

**Report By:**

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



**Report: Report**  
**Function: Test, Adjust, & Balance**  
**Date: 12/29/2023**

# PROJECT

## Skyline Take Over (Richmond, KY)

2319 Lantern Ridge Drive

Richmond, KY 40475

### Client

CAPTIVE-AIRE R120  
1329 E. Kemper Road  
Suite 4210  
Cincinnati, OH 45246

# National TAB

Project: Skyline Take Over (Richmond, KY)

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### AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HVAC SUPPLY		HVAC RETURN		HVAC OUTDOOR		OA %		HOOD MAKE-UP		HOOD EXHAUST		GENERAL EXH.	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU 1		3600	3647	3200	3256	400	388	11.1%	10.6%						
RTU 2		4550	4248	3850	3593	700	655	#REF!	15.4%						
RTU 3		4600	4623	3900	3935	700	688	15.2%	14.9%						
RTU 4		3600	3493	3000	2906	600	587	16.7%	16.8%						
MUA										1700	1525				
EF-2												2200	2098		
EF-3												500	520		
EF-4												480	508		
EF-5												650	698		
<b>TOTALS</b>		16350	16011	13950	13690	2400	2318			1700	1525	3830	3824	0	0

#### NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	4100	3843
TOTAL EXHAUST	3830	3824
<b>NET AIRFLOW</b>	<b>270</b>	<b>19</b>

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.007
SIDE	
REAR	
<b>AVERAGE</b>	<b>0.007</b>

#### FINAL CHECKS

- ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓
- MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓
- PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✓

NOTES:

## CheckList List

- 1.INITIAL SITE WALKTHROUGH
- 2.UNIT DATA AND EVALUATION
- 3.TEST, ADJUST, AND BALANCE
- 4.FINAL TESTS



## Skyline Take Over (Richmond, KY)

### CheckList Information

**Name :** 1.INITIAL SITE WALKTHROUGH **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 12/29/2023 - Austin McFall - National TAB  
**Completed Date :** 12/29/2023 - Austin McFall - National TAB

### CheckList Item Details

#### INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design? Yes

**Comment:**

All hood filters installed and accounted for? Yes

**Comment:**

Hoods are wired and have power? Yes

**Comment:**

Hood is free of alarms? Yes

**Comment:**

Thermostats have power? Yes

**Comment:**

Have trades/general contractor been notified about any issues and are they created on FaciliBuild?

**Comment:**





## Skyline Take Over (Richmond, KY)

### CheckList Information

**Name :** 2.UNIT DATA AND EVALUATION **Status :** Completed

**Assigned Organization :** National TAB **Asset :**

**Requesting Organization :** National TAB

**Created Date :** 12/29/2023 - Austin McFall - National TAB

**Completed Date :** 12/29/2023 - Austin McFall - National TAB

### CheckList Item Details

#### UNIT DATA AND EVALUATION WHILE GATHERING UNIT DATA CHECK THE FOLLOWING:

##### RTU's/AHU's

Economizers are assembled and functional? Yes

##### Comment:

DCV Max damper opening position is set to minimum? Yes

##### Comment:

Free cooling enthalpy set point set for lowest setting (Typically "D") Yes

##### Comment:

Motors are all operating below the FLA rating? Yes

##### Comment:

YES

Are belts tight?

##### Comment:

YES

If direct drive unit is the speed controller working.

**Comment:**

YES

Is gas piping installed and valves turned on?

Yes

**Comment:**

YES

Unit free of noticeable noise and vibration

Yes

**Comment:**

**EF's**

Rotation is correct?

Yes

**Comment:**

Belts are tight?

**Comment:**

Grease cup installed on hood fan?

Yes

**Comment:**

Hinge kit installed installed on hood fan?

Yes

**Comment:**

Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?

Yes

**Comment:**

Flex conduit is long enough so that fan can be completely tilted back?

Yes

**Comment:**

There is no major leakage around base of fan?

Yes

**Comment:**

Is the motor operating below the motor FLA rating? Yes

**Comment:**

For restroom fan(s) is the back draft damper installed and can it fully open? Yes

**Comment:**

Unit free of noticeable noise and vibration? Yes

**Comment:**

**MUA**

Rotation is correct? Yes

**Comment:**

Gas piping is installed and valves are in on position? Yes

**Comment:**

Heater tested and is functional? Yes

**Comment:**

Internal motorized damper is fully opening? Yes

**Comment:**

Motor is operating below the FLA rating? Yes

**Comment:**

Unit free of noticeable noise and vibration? Yes

**Comment:**

**HOODS**

Kitchen equipment installed in proper places? Yes

**Comment:**

Can kitchen equipment be turned on for final smoke test? Yes

**Comment:**

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**DOCUMENTATION**

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Have trades/general contractor been notified about any issues and are they created on FaciliBuild? Yes

---

**Comment:**

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## Skyline Take Over (Richmond, KY)

### CheckList Information

**Name :** 3.TEST, ADJUST, AND BALANCE **Status :** Completed

**Assigned Organization :** National TAB **Asset :**

**Requesting Organization :** National TAB

**Created Date :** 12/29/2023 - Austin McFall - National TAB

**Completed Date :** 12/29/2023 - Austin McFall - National TAB

### CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting? Yes

Comment:

Is space comfortable in all areas? Yes

Comment:

Is the space free of ventilation noise? Yes

Comment:

If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".

Comment:

NA



## Skyline Take Over (Richmond, KY)

### CheckList Information

**Name :** 4.FINAL TESTS **Status :** Completed  
**Assigned Organization :** National TAB **Asset :**  
**Requesting Organization :** National TAB  
**Created Date :** 12/29/2023 - Austin McFall - National TAB  
**Completed Date :** 12/29/2023 - Austin McFall - National TAB

### CheckList Item Details

#### FINAL TESTS

#### HOOD CAPTURE TEST

List equipment turned on for testing

**Comment:**

NA

List smoke candle type used

**Comment:**

NA

Smoke test capture - Perimeter of hood

**Comment:**

NA

Smoke test capture - Top of cooking surface

**Comment:**

NA

#### WITNESS

Date test was completed

**Comment:**

NA

TAB tech name / Firm

**Comment:**

NA

Site super name / Firm

**Comment:**

NA

Owner representative name / Firm (if Applicable)

**Comment:**

NA

Building pressure at front & back doors (All Systems On)

**Comment:**

FRONT:0.007"

**ADDITIONAL**

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

**Comment:**

Thermostats are programmed?

Yes

**Comment:**

YES

# National TAB

Project: Skyline Take Over (Richmond, KY)

System/Unit: AHU/RTU



Asset: RTU-1

AREA:

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	3820P84526
Model Num	NA	48TCEM12A2A5
Configuration	VERTICAL	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
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	-	NA
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	230
Rated Amperage	-	10.6
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	5"
Motor Bore Size	-	0.875"
Fan Sheave Size	-	AFD74
Fan Sheave Bore	-	1"
Belt CL Distance	-	16.5"
Num of Belts	-	1
Belt Size	-	AX49

Test Data		
	Design	Actual
SF CFM	3600	3647
RA CFM	3200	3259
OA CFM	400	388
RL Voltage	208	213/211/212
RL Amperage	-	8.9/8.6/8.8
OA Damper Position	-	0.50"

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.43"
Fan Suction SP	-	-0.64"
Fan Discharge SP	-	0.33"
Total ESP	-	0.76"
Fan Total SP	-	0.97"

Completed By: Austin McFall on 12/06/2023

Notes:  
Filters loaded. Recommend replacement.

Written By: Gabe Merk on 10/04/2023

# National TAB

Project: Skyline Take Over (Richmond, KY)

## System/Unit: AHU/RTU



Asset: RTU-2

AREA:

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	3820P37462
Model Num	NA	48TCED14A2A5
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	36"x21"
Num PreFilter 1	-	4
PreFilter Size 1	-	20"x20" 2"

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56HZ
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	10.6
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	1VM50
Motor Bore Size	-	0.875"
Fan Sheave Size	-	MA78X1 AK74
Fan Sheave Bore	-	1"
Belt CL Distance	-	16.375"
Num of Belts	-	1
Belt Size	-	AX49

Test Data		
	Design	Actual
SF CFM	4550	4248
RA CFM	3850	3593
OA CFM	700	655
RL Voltage	208	213/211/212
RL Amperage	-	7.4/7.6/7.6
OA Damper Position	-	0.675"

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.54"
Fan Suction SP	-	-0.77"
Fan Discharge SP	-	0.44"
Total ESP	-	0.98"
Fan Total SP	-	1.21"

Completed By: Austin McFall on 12/06/2023

# National TAB

Project: Skyline Take Over (Richmond, KY)

## System/Unit: AHU/RTU



Asset: RTU-3

AREA:

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	3820P37461
Model Num	NA	48TCED14A2A5
Configuration	VERTICAL	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
Motor MFG	-	MARATHON
Frame	-	56HZ
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	10.6
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	5"
Motor Bore Size	-	0.875"
Motor Sheave SetPt	-	
Fan Sheave Size	-	MA73X1 AK74
Fan Sheave Bore	-	1"
Belt CL Distance	-	16.125"
Num of Belts	-	1
Belt Size	-	AX49

Test Data		
	Design	Actual
SF CFM	4600	4623
RA CFM	3900	3935
OA CFM	700	688
RL Voltage	208	213/211/213
RL Amperage	-	8.7/8.9/8.8
OA Damper Position	-	0..675"

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.48"
Fan Suction SP	-	-0.70"
Fan Discharge SP	-	0.38"
Total ESP	-	0.86"
Fan Total SP	-	1.08"

Completed By: Austin McFall on 12/06/2023

# National TAB

Project: Skyline Take Over (Richmond, KY)

## System/Unit: AHU/RTU



Asset: RTU-4

AREA:

Unit Data		
	Design	Actual
MFG	NA	CARRIER
Serial Num	-	3720P84228
Model Num	NA	48TCEM12A2A5
Configuration	VERTICAL	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
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	-	
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	208
Rated Amperage	-	10.6
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	5"
Motor Bore Size	-	0.875"
Motor Sheave SetPt	-	
Fan Sheave Size	-	AFD74
Fan Sheave Bore	-	1"
Belt CL Distance	-	16.875"
Num of Belts	-	1
Belt Size	-	AX49

Test Data		
	Design	Actual
SF CFM	3600	3493
RA CFM	3000	2906
OA CFM	600	587
RL Voltage	208	213/211/212
RL Amperage	-	8.4/8.5/8.4
OA Damper Position	-	0.50"

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.41"
Fan Suction SP	-	-0.68"
Fan Discharge SP	-	0.33"
Total ESP	-	0.94"
Fan Total SP	-	1.03"

Completed By: Austin McFall on 12/06/2023

# National TAB

Project: Skyline Take Over (Richmond, KY)



**Diffuser Supply (GRD)**

**RTU-1/**

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
1-1				550	584	575	104.5
1-2		H	18	550	585	580	105.5
1-3		H	18	350	412	363	103.7
1-4		H	18	550	737	555	100.9
1-5		H	18	550	622	526	95.6
1-6				500	642	506	101.2
1-7		H	18	550	676	542	98.5
Total				3600	4258	3647	101.31%

**RTU-2/**

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
2-1		C	10	300	164		-
2-2		C	10	300	192		-
2-3		D	12	300	266		-
2-4		D	12	300	298		-
2-5		D	12	300	330		-
2-6		D	12	300	370		-
2-7		C	10	300	244		-
2-8		C	10	300	153		-
2-9				275	216		-
2-10				275	262		-
2-11				275	263		-
2-12				275	272		-
2-13				275	270		-
2-14				275	281		-
2-15		B	8	150	195		-
2-16		C	10	300	290		-
2-17		B	8	150	182		-
Total				4650	4248	0	0%

**RTU-3/**

Asset							
Asset Name	Location	Type	Size	DESIGN CFM	CFM(1)	FINAL CFM	% to design
3-1		C	10	200	193		-
3-2				250	267		-
3-3				250	361		-
3-4		C	10	200	145		-
3-5				250	265		-
3-6				250	368		-
3-7		F	18	500	505		-
3-8		F	18	500	670		-
3-9		F	18	500	400		-
3-10		F	18	500	541		-
3-11		D	12	300	341		-
3-12		D	12	300	263		-
3-13				300	149		-
3-14				300	155		-
Total				4600	4623	0	0%

**RTU-4/**

<b>Asset</b>							
<b>Asset Name</b>	<b>Location</b>	<b>Type</b>	<b>Size</b>	<b>DESIGN CFM</b>	<b>CFM(1)</b>	<b>FINAL CFM</b>	<b>% to design</b>
4-1				450	459	459	102.0
4-2				450	442	442	98.2
4-3				450	410	410	91.1
4-4				450	442	442	98.2
4-5				450	466	466	103.6
4-6				450	458	458	101.8
4-7				450	432	432	96.0
4-8				450	384	384	85.3
<b>Total</b>				<b>3600</b>	<b>3493</b>	<b>3493</b>	<b>97.03%</b>

<b>Asset</b>	<b>Notes</b>	<b>Date</b>	<b>Written By</b>
4-8	Damper fully open.	10/06/2023	Mohammed Ouard

# National TAB

Project: Skyline Take Over (Richmond, KY)

System/Unit: FAN - Exhaust



Asset: EF-1

AREA:COOK LINE HOOD

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU180HFA
Serial Num	-	4062092
Type	-	CRE UPBLAST

Test Data		
	Design	Actual
CFM	2200	2098
Fan RPM	-	DD
RL Voltage	-	208
RL Amperage	-	3.0

Motor Data		
	Design	Actual
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	145T
Horsepower	1.0	1.0
Motor Rpm	-	1150
Phase	3	3
Voltage (rated)	208	230
Amperage (rated)	-	3.44
Service Factor	-	1.15

Completed By: Austin McFall on 12/06/2023

# National TAB

Project: Skyline Take Over (Richmond, KY)

System/Unit: FAN - Exhaust



Asset: EF-5

AREA:WAREWASHER

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU12HFA
Serial Num	-	4062092
Type	-	CRE UPBLAST

Test Data		
	Design	Actual
CFM	500	520
RL Voltage	-	120
RL Amperage	-	1.3

Motor Data		
	Design	Actual
Motor MFG	-	HSSA
Frame	-	42Y
Horsepower	0.25	0.167
Motor Rpm	-	1625
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	1.9
Service Factor	-	1.0

Completed By: Austin McFall on 12/06/2023

# National TAB

Project: Skyline Take Over (Richmond, KY)

System/Unit: FAN - Exhaust



Asset: EF-6

AREA:RESTROOM

Unit Data		
	Design	Actual
MFG	NA	GREENHECK
Model Num	NA	G-090-D-X
Serial Num	-	17326773
Type	CRE	CRE DOWNBLAST

Test Data		
	Design	Actual
CFM	480	508
RL Voltage	-	120
RL Amperage	-	1.1

Motor Data		
	Design	Actual
Motor MFG	-	MCMILLIAN ELECTRIC
Horsepower	125W	0.067
Motor Rpm	-	1550
Phase	1	1
Voltage (rated)	120	120
Amperage (rated)	-	1.2

Completed By: Austin McFall on 12/06/2023

# National TAB

Project: Skyline Take Over (Richmond, KY)

System/Unit: FAN - Exhaust



Asset: KEF 1

AREA:FRYER

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU33HFA
Serial Num	-	6097446
Type	CRE UPBLAST	CRE

Test Data		
	Design	Actual
CFM	650	698
RL Voltage	-	208
RL Amperage	-	2.5

Motor Data		
	Design	Actual
Motor MFG	-	Telco Green
Frame	-	NL
Horsepower	0.333	1/3
Motor Rpm	1600	1800
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	2.5
Service Factor	-	NL

Completed By: Austin McFall on 12/06/2023

# National TAB

Project: Skyline Take Over (Richmond, KY)

System/Unit: FAN - Supply



Asset: SF-MPU1

AREA:

Unit Data		
	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	A2-D.500-20D-MPU
Serial Num	-	4062092
Type	GAS FIRED	GAS FIRED
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	Actual
CFM	1700	1525
SF RPM	1914	1694
RL Voltage	-	208
RL Amperage	-	4.4
Brake Horse Power	-	1.0650

Motor Data		
	Design	Actual
Motor MFG	-	TECO WESTINGHOUSE
Frame	-	213T
Horsepower	1.500	7.5
Motor Rpm	1914	1755
Phase	3	3
Voltage (rated)	208	208
Amperage (rated)	-	19.1
Service Factor	-	1.15

Completed By: Austin McFall on 12/06/2023

# National TAB

Project: Skyline Take Over (Richmond, KY)

## System/Unit: Kitchen Hood Type I



Asset: HD1

AREA:FRYER

### Unit Data

	Design	Actual
MFG	NA	CAPTIVEAIRE
Model Num	NA	3650 BD-2
Job / Serial Num	-	6097446
Type	TYPE I CANOPY	TYPE 1 CANOPY
Hood length	42	42"
Hood Width	36	36"

### Test Data Exhaust

	Design	Actual
Filter Type	SOLO CAPTRATE	SOLO
Filter Size 1	16X20	20"x16"
Filter Qty 1	2	2
Filter AK factor size 1	2.08	2.08
Filter Total AK Area	4.16	4.16
Filter1 FPM	-	160
Filter2 FPM	-	156
Filter Ave FPM(corr)	-	158
CFM	650	657

### Cooking Equipment

	Design	Actual
Item 1	-	Fryer
Item 2	-	Fryer

Completed By: Austin McFall on 12/06/2023