

Report By:

National TAB
1329 E. KEMPER ROAD
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Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 06/27/2023

PROJECT
ALBC ABUNDANT LIFE CROSSROADS
(KANSAS CITY, MO)

1840 Cherry St

Kansas City, MO

Client

Metro Air Conditioning

8151 McCoy

Shawnee, KS 66227



ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

PROJECT TEAM MEMBERS

Owner/Client: Abundant Life
1840 Cherry Street
Kansas City, MO, 64108

General Contractor: Pearce Construction
417 East 135th Street
Kansas City, MO, 64145

Mechanical Contractor: Metro Air Conditioning
8151 McCoy
Shawnee, KS, 66227

Test, Adjust, & Balance: National TAB Intelligence - Kansas City
1126 Swift St
North Kansas City, MO, 64116

National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY,
MO)

Project Summary

RTU's

Each of the RTU's were measured at their terminal devices utilizing a flow hood. The sum of these readings is equal to the total flow for that particular unit. The total flow of each RTU was then adjusted to within tolerance of the specified design. Each terminal diffuser was balanced to within tolerance of the engineer's design volume utilizing the provided hand damper located at the takeoff of the main & branch trunk line(s). Any equipment that fell outside of this tolerance is noted throughout the report.

Exhaust Fans

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 design tolerance. 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.

Ceiling Exhaust Fans

The ceiling exhaust fans were measured using a flow hood. If speed adjustment was provided, the fan speed was adjusted to within design tolerance. Any equipment that fell outside of this tolerance is noted throughout the report.

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Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Asset: RTU-1

AREA: 212

Unit Data		
	Design	Actual
MFG	NA	TRANE
Model Num	BELT	YSC120H4RMA 27F0B1A1A7
Serial Num	-	222513105L
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	15.25X35.75
Num PreFilter 1	-	4
PreFilter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	EBMPAPST
Frame	-	NL
Horsepower	2.0	2.3KW
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	460	380-480
Rated Amperage	-	3.9
Service Factor	-	NL

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD

Completed By: Jacob Davidson on 04/18/2023

Notes: UNIT SCHEDULED FOR 4000 CFM BUT DIFFUSER COUNT ADDS TO 3800 CFM. UNIT BALANCED TO THE 3800 CFM
SPEED SETPOINT: 5VDC

Test Data		
	Design	Actual
SF CFM	3800	3482
SF RPM	-	716
RA CFM	-	2921
OA CFM	570	561
RL Voltage	-	485/484/486
RL Amperage	-	1.32/1.24/1.35
OA Damper Position	-	20%
Brake Horse Power	-	NA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.26"
Fan Suction SP	-	-0.54"
Fan Discharge SP	-	0.12"
Total ESP	0.75"	0.80"
Fan Total SP	-	0.66"

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Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Diffuser Supply (GRD)

RTU-1 / 212

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	213	SG-1	14"X12"	300	1	436	264	273	91.0
SGRD2	212	SG-1	16"X8"	500	0.679	382	454	454	90.8
SGRD3	212	SG-1	16"X8"	500	0.679	473	500	469	93.8
SGRD4	212	SG-1	16"X8"	500	0.679	477	497	471	94.2
SGRD5	212	SG-1	16"X8"	500	0.679	416	421	451	90.2
SGRD6	212	SG-1	16"X8"	500	0.679	422	449	460	92.0
SGRD7	212	SG-1	16"X8"	500	0.679	447	453	453	90.6
SGRD8	212	SG-1	16"X8"	500	0.679	405	431	451	90.2

Completed By: Jacob Davidson on 01/30/2023

Asset	Area Served	Notes
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National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Asset: RTU-2

AREA: 212

Unit Data		
	Design	Actual
MFG	NA	TRANE
Model Num	BELT	YSC120H4RMA 27F0B1A1A7
Serial Num	-	222513108L
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	15.25X35.76
Num PreFilter 1	-	4
PreFilter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	EMBAPST
Frame	-	NL
Horsepower	2.0	2.3KW
Motor Rpm	-	NL
Phase	3	3
Rated Voltage	460	380-480
Rated Amperage	-	3.9
Service Factor	-	NL

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD

Completed By: Jacob Davidson on 05/18/2023

Notes: UNIT SCHEDULED FOR 4000 CFM, HOWEVER DIFFUSER TOTAL ONLY ADDS UP TO 3900 CFM.
BALANCED UNIT TO 3900 CFM.
Speed Setpoint: 3.62VDC

Test Data		
	Design	Actual
SF CFM	4000	3897
SF RPM	-	724
RA CFM	-	3256
OA CFM	630	641
RL Voltage	-	489/491/491
RL Amperage	-	1.29/1.29/1.28
OA Damper Position	-	20%
Brake Horse Power	-	UTO

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.26"
Fan Suction SP	-	-0.50"
Fan Discharge SP	-	0.24
Total ESP	0.75"	0.76"
Fan Total SP	-	0.74"

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Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Diffuser Supply (GRD)

RTU-2 / 212

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	212	SG-1	16"X8"	400	0.679	411	489	388	97.0
SGRD2	212	SG-1	16"X8"	400	0.679	386	512	406	101.5
SGRD3	212	SG-1	16"X8"	400	0.679	453	494	392	98.0
SGRD4	212	SG-1	16"X8"	400	0.679	452	510	405	101.3
SGRD5	212	SG-1	16"X8"	400	0.679	360	519	412	103.0
SGRD6	212	SG-1	16"X8"	400	0.679	399	519	412	103.0
SGRD7	212	SG-1	16"X8"	500	0.679	424	627	498	99.6
SGRD8	212	SG-1	16"X8"	500	0.679	407	650	516	103.2
SGRD9	209	SD-1	10"	250	1	163	298	237	94.8
SGRD10	209	SD-1	10"	250	1	171	292	232	92.8

Completed By: Jacob Davidson on 05/18/2023

Asset	Area Served	Notes
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Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Asset: RTU-3

AREA: CLASSROOMS

Unit Data		
	Design	Actual
MFG	NA	TRANE
Model Num	BELT	YHC120F4RHA2 7FEB1A1A7
Serial Num	-	222515659L
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	15.5X36
Num PreFilter 1	-	3/2
PreFilter Size 1	-	20X25X2/20X30 X2

Test Data		
	Design	Actual
SF CFM	4000	3937
SF RPM	-	DD
RA CFM	-	2891
OA CFM	980	1046
RL Voltage	-	493
RL Amperage	-	1.35
OA Damper Position	-	30%
Brake Horse Power	-	UTO

Motor Data		
	Design	Actual
Motor MFG	-	EBMPAPST
Frame	-	NL
Horsepower	2.0	2.3KW
Motor Rpm	NL	1650
Phase	3	3
Rated Voltage	460	480
Rated Amperage	-	3.6
Service Factor	-	NL

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.31"
Fan Suction SP	-	-0.43"
Fan Discharge SP	-	0.27"
Total ESP	0.75"	0.74"
Fan Total SP	-	0.70"

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD

Completed By: Jacob Davidson on 04/18/2023

Notes: SPEED SETPOINT AT 4.8VDC AT 35%

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Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Diffuser Supply (GRD)

RTU-3 / CLASSROOMS

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	205	SD-1	6"	75	1	59	91	77	102.7
SGRD2	206	SG-1	16"X8"	500	0.679	441	568	481	96.2
SGRD3	206	SG-1	16"X8"	300	0.679	386	361	306	102.0
SGRD4	207	SG-1	16"X8"	500	0.679	493	629	532	106.4
SGRD5	207	SG-1	16"X8"	300	0.679	538	352	298	99.3
SGRD6	210	SG-1	16"X8"	500	0.679	592	561	475	95.0
SGRD7	210	SG-1	16"X8"	300	0.679	538	354	299	99.7
SGRD8	211	SG-1	16"X8"	500	0.679	449	550	465	93.0
SGRD9	211	SG-1	16"X8"	300	0.679	450	370	313	104.3
SGRD10	EMR	SG-1	16"X8"	400	0.679	347	458	388	97.0
SGRD11	HALL	SG-1	16"X8"	300	0.679	554	359	303	101.0

Completed By: Jacob Davidson on 04/18/2023

Asset	Area Served	Notes

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Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Asset: RTU-4

AREA: 111

Unit Data		
	Design	Actual
MFG	NA	TRANE
Model Num	BELT	YHD300G4RHD 19FAB1A1A7
Serial Num	-	221710709D
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	17.5X60
Num PreFilter 1	-	4/8
PreFilter Size 1	-	16X20X2/20X20 X2

Test Data		
	Design	Actual
SF CFM	8500	8321
SF RPM	-	743
RA CFM	-	6892
OA CFM	1570	1429
RL Voltage	-	484/485/489
RL Amperage	-	6.1 VFD
OA Damper Position	-	32%
Brake Horse Power	-	5.14

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	184TZ
Horsepower	10.0	7-1/2
Motor Rpm	-	3490
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	8.9
Service Factor	-	1.15

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.62"
Fan Suction SP	-	-0.47"
Fan Discharge SP	-	0.43"
Total ESP	0.75"	1.05"
Fan Total SP	-	0.90"

Drive Data		
	Design	Actual
Motor Sheave Size	-	4.25"
Motor Bore Size	-	1-1/8"
Motor Sheave SetPt	-	3 TURNS OUT
Fan Sheave Size	-	15.5"
Fan Sheave Bore	-	1-3/16"
Belt CL Distance	-	TENSIONER IN PLACE
Num of Belts	-	1
Belt Size	-	BX77

Completed By: Jacob Davidson on 03/09/2023

Notes:

National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Asset: RTU-5

AREA: 111

Unit Data		
	Design	Actual
MFG	NA	TRANE
Model Num	BELT	YHD300G4RHD 19FAB1A1A7
Serial Num	-	221710710D
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	17.5X60
Num PreFilter 1	-	4/8
PreFilter Size 1	-	16X20X2/20X20 X2

Test Data		
	Design	Actual
SF CFM	8000	8116
SF RPM	-	711
RA CFM	-	6658
OA CFM	1570	1458
RL Voltage	-	488/486/489
RL Amperage	-	6.3 VFD
OA Damper Position	-	25%
Brake Horse Power	-	5.3

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	184TZ
Horsepower	10.0	7.5
Motor Rpm	-	3490
Phase	3	3
Rated Voltage	460	460
Rated Amperage	-	8.9
Service Factor	-	1.15

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.43"
Fan Suction SP	-	-0.63"
Fan Discharge SP	-	0.29"
Total ESP	0.75"	0.72"
Fan Total SP	-	0.92"

Drive Data		
	Design	Actual
Motor Sheave Size	-	4.25"
Motor Bore Size	-	1-1/8"
Motor Sheave SetPt	-	3 TURNS OUT
Fan Sheave Size	-	BK160
Fan Sheave Bore	-	1-3/16"
Belt CL Distance	-	TENSIONER IN PLACE
Num of Belts	-	1
Belt Size	-	BX77

Completed By: Jacob Davidson on 04/18/2023

Notes:

National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Asset: RTU-6

AREA: 101

Unit Data		
	Design	Actual
MFG	NA	TRANE
Model Num	BELT	YSC092H4RHA2 7F0B1A1A7
Serial Num	-	222513092L
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	15.25X35.75
Num PreFilter 1	-	4
PreFilter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	2.0	1
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	460	200-230/460
Rated Amperage	-	3.3-3.2/1.6
Service Factor	-	1.5

Drive Data		
	Design	Actual
Motor Sheave Size	-	3.25"
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	5 TURNS OUT
Fan Sheave Size	-	7.25"
Fan Sheave Bore	-	1"
Belt CL Distance	-	11.75"
Num of Belts	-	1
Belt Size	-	AX37

Completed By: Jacob Davidson on 03/08/2023

Notes:

Test Data		
	Design	Actual
SF CFM	3000	2998
SF RPM	-	536
RA CFM	-	2510
OA CFM	500	488
RL Voltage	-	488/487/490
RL Amperage	-	1.28/1.29/1.32
OA Damper Position	-	25%
Brake Horse Power	-	0.8125

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.11"
Fan Suction SP	-	-0.24"
Fan Discharge SP	-	0.21"
Total ESP	0.75"	0.32"
Fan Total SP	-	0.45"

National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Diffuser Supply (GRD)

RTU-6 / 101

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	101	SG-1	16"X8"	350	0.679	607	539	368	105.1
SGRD2	101	SG-1	16"X8"	350	0.679	516	420	328	93.7
SGRD3	101	SG-1	16"X8"	350	0.679	606	500	352	100.6
SGRD4	101	SG-1	16"X8"	350	0.679	625	534	377	107.7
SGRD5	101	SG-1	16"X8"	350	0.679	463	380	343	98.0
SGRD6	101	SG-1	16"X8"	350	0.679	505	433	338	96.6
SGRD7	116	SG-1	16"X8"	400	0.679	460	392	428	107.0
SGRD8	116	SG-1	16"X8"	500	0.679	502	416	464	92.8

Completed By: Jacob Davidson on 02/23/2023

Asset	Area Served	Notes

National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Asset: RTU-7

AREA: 101

Unit Data		
	Design	Actual
MFG	NA	TRANE
Model Num	BELT	YSC092H4RHA2 7F0B1A1A7
Serial Num	-	222513032L
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	15.25X35.75
Num PreFilter 1	-	4
PreFilter Size 1	-	20X25X2

Test Data		
	Design	Actual
SF CFM	3000	3059
SF RPM	-	605
RA CFM	-	2770
OA CFM	265	289
RL Voltage	-	485/486/485
RL Amperage	-	1.41/1.35/1.44
OA Damper Position	-	5%
Brake Horse Power	-	NA

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	2.0	1
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	460	200-230/460
Rated Amperage	-	3.3-3.2/1.6
Service Factor	-	1.5

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.12"
Fan Suction SP	-	-0.28"
Fan Discharge SP	-	0.39"
Total ESP	0.75"	0.51"
Fan Total SP	-	0.67"

Drive Data		
	Design	Actual
Motor Sheave Size	-	3.25"
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	5 TURNS OUT
Fan Sheave Size	-	7.25"
Fan Sheave Bore	-	1"
Belt CL Distance	-	11.5"
Num of Belts	-	1
Belt Size	-	AX37

Completed By: Jacob Davidson on 04/18/2023

Notes:

National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Diffuser Supply (GRD)

RTU-7 / 101

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	107	SD-1	10"	300	1	245	395	291	97.0
SGRD2	106	SD-1	12"	600	1	293	511	648	108.0
SGRD3	101	SG-1	16"X8"	400	0.679	325	581	396	99.0
SGRD4	101	SG-1	16"X8"	400	0.679	473	417	424	106.0
SGRD5	105	SG-1	14"X8"	250	0.621	365	282	232	92.8
SGRD6	101	SG-1	16"X8"	375	0.679	578	414	365	97.3
SGRD7	101	SG-1	16"X8"	375	0.679	436	346	362	96.5
SGRD8	101	SG-1	16"X8"	375	0.679	549	394	341	90.9

Completed By: Jacob Davidson on 02/23/2023

Asset	Area Served	Notes
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National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Asset: RTU-8

AREA: 200

Unit Data		
	Design	Actual
MFG	NA	TRANE
Model Num	BELT	YSC092H4RHA2 7F0B1A1A7
Serial Num	-	222513078L
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	15.25X35.75
Num PreFilter 1	-	4
PreFilter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	2.0	1
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	460	200-230/460
Rated Amperage	-	3.3-3.2/1.6
Service Factor	-	NL

Drive Data		
	Design	Actual
Motor Sheave Size	-	3.25"
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	5 TURNS OPEN
Fan Sheave Size	-	7.25"
Fan Sheave Bore	-	1"
Belt CL Distance	-	11.75"
Num of Belts	-	1
Belt Size	-	AX37

Test Data		
	Design	Actual
SF CFM	3000	2982
SF RPM	-	512
RA CFM	-	2641
OA CFM	350	341
RL Voltage	-	487/486/489
RL Amperage	-	1.32/1.28/1.35
OA Damper Position	-	18%
Brake Horse Power	-	0.844

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.07"
Fan Suction SP	-	-0.20"
Fan Discharge SP	-	0.21"
Total ESP	0.75"	0.28"
Fan Total SP	-	0.41"

Completed By: Jacob Davidson on 04/18/2023

Notes:

National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Diffuser Supply (GRD)

RTU-8 / 200

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	200	SG-1	16"X8"	425	0.679	607	507	464	109.2
SGRD2	200	SG-1	16"X8"	425	0.679	758	647	450	105.9
SGRD3	200	SG-1	16"X8"	425	0.679	707	619	401	94.4
SGRD4	200	SG-1	16"X8"	425	0.679	830	667	436	102.6
SGRD5	200	SG-1	16"X8"	425	0.679	712	624	423	99.5
SGRD6	202	SD-1	10"	275	1	321	277	274	99.6
SGRD7	201	SD-1	12"	550	1	379	319	534	97.1

Completed By: Jacob Davidson on 02/23/2023

Asset	Area Served	Notes
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National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Asset: RTU-9

AREA: 200

Unit Data		
	Design	Actual
MFG	NA	TRANE
Model Num	BELT	YSC092H4RHA2 7F0B1A1A7
Serial Num	-	222513016L
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1 METAL MESH
OA Filter Size 1	-	15.25X35.75
Num PreFilter 1	-	4
PreFilter Size 1	-	20X25X2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56
Horsepower	2.0	1
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	460	200-230/460
Rated Amperage	-	3.3-3.2/1.6
Service Factor	-	NL

Drive Data		
	Design	Actual
Motor Sheave Size	-	3.25"
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	5 TURNS OPEN
Fan Sheave Size	-	7.25"
Fan Sheave Bore	-	1"
Belt CL Distance	-	11.75"
Num of Belts	-	1
Belt Size	-	AX37

Completed By: Jacob Davidson on 04/18/2023

Notes:

Test Data		
	Design	Actual
SF CFM	3000	2857
SF RPM	-	507
RA CFM	-	2520
OA CFM	315	337
RL Voltage	-	489/492/488
RL Amperage	-	1.28/1.29/1.32
OA Damper Position	-	7%
Brake Horse Power	-	NA

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.12"
Fan Suction SP	-	-0.28"
Fan Discharge SP	-	0.11"
Total ESP	0.75"	0.23"
Fan Total SP	-	0.39"

National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: AHU/RTU

Diffuser Supply (GRD)

RTU-9 / 200

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	200	SG-1	16"X8" (2)	1000	1.83 SF (22X12)	938	1183	948	94.8
SGRD2	200			0					-
SGRD3	200	SG-1	16"X8"	500	591 CFM / 870 FPM	511	551	452	90.4
SGRD4	200	SG-1	16"X8"	500	0.679	784	612	490	98.0
SGRD5	200	SG-1	16"X8"	500	0.679	637	615	493	98.6
SGRD6	200	SG-1	16"X8"	500	0.679	673	592	474	94.8

Completed By: Jacob Davidson on 02/23/2023

Asset	Area Served	Notes
SGRD2	200	NOT INSTALLED.

National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: FAN - Exhaust

Asset: EF-1

AREA: RESTROOMS

Unit Data		
	Design	Actual
MFG	NA	GREENHECK
Model Num	DD	G-140-7-VG-1-22-X
Serial Num	-	19948431
Type	CRE	DOWNBLAST

Test Data		
	Design	Actual
CFM	1950	1875
RL Voltage	-	NOT SAFE
RL Amperage	-	NOT SAFE
Total ESP	0.50"	0.34"

Motor Data		
	Design	Actual
Motor MFG	-	BROAD OCEAN
Frame	-	NL
Horsepower	0.75	3/4
Motor Rpm	1440	300-1750
Phase	1	1
Voltage (rated)	120	115/208-230/277
Amperage (rated)	-	8.8/5.4/4.8
Service Factor	-	NL

Completed By: Jacob Davidson on 05/18/2023

Notes: SPEED SETPOINT: 10 OF 10 ON POTENTIOMETER

Diffuser Ret/Exh (GRD)

EF-1 / RESTROOMS

Asset	Area Served	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	106	EX-1	12"	625	1	386	416	518	82.9
EGRD2	107	EX-1	10"	350	1	303	315	319	91.1
EGRD3	109	EX-3	6"	50	1	69	75	47	94.0
EGRD4	110	EX-3	6"	50	1	72	76	48	96.0
EGRD5	202	EX-1	12"	575	1	449	468	573	99.7
EGRD6	201	EX-1	12"	350	1	117	400	316	90.3
EGRD7	204	EX-2	6"	50	0.34	154	41	54	108.0

Completed By: Jacob Davidson on 05/18/2023

Asset	Area Served	Notes
EGRD1	106	DAMPER IS FULLY OPEN. UNABLE TO PUSH MORE AIR TO DIFFUSER WITHOUT PUTTING REST OF SYSTEM OUT OF BALANCE.

National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: FAN - Exhaust

Asset: EF-2

AREA: UPSTAIRS EMR

Unit Data		
	Design	Actual
MFG	NA	GREENHECK
Model Num	CEILING	SP-A390
Serial Num	-	19946867

Test Data		
	Design	Actual
CFM	400	405

Motor Data		
	Design	Actual
Motor MFG	-	MCMILLAN ELECTRIC
Horsepower	100W	1/12
Motor Rpm	1200	1350
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	1.42

Completed By: Jacob Davidson on 03/08/2023

Notes: AMP: 1.40A
VOLTAGE: 107V

National TAB

Project: ALBC ABUNDANT LIFE CROSSROADS (KANSAS CITY, MO)

System/Unit: FAN - Exhaust

Asset: EF-3

AREA: DOWNSTAIRS ELECTRICAL

Unit Data		
	Design	Actual
MFG	NA	GREENHECK
Model Num	CEILING	SP-A390
Serial Num	-	19946865

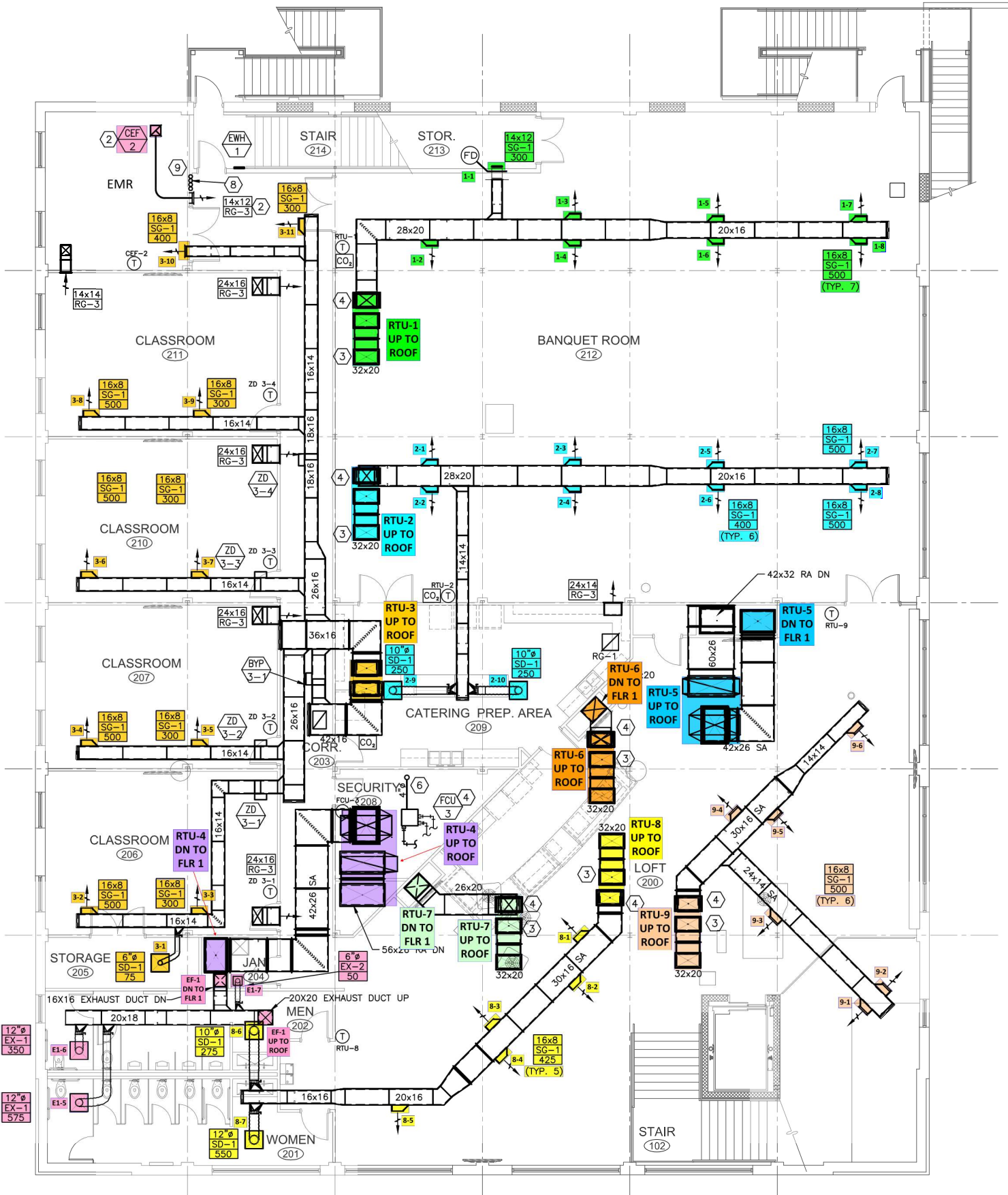
Test Data		
	Design	Actual
CFM	400	302

Motor Data		
	Design	Actual
Motor MFG	-	MCMILLAN
Horsepower	100W	1/12
Motor Rpm	1200	1350
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	1.42

Completed By: Jacob Davidson on 02/20/2023

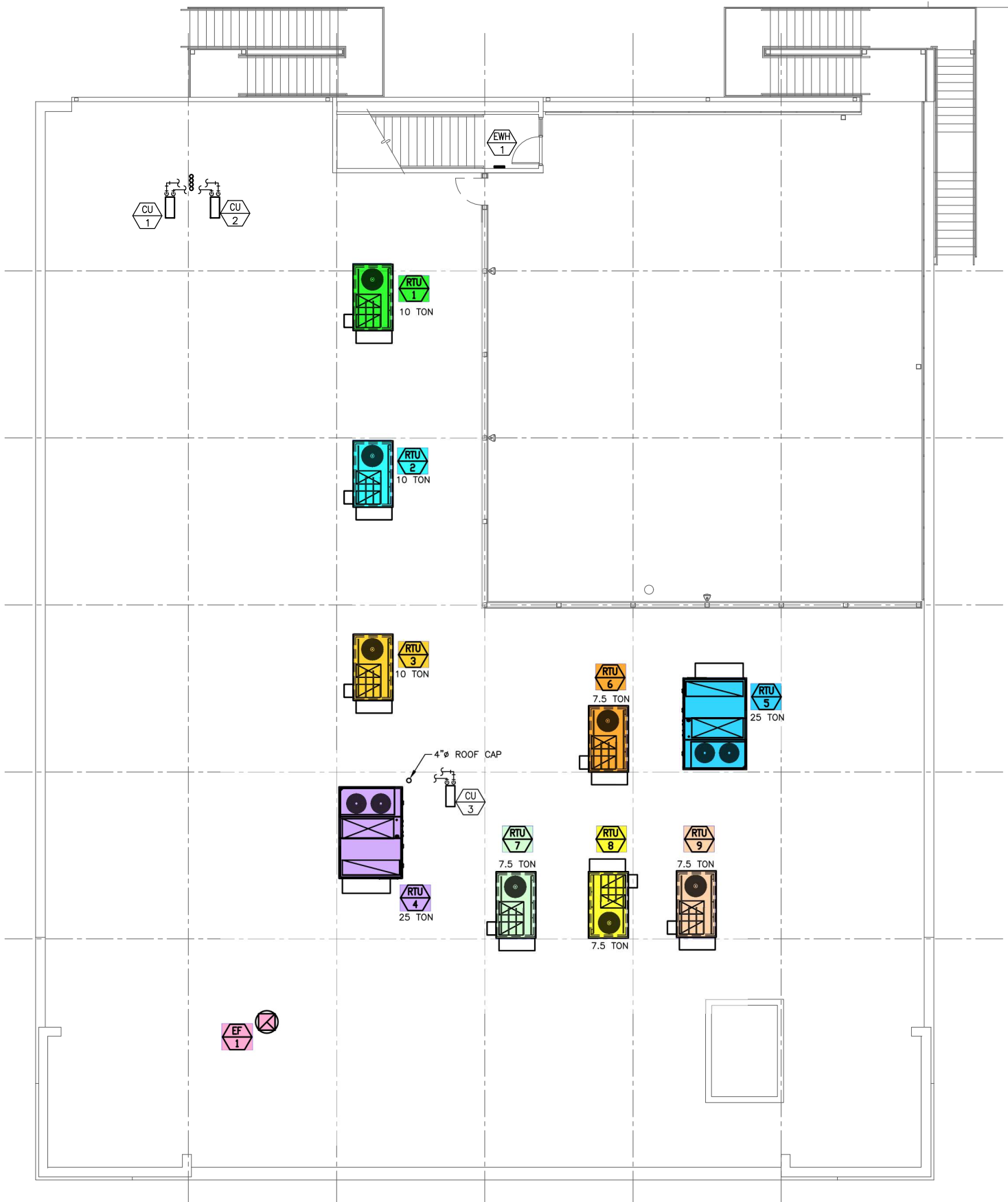
Notes: AMPS: 0.97A
VOLTS: 113V

FAN SPEED IS MAXIMIZED. ROTATION IS CORRECT. HOLES IN DISCHARGE PLENUM APPEAR TO BE TOO SMALL. HOLES WERE DRILLED OUT TO MAKE LARGER, BUT AIRFLOW IS STILL LOW.



1 SECOND FLOOR MECHANICAL PLAN
 M1.20 SCALE: 1/8" = 1'-0"





1
M2.10
MECHANICAL ROOF PLAN
 SCALE: 1/8" = 1'-0"



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	Evergreen Telemetry S-PVF-1 2300177A	2/23/2023	2/23/2024
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	Evergreen Telemetry S-PVF-1 2300177A	2/23/2023	2/23/2024
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 5 % +/- 7 cfm	Evergreen Telemetry CH-15D 2300114	2/20/2023	2/23/2024
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	8/12/2022	8/12/2023
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	8/12/2022	8/12/2023
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	8/12/2022	8/12/2023
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	8/12/2022	8/12/2023
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	8/12/2022	8/12/2023
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper SRH77A S/N 100516003	8/12/2022	8/12/2023
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper SRH77A S/N 100516003	8/12/2022	8/12/2023
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Fluke 323 S/N 35491023WS	8/11/2022	8/11/2023
	AMPERAGE MEASUREMENT	0 Amperers to 100 Amperes	2 % reading +/- 5 digits	Fluke 323 S/N 35491023WS	8/11/2022	8/11/2023
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	Shimpo DT 207Lp S/N D1690029R	8/11/2022	8/11/2023
HYDRONIC	PRESSURE MEASUREMENT	-30 in Hg to 200 psi	±2% of reading +/- 1 psi	Hydronic Manometer - Dwyer 490W-6-HKIT S/N: 359515093207912	8/12/2022	8/12/2023
	DIFFERENTIAL PRESSURE MEASUREMENT	0 psi - 80 psi	±2% of reading +/- 1 psi	Hydronic Manometer - Dwyer 490W-6-HKIT S/N: 359515093207912	8/12/2022	8/12/2023