



CERTIFIED TEST, ADJUST, AND BALANCE REPORT

DATE

APRIL 26, 2024

PROJECT

**ASU MID-SOUTH
CHILLER REPLACEMENT
WEST MEMPHIS, AR**

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LITTLE ROCK, AR 72201
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HVAC CONTRACTOR

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NEBB TAB FIRM

AIRETECH CORPORATION
7631 Northshore Place
North Little Rock, Arkansas 72118

Certification Number: 2847



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 W. Smith, Jr.".

NEBB President

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

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



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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		



PROJECT: ASU MID-SOUTH CHILLER REPLACEMENT

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: West Memphis, AR
PROJECT #: 74117

DATE: 4/26/2024
CONTACT: Elizabeth Amador

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REPORT SUMMARY

Test and Balance consisted of 2 exhaust fans, 2 make up air units, 2 kitchen hoods, 1 VAV box, 4 hydronic pumps and 3 chillers.

Exhaust fans and make up air units are serving kitchen hoods. Fan totals were determined via average face velocities at baffles/perforated plenums. Velocities, airflows and final fan speeds were measured and recorded. Make up air units were tested in heating mode to verify proper operation. All fan and motor operating data were measured and recorded.

VAV-01 serves the kitchen/kitchen hood ventilation. VAV total was determined at supply outlets using a direct reading flow hood, flow sensor was calibrated, and outlets were balanced to their respective designs. Outlet 1 in corridor does not have a design airflow indicated and was set to a typical airflow of the 6" installed duct. VAV was tested in heating mode to verify proper operation, fan speed was adjusted, and entering/leaving air temperatures were measured and recorded.

Hydronic pumps were tested to verify proper operation. Pump flows were determined at associated chillers, pump speeds were adjusted to meet chiller designs and final pump and motor operating data were measured and recorded. Chiller pressures, flows and temperatures were measured and recorded.

Fan Unit

PROJECT: ASU Mid-South Chiller Replacement
LOCATION: West Memphis, AR
PROJECT #: 74117

DATE: 4/26/2024
CONTACT: Elizabeth Amador

SYSTEM/UNIT: KEF-1

Tested By: David DeMarco
 Date: 1/11/2024

Unit Data	
Fan Manufacturer	Greenheck
Fan Model Number	CUBE-140-7-1-22-G
Fan Serial Number	23200967

Test Data	
Design Airflow	1800 CFM
Actual Airflow	1787 CFM
Design RPM	1443 RPM
Actual RPM	1430 RPM
Motor Volts T1-T2	119 Volts
Motor Amps T1	9.6 Amps

Motor Data	
Rated Airflow Capacity	1800 CFM
Motor Manufacturer	Baldor
Motor Frame	56
Motor HP	3/4 HP
Motor RPM	1725 RPM
Motor Rated Volts	115 Volts
Motor Phase	1
Motor Hertz	60 Hz
Motor FL Amps	10.8 Amps
Motor Service Factor	1
Brake Horse Power	0.77 BHP
Corrected FL Amps	10.44 Amps
Nominal Efficiency	0.710
Power Factor	0.710
Motor Type	Belt Drive

Sheave Data	
Motor Sheave Model	VP34
Motor Sheave Bore	5/8 in.
Fan Sheave Model	AK39
Fan Sheave Bore	3/4 in.
Number of Belts	1
Belt Size	A20
Sheave Center Line	5.75 in.

Fan Unit

PROJECT: ASU Mid-South Chiller Replacement
LOCATION: West Memphis, AR
PROJECT #: 74117

DATE: 4/26/2024
CONTACT: Elizabeth Amador

SYSTEM/UNIT: KEF-2

Tested By: David DeMarco
 Date: 1/11/2024

Unit Data	
Fan Manufacturer	Greenheck
Fan Model Number	CUBE-120-5-1-19-G
Fan Serial Number	23200978

Test Data	
Design Airflow	1238 CFM
Actual Airflow	1183 CFM
Design RPM	1568 RPM
Actual RPM	1554 RPM
Motor Volts T1-T2	118 Volts
Motor Amps T1	7.84 Amps

Motor Data	
Rated Airflow Capacity	1238 CFM
Motor Manufacturer	U.S Motors
Motor HP	1/2 HP
Motor RPM	1725 RPM
Motor Rated Volts	115 Volts
Motor Phase	1
Motor Hertz	60 Hz
Motor FL Amps	8.6 Amps
Motor Service Factor	1.25
Corrected FL Amps	8.38 Amps
Motor Type	Belt Drive

Sheave Data	
Motor Sheave Model	VP34
Motor Sheave Bore	1/2 in.
Fan Sheave Model	AK34
Fan Sheave Bore	3/4 in.
Number of Belts	1
Belt Size	4L200
Sheave Center Line	6 in.

SYSTEM/UNIT: KMAU-1

Tested By: David DeMarco
 Date: 1/11/2024

Unit Data	
Fan Manufacturer	Greenheck
Fan Model Number	MSX-P112-H12-MF
Fan Serial Number	23240965

Test Data	
Design Airflow	1440 CFM
Actual Airflow	1467 CFM
Design RPM	1475 RPM
Actual RPM	1118 RPM
Motor Volts T1-T2	153 Volts
Motor Amps T1	1.35 Amps

Motor Data	
Rated Airflow Capacity	1440 CFM
Motor Manufacturer	WEG
Motor Frame	56
Motor HP	1/2 HP
Motor RPM	1765 RPM
Motor Rated Volts	230 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	1.72 Amps
Motor Service Factor	1.25
Nominal Efficiency	0.782
Power Factor	0.690
Motor Type	Direct Drive
Direct Drive Speed	38 HZ

Log:	Date	Tester	Notes
KMAU-1	1/11/2024	David DeMarco	Filter Bank: (4) 16x20x2
KMAU-1	4/25/2024	David DeMarco	Heating Mode: EAT DB: 62F LAT DB: 91F



Fan Unit

PROJECT: ASU Mid-South Chiller Replacement
LOCATION: West Memphis, AR
PROJECT #: 74117

DATE: 4/26/2024
CONTACT: Elizabeth Amador

SYSTEM/UNIT: KMAU-2

Tested By: David DeMarco
 Date: 1/11/2024

Unit Data	
Fan Manufacturer	Greenheck
Fan Model Number	MSX-P109-H12-MF
Fan Serial Number	23240968

Test Data	
Design Airflow	990 CFM
Actual Airflow	1034 CFM
Motor Volts T1-T2	182 Volts
Motor Amps T1	0.88 Amps

Motor Data	
Rated Airflow Capacity	990 CFM
Motor Manufacturer	WEG
Motor Frame	56
Motor HP	1/4 HP
Motor RPM	1765 RPM
Motor Rated Volts	230 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor FL Amps	1.07 Amps
Motor Service Factor	1.35
Nominal Efficiency	0.695
Power Factor	0.610
Motor Type	Direct Drive
Direct Drive Speed	46 HZ

Log:	Unit	Date	Tester	Notes
	KMAU-2	1/11/2024	David DeMarco	Filter Bank: (4) 16x20x2
	KMAU-2	4/25/2024	David DeMarco	Heating Mode: EAT DB: 62F LAT DB: 90F

Kitchen Hood

PROJECT: ASU Mid-South Chiller Replacement
LOCATION: West Memphis, AR
PROJECT #: 74117

DATE: 4/26/2024
CONTACT: Elizabeth Amador

SYSTEM/UNIT: KH-1

Tested By: David DeMarco
 Date: 1/11/2024

Unit Data	
Hood Manufacturer	Greenheck
Hood Model Number	GXEW-98.00-S
Hood Serial Number	23205143

Exhaust Section	
Design Exhaust Airflow	1800 CFM
Calculated Exhaust Airflow	1787 CFM
Total Filters Height	18.00 in.
Total Filters Width	91.00 in.
Total Filter Area	11.38 Sq Ft
Total Readings - Exhaust	6
Sum of Readings - Exhaust	943 FPM
Avg Velocity - Exhaust	157 FPM

Exhaust Readings	
EA-Reading001	154 FPM
EA-Reading002	148 FPM
EA-Reading003	162 FPM
EA-Reading004	162 FPM
EA-Reading005	157 FPM
EA-Reading006	160 FPM

Filter Data	
Filter Quantity	6
Filter Size	16x20

Supply Section	
Design Supply Airflow	1440 CFM
Calculated Supply Airflow	1467 CFM
Make-up Air Length	12.00 in.
Make-up Air Width	110.00 in.
Total Make-up Air Area	9.17 Sq Ft
Total Readings - Supply	7
Sum of Readings - Supply	1117 FPM
Avg Velocity - Supply	160 FPM

Supply Readings	
SA-Reading001	154 FPM
SA-Reading002	151 FPM
SA-Reading003	162 FPM
SA-Reading004	180 FPM
SA-Reading005	167 FPM
SA-Reading006	146 FPM
SA-Reading007	157 FPM

SYSTEM/UNIT: KH-2

Tested By: David DeMarco
 Date: 1/11/2024

Unit Data	
Hood Manufacturer	Greenheck
Hood Model Number	GXEW-66.00-S
Hood Serial Number	23205151

Exhaust Section	
Design Exhaust Airflow	1238 CFM
Calculated Exhaust Airflow	1183 CFM
Total Filters Height	18.00 in.
Total Filters Width	61.00 in.
Total Filter Area	7.63 Sq Ft
Total Readings - Exhaust	4
Sum of Readings - Exhaust	618 FPM
Avg Velocity - Exhaust	155 FPM

Exhaust Readings	
EA-Reading001	148 FPM
EA-Reading002	142 FPM
EA-Reading003	168 FPM
EA-Reading004	160 FPM

Filter Data	
Filter Quantity	4
Filter Size	16x20

Supply Section	
Design Supply Airflow	990 CFM
Calculated Supply Airflow	1034 CFM
Make-up Air Length	12.00 in.
Make-up Air Width	78.00 in.
Total Make-up Air Area	6.50 Sq Ft
Total Readings - Supply	5
Sum of Readings - Supply	797 FPM
Avg Velocity - Supply	159 FPM

Supply Readings	
SA-Reading001	150 FPM
SA-Reading002	141 FPM
SA-Reading003	172 FPM
SA-Reading004	162 FPM
SA-Reading005	172 FPM



Air Handling Unit

PROJECT: ASU Mid-South Chiller Replacement
LOCATION: West Memphis, AR
PROJECT #: 74117

DATE: 4/26/2024
CONTACT: Elizabeth Amador

SYSTEM/UNIT: EX AHU/VAV-1

Tested By: David DeMarco
 Date: 1/11/2024

Unit Data	
Manufacturer	Greenheck
VAV Address	ID#8682235
Box Inlet Size	14
K Factor	0.98

Term Box Test Data	
Cool Max CFM Design	2760 CFM
Cool Max CFM Actual	2623 CFM
Cool Min CFM Design	830 CFM
Cool Min CFM Actual	829 CFM
Design Fan Airflow	550 CFM
Actual Fan Airflow	539 CFM
Design Reheat Airflow	1380 CFM
Actual Reheat Airflow	1368 CFM
Design Heating LAT	95 Deg F
Actual Heating LAT	98 Deg F
Primary Air Temp	55 Deg F

Log: EX AHU/VAV-1 1/11/2024 David DeMarco Outlet 1 in corridor has no design listed and was set to typical airflow of the 6" installed duct. (1) 16x20x1 filter installed. Existing AHU was increased from 1.5" to 2.25" to achieve design airflow.

EX AHU/VAV-1 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	B108A	NL	NL	NL	59		92		Evergreen
Outlet-02	B109	CD1	10	300	184	61.3	292	97.3	Evergreen
Outlet-03	B109	KH2	8	100	96	96.0	92	92.0	Evergreen
Outlet-04	B109	KH2	8	100	95	95.0	96	96.0	Evergreen
Outlet-05	B109	KH2	8	100	98	98.0	97	97.0	Evergreen
Outlet-06	B109	KH2	8	100	93	93.0	95	95.0	Evergreen
Outlet-07	B109	CD1	10	300	197	65.7	290	96.7	Evergreen
Outlet-08	B109	CD1	10	300	154	51.3	284	94.7	Evergreen
Outlet-09	B109	CD1	8	160	135	84.4	153	95.6	Evergreen
Outlet-10	B109	KH1	8	84	89	106.0	90	107.1	Evergreen
Outlet-11	B109	KH1	8	84	90	107.1	92	109.5	Evergreen
Outlet-12	B109	KH1	8	84	93	110.7	91	108.3	Evergreen
Outlet-13	B109	KH1	8	84	90	107.1	90	107.1	Evergreen
Outlet-14	B109	KH1	8	84	88	104.8	92	109.5	Evergreen
Outlet-15	B109	KH1	8	84	89	106.0	91	108.3	Evergreen
Outlet-16	B110	CD1	8	200	122	61.0	201	100.5	Evergreen
Outlet-17	B110	CD1	8	200	124	62.0	196	98.0	Evergreen
Outlet-18	B110	CD1	8	200	101	50.5	189	94.5	Evergreen
Totals:	-	-	-	2564	1997	77.9	2623	102.3	-



Hydronic Pump

PROJECT: ASU Mid-South Chiller Replacement
LOCATION: West Memphis, AR
PROJECT #: 74117

DATE: 4/26/2024
CONTACT: Elizabeth Amador

SYSTEM/UNIT: EX P-01

Tested By: David DeMarco
 Date: 3/25/2024

Unit Data	
Pump Manufacturer	TACO
Pump Model Number	E4008E2H1F2L0A
Rated Waterflow	720 GPM
Pump rpm Design	1750
Pump rpm Actual	1108 rpm

Final Test Data	
Final System DP	4 PSID
Final DP	12.9 PSI
Final SP	5 PSI
Design Pressure Diff.	55 Ft
Actual Final Pressure Diff.	18.2 Ft
Design Waterflow	720 GPM
Actual Waterflow	264.5 GPM
Motor Volts T1-T2	237 Volts
Motor Amps T1	6.2 Amps

Motor Data	
Motor Manufacturer	Baldor
Motor Frame	215T
Motor HP	10 HP
Motor RPM	1770 RPM
Motor Rated Volts	460 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor F.L. Amps	12.5 Amps
Motor Service Factor	1.15
Nominal Efficiency	0.917
Power Factor	0.820
Pump Impeller Diam.	8.0 in.
VFD Actual	38 Hz

Measured Data	
Valve Open DP	20.90 PSI
Valve Open SP	11.50 PSI
Valve Open Diff.	21.71 Ft
Valve Open Waterflow	400 GPM
Ind. Valve Final Setting	100.00 %
Ind. Impeller Diam.	8.00 in.

Log:	EX P-01	3/25/2024	David DeMarco	Flow determined at chiller. Pump pressures measured for reference.
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Hydronic Pump

PROJECT: ASU Mid-South Chiller Replacement
LOCATION: West Memphis, AR
PROJECT #: 74117

DATE: 4/26/2024
CONTACT: Elizabeth Amador

SYSTEM/UNIT: EX P-02

Tested By: David DeMarco
 Date: 3/25/2024

Unit Data	
Pump Manufacturer	TACO
Pump Model Number	E4008E2H1F2L0A
Rated Waterflow	720 GPM
Pump rpm Design	1750
Pump rpm Actual	1108 rpm

Final Test Data	
Final System DP	4 PSID
Final DP	12.5 PSI
Final SP	4.5 PSI
Design Pressure Diff.	55 Ft
Actual Final Pressure Diff.	18.5 Ft
Design Waterflow	720 GPM
Actual Waterflow	264.5 GPM
Motor Volts T1-T2	237 Volts
Motor Amps T1	6.3 Amps

Motor Data	
Motor Manufacturer	Baldor
Motor Frame	215T
Motor HP	10 HP
Motor RPM	1770 RPM
Motor Rated Volts	460 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor F.L. Amps	12.5 Amps
Motor Service Factor	1.15
Nominal Efficiency	0.917
Power Factor	0.820
Pump Impeller Diam.	8.0 in.
VFD Actual	38 Hz

Measured Data	
Valve Open DP	17.90 PSI
Valve Open SP	8.30 PSI
Valve Open Diff.	22.18 Ft
Valve Open Waterflow	399 GPM
Ind. Valve Final Setting	100.00 %
Ind. Impeller Diam.	8.00 in.

Log:	EX P-02	3/25/2024	David DeMarco	Flow determined at chiller. Pump pressures measured for reference.
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Hydronic Pump

PROJECT: ASU Mid-South Chiller Replacement
LOCATION: West Memphis, AR
PROJECT #: 74117

DATE: 4/26/2024
CONTACT: Elizabeth Amador

SYSTEM/UNIT: P-01

Tested By: David DeMarco
 Date: 3/25/2024

Unit Data	
Pump Manufacturer	Grundfos
Pump Model Number	25123 LC
Rated Waterflow	270 GPM
Pump rpm Design	1760
Pump rpm Actual	1327 rpm

Final Test Data	
Final System DP	4 PSID
Final DP	31.4 PSI
Final SP	18.1 PSI
Design Pressure Diff.	91 Ft
Actual Final Pressure Diff.	30.7 Ft
Design Waterflow	270 GPM
Actual Waterflow	270 GPM
Motor Volts T1-T2	173 Volts
Motor Amps T1	17.0 Amps
Motor NLA T1	11.2 Amps

Motor Data	
Motor Manufacturer	Baldor
Motor Frame	215JM
Motor HP	10 HP
Motor RPM	1770 RPM
Motor Rated Volts	230 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor F.L. Amps	25 Amps
Motor Service Factor	1.15
Nominal Efficiency	0.917
Power Factor	0.820
Pump Impeller Diam.	10.37 in.
VFD Actual	45 Hz

Measured Data	
Valve Shut DP	68.00 PSI
Valve Shut SP	20.60 PSI
Valve Shut Diff.	109.49 Ft
Valve Open DP	42.70 PSI
Valve Open SP	16.40 PSI
Valve Open Diff.	60.75 Ft
Valve Open Waterflow	360 GPM
Ind. Valve Final Setting	100.00 %
Ind. Impeller Diam.	10.37 in.



Hydronic Pump

PROJECT: ASU Mid-South Chiller Replacement
LOCATION: West Memphis, AR
PROJECT #: 74117

DATE: 4/26/2024
CONTACT: Elizabeth Amador

SYSTEM/UNIT: P-02

Tested By: David DeMarco
 Date: 3/25/2024

Unit Data	
Pump Manufacturer	Grundfos
Pump Model Number	25123 LC
Pump Serial Number	1971247830-10B
Rated Waterflow	270 GPM
Pump rpm Design	1760
Pump rpm Actual	1327 rpm

Final Test Data	
Final System DP	4 PSID
Final DP	30.5 PSI
Final SP	17.2 PSI
Design Pressure Diff.	91 Ft
Actual Final Pressure Diff.	30.7 Ft
Design Waterflow	270 GPM
Actual Waterflow	270 GPM
Motor Volts T1-T2	174 Volts
Motor Amps T1	17.1 Amps
Motor NLA T1	11.2 Amps

Motor Data	
Motor Manufacturer	Baldor
Motor Frame	215JM
Motor HP	10 HP
Motor RPM	1770 RPM
Motor Rated Volts	230 Volts
Motor Phase	3
Motor Hertz	60 Hz
Motor F.L. Amps	25 Amps
Motor Service Factor	1.15
Nominal Efficiency	0.917
Power Factor	0.820
Pump Impeller Diam.	10.37 in.
VFD Actual	45 Hz

Measured Data	
Valve Shut DP	68.20 PSI
Valve Shut SP	20.79 PSI
Valve Shut Diff.	109.52 Ft
Valve Open DP	42.90 PSI
Valve Open SP	16.59 PSI
Valve Open Diff.	60.78 Ft
Valve Open Waterflow	360 GPM
Ind. Valve Final Setting	100.00 %
Ind. Impeller Diam.	10.37 in.

Chiller Test

PROJECT: ASU Mid-South Chiller Replacement
LOCATION: West Memphis, AR
PROJECT #: 74117

DATE: 4/26/2024
CONTACT: Elizabeth Amador

SYSTEM/UNIT: CH-01 REYNOLDS

Tested By: David DeMarco
 Date: 3/25/2024

Unit Data	
Manufacturer	Carrier
Model Number	30RBF16064-LN863
Serial Number	0424Q96038
Cooling Type	Air Cooled
Rated Capacity	160 Tons
Refrigerant Type	R-410
Outside air temp at time of testing	65 F

Evaporator Data	
Evap Dsgn Ent H2O Temp	56.0 Deg F
Evap Act Ent H2O Temp	48.0 Deg F
Evap Dsgn Lvg H2O Temp	42.0 Deg F
Evap Act Lvg H2O Temp	42.0 Deg F
Evap Flow Design	245.6 GPM
Evap Flow Actual	270.0 GPM
Evap DP Design	3.97 ft.
Evap DP Actual	4.79 ft.
Total BTUh	269 BTU
Evap EWP	30.2 psi
Evap LWP	28.13 psi

SYSTEM/UNIT: CH-01 UNIVERSITY

Tested By: David DeMarco
 Date: 3/25/2024

Unit Data	
Manufacturer	Carrier
Model Number	30RBF16064-LN863
Serial Number	0424Q96030
Cooling Type	Air Cooled
Rated Capacity	160 Tons
Refrigerant Type	R-410
Outside air temp at time of testing	65 F

Evaporator Data	
Evap Dsgn Ent H2O Temp	56.0 Deg F
Evap Act Ent H2O Temp	49.0 Deg F
Evap Dsgn Lvg H2O Temp	42.0 Deg F
Evap Act Lvg H2O Temp	42.0 Deg F
Evap Flow Design	245.6 GPM
Evap Flow Actual	264.5 GPM
Evap DP Design	3.97 ft.
Evap DP Actual	4.60 ft.
Total BTUh	269 BTU
Evap EWP	11.0 psi
Evap LWP	9.01 psi

SYSTEM/UNIT: CH-02 UNIVERSITY

Tested By: David DeMarco
 Date: 4/17/2024

Unit Data	
Manufacturer	Carrier
Model Number	30RBF16064-LN863
Serial Number	0424Q96040
Cooling Type	Air Cooled
Rated Capacity	160 Tons
Refrigerant Type	R-410
Outside air temp at time of testing	65 F

Evaporator Data	
Evap Dsgn Ent H2O Temp	56.0 Deg F
Evap Act Ent H2O Temp	50.0 Deg F
Evap Dsgn Lvg H2O Temp	42.0 Deg F
Evap Act Lvg H2O Temp	42.0 Deg F
Evap Flow Design	245.6 GPM
Evap Flow Actual	264.5 GPM
Evap DP Design	3.97 ft.
Evap DP Actual	4.60 ft.
Total BTUh	269 BTU
Evap EWP	12.9 psi
Evap LWP	10.91 psi