Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 08/15/2025

Completed By: National TAB

PROJECT

07-14-25 WAWA #6623 WINCHESTER, VA

200 CROSSOVER BLVD

WINCHESTER , VA

Client

Wawa

260 West Baltimore Pike

Wawa, PA 19063

National TAB

Project: 07-14-25 WAWA #6623 WINCHESTER, VA

Table Of Contents

Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report is further detail about your building performance including recommendations, asset data, and pictures. Our focus is to work with the trades to remedy any issues or deficiencies during the actual field balancing and not after the balancing has occurred to achieve a positive environment and outcome. The level of success is determined by the availability of the trades, possible parts needed, or time constraints.

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

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

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.

Final Building Tests
After completing the test and balance the final building pressure was measured. It was confirmed that the building pressure fell within acceptable tolerances and that the pressure measurement coincides with the actual and design net airflow. Any deviations from these standards are noted throughout the report.

Issue List

- RTU-1: Unable to Connect/Unit not running.
- RTU-3: Missing OA/Economizer Filter

07-14-25 WAWA #6623 WINCHESTER, VA

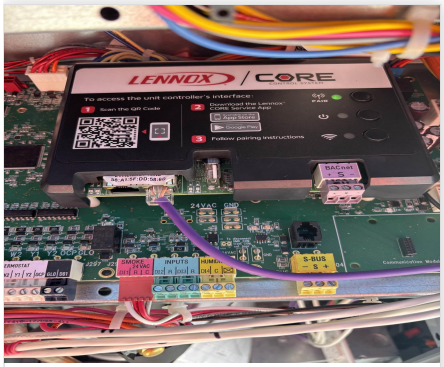
Project Issue Information

Issue Name : RTU-1: Unable to Connect/Unit not running.

Description : Unable to connect to Service Core board on electrical panel inside of unit. Unable to get unit running. Recommend service from manufacturer.

Created By :	National TAB	**Assigned To :**	National TAB - Kalen Kemp
Status :	Open		
Priority :	Urgent	**Asset Tag :**	RTU1
Originated Date :	07/17/2025 - Kalen Kemp - National TAB		

Project Issue File Details



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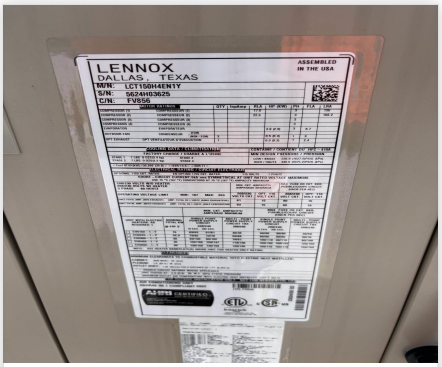

07/17/2025

Project Issue Response Details

- **08/15/2025 National TAB - Jordan Best**
  - Lennox core board to be replaced. Unit running.

07-14-25 WAWA #6623 WINCHESTER, VA

Project Issue Information

Issue Name : RTU-3: Missing OA/Economizer Filter
Description : The OA/Economizer filter is missing. Installation Necessary.

Created By : National TAB
Assigned To : National TAB - Kalen Kemp
Status : Open
Priority : Urgent
Asset Tag : RTU3
Originated Date : 07/17/2025 - Kalen Kemp - National TAB

Project Issue File Details

07/17/2025

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07/17/2025

Project Issue Response Details

- **08/15/2025 National TAB - Jordan Best**
  - Filter remains missing. GC to replace at TBD date.

CheckList List

- 01: RTU's/AHU's
- 02: LENNOX SETUP PARAMETERS
- 03: SENSOR WIRING (LENNOX)
- 04: EF'S
- 05: CLOSEOUT CHECKS

07-14-25 WAWA #6623 WINCHESTER, VA

CheckList Information

Name :	01: RTU's/AHU's	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/09/2025 - Tara Metcalf - National TAB		

CheckList Item Details

RTU's/AHU's

All diffusers and grilles are installed and match design?

Comment:

Clean filters installed?

Comment:

Economizers are assembled and functional?

Comment:

Motors are all operating below the FLA rating?

Comment:

Are belts tight?

Comment:

If direct drive unit is the speed controller working?

Comment:

Is gas piping installed and valves turned on?

Comment:

Condensate drains are installed?

Comment:

Unit free of noticeable noise and vibration

Comment:

Final outside air damper position is marked with permanent marker?

Comment:

No alarms present?

Comment:

Any noticeable duct leakage?

Comment:

Total supply and OA flows are balanced within +/-5% and supply & return diffusers within +/-10%?

Comment:

IN TEST MODE, TEST THE FOLLOWING:

Cooling mode is operational? Record EAT/LAT for each unit:

Comment:

Heating mode is operational? Record EAT/LAT for each unit:

Comment:

Dehumidification mode is operational? (Feel dehumidification coil with your hand. Is it hot?) Record EAT/LAT for each unit:

Comment:

07-14-25 WAWA #6623 WINCHESTER, VA

CheckList Information

Name :	02: LENNOX SETUP PARAMETERS	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/09/2025 - Tara Metcalf - National TAB		

CheckList Item Details

UNIT ID CONFIGURATIONS

BACNET CONFIGURATION: GO TO SETTINGS>GENERAL>CONFIGURATION ID1 POSITION 5 SET TO "N".

Comment:

NETWORK CONFIGURATION: GO TO SETUP>NETWORK INTEGRATION, SET TO BACNET IP

Comment:

CONTROL MODE: SET CONTROL MODE TO ROOM SENSOR: CO2, TEMP & HUMIDITY (PER UNIT, AS NEEDED).

Comment:

INDIVIDUAL PARAMETER CONFIGURATIONS (MECHANICAL CONTRACTOR TO DEFINE / AS APPLICABLE):

PARAMETER 105 DEHUMID MODE: 7 NO CONDITIONS

Comment:

PARAMETER 106 DEHUMID SETPOINT: 50, THIS IS A CENTERED SET POINT (+/-)

Comment:

PARAMETER 107 DEHUMID DEADBAND: 3 (DEFAULT) THIS IS THE ACTUAL +/- VALUE

Comment:

PARAMETER 117 CO2 DAMPER MAX OPEN: 50%

Comment:

PARAMETER 118 CO2 START OPEN PPM: 1500

Comment:

PARAMETER 119 CO2 MAX OPEN PPM: 1500

Comment:

PARAMETER 137 OCCHET SET POINT: 68 (BACK UP)

Comment:

PARAMETER 131 SET TO THE SAME % AS THE MINMIUM OA DAMPER SETPOINT

Comment:

PARAMETER 139 OCC COOLING SET POINT: 72 (BACK UP)

Comment:

PARAMETER 154 OCC BLOWER MODE: ON-CONTINUOUS 1

Comment:

CFM VALUES / MSAV FAN SPEEDS (AIR BALANCER TO DEFINE / IF APPLICABLE):

OA DAMPER SET TO SAME POSITION IN ALL FAN SPEEDS?

Comment:

ALL FAN SPEEDS SET TO THE SAME CFM VALUE (ENTER SETPOINTS BELOW)

Comment:

HEAT CFM VALUE: PER THE HVAC SCHEDULE

Comment:

HIGH COOL CFM VALUE: THE HIGH COOL CFM VALUE

Comment:

LOW COOL CFM VALUE: MATCH THE HIGH COOL CFM VALUE

Comment:

VENTILATION CFM VALUE: MATCH THE HIGH COOL CFM VALUE

Comment:

07-14-25 WAWA #6623 WINCHESTER, VA

CheckList Information

Name :	03: SENSOR WIRING (LENNOX)	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/09/2025 - Tara Metcalf - National TAB		

CheckList Item Details

COMBINATION TEMPERATURE/HUMIDITY SENSOR

Sensors are installed where shown on the drawing?

Comment:

2 conductor shielded cable has one wire landed to Vin, one to GND, and the shield wire is not connected.

Comment:

For second shielded cable, one wire is landed to Vout and the shield wire is not connected.

Comment:

Verify that the CORE or Prodigy controller is sensing a relative humidity (record the reading)

Comment:

07-14-25 WAWA #6623 WINCHESTER, VA

CheckList Information

Name :	04: EF'S	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/09/2025 - Tara Metcalf - National TAB		

CheckList Item Details

EF's

Rotation is correct?

Comment:

Belts are tight (if applicable)?

Comment:

Speed controller installed and functional (if applicable)?

Comment:

There is no major leakage around base of fan?

Comment:

Is the motor operating below the motor FLA rating?

Comment:

Back draft damper installed and can it fully open?

Comment:

Unit free of noticeable noise and vibration?

Comment:

Total exhaust flow balanced within +/-5% and grilles are within +/-10%?

Comment:

07-14-25 WAWA #6623 WINCHESTER, VA

CheckList Information

Name :	05: CLOSEOUT CHECKS	**Status :**	Not Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	06/09/2025 - Tara Metcalf - National TAB		

CheckList Item Details

SPACE COMFORT

Is space free of drafting?

Comment:

Is space comfortable in all areas?

Comment:

Is the space free of ventilation noise?

Comment:

BUILDING PRESSURE

Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)

Comment:

National TAB

Project: 07-14-25 WAWA #6623 WINCHESTER, VA

System/Unit: AHU/RTU

Asset: RTU1 AREA:BACK OF HOUSE

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Serial Num	-	5624H03625
Model Num	LCT150H4E	LCT150H4E
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	14"X23"
Num Final Filter 1	-	4
Final Filter Size 1	-	20"X25"X2"

Motor Data		
	Design	**Actual**
Motor MFG	-	EBM-PAPST
Horsepower	3.75	3.8
Phase	3	3
Rated Voltage	208	200-240
Rated Amperage	-	8.7

Test Data		
	Design	**Actual**
SF CFM	4500	4425
RA CFM	3800	3714
OA CFM	700	711
RL Voltage	-	205.4 / 207.2 / 207.1
RL Amperage	-	4.1 / 4.2 / 4.2
SF System SetPt	-	76%
RA Damper Position	-	80%
OA Damper Position	-	20%
OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.47"
Fan Suction SP	-	-0.83"
Fan Discharge SP	-	0.41"
Total ESP	.70"	0.82"
Fan Total SP	-	1.24"

Completed By: Jordan Best on 08/15/2025

Unit Data - PHOTO LOG

08/15/2025

National TAB

Project:07-14-25 WAWA #6623 WINCHESTER, VA

AHU/RTU

Diffuser Supply (GRD)

RTU1/BACK OF HOUSE

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	TRASH/STAGING	SD1	10"	300	1	382	295	295	98.3
SGRD2	ELECTRICAL ROOM	SD1	10"	375	1	319	345	345	92.0
SGRD3	BOH	SD6	10"	400	1	334	361	361	90.3
SGRD4	BOH	SD6	10"	400	1	339	368	368	92.0
SGRD5	BOH	SD6	10"	400	1	350	383	383	95.8
SGRD6	FOOD SERVICE	SD6	10"	425	1	398	424	424	99.8
SGRD7	FOOD SERVICE	SD6	10"	425	1	393	428	428	100.7
SGRD8	FOOD SERVICE	SD6	10"	425	1	412	437	437	102.8
SGRD9	FOOD SERVICE	SD6	10"	425	1	371	406	406	95.5
SGRD10	FOOD SERVICE	SD6	10"	425	1	448	469	469	110.4
SGRD11	FOOD SERVICE	SD6	12"	500	1	655	509	509	101.8
Total				4500		4401	4425	4425	98.33%

Diffuser Ret/Exh (GRD)

RTU1/BACK OF HOUSE

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD1	WASHROOM	RG1	16X14	1200	1	1068	1089	1089	90.8
EGRD2	BOH	RG1	14"	865	1	684	870	870	100.6
EGRD3	BOH	RG1	14"	865	1	925	878	878	101.5
EGRD4	BOH	RG1	14"	870	1	761	843	843	96.9
Total				3800		3438	3680	3680	96.84%

Completed By: Jordan Best on 08/15/2025

National TAB

Project: 07-14-25 WAWA #6623 WINCHESTER, VA

System/Unit: AHU/RTU

Asset: RTU2 AREA:RETAIL

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Serial Num	-	624H03850
Model Num	LGT102H4E	LGT102H4E
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	2
OA Filter Size 1	-	14"X23"
Num Final Filter 1	-	4
Final Filter Size 1	-	20"X25"X2"

Motor Data		
	Design	**Actual**
Motor MFG	-	EBM-PAPST
Horsepower	3.75	3.8
Phase	3	3
Rated Voltage	208	200-240
Rated Amperage	-	8.7

Test Data		
	Design	**Actual**
SF CFM	3400	3410
RA CFM	3020	3024
OA CFM	380	386
RL Voltage	-	206.3 / 205.4 / 205.4
RL Amperage	-	3.9 / 3.7 / 3.8
SF System SetPt	-	75%
RA Damper Position	-	85%
OA Damper Position	-	15%
OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.13"
Fan Suction SP	-	-0.54"
Fan Discharge SP	-	0.83"
Total ESP	1.00"	0.96"
Fan Total SP	-	1.37"

Completed By: Jordan Best on 08/15/2025

Unit Data - PHOTO LOG

08/15/2025

National TAB

Project:07-14-25 WAWA #6623 WINCHESTER, VA

AHU/RTU

Diffuser Supply (GRD)

RTU2/RETAIL

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SALES	SD2	12"	275	0.4	454	281	281	102.2
SGRD2	SALES	SD2	12"	275	0.4	189	268	268	97.5
SGRD3	SALES	SD2	12"	275	0.4	389	271	271	98.5
SGRD4	SALES	SD2	12"	275	0.4	472	289	289	105.1
SGRD5	SALES	SD2	12"	275	0.4	204	263	263	95.6
SGRD6	SALES	SD2	12"	300	0.4	402	288	288	96.0
SGRD7	SALES	SD2	12"	275	0.4	187	274	274	99.6
SGRD8	SALES	SD2	12"	275	0.4	202	268	268	97.5
SGRD9	SALES	SD2	12"	275	0.4	145	277	277	100.7
SGRD10	DELIVERY ROOM	SD1	8"	250	1	364	261	261	104.4
SGRD11	MENS RR	SD1	8"	150	1	248	143	143	95.3
SGRD12	VESTIBLE	SD1	8"	200	1	248	211	211	105.5
SGRD13	HALLWAY	SD1	8"	200	1	253	208	208	104.0
SGRD14	WOMENS RR	SD5	8"	100	1	186	108	108	108.0
Total				3400		3943	3410	3410	100.29%

Completed By: Jordan Best on 08/15/2025

National TAB

Project: 07-14-25 WAWA #6623 WINCHESTER, VA

System/Unit: AHU/RTU

Asset: RTU3 AREA:FRONT OF HOUSE

Unit Data		
	Design	**Actual**
MFG	LENNOX	LENNOX
Serial Num	-	5624H02648
Model Num	LGT072H4E	LGT072H4E
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	32"x15"
Num Final Filter 1	-	4
Final Filter Size 1	-	20X20X2”

Test Data		
	Design	**Actual**
SF CFM	2400	2370
RA CFM	2200	2181
OA CFM	200	189
RL Voltage	-	208/208/209
RL Amperage	-	0.76/0.79/0.80
SF System SetPt	-	50%
RA Damper Position	-	90%
OA Damper Position	-	10%
OA Damper Type	-	ECON

Motor Data		
	Design	**Actual**
Motor MFG	-	EBM-PAPST
Horsepower	1	1.5
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	4.4

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.13"
Fan Suction SP	-	-0.24"
Fan Discharge SP	-	0.25"
Total ESP	.50"	0.38"
Fan Total SP	-	0.49"

Completed By: Jordan Best on 08/15/2025

Unit Data - PHOTO LOG

08/15/2025

National TAB

Project:07-14-25 WAWA #6623 WINCHESTER, VA

AHU/RTU

Diffuser Supply (GRD)

RTU3/FRONT OF HOUSE

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	OFFICE	SD1	8"	200		164	143	189	94.5
SGRD2	OFFICE	SD1	8"	150		300	178	136	90.7
SGRD3	FOH	SD5	8"	250		244	143	228	91.2
SGRD4	FOH	SD2	18"	450		755	755	444	98.7
SGRD5	FOH	SD2	18"	450		814	814	458	101.8
SGRD6	FOH	SD2	18"	450		847	847	455	101.1
SGRD7	FOH	SD2	18"	450		1006	1006	460	102.2
Total				2400		4130	3886	2370	98.75%

Completed By: Jordan Best on 08/15/2025

National TAB

Project: 07-14-25 WAWA #6623 WINCHESTER, VA

System/Unit: FAN - Exhaust

Asset: EF1 AREA:RESTROOMS

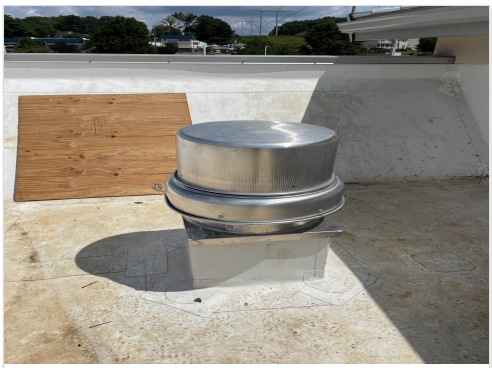
Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	GB-098-6	GB-098-6
Serial Num	-	26588962
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	48Y
Horsepower	.167	00.167
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	3.6
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	375	369
Fan Rotation	-	CCW
System SetPt	-	0 TURNS OUT
RL Voltage	-	114.3
RL Amperage	-	2.1
Total ESP	.38"	0.18"
Fan Inlet SP	-	-0.18"
Fan Discharge SP	-	ATM

Completed By: Jordan Best on 08/15/2025

Unit Data - PHOTO LOG



08/15/2025

National TAB

Project:07-14-25 WAWA #6623 WINCHESTER, VA

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF1/RESTROOMS

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD1	MENS RR	EG1	8X8	225	1	86	231	231	102.7
EGRD2	WOMENS RR	EG1	8X8	150	1	192	138	138	92.0
Total				375		278	369	369	98.4%

Completed By: Jordan Best on 08/15/2025

National TAB

Project: 07-14-25 WAWA #6623 WINCHESTER, VA

System/Unit: FAN - Exhaust

Asset: EF2 AREA:BACK OF HOUSE

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	GB-098-6	GB-098-6
Serial Num	-	26588959
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	48Y
Horsepower	.167	0.167
Motor Rpm	-	1725
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	3.6
Service Factor	-	1.15

Test Data		
	Design	**Actual**
CFM	400	410
Fan Rotation	-	CCW
System SetPt	-	1 TURN OUT
RL Voltage	-	114.5
RL Amperage	-	2.4
Total ESP	.38"	0.17"
Fan Inlet SP	-	-0.17"
Fan Discharge SP	-	ATM

Completed By: Jordan Best on 08/15/2025

Unit Data - PHOTO LOG

08/15/2025

National TAB

Project:07-14-25 WAWA #6623 WINCHESTER, VA

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF2/BACK OF HOUSE

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD1	BOH	RG2	8X8	200	1	267	208	208	104.0
EGRD2	BOH	RG2	8X8	200	1	174	202	202	101.0
Total				400		441	410	410	102.5%

Completed By: Jordan Best on 08/15/2025

National TAB

Project: 07-14-25 WAWA #6623 WINCHESTER, VA

System/Unit: FAN - Exhaust

Asset: EF3 AREA:TRASH ROOM

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	SP-B200	SP-B200
Serial Num	-	NA
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	**Actual**
CFM	200	184
Fan Rotation	-	CCW
System SetPt	-	FIXED SPEED
Fan Discharge SP	-	ATM

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Horsepower	.167	0.03
Motor Rpm	-	1000
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	2.7

Completed By: Jordan Best on 08/15/2025

Unit Data - PHOTO LOG

08/15/2025