Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 03/05/2025

Completed By: National TAB

PROJECT

Wilmington CBOC (Wilmington, OH)

31 Clark Street

Wilmington, OH

Client

Mechanical Optimizers

2145 Patterson Street

Cincinnati, OH 45214

National TAB

Project: Wilmington CBOC (Wilmington, OH)

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Project: Wilmington CBOC (Wilmington, OH)

System/Unit: AHU/RTU

Asset: RTU-1 AREA:108

Unit Data		
	Design	**Actual**
MFG	NA	TRANE
Serial Num	-	243610499L
Model Num	NA	YSJ150B3SAH
Configuration	VERTICAL	VERTICAL
OA Filter Size 1	-	38”x17”
Num PreFilter 1	-	3
PreFilter Size 1	-	18”x18”x2”
Num PreFilter 2	-	3
PreFilter Size 2	-	18”x24”x2”

Motor Data		
	Design	**Actual**
Motor MFG	-	EBM PABPST
Horsepower	4.60	5.0
Motor Rpm	-	1239
Phase	3	3
Rated Voltage	208	208
Rated Amperage	11.00	11.0

Test Data		
	Design	**Actual**
SF CFM	3750	3853
RA CFM	3250	3349
OA CFM	500	504
RL Voltage	208	217/216/215
RL Amperage	11.00	5.6/5.8/5.8
SF System SetPt	-	1.2"
Min OA Damper Position	-	0%
Brake Horse Power	-	2.6

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.91"
Fan Suction SP	-	-1.41"
Fan Discharge SP	0.859	1.28"
Total ESP	0.859	2.19
Fan Total SP	1.641	2.69"

Completed By: Gabe Merk on 01/21/2025

VAV - Single Duct

RTU-1/108

Asset											
Asset Name	**MFG**	**Model Num**	**Type**	**Inlet Size**	**Design Max CFM**	**Max CFM**	**Design Min CFM**	**Min CFM**	**Design Heat CFM**	**Heat CFM**	**Ak (max)**
VAV-101	TRANE	VCEF08--*M0SY95D	REHEAT	8	505	485	305	310	315	311	1.18
VAV-102	TRANE	VCEF06--*M0SY95D	REHEAT	6	85	86	60	61	83	82	1.22
VAV-103	TRANE	VCEF16--*M0SY95D	REHEAT	16	2740	2755	2097	2115	2250	2276	1.12
VAV-104	TRANE	VCEF10--*M0SY95D	REHEAT	10	635	616	635	616	635	616	0.99

Diffuser Ret/Exh (GRD)

RTU-1/108

Asset							
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**FINAL CFM**	**% to design**
EGRD1	R12	12	435	1	827	435	100.0
EGRD2	R12	12	505	1	210	518	102.6
EGRD3	R6	6	85	1	151	93	109.4
EGRD4	R12	12	450	1	652	463	102.9
EGRD5	R12	12	450	1	505	486	108.0
EGRD6	R12	12	450	1	345	455	101.1
EGRD7	R12	12	450	1	337	460	102.2
Total			2825		3027	2910	103.01%

Diffuser Supply (GRD)

VAV-101/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-101-SGRD1	104	S	12	505	579	485	96.0
Total				505	579	485	96.04%

VAV-102/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-102-SGRD1	103	S	6	85	93	86	101.2
Total				85	93	86	101.18%

VAV-103/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-103-SGRD1	102	S	10	210	334	201	95.7
VAV-103-SGRD2	101	S	12	450	524	484	107.6
VAV-103-SGRD3	101	S	12	450	92	439	97.6
VAV-103-SGRD4	101	S	12	450	566	470	104.4
VAV-103-SGRD5	100	S	10	365	520	367	100.5
VAV-103-SGRD6	100	S	10	365	437	375	102.7
VAV-103-SGRD7	101	S	12	450	659	419	93.1
Total				2740	3132	2755	100.55%

VAV-104/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-104-SGRD1	106	S	8	200	210	210	105.0
VAV-104-SGRD2	105	S	12	435	406	406	93.3
Total				635	616	616	97.01%

Completed By: Gabe Merk on 01/21/2025

National TAB

Project: Wilmington CBOC (Wilmington, OH)

System/Unit: AHU/RTU

Asset: RTU-2 AREA:123

Unit Data		
	Design	**Actual**
MFG	NA	TRANE
Serial Num	-	243610494L
Model Num	NA	YSJ090A3SAH
Configuration	VERTICAL	VERTICAL
OA Filter Size 1	-	38"x17"
Num PreFilter 1	-	3
PreFilter Size 1	-	16”x24”x2”
Num PreFilter 2	-	2
PreFilter Size 2	-	18”x24”x2”

Motor Data		
	Design	**Actual**
Motor MFG	-	EBM PABPST
Horsepower	3.00	3.0
Motor Rpm	-	977
Phase	3	3
Rated Voltage	208	208
Rated Amperage	8.80	8.8

Test Data		
	Design	**Actual**
SF CFM	2245	2244
RA CFM	1745	1540
OA CFM	500	473
RL Voltage	208	217/217/218
RL Amperage	8.80	2.3/2.3/2.5
SF System SetPt	-	1.00"
Min OA Damper Position	-	15%
Brake Horse Power	-	0.83

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.43”
Fan Suction SP	-	-0.62”
Fan Discharge SP	-	1.17”
Total ESP	1.825	1.60”
Fan Total SP	0.675	1.79”

Completed By: Gabe Merk on 03/26/2025

Notes:
Economizer not modulating (1/21/25)
RESOLVED 3/26/25
RETURNS PROPORTIONALLY BALANCED

Written By: Gabe Merk on 03/26/2025

VAV - Single Duct

RTU-2/123

Asset											
Asset Name	**MFG**	**Model Num**	**Type**	**Inlet Size**	**Design Max CFM**	**Max CFM**	**Design Min CFM**	**Min CFM**	**Design Heat CFM**	**Heat CFM**	**Ak (max)**
VAV-112	TRANE	VCEF10--*M0SY95D	REHEAT	10	730	727	450	444	580	584	0.95
VAV-113	TRANE	VCEF10--*M0SY95D	REHEAT	10	640	664	640	664	629	635	1.18
VAV-114	TRANE	VCEF10--*M0SY95D	REHEAT	10	680	677	410	411	410	411	1.05
VAV-115	TRANE	VCEF10--*M0SY95D	REHEAT	10	195	176	195	176	195	176	0.65

Diffuser Ret/Exh (GRD)

RTU-2/123

Asset							
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**FINAL CFM**	**% to design**
EGRD1	R12	12	365	1	426	323	88.5
EGRD2	R12	12	365	1	0	0	0.0
EGRD3	R8	8	130	1	129	128	98.5
EGRD4	R6	6	75	1	129	71	94.7
EGRD5	R8	8	150	1	126	137	91.3
EGRD6	R6	6	85	1	68	83	97.6
EGRD7	R10	10	340	1	172	330	97.1
EGRD8	R10	10	340	1	179	317	93.2
EGRD9	R8	8	170	1	96	151	88.8
Total			2020		1325	1540	76.24%

Diffuser Supply (GRD)

VAV-112/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-112-SGRD1	127	S	12	365	264	366	100.3
VAV-112-SGRD2	127	S	12	365	413	361	98.9
Total				730	677	727	99.59%

VAV-113/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-113-SGRD1	129	NA	8	130	228	125	96.2
VAV-113-SGRD2	126	NA	6	50	50	54	108.0
VAV-113-SGRD3	130	S	6	75	130	82	109.3
VAV-113-SGRD4	128	S	8	100	87	108	108.0
VAV-113-SGRD5	131	S	8	175	120	176	100.6
VAV-113-SGRD6	132	S	8	110	135	117	106.4
Total				640	750	662	103.44%

VAV-114/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-114-SGRD1	112	S	10	340	372	334	98.2
VAV-114-SGRD2	112	S	10	340	318	343	100.9
Total				680	690	677	99.56%

VAV-115/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-115-SGRD1	111	S	8	195	119	176	90.3
Total				195	119	176	90.26%

Completed By: Gabe Merk on 03/26/2025

Asset	Notes	Date	Written By
EGRD2	RTU 2 RETURN GRILLE 2 NOT INSTALLED. REMAINING RETURNS PROPORTIONALLY BA LANCED.	03/26/2025	Gabe Merk

National TAB

Project: Wilmington CBOC (Wilmington, OH)

System/Unit: AHU/RTU

Asset: RTU-3 AREA:116

Unit Data		
	Design	**Actual**
MFG	NA	TRANE
Serial Num	-	243610500L
Model Num	NA	YSJ120A3SAH
Configuration	VERTICAL	VERTICAL
OA Filter Size 1	-	38"x17"
Num PreFilter 1	-	3
PreFilter Size 1	-	16”x24”x2”
Num PreFilter 2	-	2
PreFilter Size 2	-	18”x24”x2”

Motor Data		
	Design	**Actual**
Motor MFG	-	EBM PABPST
Horsepower	3.00	3.0
Motor Rpm	-	1291
Phase	3	3
Rated Voltage	208	208
Rated Amperage	8.80	8.8

Test Data		
	Design	**Actual**
SF CFM	3450	3463
RA CFM	2950	2800
OA CFM	500	515
RL Voltage	208	216/215/217
RL Amperage	8.80	4.3/4.2/4.3
SF System SetPt	-	1.6"
Min OA Damper Position	-	11%
Brake Horse Power	-	1.45

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.49"
Fan Suction SP	-	-0.88"
Fan Discharge SP	-	1.32"
Total ESP	0.859	1.81"
Fan Total SP	1.641	2.20"

Completed By: Gabe Merk on 03/26/2025

VAV - Single Duct

RTU-3/116

Asset											
Asset Name	**MFG**	**Model Num**	**Type**	**Inlet Size**	**Design Max CFM**	**Max CFM**	**Design Min CFM**	**Min CFM**	**Design Heat CFM**	**Heat CFM**	**Ak (max)**
VAV-105	TRANE	VCEF06--*M0SY95D	REHEAT	6	135	135	80	80	83	84	1.03
VAV-106	TRANE	VCEF06--*M0SY95D	REHEAT	6	65	65	65	65	65	65	1.19
VAV-107	TRANE	VCEF14--*M0SY95D	REHEAT	14	1450	1432	985	991	985	991	1.04
VAV-108	TRANE	VCEF06--*M0SY95D	REHEAT	6	250	266	250	266	250	266	1.07
VAV-109	TRANE	VCEF06--*M0SY95D	REHEAT	6	250	258	250	258	250	258	1.09
VAV-110	TRANE	VCEF10--*M0SY95D	REHEAT	10	775	811	775	811	775	811	1.16
VAV-111	TRANE	VCEF06--*M0SY95D	REHEAT	6	525	502	525	502	525	502	1.19

Diffuser Ret/Exh (GRD)

RTU-3/116

Asset							
Asset Name	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**FINAL CFM**	**% to design**
EGRD1	R6	6	95	1	66	86	90.5
EGRD2	R8	8	135	1	174	134	99.3
EGRD3	R8	8	160	1	200	145	90.6
EGRD4	R10	10	305	1	281	330	108.2
EGRD5	R8	8	135	1	190	133	98.5
EGRD6	R8	8	125	1	190	124	99.2
EGRD7	R8	8	125	1	262	136	108.8
EGRD8	R12	12	460	1	285	420	91.3
EGRD9	R12	12	460	1	307	416	90.4
EGRD10	R8	8	125	1	213	132	105.6
EGRD11	R8	8	135	1	143	137	101.5
EGRD12	R10	10	230	1	0	215	93.5
EGRD13	R8	8	125	1	139	136	108.8
EGRD14	R8	8	175	1	179	190	108.6
EGRD15	R6	6	65	1	45	66	101.5
Total			2855		2674	2800	98.07%

Diffuser Supply (GRD)

VAV-105/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-105-SGRD1	113	S	8	135	130	135	100.0
Total				135	130	135	100%

VAV-106/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-106-SGRD1	119	S	6	65	83	65	100.0
Total				65	83	65	100%

VAV-107/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-107-SGRD1	108	S	10	305	354	305	100.0
VAV-107-SGRD2	108	S	10	305	267	279	91.5
VAV-107-SGRD3	107	S	10	230	226	236	102.6
VAV-107-SGRD4	108	S	10	305	334	290	95.1
VAV-107-SGRD5	109	S	10	305	314	322	105.6
Total				1450	1495	1432	98.76%

VAV-108/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-108-SGRD1	115	S	8	125	133	130	104.0
VAV-108-SGRD2	114	S	8	125	141	136	108.8
Total				250	274	266	106.4%

VAV-109/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-109-SGRD1	121	S	8	125	129	128	102.4
VAV-109-SGRD2	120	S	8	125	139	130	104.0
Total				250	268	258	103.2%

VAV-110/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-110-SGRD1	116	S	8	135	163	140	103.7
VAV-110-SGRD2	118	S	8	175	172	192	109.7
VAV-110-SGRD3	125	S	10	210	277	219	104.3
VAV-110-SGRD4	133	S	6	95	74	91	95.8
VAV-110-SGRD5	117	S	8	160	187	169	105.6
Total				775	873	811	104.65%

VAV-111/

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
VAV-111-SGRD1	122	S	8	180	112	164	91.1
VAV-111-SGRD2	123	S	8	135	118	126	93.3
VAV-111-SGRD3	124	S	10	210	290	212	101.0
Total				525	520	502	95.62%

National TAB

Project: Wilmington CBOC (Wilmington, OH)

System/Unit: FAN - Exhaust

Asset: EF-1 AREA:102 PATIENT RR

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SP-A250-QD
Serial Num	-	25233791
Type	CEILING	CEILING

Test Data		
	Design	**Actual**
CFM	250	193

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	67W	1/30
Motor Rpm	1000	1000
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	.56
Service Factor	-	NL

Completed By: Gabe Merk on 03/05/2025

Notes:
AFTER CHANGING OUTLET PIPE TO 8" (OTHER THAN AT EXTERIOR) AIRFLOW INCREASED FROM 103 CFM TO 193 CFM.

Written By: Gabe Merk on 03/05/2025

National TAB

Project: Wilmington CBOC (Wilmington, OH)

System/Unit: FAN - Exhaust

Asset: EF-2 AREA:106 PATIENT RR

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SP-A250-QD
Serial Num	-	25233803
Type	CEILING	CEILING

Test Data		
	Design	**Actual**
CFM	250	172

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	67W	1/30
Motor Rpm	1000	1000
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	.56
Service Factor	-	NL

Completed By: Gabe Merk on 03/05/2025

Notes:
AFTER CHANGING OUTLET PIPE TO 8" (OTHER THAN AT EXTERIOR) AIRFLOW INCREASED FROM 107 CFM TO 172 CFM.

Written By: Gabe Merk on 03/05/2025

National TAB

Project: Wilmington CBOC (Wilmington, OH)

System/Unit: FAN - Exhaust

Asset: EF-3 AREA:122 PATIENT RR

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SP-A250-QD
Serial Num	-	25233800
Type	CEILING	CEILING

Test Data		
	Design	**Actual**
CFM	250	162

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	67W	1/30
Motor Rpm	1000	1000
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	.56
Service Factor	-	NL

Completed By: Gabe Merk on 03/05/2025

Notes:
AFTER CHANGING OUTLET PIPE TO 8" (OTHER THAN AT EXTERIOR) AIRFLOW INCREASED FROM 108 CFM TO 162 CFM.

Written By: Gabe Merk on 03/05/2025

National TAB

Project: Wilmington CBOC (Wilmington, OH)

System/Unit: FAN - Exhaust

Asset: EF-4 AREA:124 STAFF RR

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SP-A250-QD
Serial Num	-	25233785
Type	CEILING	CEILING

Test Data		
	Design	**Actual**
CFM	250	183

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	67W	1/30
Motor Rpm	1000	1000
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	.56
Service Factor	-	NL

Completed By: Gabe Merk on 03/05/2025

Notes:
AFTER CHANGING OUTLET PIPE TO 8" (OTHER THAN AT EXTERIOR) AIRFLOW INCREASED FROM 83 CFM TO 183 CFM.

Written By: Gabe Merk on 03/05/2025

National TAB

Project: Wilmington CBOC (Wilmington, OH)

System/Unit: FAN - Exhaust

Asset: EF-5 AREA:126 SOILED UTILITY

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SP-AP0511A-1
Serial Num	-	NL
Type	CEILING	CEILING

Motor Data		
	Design	**Actual**
Motor MFG	-	NL
Frame	-	NL
Horsepower	67W	22W
Motor Rpm	887	NL
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	NL
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	80	83

Completed By: Gabe Merk on 03/05/2025

National TAB

Project: Wilmington CBOC (Wilmington, OH)

System/Unit: FAN - Exhaust

Asset: EF-6 AREA:125 PATIENT RR

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SP-A250-QD
Serial Num	-	25233794
Type	CEILING	CEILING

Test Data		
	Design	**Actual**
CFM	250	202

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	67W	1/30
Motor Rpm	1000	1000
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	.56
Service Factor	-	NL

Completed By: Gabe Merk on 03/05/2025

Notes:
AFTER CHANGING OUTLET PIPE TO 8" (OTHER THAN AT EXTERIOR) AIRFLOW INCREASED FROM 92 CFM TO 202 CFM.

Written By: Gabe Merk on 03/05/2025

National TAB

Project: Wilmington CBOC (Wilmington, OH)

System/Unit: FAN - Exhaust

Asset: EF-7 AREA:131 JANITOR

Unit Data		
	Design	**Actual**
MFG	NA	GREENHECK
Model Num	NA	SP-A250-QD
Serial Num	-	25233782
Type	CEILING	CEILING

Test Data		
	Design	**Actual**
CFM	250	197

Motor Data		
	Design	**Actual**
Motor MFG	-	GREENHECK
Frame	-	NL
Horsepower	67W	1/30
Motor Rpm	1000	1000
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	.56
Service Factor	-	NL

Completed By: Gabe Merk on 03/05/2025

Notes:
AFTER CHANGING OUTLET PIPE TO 8" (OTHER THAN AT EXTERIOR) AIRFLOW INCREASED FROM 90 CFM TO 197 CFM.

Written By: Gabe Merk on 03/05/2025