
75.00	F	75.25	75.10	-0.15		
150.00	F	150.31	150.00	-0.31		

Report of Calibration for SERIAL NUMBER: 100516003 ASSET NUMBER: 100516003

Printed On: Friday, September 29, 2023 Page 1 of 2
Test Results indicate the following: Found-Left: Unit was left as found. As-Left: Unit was left after adjustments.



National TAB

Testing, Adjusting, and Balancing Equipment



Test Description	True Value	Test Result	Lower Limit	Upper Limit	Units	TUR
5028 Slim Humidity Probe						
Accuracy ±2% from 20 to 80%RH, ±3% below 20 and ±						
10.0 %RH @ 23.0°C	%RH	10.0	16	6.0		
25.0 %RH @ 23.0°C	%RH	25.0	30	5.0		
50.0 %RH @ 23.0°C	%RH	50.0	53	3.0		
75.0 %RH @ 23.0°C	%RH	75.0	77	2.0		
23.0°C @ 10.0 %RH	C	23.0	23.2	0.2		
23.0°C @ 25.0 %RH	C	23.0	23.2	0.2		
23.0°C @ 50.0 %RH	C	23.0	23.2	0.2		
23.0°C @ 75.0 %RH	C	23.0	23.1	0.1		

*****END OF CALIBRATION*****

Signed: *Bart A. Schwartz*
Bart A. Schwartz, Engineer in Charge

Report of Calibration for SERIAL NUMBER: 100516003 ASSET NUMBER: 100516003 Page 2 of 2
Printed On: Friday, September 29, 2023
Test Results indicate the following: Found-Left: Unit was left as found. As-Left: Unit was left after adjustments.

Report of Calibration

Kansas City Calibration Lab., Inc.
8847 Long Street
Lenexa, Kansas 66215

Telephone: (913) 541-0629 Internet: www.kccl.com Email: service@kccl.com

UNIT UNDER TEST:	Klein Tools CL800 True RMS Digital Clampmeter	TEST RESULT:	PASS
SERIAL NUMBER:	1220C-C1	PERFORMED ON:	9/29/2023
ASSET NUMBER:	1220C-C1	DATA TYPE:	FOUND-LEFT
PROCEDURE NAME:	Klein Tools CL800 : (1 year) CAL VER / 5520	TEMPERATURE:	24.9°C
PROCEDURE REV.:	20230928	HUMIDITY:	46 %
CALIBRATED BY:	Bart Schwartz	Recalibration Date	September 29, 2024
P.O. NUMBER:		Calibration Number:	0007542
CUSTOMER:	National TAB 1126 Swift Street NKC, MO 64116	Previous Calibration Date:	

Cal Seals Intact: Unknown

K.C. Calibration Lab., Inc. certifies that the above listed instrument meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). This calibration is traceable to the International System of Units (SI), through National Metrology Institutes (NIST, PTB, NRC, NPL, etc), radiometric techniques, or natural physical constants. This calibration complies with MIL-STD-45662A and ANSI/NCISL Z540-1-1994.

This report may not be reproduced, except in full, unless permission for the publication of an approved abstract is obtained in writing from the calibration organization issuing this report.

Note: Any Test Uncertainty Ratio (TUR) that is less than four to one will appear under the "TUR" heading on the data record. If the TUR meets or exceeds four to one, the field is left blank.

REMARKS:

Asset #	Description	Cal Date	Due Date
3277903	Fluke 5522A Multi-Product Calibrator	11/30/2022	11/30/2023

Test Description	True Value	Test Result	Lower Limit	Upper Limit	Units	TUR
Root Difference Square guardbanding method used						
AC VOLTS TESTS						
6 V Range						
5.900 V @ 60 Hz	5.9000	5.897	5.807	5.994	V	Pass
60 V Range						
59.00 V @ 60 Hz	59.0000	58.97	58.24	59.76	V	Pass
600 V Range						
590.0 V @ 60 Hz	590.000	589.7	582.4	597.6	V	Pass
1000 V Range						
990.0 V @ 60 Hz	990.000	991.0	970.1	1009.9	V	Pass
DC VOLTS TESTS						
600 mV Range						
600.0 mV	600.000	599.8	593.2	606.8	m V	Pass

Report of Calibration for SERIAL NUMBER: 1220C-C1 ASSET NUMBER: 1220C-C1 Page 1 of 3
Printed On: Friday, September 29, 2023
Test Results indicate the following: Found-Left: Unit was left as found. As-Left: Unit was left after adjustments.

Test Description	True Value	Test Result	Lower Limit	Upper Limit	Units	TUR
-600.0 mV	-600.00	-599.9	-606.8	-593.2	m V	Pass
6 V Range						
6.000 V	6.0000	5.997	5.937	6.063	V	Pass
-6.000 V	-6.0000	-5.995	-6.063	-5.937	V	Pass
60 V Range						
60.00 V	60.0000	59.96	59.37	60.63	V	Pass
600 V Range						
600.0 V	600.0000	599.6	593.7	606.3	V	Pass
1000 V Range						
1000.0 V	1000.0000	1001	985	1015	V	Pass
-1000.0 V	-1000.0000	-1001	-1015	-985	V	Pass
CONTINUITY TESTS						
Audible Indicator ON @ 10 ohms						
Audible Indicator OFF @ 51 ohms						
RESISTANCE TESTS						
600 Ohm Range						
600.0 Ohm	600.000	601.2	590.5	609.5	Ω	Pass
6 kOhm Range						
6.000 kOhm	6.00000	6.000	5.905	6.095	k Ω	Pass
60 kOhm Range						
60.00 kOhm	60.0000	59.99	59.05	60.95	k Ω	Pass
600 kOhm Range						
600.0 kOhm	600.0000	599.9	590.5	609.5	k Ω	Pass
6 MOhm Range						
6.000 MOhm	6.00000	5.993	5.905	6.095	M Ω	Pass
60 MOhm Range						
60.00 MOhm	60.00000	59.47	58.70	61.30	M Ω	Pass
DIODE CHECK TESTS						
Diode Voltage						
FREQUENCY TESTS						
9.00 Hz @ 8 V						
9.00 Hz @ 8 V	9.0000	8.999	8.905	9.095	Hz	Pass
90.00 Hz @ 8 V						
90.00 Hz @ 8 V	90.0000	90.00	89.05	90.95	Hz	Pass
900.0 Hz @ 8 V						
900.0 Hz @ 8 V	900.0000	900.0	890.5	909.5	Hz	Pass
9.000 kHz @ 8 V						
9.000 kHz @ 8 V	9.00000	9.000	8.905	9.095	k Hz	Pass
90.00 kHz @ 8 V						
90.00 kHz @ 8 V	90.00000	90.00	89.05	90.95	k Hz	Pass
100.0 kHz @ 8 V						
100.0 kHz @ 8 V	100.00000	100.00	98.5	101.5	k Hz	Pass
DUTY CYCLE						
50.0 % @ 1 kHz						
50.0 % @ 1 kHz	50.00	50.3	49.3	50.8	%	Pass
CAPACITANCE TESTS						
60 nF Range						
59.00 nF	59.0000	59.96	55.70	62.30	n F	Pass
600 nF Range						
590.0 nF	590.0000	597.1	571.8	608.2	n F	Pass
6 uF Range						
5.900 uF	5.90000	5.854	5.718	6.082	u F	Pass
60 uF Range						
59.00 uF	59.00000	58.87	57.18	60.82	u F	Pass

Report of Calibration for SERIAL NUMBER: 1220C-C1 ASSET NUMBER: 1220C-C1 Page 2 of 3
Printed On: Friday, September 29, 2023
Test Results indicate the following: Found-Left: Unit was left as found. As-Left: Unit was left after adjustments.

Test Description	True Value	Test Result	Lower Limit	Upper Limit	Units	TUR
6000 uF Range						
5900 uF	5900.000	590.6	560.0	620.0	u F	Pass
TEMPERATURE F TESTS						
5900 uF						
5900 uF	5900.000	5957	5600	6200	u F	Pass
-14 °F						
-14 °F	-14.0	-10	-23	-5	°F	Pass
100 °F						
100 °F	100.0	102	94	106	°F	Pass
500 °F						
500 °F	500.0	502	490	510	°F	Pass
900 °F						
900 °F	900.0	902	873	927	°F	Pass
TEMPERATURE C TESTS						
-25 °C						
-25 °C	-25.0	-23	-31	-20	°C	Pass
100 °C						
100 °C	100.0	102	96	104	°C	Pass
350 °C						
350 °C	350.0	351	344	357	°C	Pass
500 °C						
500 °C	500.0	501	485	515	°C	Pass
AC CURRENT TESTS						
60 A Range						
50.00 A @ 60 Hz	50.0000	49.60	48.92	51.08	A	Pass
50.00 A @ 400 Hz	50.0000	50.00	48.92	51.08	A	Pass
400 A Range						
500.0 A @ 60 Hz	500.0000	494.2	489.5	510.5	A	Pass
500.0 A @ 100 Hz	500.0000	494.4	489.5	510.5	A	Pass
60 A Range						
50.00 A	50.0000	49.20	48.92	51.08	A	Pass
600 A Range						
300.0 A	300.0000	296.5	293.5	306.5	A	Pass
590.0 A	590.0000	582.7	577.7	602.3	A	Pass

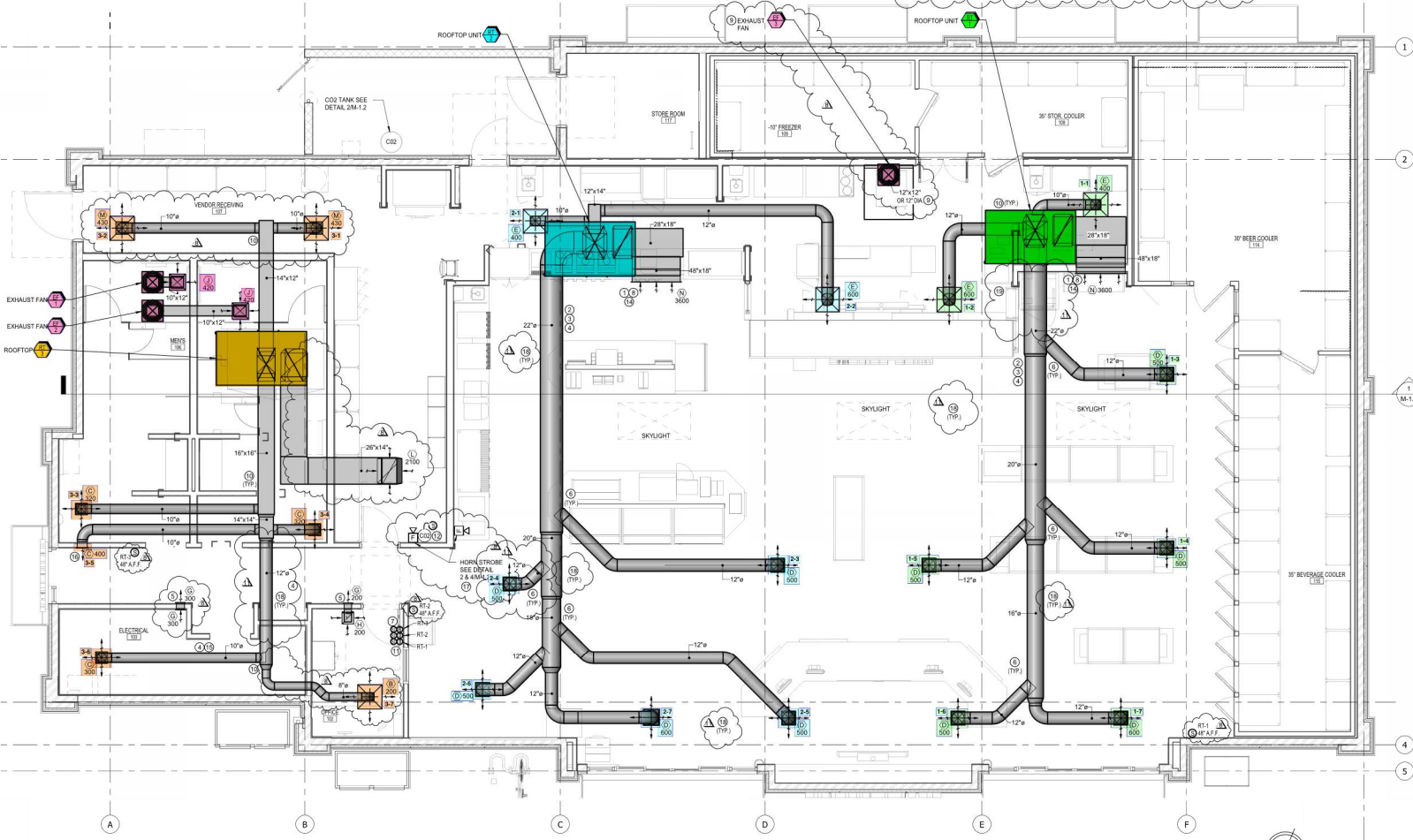
*****END OF CALIBRATION*****

Signed: *Bart A. Schwartz*
Bart A. Schwartz, Engineer in Charge

Report of Calibration for SERIAL NUMBER: 1220C-C1 ASSET NUMBER: 1220C-C1 Page 3 of 3
Printed On: Friday, September 29, 2023
Test Results indicate the following: Found-Left: Unit was left as found. As-Left: Unit was left after adjustments.



- 4 DUCTWORK SHALL BE PAINT LOCK OR PRIMED FOR PAINTING
- 5 PROVIDE 1/4" DUCT SLEEVE OPENING AT TRUSS ELEVATION FOR RETURN AIR. INSTALL TRANSFER GRILLE FINE ANGLED UPWARD.
- 6 INSTALL BALANCE DAMPER ON TOP OF DUCT TO HIDE FROM PUBLIC EYE.
- 7 LOCATE THERMOSTATS IN OFFICE. COORDINATE LOCATION WITH CONTRACTOR.
- 8 RETURN DUCT SHALL BE INSULATED PER SPECIFICATION WITH 1" R-6 SILIMER.
- 9 EXHAUST DUCT SHALL BE ALUMINUM. FOLLOW SMACNA STANDARDS FOR GAUGE. PROVIDE DUCT CLEANOUT ON HOOD EXHAUST DUCT AT EACH CHANGE IN DIRECTION PER UM.
- 10 INSTALL BALANCING DAMPER ON EACH BRANCH DUCT TAKE OFF.
- 11 INSTALL TEST AND RESET SWITCH ON WALL INSIDE OFFICE.
- 12 INSTALL CO2 DETECTOR ON THE WALL AND SENSORS 12" ABOVE THE BAG AND THE BOX FLOOR. (INSTALL CO2 EQUIPMENT PER MANUFACTURER'S INSTALLATION MANUAL & DET.
- 14 LOCATE BRANCH GRILLE CENTERED BETWEEN BRINK TRUSS. HANG RETURN GRILLE 15" ABOVE FLOOR.
- 15 INSULATE SUPPLY DUCT IN CENTER OF ELECTRICAL ROOM 30" CLEAR OF PANELS AND 6" ABOVE PANELS.
- 16 ALL GRILLE FACES DOWNWARD.
- 17 PROVIDE REMOTE SENSORS FOR CO2 DETECTION SYSTEM AT 11'-0" A.F.F. AND 12" FROM THE END OF THE WALL.
- 18 INSTALL ALL SUPPLY DUCT SHALL BE INSTALLED AS HIGH AS POSSIBLE TO SEAT DEVICES.
- 19 INSULATE ALL SUPPLY DUCT FROM RTH IF AS HIGH AS POSSIBLE TO BE ABLE TO INSTALL UNLAP PAPER.



1 MECHANICAL FLOOR PLAN
 M-1.1 1/4" = 1'-0"