



CERTIFIED TEST, ADJUST, AND BALANCE REPORT

DATE

7/25/22024

PROJECT

**NEW OFFICE
FARM CREDIT
RUSSELLVILLE, AR**

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NEBB TAB FIRM

**AIRETECH CORPORATION
7631 Northshore Place
North Little Rock, Arkansas 72118**

Certification Number: 2847



PROJECT: NEW OFFICE FARM CREDIT

THE DATA PRESENTED IN THIS REPORT IS A RECORD OF SYSTEM MEASUREMENTS & FINAL ADJUSTMENTS THAT HAVE BEEN OBTAINED IN ACCORDANCE WITH THE CURRENT ADDITION OF THE NEBB PROCEDURAL STANDARD FOR TESTING, ADJUSTING & BALANCING OF ENVIRONMENTAL SYSTEMS. THE MEASUREMENTS SHOWN, & THE INFORMATION GIVEN, IN THIS REPORT ARE CERTIFIED TO BE ACCURATE & COMPLETE, AT THE TIME & DATE INFORMATION WAS GATHERED. ANY VARIANCES FROM DESIGN QUANTITIES, WHICH EXCEED NEBB TOLERANCES, ARE NOTED IN THE TAB REPORT PROJECT SUMMARY.

SUBMITTED & CERTIFIED BY:

NEBB TAB FIRM: AIRETECH CORPORATION

REGISTRATION NUMBER: 2847

CERTIFIED BY (TAB SUPERVISOR): DANIEL J DRAPER

CERTIFICATION EXPIRATION DATE: 12/31/2024

SIGNATURE:

A handwritten signature in black ink that reads 'Daniel J. Draper'.



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LOCATION: Russellville, AR
PROJECT #: 78318

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CONTACT: Elizabeth Amador
AUTHOR:

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Firm Certification

AIRETECH CORPORATION

HAS MET ALL REQUIREMENTS FOR NEBB CERTIFIED
STATUS IN THE FOLLOWING DISCIPLINE

Testing, Adjusting and Balancing of Environmental Systems

2847

NEBB Certification Number

December 31, 2024

Expiration Date

A handwritten signature in black ink, appearing to read "James M. Trz" or similar.

NEBB President

A handwritten signature in black ink, appearing to read "Michael J. Kelly" or similar.

NEBB President-Elect



Certification

DANIEL J. DRAPER

**HAS MET ALL REQUIREMENTS FOR NEBB CERTIFIED PROFESSIONAL
STATUS IN THE FOLLOWING DISCIPLINE**

Testing, Adjusting and Balancing of Environmental Systems

This Certificate, as well as individual affiliation with a NEBB Certified Firm and associated NEBB Certification Stamp are REQUIRED to provide a NEBB Certified Report. Participation in the NEBB Quality Assurance Program requires the Certificant be affiliated with a NEBB Certified Firm

CP-23442

NEBB Certification Number

December 31, 2024

Expiration Date

NEBB President

NEBB President-Elect



7631 Northshore Place
 North Little Rock, AR 72118
 Phone: 501-280-0404
 Fax: 501-280-9200

Instrument Calibration List

	Function	Range	Accuracy	Make	Model #	Serial #	Calibration Date
AIR	Air Pressure Measurement	0 to 10.00 in.w.g.	± 2% of reading	Evergreen	S-PVF-1	1900682	6/12/2023
	Air Velocity Measurement	100 to 3500 fpm	± 5% of reading	Evergreen	S-PVF-1	1900682	6/12/2023
	Direct Reading Hood	25 to 2000 cfm	± 5% of reading, ± 7 cfm	Evergreen	S-PVF-1	1900682	6/12/2023
TEMPERATURE	Air Meter with Probe	0 to 200 °F	± 0.5% of reading	Cooper	SRH77A-E	10709022	10/24/2023
	Immersion Meter with probe	0 to 200 °F	± 0.5% of reading	Cooper	SRH77A-E	10709022	10/24/2023
HUMIDITY	Humidity Measurement	10 to 90% RH	± 3% RH	Cooper	SRH77A-E	10709022	10/24/2023
ELECTRICAL	Volts AC	0 to 600 VAC	± 2% of reading	Fluke	902	62201193MV	10/19/2023
	Amperes	0.1 to 100 Amps	± 2% of reading	Fluke	902	62201193MV	10/19/2023
ROTATION	Rotation Measurement	60 to 5000rpm	± 2% of reading	Extech	461995	H319421	11/21/2023
HYDRONIC	Hydronic Pressure Measurement	0.4 to 200 PSI	± 2% of reading	Dwyer	490W-6	01L6RK	1/31/2024
	Hydronic Differential Pressure	0.4 to 75 PSI	± 2% of reading	Dwyer	490W-6	01L6RK	1/31/2024

(N.E.B.B. # 2847)

ABBREVIATIONS

<u>SYMBOL</u>	<u>DESCRIPTION</u>	<u>SYMBOL</u>	<u>DESCRIPTION</u>
A	AMPS	HP	HEAT PUMP
AHU	AIR HANDLING UNIT	HW	HEATING WATER
BCU	BLOWER COIL UNIT	KEF	KITCHEN EXHAUST FAN
BTU	BRITISH THERMAL UNIT	LAT	LEAVING AIR TEMPERATURE
CD	CEILING DIFFUSER	LWT	LEAVING WATER TEMPERATURE
CFM	CUBIC FEET PER MINUTE	M/N	MODEL NUMBER
CH	CHILLER	MAT	MIXED AIR TEMPERATURE
CHW	CHILLED WATER	MAU	MAKE UP AIR UNIT
CW	CONDENSER WATER	NA	NOT APPLICABLE
COMP	COMPRESSOR	NL	NOT LISTED
COND	CONDENSER	NLA	NO LOAD AMPS
CRAC	COMPUTER ROOM AIR CONDITIONING	OAT	OUTSIDE AIR TEMPERATURE
CW	CHILL WATER	OAU	OUTSIDE AIR UNIT
DALT	DUCT AIR LEAKAGE TEST	OED	OPEN ENDED DUCT
DB	DRY BULB	PH	PRE-HEAT
DP	DIFFERENTIAL PRESSURE	RG	RETURN GRILLE
DP	DISCHARGE PRESSURE	RH	RE-HEAT
EAT	ENTERING AIR TEMPERATURE	RLA	RUN LOAD AMPS
EF	EXHAUST FAN	RTU	ROOF TOP UNIT
EG	EXHAUST GRILLE	S/N	SERIAL NUMBER
ERU	ENERGY RECOVERY UNIT	SF	SUPPLY FAN
ERV	ENERGY RECOVERY VENTILATOR	SG	SIDEWALL GRILLE
ESP	EXTERNAL STATIC PRESSURE	SP	SUCTION PRESSURE
EVAP	EVAPORATOR	TSP	TOTAL STATIC PRESSURE
EWT	ENTERING WATER TEMPERATURE	V	VOLTS
FCU	FAN COIL UNIT	VAV	VARIABLE AIR VOLUME
FP	FAN POWERED	VRF	VARIABLE REFRIGERANT
FPM	FEET PER MINUTE	WB	WET BULB
GPM	GALLONS PER MINUTE		



REPORT SUMMARY

Test, adjust, and balance work was performed at the Farm Credit Project in Russellville, Arkansas. The scope of work included 9 package roof top units, 12 vav terminal boxes, 8 exhaust fans, and 1 unit heater.

PACKAGE ROOF TOP UNITS

There are 9 package roof top units, the total supply airflow was measured, fan speeds adjusted as necessary, and grilles proportionally balanced. RTU-1 and RTU-3 are variable volume units that serve vav terminal boxes. The terminal boxes were tested and balanced at maximum cooling airflow set point. The supply grille airflows were measured with a direct reading flow hood, totaled, air flow sensors calibrated, and grilles proportionally balanced. The outside air flow was measured, and outside air dampers adjusted to provide design minimum outside air. Unit operating data, temperatures, and static pressures were measured and recorded.

EXHAUST FANS

The exhaust fan airflows were measured with a direct reading flow hood, fan speeds adjusted as necessary, and grilles proportionally balanced.

UNIT HEATER

The unit heater was tested, and entering and leaving air temperatures measured and recorded.



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-01

Tested By: Daniel Draper
Date: 7/25/2024

Unit Data	
Unit Manufacturer	AAON
Unit Model Number	RN-011-8-0-KB09-3F9
Unit Serial Number	202401-ANGZ113286
Unit Discharge	Vertical
Location	Roof
RTU-01/Filter Bank	
MERV Rating	NL
Filter Qty - S1	4
Filter Size - S1	20x25x2

Test Data	
Design Airflow	3900 CFM
Actual Airflow	3861 CFM
Design Outside Airflow	240 CFM
Actual Outside Airflow	260 CFM
Design Return Airflow	3660 CFM
Actual Return Airflow	3601 CFM
O/A Damper Position	20 %
RTU-01/Supply Fan	
Design RPM	2070 RPM
Actual RPM	2053 RPM
Motor Amps T1	12.00 Amps

Motor Data	
RTU-01/Exhaust Fan	
Motor Manufacturer	WEG
Motor Frame	143/5T
Motor HP	2 HP
Motor RPM	1740 RPM
Motor Rated Volts	200 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	6.19 Amps
Motor Service Factor	1.15
Nominal Efficiency	0.86
Motor Power Factor	0.81
Belt Drive/Direct Drive	Belt Drive
RTU-01/Supply Fan	
Motor Frame	184T
Motor HP	5 HP
Motor RPM	1760 RPM
Motor Rated Volts	208 Volts
Motor Phase	3
Motor Hertz	60 Hz
Nominal Efficiency	0.895
Belt Drive/Direct Drive	Direct Drive
VFD Freq Design	70 Hz
VFD Freq	70 Hz

Sheave Data	
RTU-01/Exhaust Fan	
Motor Sheave Diam.	5 in.
Motor Sheave Bore	1 in.
Fan Sheave Model	BK85
Fan Sheave Bore	1.00 in.
Number of Belts	1
Belt Size	B38
Sheave Center Line	10.00 in.

Air Test Data	
RTU-01/Cooling Coil	
Ent Air DB Temp Design	76.4 Deg F
Ent Air WB Temp Design	63.3 Deg F
Leav Air DB Temp Design	55.2 Deg F
Leav Air WB Temp Design	53.6 Deg F
Ent. Air DB Temp Actual	75.0 Deg F
Ent. Air WB Temp Actual	66.0 Deg F
Lvg. Air DB Temp Actual	55.0 Deg F
Lvg. Air WB Temp Actual	53.0 Deg F
Air Temp Delta T Actual	20.0 Deg F
RTU-01/Heating Coil	
Ent Air DB Temp Design	69.8 Deg F
Leav Air DB Temp Design	92.3 Deg F

Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-01

Tested By: Daniel Draper
Date: 7/25/2024

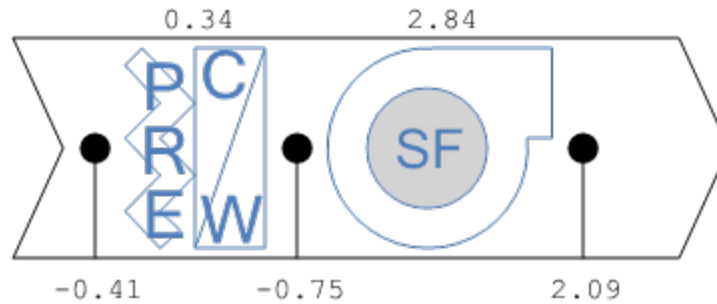
Log:	RTU-01	8/6/2024	Daniel Draper	Could not test heat due to high outdoor ambient temperatures.
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SYSTEM/UNIT: RTU-01/SPP-01

Tested By: Daniel Draper
Date: 7/25/2024

Test Pressures	
Pre Filter/Cooling Coil SP In	-0.41 in. w.c.
Pre Filter/Cooling Coil SP Out	-0.75 in. w.c.
Supply Fan SP In	-0.75 in. w.c.
Supply Fan SP Out	2.09 in. w.c.

Static Pressure Profile



SYSTEM/UNIT: RTU-01/V1-01

Tested By: Daniel Draper
Date: 7/23/2024

Unit Data	
Manufacturer	Price
VAV Address	12
Box Inlet Size	8
K Factor	928

Term Box Test Data	
Cool Max CFM Design	650 CFM
Cool Max CFM Actual	667 CFM
Cool Min CFM Design	125 CFM
Cool Min CFM Actual	137 CFM
Heat Max CFM Design	325 CFM
Heat Max CFM Actual	305 CFM
Actual Heating LAT	109 Deg F

RTU-01/V1-01 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	B114	D	10	250	278	111.2	258	103.2	Evergreen
Outlet-02	B115	C	8	150	142	94.7	152	101.3	Evergreen
Outlet-03	B115	D	10	250	341	136.4	257	102.8	Evergreen
Totals:		-	-	650	761	117.1	667	102.6	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-01/V1-02

Tested By: Daniel Draper
Date: 7/23/2024

Unit Data	
Manufacturer	Price
VAV Address	11
Box Inlet Size	8
K Factor	927

Term Box Test Data	
Cool Max CFM Design	700 CFM
Cool Max CFM Actual	737 CFM
Cool Min CFM Design	130 CFM
Cool Min CFM Actual	136 CFM
Heat Max CFM Design	350 CFM
Heat Max CFM Actual	341 CFM
Actual Heating LAT	94 Deg F

RTU-01/V1-02 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	B113	C	8	150	197	131.3	155	103.3	Evergreen
Outlet-02	B113	C	8	150	212	141.3	157	104.7	Evergreen
Outlet-03	B113	T	8	200	175	87.5	211	105.5	Evergreen
Outlet-04	B 113	T	8	200	211	105.5	214	107.0	Evergreen
Totals:		-	-	700	795	113.6	737	105.3	-

SYSTEM/UNIT: RTU-01/V1-03

Tested By: Daniel Draper
Date: 7/23/2024

Unit Data	
Manufacturer	Price
VAV Address	10
Box Inlet Size	6
K Factor	472

Term Box Test Data	
Cool Max CFM Design	500 CFM
Cool Max CFM Actual	508 CFM
Cool Min CFM Design	85 CFM
Cool Min CFM Actual	88 CFM
Heat Max CFM Design	250 CFM
Heat Max CFM Actual	253 CFM
Actual Heating LAT	86 Deg F

RTU-01/V1-03 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	B111	D	10	250	286	114.4	256	102.4	Evergreen
Outlet-02	B112	D	10	250	223	89.2	252	100.8	Evergreen
Totals:		-	-	500	509	101.8	508	101.6	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-01/V1-04

Tested By: Daniel Draper
Date: 7/23/2024

Unit Data	
Manufacturer	Price
VAV Address	9
Box Inlet Size	6
K Factor	457

Term Box Test Data	
Cool Max CFM Design	500 CFM
Cool Max CFM Actual	496 CFM
Cool Min CFM Design	85 CFM
Cool Min CFM Actual	92 CFM
Heat Max CFM Design	250 CFM
Heat Max CFM Actual	244 CFM
Actual Heating LAT	97 Deg F

RTU-01/V1-04 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	B109	D	10	250	455	182.0	246	98.4	Evergreen
Outlet-02	B110	D	10	250	49	19.6	250	100.0	Evergreen
Totals:		-	-	500	504	100.8	496	99.2	-

SYSTEM/UNIT: RTU-01/V1-05

Tested By: Daniel Draper
Date: 7/23/2024

Unit Data	
Manufacturer	Price
VAV Address	8
Box Inlet Size	6
K Factor	461

Term Box Test Data	
Cool Max CFM Design	500 CFM
Cool Max CFM Actual	510 CFM
Cool Min CFM Design	85 CFM
Cool Min CFM Actual	91 CFM
Heat Max CFM Design	250 CFM
Heat Max CFM Actual	243 CFM
Actual Heating LAT	106 Deg F

RTU-01/V1-05 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	B107	D	10	250	258	103.2	258	103.2	Evergreen
Outlet-02	B108	D	10	250	252	100.8	252	100.8	Evergreen
Totals:		-	-	500	510	102.0	510	102.0	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-01/V1-06

Tested By: Daniel Draper
Date: 7/23/2024

Unit Data	
Manufacturer	Price
VAV Address	7
Box Inlet Size	8
K Factor	921

Term Box Test Data	
Cool Max CFM Design	650 CFM
Cool Max CFM Actual	673 CFM
Cool Min CFM Design	125 CFM
Cool Min CFM Actual	133 CFM
Heat Max CFM Design	325 CFM
Heat Max CFM Actual	324 CFM
Actual Heating LAT	106 Deg F

RTU-01/V1-06 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	B118	C	8	150	187	124.7	155	103.3	Evergreen
Outlet-02	B105	D	10	250	256	102.4	258	103.2	Evergreen
Outlet-03	B106	D	10	250	310	124.0	260	104.0	Evergreen
Totals:		-	-	650	753	115.8	673	103.5	-

SYSTEM/UNIT: RTU-01/V1-07

Tested By: Daniel Draper
Date: 7/23/2024

Unit Data	
Manufacturer	Price
VAV Address	6
Box Inlet Size	6
K Factor	470

Term Box Test Data	
Cool Max CFM Design	400 CFM
Cool Max CFM Actual	389 CFM
Cool Min CFM Design	85 CFM
Cool Min CFM Actual	94 CFM
Heat Max CFM Design	250 CFM
Heat Max CFM Actual	256 CFM
Actual Heating LAT	113 Deg F

RTU-01/V1-07 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	B102	D	10	300	375	125.0	285	95.0	Evergreen
Outlet-02	B103	A	6	50	30	60.0	51	102.0	Evergreen
Outlet-03	B104	A	6	50	10	20.0	53	106.0	Evergreen
Totals:		-	-	400	415	103.8	389	97.3	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-02

Tested By: Daniel Draper
Date: 7/25/2024

Unit Data	
Unit Manufacturer	TempMaster
Unit Model Number	ZJ150N24R2B5NCE2A2
Unit Serial Number	N2A4100984
Unit Discharge	Vertical
Location	Roof
RTU-02/Filter Bank	
MERV Rating	NL
Filter Qty - S1	4
Filter Size - S1	20x24x2

Test Data	
Design Airflow	4800 CFM
Actual Airflow	4936 CFM
Design Outside Airflow	300 CFM
Actual Outside Airflow	315 CFM
Design Return Airflow	4500 CFM
Actual Return Airflow	4621 CFM
O/A Damper Position	15
RTU-02/Supply Fan	
Design RPM	1359 RPM
Actual RPM	1203 RPM
Motor Volts T1-T2	31 Volts
Motor Volts T2-T3	31 Volts
Motor Volts T1-T3	211 Volts
Motor Amps T1	11.20 Amps
Motor Amps T2	30.86 Amps
Motor Amps T3	2.23 Amps

Motor Data	
RTU-02/Supply Fan	
Motor Manufacturer	Baldor
Motor Frame	184T
Motor HP	5 HP
Motor RPM	1750 RPM
Motor Rated Volts	208 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	13.5 Amps
Motor Service Factor	1.15
Brake Horsepower	2.2 BHP
Corrected FL Amps	30.86 Amps
Nominal Efficiency	0.895
Motor Power Factor	0.8
Belt Drive/Direct Drive	Belt Drive
VFD Freq	49 Hz

Sheave Data	
RTU-02/Supply Fan	
Motor Sheave Diam.	5.5 in.
Motor Sheave Bore	1 1/8 in.
Fan Sheave Diam.	2.23 in.
Fan Sheave Bore	1.00 in.
Number of Belts	1
Belt Size	30.86
Sheave Center Line	2.23 in.

Air Test Data	
RTU-02/Cooling Coil	
Ent Air DB Temp Design	80.0 Deg F
Ent Air WB Temp Design	67.0 Deg F
Leav Air DB Temp Design	57.2 Deg F
Leav Air WB Temp Design	55.7 Deg F
Ent. Air DB Temp Actual	76.0 Deg F
Ent. Air WB Temp Actual	66.0 Deg F
Lvg. Air DB Temp Actual	54.0 Deg F
Lvg. Air WB Temp Actual	52.0 Deg F
Air Temp Delta T Actual	22.0 Deg F
RTU-02/Heating Coil	
Ent Air DB Temp Design	60.0 Deg F
Leav Air DB Temp Design	97.4 Deg F

Log: RTU-02 8/6/2024 Daniel Draper Could not test heat due to high outdoor ambient temperatures.

Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

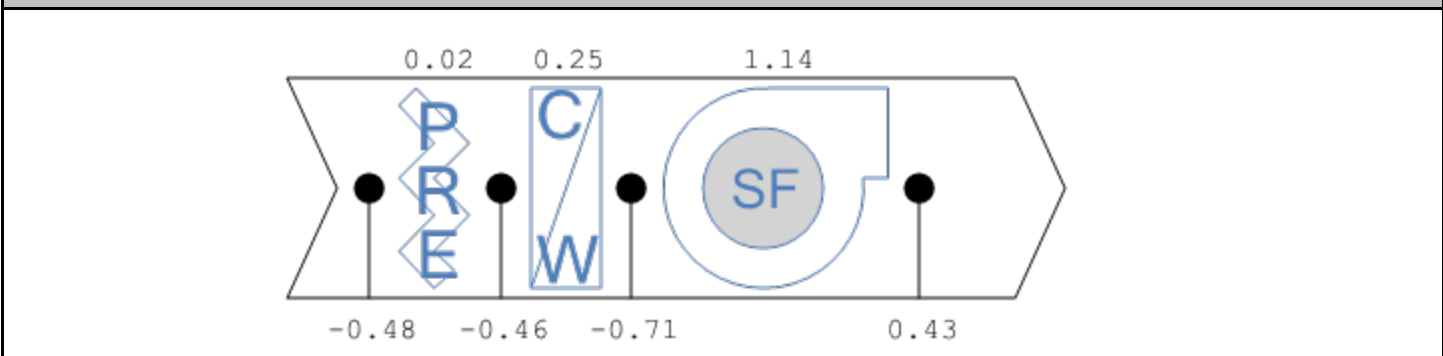
DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-02/SPP-01

Tested By: Daniel Draper
Date: 7/25/2024

Test Pressures	
Cooling Coil SP In	-0.46 in. w.c.
Cooling Coil SP Out	-0.71 in. w.c.
Pre Filter SP In	-0.48 in. w.c.
Pre Filter SP Out	-0.46 in. w.c.
Supply Fan SP In	-0.71 in. w.c.
Supply Fan SP Out	0.43 in. w.c.

Static Pressure Profile



RTU-02 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	B116	K	16	400	303	75.8	415	103.8	Evergreen
Outlet-02	B116	R	32	400	277	69.3	410	102.5	Evergreen
Outlet-03	B116	R	32	400	265	66.3	390	97.5	Evergreen
Outlet-04	B116	P	26	400	315	78.8	420	105.0	Evergreen
Outlet-05	B116	P	26	400	333	83.3	416	104.0	Evergreen
Outlet-06	B116	M	20	400	289	72.3	396	99.0	Evergreen
Outlet-07	B116	M	20	400	290	72.5	404	101.0	Evergreen
Outlet-08	B116	M	20	350	265	75.7	365	104.3	Evergreen
Outlet-09	B116	M	20	350	277	79.1	370	105.7	Evergreen
Outlet-10	B116	P	26	350	280	80.0	345	98.6	Evergreen
Outlet-11	B116	P	26	350	300	85.7	368	105.1	Evergreen
Outlet-12	B116	R	32	300	255	85.0	322	107.3	Evergreen
Outlet-13	B116	R	32	300	260	86.7	315	105.0	Evergreen
Totals:		-	-	4800	3709	77.3	4936	102.8	-

RTU-02 Return Inlet Summary

System/Unit	Area Served	Inlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Inlet-01	B118	X	46/18	2250	2070	92.0	2356	104.7	Evergreen
Inlet-02	B118	X	46/18	2250	1343	59.7	2265	100.7	Evergreen
Totals:		-	-	4500	3413	75.8	4621	102.7	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-03

Tested By: Daniel Draper
Date: 7/30/2024

Unit Data	
Unit Manufacturer	AAON
Unit Model Number	RN-007-8-0-KB09-3K9
Unit Serial Number	202401-ANGG113291
Unit Discharge	Vertical
Location	Roof
RTU-03/Filter Bank	
Filter Qty - S1	4
Filter Size - S1	16x20x2

Test Data	
Design Airflow	2750 CFM
Actual Airflow	2650 CFM
Design Outside Airflow	250 CFM
Actual Outside Airflow	265 CFM
Design Return Airflow	2500 CFM
Actual Return Airflow	2385 CFM
O/A Damper Position	20 %

Motor Data	
RTU-03/Exhaust Fan	
Motor Manufacturer	WEG
Motor Frame	143/5T
Motor HP	2 HP
Motor RPM	1740 RPM
Motor Rated Volts	200 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	6.19 Amps
Motor Service Factor	1.15
Nominal Efficiency	0.86
Motor Power Factor	0.81
Belt Drive/Direct Drive	Belt Drive
RTU-03/Supply Fan	
Motor Frame	182T
Motor HP	3 HP
Motor RPM	1760 RPM
Motor Rated Volts	208 Volts
Motor Phase	3
Motor Hertz	60 Hz
Belt Drive/Direct Drive	Direct Drive

Sheave Data	
RTU-03/Exhaust Fan	
Motor Sheave Model	1VP50
Motor Sheave Bore	7/8 in.
Fan Sheave Model	AK68
Fan Sheave Bore	1.00 in.
Number of Belts	1
Belt Size	A38
Sheave Center Line	9 1/2 in.

Air Test Data	
RTU-03/Cooling Coil	
Ent Air DB Temp Design	77.0 Deg F
Ent Air WB Temp Design	64.0 Deg F
Leav Air DB Temp Design	55.7 Deg F
Leav Air WB Temp Design	54.3 Deg F
Ent. Air DB Temp Actual	75.3 Deg F
Ent. Air WB Temp Actual	64.0 Deg F
Lvg. Air DB Temp Actual	55.0 Deg F
Lvg. Air WB Temp Actual	53.0 Deg F
Air Temp Delta T Actual	20.3 Deg F
RTU-03/Heating Coil	
Ent Air DB Temp Design	69.1 Deg F
Leav Air DB Temp Design	93.6 Deg F

Log: RTU-03 8/6/2024 Daniel Draper Could not test heat due to high outdoor ambient temperatures.

Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

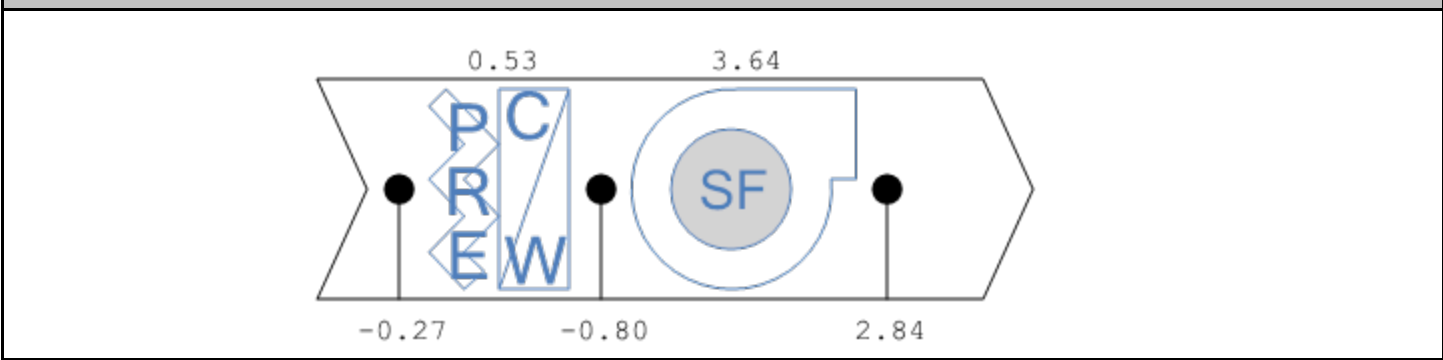
DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-03/SPP-01

Tested By: Daniel Draper
 Date: 7/25/2024

Test Pressures	
Pre Filter/Cooling Coil SP In	-0.27 in. w.c.
Pre Filter/Cooling Coil SP Out	-0.80 in. w.c.
Supply Fan SP In	-0.80 in. w.c.
Supply Fan SP Out	2.84 in. w.c.

Static Pressure Profile



SYSTEM/UNIT: RTU-03/V3-01

Tested By: Daniel Draper
 Date: 7/23/2024

Unit Data	
Manufacturer	Price
VAV Address	3
Box Inlet Size	6
K Factor	387

Term Box Test Data	
Cool Max CFM Design	500 CFM
Cool Max CFM Actual	533 CFM
Cool Min CFM Design	85 CFM
Cool Min CFM Actual	91 CFM
Heat Max CFM Design	250 CFM
Heat Max CFM Actual	266 CFM
Actual Heating LAT	114 Deg F

RTU-03/V3-01 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	A123	D	10	250	220	88.0	271	108.4	Evergreen
Outlet-02	A122	D	10	250	217	86.8	262	104.8	Evergreen
	Totals:	-	-	500	437	87.4	533	106.6	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-03/V3-02

Tested By: Daniel Draper
Date: 7/25/2024

Unit Data	
Manufacturer	Price
VAV Address	4
Box Inlet Size	6
K Factor	490

Term Box Test Data	
Cool Max CFM Design	500 CFM
Cool Max CFM Actual	490 CFM
Cool Min CFM Design	85 CFM
Cool Min CFM Actual	77 CFM
Heat Max CFM Design	250 CFM
Heat Max CFM Actual	243 CFM
Actual Heating LAT	110 Deg F

RTU-03/V3-02 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	A121	D	10	250	18	7.2	236	94.4	Evergreen
Outlet-02	A120	D	10	250	355	142.0	254	101.6	Evergreen
	Totals:	-	-	500	373	74.6	490	98.0	-

SYSTEM/UNIT: RTU-03/V3-03

Tested By: Daniel Draper
Date: 7/23/2024

Unit Data	
Manufacturer	Price
VAV Address	5
Box Inlet Size	8
K Factor	954

Term Box Test Data	
Cool Max CFM Design	650 CFM
Cool Max CFM Actual	674 CFM
Cool Min CFM Design	125 CFM
Cool Min CFM Actual	131 CFM
Heat Max CFM Design	325 CFM
Heat Max CFM Actual	342 CFM
Actual Heating LAT	98 Deg F

RTU-03/V3-03 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	A119	D	10	250	305	122.0	252	100.8	Evergreen
Outlet-02	A118	E	12	400	465	116.3	422	105.5	Evergreen
	Totals:	-	-	650	770	118.5	674	103.7	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-03/V3-04

Tested By: Daniel Draper
Date: 7/23/2024

Unit Data	
Manufacturer	Price
VAV Address	1
Box Inlet Size	8
K Factor	797

Term Box Test Data	
Cool Max CFM Design	600 CFM
Cool Max CFM Actual	630 CFM
Cool Min CFM Design	250 CFM
Cool Min CFM Actual	265 CFM
Heat Max CFM Design	300 CFM
Heat Max CFM Actual	304 CFM
Design Heating LAT	110 Deg F

RTU-03/V3-04 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	A116	T	8	150	139	92.7	161	107.3	Evergreen
Outlet-02	A116	T	8	150	184	122.7	155	103.3	Evergreen
Outlet-03	A117	C	8	150	110	73.3	156	104.0	Evergreen
Outlet-04	A117	C	8	150	193	128.7	158	105.3	Evergreen
Totals:		-	-	600	626	104.3	630	105.0	-

SYSTEM/UNIT: RTU-03/V3-05

Tested By: Daniel Draper
Date: 7/23/2024

Unit Data	
Manufacturer	Price
VAV Address	2
Box Inlet Size	6
K Factor	455

Term Box Test Data	
Cool Max CFM Design	500 CFM
Cool Max CFM Actual	500 CFM
Cool Min CFM Design	85 CFM
Cool Min CFM Actual	89 CFM
Heat Max CFM Design	250 CFM
Actual Heating LAT	114 Deg F

RTU-03/V3-05 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	A125	D	10	250	293	117.2	242	96.8	Evergreen
Outlet-02	A124	D	10	250	198	79.2	258	103.2	Evergreen
Totals:		-	-	500	491	98.2	500	100.0	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-04

Tested By: Daniel Draper
Date: 7/25/2024

Unit Data	
Unit Manufacturer	TempMaster
Unit Model Number	ZJ102N18R2B5NCE2A3
Unit Serial Number	N2A4100952
Unit Discharge	Vertical
Location	Roof
RTU-04/Filter Bank	
MERV Rating	NL
Filter Qty - S1	4
Filter Size - S1	20x24x2

Test Data	
Design Airflow	3200 CFM
Actual Airflow	3119 CFM
Design Outside Airflow	300 CFM
Actual Outside Airflow	325 CFM
Design Return Airflow	2900 CFM
Actual Return Airflow	2794 CFM
O/A Damper Position	15
RTU-04/Supply Fan	
Design RPM	998 RPM
Actual RPM	932 RPM
Motor Volts T1-T2	211 Volts
Motor Volts T2-T3	210 Volts
Motor Volts T1-T3	211 Volts
Motor Amps T1	7.40 Amps
Motor Amps T2	7.50 Amps
Motor Amps T3	7.50 Amps

Motor Data	
RTU-04/Supply Fan	
Motor Manufacturer	Baldor
Motor Frame	56HZ
Motor HP	3 HP
Motor RPM	1750 RPM
Motor Rated Volts	208 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	8.3 Amps
Motor Service Factor	1.15
Brake Horsepower	2.5 BHP
Corrected FL Amps	8.19 Amps
Nominal Efficiency	0.875
Motor Power Factor	0.78
VFD Freq	55 Hz

Sheave Data	
RTU-04/Supply Fan	
Motor Sheave Diam.	5 in.
Motor Sheave Bore	7/8 in.
Fan Sheave Diam.	7.5 in.
Fan Sheave Bore	1.00 in.
Number of Belts	1
Belt Size	A54
Sheave Center Line	19.00 in.

Air Test Data	
RTU-04/Cooling Coil	
Ent Air DB Temp Design	80.0 Deg F
Ent Air WB Temp Design	67.0 Deg F
Leav Air DB Temp Design	58.8 Deg F
Leav Air WB Temp Design	56.5 Deg F
Ent. Air DB Temp Actual	76.0 Deg F
Ent. Air WB Temp Actual	63.0 Deg F
Lvg. Air DB Temp Actual	57.0 Deg F
Lvg. Air WB Temp Actual	55.0 Deg F
Air Temp Delta T Actual	19.0 Deg F
RTU-04/Heating Coil	
Ent Air DB Temp Design	60.0 Deg F
Leav Air DB Temp Design	102.2 Deg F

Log: RTU-04 8/6/2024 Daniel Draper Could not test heat due to high outdoor ambient temperatures.

Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

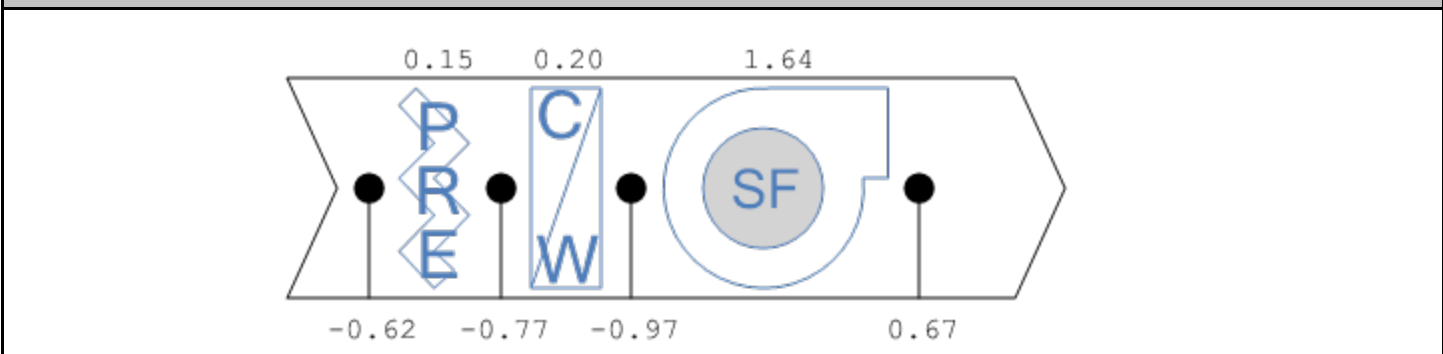
DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-04/SPP-01

Tested By: Daniel Draper
Date: 7/25/2024

Test Pressures	
Cooling Coil SP In	-0.77 in. w.c.
Cooling Coil SP Out	-0.97 in. w.c.
Pre Filter SP In	-0.62 in. w.c.
Pre Filter SP Out	-0.77 in. w.c.
Supply Fan SP In	-0.97 in. w.c.
Supply Fan SP Out	0.67 in. w.c.

Static Pressure Profile



RTU-04 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	A127	Q	28	400	323	80.8	410	102.5	Evergreen
Outlet-02	A127	Q	28	400	355	88.8	388	97.0	Evergreen
Outlet-03	A127	Q	28	400	370	92.5	395	98.8	Evergreen
Outlet-04	A127	P	26	400	277	69.3	405	101.3	Evergreen
Outlet-05	A127	N	22	400	304	76.0	377	94.3	Evergreen
Outlet-06	A127	N	22	400	325	81.3	380	95.0	Evergreen
Outlet-07	A127	N	22	400	366	91.5	376	94.0	Evergreen
Outlet-08	A127	P	26	200	155	77.5	192	96.0	Evergreen
Outlet-09	A127	Q	28	200	170	85.0	196	98.0	Evergreen
Totals:	-	-	-	3200	2645	82.7	3119	97.5	-

RTU-04 Return Inlet Summary

System/Unit	Area Served	Inlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Inlet-01	A127	H	46/22	2900	2179	75.1	2794	96.3	Evergreen
Totals:	-	-	-	2900	2179	75.1	2794	96.3	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-05

Tested By: Daniel Draper
Date: 7/25/2024

Unit Data	
Unit Manufacturer	TempMaster
Unit Model Number	JZ102N18R2B5NCE2A3
Unit Serial Number	N2A4100850
Unit Discharge	Vertical
Location	Roof
RTU-05/Filter Bank	
MERV Rating	NL
Filter Qty - S1	4
Filter Size - S1	20x24x2

Test Data	
Design Airflow	3200 CFM
Actual Airflow	3520 CFM
Design Outside Airflow	470 CFM
Actual Outside Airflow	515 CFM
Design Return Airflow	2730 CFM
Actual Return Airflow	3005 CFM
O/A Damper Position	20
RTU-05/Supply Fan	
Design RPM	998 RPM
Actual RPM	1108 RPM
Motor Volts T1-T2	211 Volts
Motor Volts T2-T3	210 Volts
Motor Volts T1-T3	211 Volts
Motor Amps T1	7.80 Amps
Motor Amps T2	7.60 Amps
Motor Amps T3	7.70 Amps

Motor Data	
RTU-05/Supply Fan	
Motor Manufacturer	Baldor
Motor Frame	56HZ
Motor HP	3 HP
Motor RPM	1750 RPM
Motor Rated Volts	208 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	8.3 Amps
Motor Service Factor	1.15
Brake Horsepower	2.6 BHP
Corrected FL Amps	8.19 Amps
Nominal Efficiency	0.875
Motor Power Factor	0.78
VFD Freq	57 Hz

Sheave Data	
RTU-05/Supply Fan	
Motor Sheave Diam.	5 in.
Motor Sheave Bore	7/8 in.
Fan Sheave Diam.	7.5 in.
Fan Sheave Bore	1.00 in.
Number of Belts	1
Belt Size	A54
Sheave Center Line	19.00 in.

Air Test Data	
RTU-05/Cooling Coil	
Ent Air DB Temp Design	80.0 Deg F
Ent Air WB Temp Design	67.0 Deg F
Leav Air DB Temp Design	58.8 Deg F
Leav Air WB Temp Design	56.5 Deg F
Ent. Air DB Temp Actual	76.0 Deg F
Ent. Air WB Temp Actual	65.0 Deg F
Lvg. Air DB Temp Actual	56.0 Deg F
Lvg. Air WB Temp Actual	54.0 Deg F
Air Temp Delta T Actual	20.0 Deg F
RTU-05/Heating Coil	
Ent Air DB Temp Design	60.0 Deg F
Leav Air DB Temp Design	102.2 Deg F

Log: RTU-05 8/6/2024 Daniel Draper Could not test heat due to high outdoor ambient temperatures.

Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

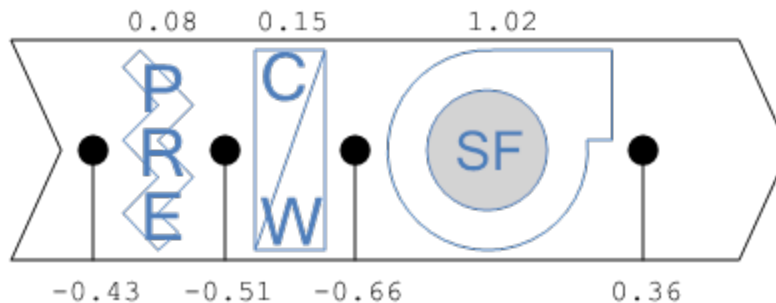
DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-05/SPP-01

Tested By: Daniel Draper
Date: 7/25/2024

Test Pressures	
Cooling Coil SP In	-0.51 in. w.c.
Cooling Coil SP Out	-0.66 in. w.c.
Pre Filter SP In	-0.43 in. w.c.
Pre Filter SP Out	-0.51 in. w.c.
Supply Fan SP In	-0.66 in. w.c.
Supply Fan SP Out	0.36 in. w.c.

Static Pressure Profile



RTU-05 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	A103	D	10	300	159	53.0	327	109.0	Evergreen
Outlet-02	A103	D	10	300	122	40.7	303	101.0	Evergreen
Outlet-03	A103	D	10	300	123	41.0	292	97.3	Evergreen
Outlet-04	A103	D	10	300	163	54.3	321	107.0	Evergreen
Outlet-05	A103	D	10	300	130	43.3	320	106.7	Evergreen
Outlet-06	A103	D	10	250	136	54.4	269	107.6	Evergreen
Outlet-07	A103	D	10	250	118	47.2	276	110.4	Evergreen
Outlet-08	A103	D	10	250	209	83.6	243	97.2	Evergreen
Outlet-09	A103	D	10	250	168	67.2	242	96.8	Evergreen
Outlet-10	A103	D	10	250	138	55.2	247	98.8	Evergreen
Outlet-11	A103	D	10	250	187	74.8	250	100.0	Evergreen
Outlet-12	A104	D	10	225	85	37.8	220	97.8	Evergreen
Outlet-13	A105	D	10	225	91	40.4	210	93.3	Evergreen
Totals:	-	-	-	3450	1829	53.0	3520	102.0	-

RTU-05 Return Inlet Summary

System/Unit	Area Served	Inlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Inlet-01	A103	H	46/22	1365	790	57.9	1495	109.5	Evergreen
Inlet-02	A103	H	46/22	1365	815	59.7	1510	110.6	Evergreen
Totals:	-	-	-	2730	1605	58.8	3005	110.1	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-06

Tested By: Daniel Draper
Date: 7/25/2024

Unit Data	
Unit Manufacturer	TempMaster
Unit Model Number	ZJ102N18R2B5NCE2A3
Unit Serial Number	N2A4100951
Unit Discharge	Vertical
Location	Roof
RTU-06/Filter Bank	
MERV Rating	NL
Filter Qty - S1	4
Filter Size - S1	20x24x2

Test Data	
Design Airflow	3200 CFM
Actual Airflow	3264 CFM
Design Outside Airflow	300 CFM
Actual Outside Airflow	315 CFM
Design Return Airflow	2900 CFM
Actual Return Airflow	2949 CFM
O/A Damper Position	15
RTU-06/Supply Fan	
Design RPM	998 RPM
Actual RPM	945 RPM
Motor Volts T1-T2	211 Volts
Motor Volts T2-T3	210 Volts
Motor Volts T1-T3	211 Volts
Motor Amps T1	7.90 Amps
Motor Amps T2	7.50 Amps
Motor Amps T3	7.60 Amps

Motor Data	
RTU-06/Supply Fan	
Motor Manufacturer	Baldor
Motor Frame	56HZ
Motor HP	3 HP
Motor RPM	1750 RPM
Motor Rated Volts	208 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	8.3 Amps
Motor Service Factor	1.15
Brake Horsepower	2.6 BHP
Corrected FL Amps	8.19 Amps
Nominal Efficiency	0.875
Motor Power Factor	0.78
VFD Freq	54 Hz

Sheave Data	
RTU-06/Supply Fan	
Motor Sheave Diam.	4.5 in.
Motor Sheave Bore	7/8 in.
Fan Sheave Diam.	7.5 in.
Fan Sheave Bore	1.00 in.
Number of Belts	1
Belt Size	A54
Sheave Center Line	19.00 in.

Air Test Data	
RTU-06/Cooling Coil	
Ent Air DB Temp Design	80.0 Deg F
Ent Air WB Temp Design	67.0 Deg F
Leav Air DB Temp Design	58.8 Deg F
Leav Air WB Temp Design	56.5 Deg F
Ent. Air DB Temp Actual	75.0 Deg F
Ent. Air WB Temp Actual	64.0 Deg F
Lvg. Air DB Temp Actual	57.0 Deg F
Lvg. Air WB Temp Actual	55.0 Deg F
Air Temp Delta T Actual	18.0 Deg F
RTU-06/Heating Coil	
Ent Air DB Temp Design	60.0 Deg F
Leav Air DB Temp Design	102.2 Deg F

Log: RTU-06 8/6/2024 Daniel Draper Could not test heat due to high outdoor ambient temperatures.

Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

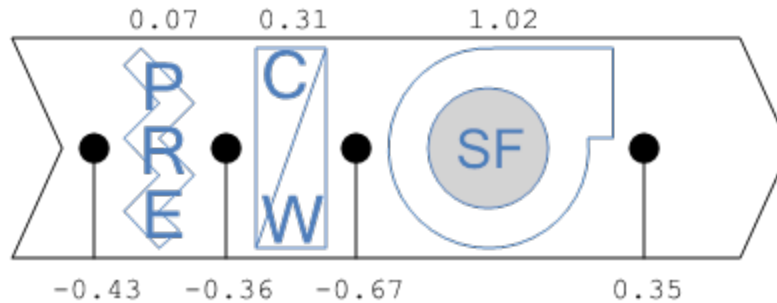
DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-06/SPP-01

Tested By: Daniel Draper
Date: 7/25/2024

Test Pressures	
Cooling Coil SP In	-0.36 in. w.c.
Cooling Coil SP Out	-0.67 in. w.c.
Pre Filter SP In	-0.43 in. w.c.
Pre Filter SP Out	-0.36 in. w.c.
Supply Fan SP In	-0.67 in. w.c.
Supply Fan SP Out	0.35 in. w.c.

Static Pressure Profile



RTU-06 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	A114	K	16	100	200	200.0	110	110.0	Evergreen
Outlet-02	A114	K	16	200	255	127.5	215	107.5	Evergreen
Outlet-03	A114	K	16	200	268	134.0	210	105.0	Evergreen
Outlet-04	A114	L	18	200	215	107.5	205	102.5	Evergreen
Outlet-05	A114	L	18	200	250	125.0	210	105.0	Evergreen
Outlet-06	A114	L	18	100	175	175.0	105	105.0	Evergreen
Outlet-07	A114	L	18	100	150	150.0	100	100.0	Evergreen
Outlet-08	A114	L	18	200	250	125.0	205	102.5	Evergreen
Outlet-09	A114	L	18	225	230	102.2	230	102.2	Evergreen
Outlet-10	A114	L	18	225	188	83.6	235	104.4	Evergreen
Outlet-11	A114	K	16	250	165	66.0	245	98.0	Evergreen
Outlet-12	A114	K	16	250	190	76.0	230	92.0	Evergreen
Outlet-13	A114	L	18	250	175	70.0	240	96.0	Evergreen
Outlet-14	A114	L	18	250	180	72.0	255	102.0	Evergreen
Outlet-15	A114	L	18	250	190	76.0	259	103.6	Evergreen
Outlet-16	A114	L	18	200	195	97.5	210	105.0	Evergreen
Totals:	-	-	-	3200	3276	102.4	3264	102.0	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-07

Tested By: Daniel Draper
Date: 7/25/2024

Unit Data	
Unit Manufacturer	TempMaster
Unit Model Number	ZT061N12P2B5NCE2A2
Unit Serial Number	N2A4106417
Unit Discharge	Downblast
Location	Roof
RTU-07/Filter Bank	
Filter Type	Pleated
MERV Rating	NL
Filter Qty - S1	4
Filter Size - S1	16x24x2

Test Data	
Design Airflow	2000 CFM
Actual Airflow	1984 CFM
Design Outside Airflow	250 CFM
Actual Outside Airflow	265 CFM
Design Return Airflow	1750 CFM
Actual Return Airflow	1719 CFM
O/A Damper Position	15
RTU-07/Supply Fan	
Design RPM	1017 RPM
Actual RPM	986 RPM
Motor Volts T1-T2	212 Volts
Motor Volts T2-T3	211 Volts
Motor Volts T1-T3	211 Volts
Motor Amps T1	3.90 Amps
Motor Amps T2	4.00 Amps
Motor Amps T3	3.70 Amps

Motor Data	
RTU-07/Supply Fan	
Motor Manufacturer	Baldor
Motor Frame	4.23
Motor HP	1.5 HP
Motor RPM	1740 RPM
Motor Rated Volts	208 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	4.3 Amps
Motor Service Factor	1.15
Brake Horsepower	1.3 BHP
Corrected FL Amps	4.23 Amps
Nominal Efficiency	0.865
Motor Power Factor	0.77
Belt Drive/Direct Drive	Belt Drive
VFD Freq Design	4.23 Hz
VFD Freq	51 Hz

Sheave Data	
RTU-07/Supply Fan	
Motor Sheave Model	1VL40
Motor Sheave Bore	7/8 in.
Fan Sheave Diam.	6 in.
Fan Sheave Bore	1.00 in.
Number of Belts	1
Belt Size	A45
Sheave Center Line	16.00 in.

Air Test Data	
RTU-07/Cooling Coil	
Ent Air DB Temp Design	80.0 Deg F
Ent Air WB Temp Design	67.0 Deg F
Leav Air DB Temp Design	58.5 Deg F
Leav Air WB Temp Design	57.0 Deg F
Ent. Air DB Temp Actual	76.0 Deg F
Ent. Air WB Temp Actual	65.0 Deg F
Lvg. Air DB Temp Actual	55.0 Deg F
Lvg. Air WB Temp Actual	53.0 Deg F
Air Temp Delta T Actual	21.0 Deg F
RTU-07/Heating Coil	
Ent Air DB Temp Design	60.0 Deg F
Leav Air DB Temp Design	104.9 Deg F

Log: RTU-07 8/6/2024 Daniel Draper Could not test heat due to high outdoor ambient temperatures.

Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

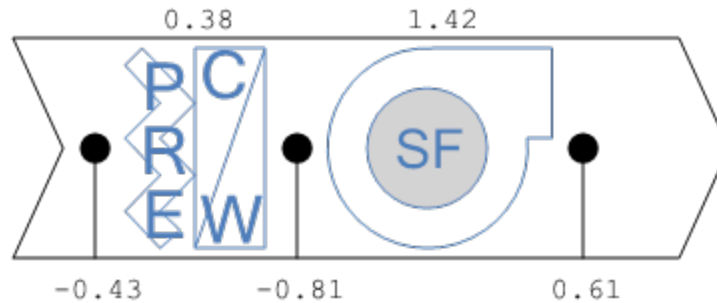
DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-07/SPP-01

Tested By: Daniel Draper
Date: 7/25/2024

Test Pressures	
Pre Filter SP In	-0.43 in. w.c.
Pre Filter SP Out	-0.81 in. w.c.
Pre Filter/Cooling Coil SP In	-0.43 in. w.c.
Pre Filter/Cooling Coil SP Out	-0.81 in. w.c.
Supply Fan SP In	-0.81 in. w.c.
Supply Fan SP Out	0.61 in. w.c.

Static Pressure Profile



RTU-07 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	A108	B	6	50	123	246.0	53	106.0	Evergreen
Outlet-02	A113	B	6	100	165	165.0	103	103.0	Evergreen
Outlet-03	A113	B	6	100	197	197.0	105	105.0	Evergreen
Outlet-04	A112	U	8	170	162	95.3	174	102.4	Evergreen
Outlet-05	A112	U	8	170	160	94.1	165	97.1	Evergreen
Outlet-06	A112	U	8	170	155	91.2	168	98.8	Evergreen
Outlet-07	A112	U	8	170	168	98.8	177	104.1	Evergreen
Outlet-08	A112	V	48/6	300	256	85.3	289	96.3	Evergreen
Outlet-09	A112	V	48/6	300	260	86.7	288	96.0	Evergreen
Outlet-10	A112	V	48/6	300	245	81.7	290	96.7	Evergreen
Outlet-11	A112	V	48/6	175	163	93.1	172	98.3	Evergreen
Totals:	-	-	-	2005	2054	102.4	1984	99.0	-

RTU-07 Return Inlet Summary

System/Unit	Area Served	Inlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Inlet-01	A112	X	46/18	1750	1790	102.3	1719	98.2	Evergreen
Totals:	-	-	-	1750	1790	102.3	1719	98.2	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-08

Tested By: Daniel Draper
Date: 7/25/2024

Unit Data	
Unit Manufacturer	TempMaster
Unit Model Number	ZT061N12P2B5NCE2A2
Unit Serial Number	N2A4106418
Location	Roof
RTU-08/Filter Bank	
Filter Type	Pleated
MERV Rating	NL
Filter Qty - S1	4
Filter Size - S1	16x24x2

Test Data	
Design Airflow	2000 CFM
Actual Airflow	2057 CFM
Design Outside Airflow	150 CFM
Actual Outside Airflow	160 CFM
Design Return Airflow	1850 CFM
Actual Return Airflow	1897 CFM
O/A Damper Position	15
RTU-08/Supply Fan	
Design RPM	1017 RPM
Actual RPM	994 RPM
Motor Volts T1-T2	210 Volts
Motor Volts T2-T3	211 Volts
Motor Volts T1-T3	210 Volts
Motor Amps T1	3.80 Amps
Motor Amps T2	3.60 Amps
Motor Amps T3	3.70 Amps

Motor Data	
RTU-08/Supply Fan	
Motor Manufacturer	Baldor
Motor Frame	56HZ
Motor HP	1.5 HP
Motor RPM	1740 RPM
Motor Rated Volts	208 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	5.93 Amps
Motor Service Factor	1.15
Brake Horsepower	5.9 BHP
Corrected FL Amps	5.86 Amps
Nominal Efficiency	4.26
Motor Power Factor	0.77
Belt Drive/Direct Drive	Belt Drive
Direct Drive Speed	5.93
VFD Freq	60 Hz

Sheave Data	
RTU-08/Supply Fan	
Motor Sheave Model	1VL40
Motor Sheave Bore	7/8 in.
Fan Sheave Diam.	7 in.
Fan Sheave Bore	1.00 in.
Number of Belts	1
Belt Size	A45
Sheave Center Line	16.00 in.

Air Test Data	
RTU-08/Cooling Coil	
Ent Air DB Temp Design	80.0 Deg F
Ent Air WB Temp Design	67.0 Deg F
Leav Air DB Temp Design	58.5 Deg F
Leav Air WB Temp Design	57.0 Deg F
Ent. Air DB Temp Actual	74.0 Deg F
Ent. Air WB Temp Actual	66.0 Deg F
Lvg. Air DB Temp Actual	54.0 Deg F
Lvg. Air WB Temp Actual	52.0 Deg F
Air Temp Delta T Actual	20.0 Deg F
RTU-08/Heating Coil	
Ent Air DB Temp Design	60.0 Deg F
Leav Air DB Temp Design	104.9 Deg F

Log: RTU-08 8/6/2024 Daniel Draper Could not test heat due to high outdoor ambient temperatures.



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

RTU-08 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	A111	J	10	225	110	48.9	235	104.4	Evergreen
Outlet-02	A111	J	10	225	95	42.2	215	95.6	Evergreen
Outlet-03	A111	L	18	200	115	57.5	196	98.0	Evergreen
Outlet-04	A111	L	18	100	65	65.0	105	105.0	Evergreen
Outlet-05	A111	L	18	200	105	52.5	211	105.5	Evergreen
Outlet-06	A111	L	18	200	117	58.5	206	103.0	Evergreen
Outlet-07	A111	L	18	100	55	55.0	96	96.0	Evergreen
Outlet-08	A111	N	22	100	50	50.0	102	102.0	Evergreen
Outlet-09	A111	N	22	200	101	50.5	202	101.0	Evergreen
Outlet-10	A111	N	22	200	110	55.0	195	97.5	Evergreen
Outlet-11	A109	B	6	100	83	83.0	95	95.0	Evergreen
Outlet-12	A110	B	6	100	90	90.0	97	97.0	Evergreen
Outlet-13	A113	B	6	100	34	34.0	102	102.0	Evergreen
Totals:		-	-	2050	1130	55.1	2057	100.3	-

RTU-08 Return Inlet Summary

System/Unit	Area Served	Inlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Inlet-01	A111	W	42/20	1850	950	51.4	1896	102.5	Evergreen
Totals:		-	-	1850	950	51.4	1896	102.5	-



Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-09

Tested By: Daniel Draper
Date: 7/25/2024

Unit Data	
Unit Manufacturer	TempMaster
Unit Model Number	ZT037N08R2B5NCE2A3
Unit Serial Number	N2A4101992
Unit Discharge	Vertical
Location	Roof
RTU-09/Filter Bank	
MERV Rating	NL
Filter Qty - S1	4
Filter Size - S1	16x24x2

Test Data	
Design Airflow	1200 CFM
Actual Airflow	1205 CFM
Design Outside Airflow	200 CFM
Actual Outside Airflow	210 CFM
Design Return Airflow	1000 CFM
Actual Return Airflow	995 CFM
O/A Damper Position	15
RTU-09/Supply Fan	
Design RPM	948 RPM
Motor Volts T1-T2	211 Volts
Motor Volts T2-T3	212 Volts
Motor Volts T1-T3	211 Volts
Motor Amps T1	3.70 Amps
Motor Amps T2	3.80 Amps
Motor Amps T3	3.70 Amps

Motor Data	
RTU-09/Supply Fan	
Motor Manufacturer	Baldor
Motor Frame	56HZ
Motor HP	1.5 HP
Motor RPM	1740 RPM
Motor Rated Volts	208 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	4.3 Amps
Motor Service Factor	1.15
Brake Horsepower	1.2 BHP
Corrected FL Amps	4.23 Amps
Nominal Efficiency	0.865
Motor Power Factor	0.77
VFD Freq	47 Hz

Sheave Data	
RTU-09/Supply Fan	
Motor Sheave Model	1VL40
Motor Sheave Bore	7/8 in.
Fan Sheave Diam.	6 in.
Fan Sheave Bore	1.00 in.
Number of Belts	1
Belt Size	A45
Sheave Center Line	17.50 in.

Air Test Data	
RTU-09/Cooling Coil	
Ent Air DB Temp Design	80.0 Deg F
Ent Air WB Temp Design	67.0 Deg F
Leav Air DB Temp Design	58.9 Deg F
Leav Air WB Temp Design	56.4 Deg F
Ent. Air DB Temp Actual	76.0 Deg F
Ent. Air WB Temp Actual	64.0 Deg F
Lvg. Air DB Temp Actual	55.0 Deg F
Lvg. Air WB Temp Actual	53.0 Deg F
Air Temp Delta T Actual	21.0 Deg F
RTU-09/Heating Coil	
Ent Air DB Temp Design	60.0 Deg F
Leav Air DB Temp Design	110.2 Deg F

Log: RTU-09 8/6/2024 Daniel Draper Could not test heat due to high outdoor ambient temperatures.

Roof Top Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

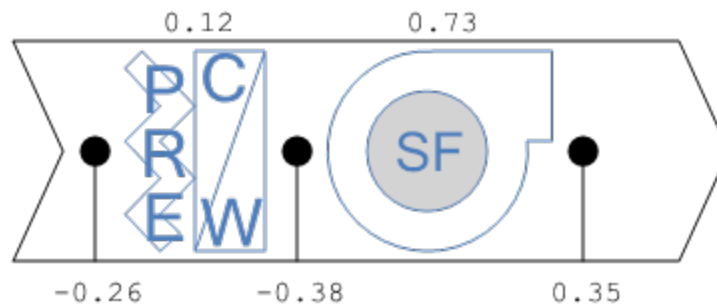
DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: RTU-09/SPP-01

Tested By: Daniel Draper
 Date: 7/25/2024

Test Pressures	
Cooling Coil SP In	-0.38 in. w.c.
Cooling Coil SP Out	-0.38 in. w.c.
Pre Filter SP In	-0.26 in. w.c.
Pre Filter SP Out	-0.38 in. w.c.
Pre Filter/Cooling Coil SP In	-0.26 in. w.c.
Pre Filter/Cooling Coil SP Out	-0.38 in. w.c.
Supply Fan SP In	-0.38 in. w.c.
Supply Fan SP Out	0.35 in. w.c.

Static Pressure Profile



RTU-09 Supply Outlet Summary

System/Unit	Area Served	Outlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Outlet-01	A101	S	48/4	250	376	150.4	260	104.0	Evergreen
Outlet-02	A102	T	8	200	149	74.5	185	92.5	Evergreen
Outlet-03	A102	T	8	200	180	90.0	190	95.0	Evergreen
Outlet-04	A102	S	48/4	275	311	113.1	280	101.8	Evergreen
Outlet-05	A102	S	48/4	275	306	111.3	290	105.5	Evergreen
Totals:		-	-	1200	1322	110.2	1205	100.4	-

RTU-09 Return Inlet Summary

System/Unit	Area Served	Inlet Type	Size LxW / D	Design Airflow	Prelim Airflow	% Prelim Diff.	Final Airflow	% Final Diff.	Instrument
Inlet-01	A102	F	22/22	1000	854	85.4	995	99.5	Evergreen
Totals:		-	-	1000	854	85.4	995	99.5	-



Fan Coil

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: MINI

Tested By: Daniel Draper
Date: 7/25/2024

Unit Data	
Unit Manufacturer	Samsung
Unit Model Number	AR12CSFCMWKN
Unit Serial Number	10KMYPDCW700241V
Filter Type	Washable
Filter Qty - S1	2

Test Data	
Cool Ent Air DB Temp Actual	70.0 Deg F
Cool Ent Air WB Temp Actual	67.0 Deg F
Cool Leav Air DB Temp Actual	54.0 Deg F
Cool Leav Air WB Temp Actual	52.0 Deg F

Motor Data	
Motor Rated Volts	208-230 Volts
Motor Phase	1
Motor Hertz	60 Hz
Motor Type	Direct Drive

Fan Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: EF-01

Tested By: Jacob Sutterfield
Date: 7/24/2024

Unit Data	
Fan Manufacturer	Cook
Fan Model Number	120C13D 120 ACE
Fan Serial Number	268PK71543-0170000701

Test Data	
Design Airflow	600 CFM
Actual Airflow	632 CFM
Motor Volts T1-T2	118 Volts
Motor Amps T1	2.78 Amps

Motor Data	
Motor Manufacturer	Queace
Motor Frame	48Y
Motor HP	1/4 HP
Motor RPM	1300 RPM
Motor Rated Volts	115 Volts
Motor Phase	1
Motor Hertz	60 Hz
Motor FL Amps	3.3 Amps
Motor Service Factor	1
Corrected FL Amps	3.22 Amps
Power Factor	0.900
Motor Type	Direct Drive
Direct Drive Speed	Low RPM

SYSTEM/UNIT: EF-02

Tested By: Jacob Sutterfield
Date: 7/24/2024

Unit Data	
Fan Manufacturer	Cook
Fan Model Number	Gemini 180

Test Data	
Design Airflow	150 CFM
Actual Airflow	155 CFM
Motor Volts T1-T2	118 Volts
Motor Amps T1	0.7 Amps

Motor Data	
Motor Manufacturer	Queace
Motor Rated Volts	115 Volts
Motor Phase	1
Motor Hertz	60 Hz
Motor FL Amps	0.83 Amps
Corrected FL Amps	0.81 Amps
Motor Type	Direct Drive
Direct Drive Speed	Medium RPM

SYSTEM/UNIT: EF-03

Tested By: Jacob Sutterfield
Date: 7/24/2024

Unit Data	
Fan Manufacturer	Cook
Fan Model Number	Gemini 180

Test Data	
Design Airflow	150 CFM
Actual Airflow	147 CFM
Motor Volts T1-T2	118 Volts
Motor Amps T1	0.67 Amps

Motor Data	
Motor Manufacturer	Queace
Motor Rated Volts	115 Volts
Motor Phase	1
Motor Hertz	60 Hz
Motor FL Amps	0.83 Amps
Corrected FL Amps	0.81 Amps
Motor Type	Direct Drive
Direct Drive Speed	Medium RPM

Fan Unit

PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: EF-04

Tested By: Jacob Sutterfield
Date: 7/24/2024

Unit Data	
Fan Manufacturer	Cook
Fan Model Number	Gemini 140

Test Data	
Design Airflow	75 CFM
Actual Airflow	78 CFM
Motor Volts T1-T2	118 Volts
Motor Amps T1	0.15 Amps

Motor Data	
Motor Manufacturer	Queace
Motor Rated Volts	115 Volts
Motor Phase	1
Motor Hertz	60 Hz
Motor FL Amps	0.22 Amps
Corrected FL Amps	0.21 Amps
Motor Type	Direct Drive
Direct Drive Speed	Low RPM

SYSTEM/UNIT: EF-05

Tested By: Jacob Sutterfield
Date: 7/24/2024

Unit Data	
Fan Manufacturer	Cook
Fan Model Number	Gemini 140

Test Data	
Design Airflow	75 CFM
Actual Airflow	80 CFM
Motor Volts T1-T2	118 Volts
Motor Amps T1	0.12 Amps

Motor Data	
Motor Manufacturer	Queace
Motor Rated Volts	115 Volts
Motor Phase	1
Motor Hertz	60 Hz
Motor FL Amps	0.22 Amps
Corrected FL Amps	0.21 Amps
Motor Type	Direct Drive
Direct Drive Speed	Low RPM

SYSTEM/UNIT: EF-06

Tested By: Jacob Sutterfield
Date: 7/24/2024

Test Data	
Design Airflow	600 CFM

SYSTEM/UNIT: EF-07

Tested By: Jacob Sutterfield
Date: 7/24/2024

Unit Data	
Fan Manufacturer	Cook
Fan Model Number	Gemini 140

Test Data	
Design Airflow	75 CFM
Actual Airflow	79 CFM
Motor Volts T1-T2	118 Volts
Motor Amps T1	0.14 Amps

Motor Data	
Motor Manufacturer	Queace
Motor Rated Volts	115 Volts
Motor Phase	1
Motor Hertz	60 Hz
Motor FL Amps	0.22 Amps
Corrected FL Amps	0.21 Amps
Motor Type	Direct Drive
Direct Drive Speed	Low RPM



Unit Heater

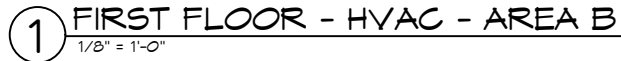
PROJECT: New Office for Farm Credit
LOCATION: Russellville, AR
PROJECT #: 78318

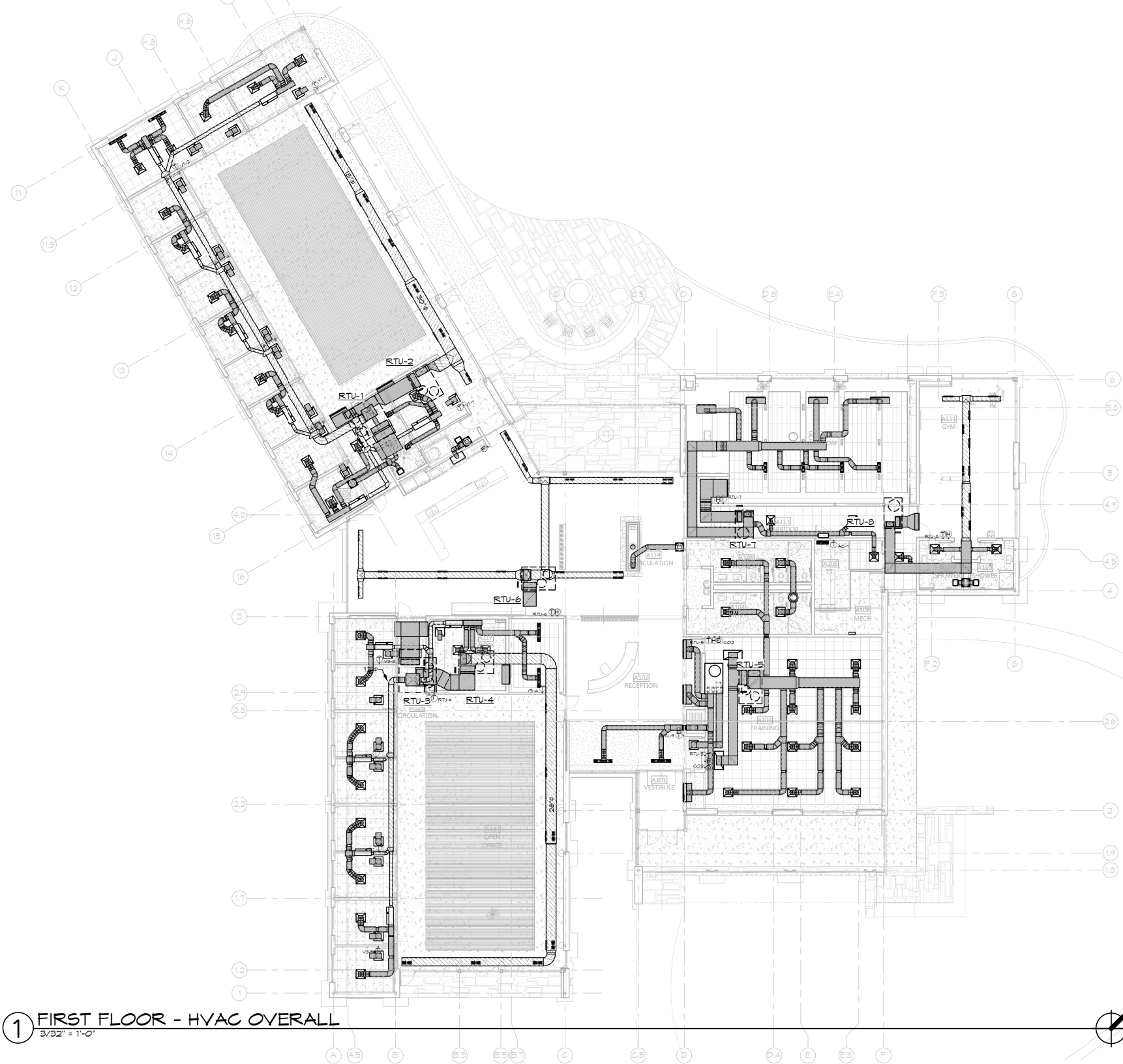
DATE: 8/6/2024
CONTACT: Elizabeth Amador
AUTHOR:

SYSTEM/UNIT: WH-01

Unit Data	
Unit Manufacturer	TPI Corporation
Model Number	AFH8130TC
Serial Number	56438-220
Motor Volts	208 Volts
Motor Amps	14.40 Amps

Air Test Data	
Design Airflow	245 CFM
Actual Airflow	245 CFM
EAT	72.0 Deg F
LAT	107.0 Deg F





1 FIRST FLOOR - HVAC OVERALL
 3/32" = 1'-0"



