

Report By:

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



Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 05/05/2025
Completed By: National TAB

PROJECT

Cincinnati Dayton Convenience Store (West Chester, OH)

1 Cincinnati Dayton and Allen rd

West Chester, OH

Client

Titan Mechanical
11011 Ohio 128

Harrison, OH 45030

National TAB

Project: Cincinnati Dayton Convenience Store (West Chester, OH)

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CERTIFICATION



PROJECT: Cincinnati Dayton Convenience Store (West Chester, OH)

The data presented in this report is a record of system measurements and final adjustments that have been obtained in accordance with the current edition of the NEBB *Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems*. Any variances from design quantities, which exceed NEBB tolerances, are noted in the Test-Adjust-Balance Report Project Summary.

The air distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

NEBB TAB FIRM: National TAB

REGISTRATION NO: 3629

CERTIFIED BY: Joe Hertenstein

DATE: 5/7/2025

The hydronic distribution system has been tested and balanced and final adjustments have been made in accordance with NEBB standards and the project specifications.

NEBB TAB FIRM: National TAB

REGISTRATION NO: 3629


CERTIFIED BY: Joe Hertenstein

DATE: _____

Submitted and Certified by:

NEBB TAB FIRM: National TAB

TAB PROFESSIONAL: Joe Hertenstein

SIGNATURE: 

REGISTRATION NO: 3629

CERTIFICATION EXP: 12/31/2025





National TAB



Testing, Adjusting, and Balancing Equipment

INTELLIGENCE

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 S-PVF-1 S/N 2200484C	3/24/2025	3/24/2027
	AIR VELOCITY INSTRUMENT	50 fpm to 3900 fpm	+/- 5 % +/- 7 fpm	Evergreen S-PVF-1 S/N 2200484C	3/24/2025	3/24/2027
	DIRECT HOOD READING	100 cfm to 2000 cfm	+/- 5 % +/- 7 cfm	Evergreen S-PVF-1 S/N 2200484C	3/24/2025	3/24/2027
TEMPERATURE	AIR METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	7/12/2024	7/12/2025
	AIR PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 5028	7/12/2024	7/12/2025
	IMMERSION METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	7/12/2024	7/12/2025
	IMMERSION PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 1075	7/12/2024	7/12/2025
	CONTACT METER	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - SRH77A S/N 071118034	7/12/2024	7/12/2025
	CONTACT PROBE	-20 F to 240 F	+/- .5 % 2 F	Cooper ATKINS - PD1388 7-6 S/N 4011	7/12/2024	7/12/2025
HUMIDITY	HUMIDITY PROBE	10 % RH to 90 % RH	3% of reading	Cooper ATKINS - SRH77A S/N 071118034	7/12/2024	7/12/2025
ELECTRICAL	VOLTAGE MEASUREMENT	0 VAC to 600 VAC	2 % reading +/- 5 digits	Fluke 373 True RMS, S/N: 33290686	7/12/2024	7/12/2025
	AMPERAGE MEASUREMENT	0 Amperers to 100 Amperes	2 % reading +/- 5 digits	Fluke 373 True RMS, S/N: 33290686	7/12/2024	7/12/2025
ROTATION	ROTATION MEASUREMENT	60 rpm to 5000 rpm	2 % reading 2 rpm	SHIMPO DT-207LR S/N: D1530081R	7/12/2024	7/12/2025
HYDRONIC	PRESSURE MEASUREMENT	-30 in Hg to 200 psi	±2% of reading +/- 1 psi	Alnor HM680 S/N: 70807241	5/11/2024	5/31/2025
	DIFFERENTIAL PRESSURE MEASUREMENT	0 psi - 80 psi	±2% of reading +/- 1 psi	Alnor HM680 S/N: 70807241	5/11/2024	5/31/2025



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

KEYED NOTES

- H1 PROVIDE PROGRAMMABLE THERMOSTAT IN BACK OFFICE AREA WITH REMOTE SENSOR IN LOCATIONS AS INDICATED ON PLANS. THERMOSTATS/SENSORS SHALL BE SAME MANUFACTURER AS HVAC UNIT. COORDINATE EXACT LOCATION WITH TENANT, OR TENANT'S REPRESENTATIVE, PRIOR TO INSTALLATION. WIRE TO HVAC UNIT PER MANUFACTURER'S PRINTED INSTRUCTIONS.
- H2 PROVIDE NEW CEILING MOUNTED EXHAUST FAN WITH INTEGRAL BACKDRAFT DAMPER AS SCHEDULED. BALANCE TO THE SCHEDULED AIRFLOW. EXTEND EXHAUST DUCTWORK THROUGH ROOF AND TERMINATE WITH VENT CAP. MAINTAIN A MINIMUM OF 10'-0" FROM ANY BUILDING INTAKE.
- H3 ELECTRICAL CONTRACTOR SHALL FURNISH NEW ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR. MECHANICAL CONTRACTOR SHALL INSTALL SMOKE DETECTOR IN THE RETURN AIR DUCT. MECHANICAL CONTRACTOR SHALL PROVIDE WIRING TO FAN INTERLOCK, E.G. SHALL PROVIDE WIRING FOR CONNECTION TO REMOTE ANNUNCIATOR.
- H4 PERFORATED CEILING DIFFUSER PROVIDED WITHOUT PATTERN CONTROLLER.

KLH ENGINEERS
 KOHRIS LOWMEYER HELL ENGINEERS, INC.
 WWW.KLHENGINEERS.COM
 15000 W. WINDY HILL AVENUE, SUITE 111
 FARMINGTON, KENTUCKY 40125
 800-354-5783 859-442-8050
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REVISIONS

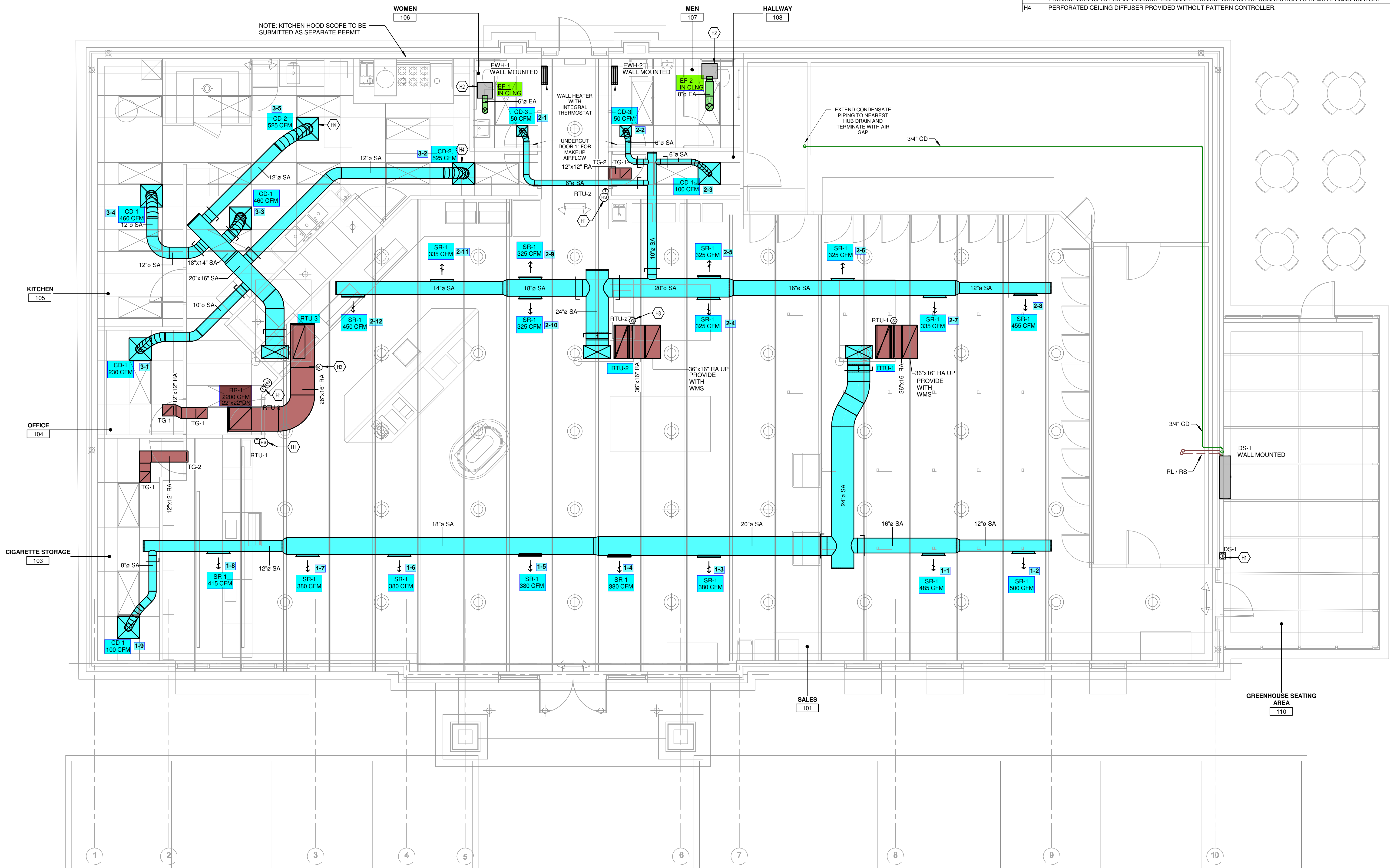
NO.	DATE	DESCRIPTION

PROPOSED NEW FUELING STATION & CONVENIENCE STORE
Cincinnati Dayton at Allen Road
 WEST CHESTER TOWNSHIP
 BUTLER COUNTY, OHIO

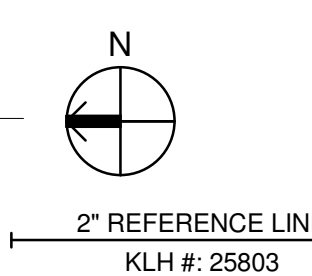
09/11/23

MECHANICAL FLOOR PLAN
M-100

OWNERSHIP OF INSTRUMENTS OF SERVICE
 All reports, plans, specifications, computer files, field data, notes and other documents and instruments prepared by the Consultant as instruments of service shall remain the property of the Consultant. The Consultant shall retain all common law, statutory and other reserved rights, including, without limitation, the copyright therein.



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



National TAB

Project: Cincinnati Dayton Convenience Store (West Chester, OH)



System/Unit: AHU/RTU

Asset: RTU-1

AREA:SALES/ CIG STORAGE

Unit Data		
	Design	Actual
MFG	NA	LENNOX
Serial Num	-	5624K01623
Model Num	NA	KGC120S4MM1Y
Configuration	-	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	14.25" x 22.75"
Num PreFilter 1	-	4
PreFilter Size 1	-	20x25x2

Motor Data		
	Design	Actual
Motor MFG	-	INTER LINK
Frame	-	56HZ
Horsepower	-	3
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	200
Rated Amperage	-	8.0
Service Factor	-	1.15

Test Data		
	Design	Actual
SF CFM	3400	3244
RA CFM	2720	2623
OA CFM	680	621
RL Voltage	-	288
RL Amperage	-	4.97
OA Damper Position	-	3.2

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.119"
Fan Suction SP	-	-0.202"
Fan Discharge SP	-	1.441"
Total ESP	0.6	1.56"
Fan Total SP	-	1.643"

Completed By: Chase Wright on 04/17/2025

Notes:
GRILLE 1-8 not installed

Written By: Nick Payne on 05/05/2025

National TAB

Project: Cincinnati Dayton Convenience Store (West Chester, OH)

AHU/RTU



Diffuser Supply (GRD)

RTU-1/SALES/ CIG STORAGE

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
RTU-1-SGRD1	101	SR	16	485	544	516	106.4
RTU-1-SGRD2	101	SR	12	500	427	530	106.0
RTU-1-SGRD3	101	SR	20	380	412	408	107.4
RTU-1-SGRD4	101	SR	20	380	519	400	105.3
RTU-1-SGRD5	101	SR	18	380	419	442	116.3
RTU-1-SGRD6	101	SR	18	380	558	398	104.7
RTU-1-SGRD7	101	SR	18	380	370	440	115.8
RTU-1-SGRD8	103	SR	12	415	0	0	0.0
RTU-1-SGRD9	103	CD	8	100	185	110	110.0
Total				3400	3434	3244	95.41%

Completed By: Chase Wright on 04/17/2025

National TAB

Project: Cincinnati Dayton Convenience Store (West Chester, OH)



System/Unit: AHU/RTU

Asset: RTU-2

AREA:SALES

Unit Data		
	Design	Actual
MFG	NA	Lennox
Serial Num	-	5624K01624
Model Num	NA	KGC120S4MM1Y
Configuration	-	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	14.25" x 22.75"
Num PreFilter 1	-	4
PreFilter Size 1	-	20x25x2

Motor Data		
	Design	Actual
Motor MFG	-	INTER LINK
Frame	-	56HZ
Horsepower	-	60
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	200
Rated Amperage	-	8.0
Service Factor	-	1.15

Test Data		
	Design	Actual
SF CFM	3400	3677
RA CFM	2720	3011
OA CFM	680	666
RL Voltage	-	285
RL Amperage	-	7.3
OA Damper Position	-	3.2

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.72"
Fan Suction SP	-	-0.96"
Fan Discharge SP	-	0.88"
Total ESP	0.6	1.60"
Fan Total SP	-	1.84"

Completed By: Chase Wright on 04/04/2025

National TAB

Project: Cincinnati Dayton Convenience Store (West Chester, OH)

AHU/RTU



Diffuser Supply (GRD)

RTU-2/SALES

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
RTU-2-SGRD1	RR	CD	6	50	40	48	96.0
RTU-2-SGRD2	RR	CD	6	50	48	55	110.0
RTU-2-SGRD3	SALES	CD	6	100	22	90	90.0
RTU-2-SGRD4	SALES	SR	20	325	376	333	102.5
RTU-2-SGRD5	SALES	SR	20	325	518	359	110.5
RTU-2-SGRD6	SALES	SR	16	325	472	351	108.0
RTU-2-SGRD7	SALES	SR	16	335	504	362	108.1
RTU-2-SGRD8	SALES	SR	12	455	431	547	120.2
RTU-2-SGRD9	SALES	SR	18	325	339	339	104.3
RTU-2-SGRD10	SALES	SR	18	325	355	355	109.2
RTU-2-SGRD11	SALES	SR	14	335	361	361	107.8
RTU-2-SGRD12	SALES	SR	14	450	510	477	106.0
Total				3400	3976	3677	108.15%

National TAB

Project: Cincinnati Dayton Convenience Store (West Chester, OH)



System/Unit: AHU/RTU

Asset: RTU-3

AREA:KITCHEN

Unit Data		
	Design	Actual
MFG	NA	Lennox
Serial Num	-	5623M01280
Model Num	NA	KGB074S4TQ3Y
Configuration	-	Vertical
Num OA Filters 1	-	2
OA Filter Size 1	-	15"x15"
Num PreFilter 1	-	4
PreFilter Size 1	-	20x20x2

Motor Data		
	Design	Actual
Motor MFG	-	US MOTORS
Frame	-	56HZ
Horsepower	-	2.0
Motor Rpm	-	1740
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	6.0
Service Factor	-	1.15

Test Data		
	Design	Actual
SF CFM	2200	2122
RA CFM	1760	1697
OA CFM	440	425
RL Voltage	-	211/210/210
RL Amperage	-	2.8/3/3
OA Damper Position	-	2.0 V

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.115"
Fan Suction SP	-	-0.182"
Fan Discharge SP	-	0.142"
Total ESP	0.5	0.257"
Fan Total SP	-	0.324"

Completed By: Chase Wright on 04/17/2025

National TAB

Project: Cincinnati Dayton Convenience Store (West Chester, OH)

AHU/RTU



Diffuser Supply (GRD)

RTU-3/KITCHEN

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
RTU-3-SGRD1	KITCHEN	CD	10	230	383	225	97.8
RTU-3-SGRD2	KITCHEN	CD	12	525	485	475	90.5
RTU-3-SGRD3	KITCHEN	CD	12	460	561	441	95.9
RTU-3-SGRD4	KITCHEN	CD	12	460	575	459	99.8
RTU-3-SGRD5	KITCHEN	CD	12	525	645	522	99.4
Total				2200	2649	2122	96.45%

Completed By: Chase Wright on 04/17/2025

National TAB

Project: Cincinnati Dayton Convenience Store (West Chester, OH)



System/Unit: FAN - Exhaust

Asset: EF-1

AREA:RR

Unit Data		
	Design	Actual
MFG	NA	GREENHECK
Model Num	NA	SP-A90-QD
Serial Num	-	25454269

Test Data		
	Design	Actual
CFM	100	96

Motor Data		
	Design	Actual
Motor MFG	-	GREENHECK
Horsepower	-	NA
Motor Rpm	-	900
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.17

Completed By: Chase Wright on 04/04/2025

National TAB

Project: Cincinnati Dayton Convenience Store (West Chester, OH)



System/Unit: FAN - Exhaust

Asset: EF-2

AREA:RR

Unit Data		
	Design	Actual
MFG	NA	GREENHECK
Model Num	NA	CSP-A390-VG-QD
Serial Num	-	25454452

Test Data		
	Design	Actual
CFM	350	337

Motor Data		
	Design	Actual
Motor MFG	-	NA
Horsepower	-	NA
Motor Rpm	-	NA
Phase	1	NA
Voltage (rated)	120	NA
Amperage (rated)	-	NA

Completed By: Chase Wright on 04/04/2025

Notes:
Unable to access motor data

Written By: Nick Payne on 05/05/2025