National TAB

Project: Cerity Partners (Cincinnati, OH)

System/Unit: AHU/RTU

Asset: RTU-6 AREA:BUILDING WEST (EXISTING)

Unit Data		
	Design	**Actual**
MFG	NA	CARRIER
Serial Num	-	2710G10537
Model Num	NA	48TCFF09
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	37”x21”
Num PreFilter 1	-	4
PreFilter Size 1	-	20”x20”x2”

Motor Data		
	Design	**Actual**
Motor MFG	-	MARATHON
Frame	-	56Y
Horsepower	-	NL
Motor Rpm	-	1430
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	5.2
Service Factor	-	1.15

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	4”
Motor Bore Size	-	0.625”
Motor Sheave SetPt	-	0 OUT
Fan Sheave Size	-	AFD74
Fan Sheave Bore	-	1”
Belt CL Distance	-	17.5”
Num of Belts	-	1
Belt Size	-	A51

Test Data		
	Design	**Actual**
SF CFM	2800 [1]	2601
SF RPM	-	
RA CFM	-	
OA CFM	-	
RL Voltage	-	212/212/210
RL Amperage	-	4.4/4.5/4.3
OA Damper Position	-	MANUALLY SET

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.40"
Fan Suction SP	-	-0.65"
Fan Discharge SP	-	1.18"
Total ESP	-	1.58"
Fan Total SP	-	1.83"

Notes:
[1] Design team recommended to shoot for 350 CFM/Ton based upon conditions. All VVT's open at max fan speed. Bypass Damper closed. There was still a little leakage at bypass damper. So total Final Supply airflow is more than what is stated.

Written By: Joe Hertenstein on 04/13/2024

National TAB

Project:Cerity Partners (Cincinnati, OH)

AHU/RTU

VAV - Single Duct

RTU-6/BUILDING WEST (EXISTING)

Asset						
Asset Name	**MFG**	**Model Num**	**Type**	**Inlet Size**	**Design Max CFM**	**Max CFM**
VVT-6-5	CARRIER	35EN3000L080D	VVT	9	792	766
VVT-6-6	CARRIER	35EN3000L070D	VVT	9	650	675
VVT-6-7	CARRIER	35EN3000L060D	VVT	7	480	512
VVT-6-8	CARRIER	35EN3000L090D	VVT	9	880	648

Diffuser Supply (GRD)

VVT-6-5/216

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
65-1	212	CD 4W4	8	198	121	159	80.3
65-2	212	CD 4W4	8	198	133	174	87.9
65-3	212	CD 4W4	8	198	140	183	92.4
65-4	212	CD 4W4	8	198	139	182	91.9
Total				792	533	698	88.13%

VVT-6-6/225

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
66-1	214	CD 4W-3	6	110	53	85	77.3
66-2	213	CD 4W-3	6	100	35	88	88.0
66-3	215	CD 4W-5	10	300	144	189	63.0
66-4	216	CD 4W-4	8	130	56	78	60.0
66-5	217	CD 4W-3	6	115	34	77	67.0
Total				755	322	517	68.48%

VVT-6-7/201

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
67-1	219	CD 4W-3	6	125	23	45	36.0
67-2	220	CD 4W-3	6	115	27	48	41.7
67-3	221	CD 4W-3	6	115	17	57	49.6
67-4	222	CD 4W-3	6	115	23	62	53.9
67-5	225	CD 4W-4	6	80	11	51	63.8
Total				550	101	263	47.82%

VVT-6-8/202

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
68-1	226	CD4W-4	8	185	81	108	58.4
68-2	224	CD4W-4	8	225	98	113	50.2
68-3	201	LD-3	10X6	235	61	101	43.0
68-4	200	LD-3	10X6	150	61	99	66.0
68-5	201	LD-3	10X6	235	111	140	59.6
Total				1030	412	561	54.47%

Asset	Notes	Date	Written By
VVT-6-5	Design changed based upon 350 CFM/Ton for RTU. Final air device total derived from duct traverse & initial measurements.	04/13/2024	Joe Hertenstein
VVT-6-6	Design changed based upon 350 CFM/Ton for RTU. Final air device total derived from duct traverse & initial measurements.	04/13/2024	Joe Hertenstein
VVT-6-7	Broken balance damper located on high side of box	12/21/2023	Gabe Merk
VVT-6-8	Design changed based upon 350 CFM/Ton for RTU. Final air device total derived from duct traverse & initial measurements.	04/13/2024	Joe Hertenstein

National TAB

Project: Cerity Partners (Cincinnati, OH)

System/Unit: AHU/RTU

Asset: RTU-11 AREA:BUILDING EAST(EXISTING)

Unit Data		
	Design	**Actual**
MFG	NA	CARRIER
Serial Num	-	4605G40789
Model Num	NA	48TFD012-A
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	36”x21”
Num PreFilter 1	-	4
PreFilter Size 1	-	20”x20”x2”

Motor Data		
	Design	**Actual**
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	7.5

Drive Data		
	Design	**Actual**
Motor Sheave Size	-	4”
Motor Bore Size	-	0.875”
Motor Sheave SetPt	-	0 out
Fan Sheave Size	-	AFD74
Fan Sheave Bore	-	1”
Belt CL Distance	-	17”
Num of Belts	-	1
Belt Size	-	A49

Test Data		
	Design	**Actual**
SF CFM	3500 [1]	3003
SF RPM	-	960
RA CFM	-	
OA CFM	-	
RL Voltage	-	209/209/208
RL Amperage	-	7.0/7.5/7.4
OA Damper Position	-	Manually Set

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.59"
Fan Suction SP	-	-0.81"
Fan Discharge SP	-	0.93"
Total ESP	-	1.52"
Fan Total SP	-	1.74"

Notes:
[1] Design team recommended to shoot for 350 CFM/Ton based upon conditions. All VVT's open at max fan speed. Bypass Damper closed. There was still a little leakage at bypass damper. So total Final Supply airflow is more than what is stated.

Written By: Joe Hertenstein on 04/13/2024

National TAB

Project:Cerity Partners (Cincinnati, OH)

AHU/RTU

VAV - Single Duct

RTU-11/BUILDING EAST(EXISTING)

Asset						
Asset Name	**MFG**	**Model Num**	**Type**	**Inlet Size**	**Design Max CFM**	**Max CFM**
VVT-11M-1	CARRIER	35EN3000L070D	VVT	7	540	318
VVT-11M-2	CARRIER	35EN3000L120D	VVT	12	1490	1022
VVT-11M-3	CARRIER	35EN3000L090D	VVT	9	1010	613
VVT-11M-4	CARRIER	35EN3000L100D	VVT	10	985	1050

Diffuser Supply (GRD)

VVT-11M-1/207

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
111-1	202	LD-3	10X6	270	126	126	46.7
111-2	202	LD-3	10X6	270	114	114	42.2
Total				540	240	240	44.44%

VVT-11M-2/208

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
112-1	203	LD-4	12X6	335	107	107	31.9
112-2	204	LD-3	10X6	295	79	79	26.8
112-3	HALL	CD 4W-4	8	80	54	54	67.5
112-4	205	LD-3	10X6	210	98	98	46.7
112-5	206	LD-4	12X6	360	126	126	35.0
112-6	207	LD-3	10X6	210	72	72	34.3
Total				1490	536	536	35.97%

VVT-11M-3/211

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
113-1	HALL	CD 4W-3	6	80	59	59	73.8
113-2	208	LD-3	10X6	310	212	212	68.4
113-3	208	LD-3	10X6	310	199	199	64.2
113-4	208	LD-3	10X6	310	203	203	65.5
Total				1010	673	673	66.63%

VVT-11M-4/OFFICE 209-211

Asset							
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**CFM(1)**	**FINAL CFM**	**% to design**
114-1	209	LD-3	10X6	220	129	129	58.6
114-2	210	LD-3	10X6	390	192	192	49.2
114-3	HALL	CD 4W-3	6	80	104	104	130.0
2114	211	LD-3	10X6	295	114	114	38.6
Total				985	539	539	54.72%

Asset	Notes	Date	Written By
VVT-11M-1	Design changed based upon 350 CFM/Ton for RTU. Final air device total derived from duct traverse & initial measurements.	04/13/2024	Joe Hertenstein
VVT-11M-2	Design changed based upon 350 CFM/Ton for RTU. Final air device total derived from duct traverse & initial measurements.	04/13/2024	Joe Hertenstein
VVT-11M-3	Design changed based upon 350 CFM/Ton for RTU. Final air device total derived from duct traverse & initial measurements.	04/13/2024	Joe Hertenstein
VVT-11M-4	Design changed based upon 350 CFM/Ton for RTU. Final air device total derived from duct traverse & initial measurements.	04/13/2024	Joe Hertenstein