

Report By:

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

NATIONAL

TAB

Comfort. Under control.

Report: FINAL TAB REPORT
Function: Test, Adjust, & Balance
Date: 07/21/2022

PROJECT

06-20 KROGER #024-292 - LOUISVILLE, KY

7509 TERRY RD

LOUISVILLE, KY 40258

Client

Kroger Division 024

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

Table Of Contents

Section	Page #
Summary	3
Remarks	5
Site Pictures	9
Checklist Data	15
AHU/RTU	17
FAN - Exhaust	26
FAN - Supply	35
Kitchen Hood Type I	36
GRD Layout	37

Preface

The summary below provides a quick understanding of how well your HVAC systems balanced in respect to the design criteria. The summary concludes with a quick understanding of your building environment and possible suggestions for each of your systems after testing has been performed. 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. Our focus is 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. Also, enclosed are pictures of building assets and items listed below that will provide your team with more insight.

Facility Identification and TAB Requirements

The mechanical equipment to be tested, adjusted, and balanced includes: All Roof Top Units (RTU), All Exhaust Fans (EF), All Kitchen Hoods, and all associated air devices.

RTU's (Roof Top Units)

Before balancing, the RTU's are commanded to high fan speed through the BMS. 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 +/- 10% of the engineer's design flow. Any equipment that fell outside of that tolerance is noted throughout the report.

RTU's (Roof Top Units) with Terminal Devices

Before balancing, the RTU's are commanded to high fan speed through the BMS. Each of the RTU's were measured at their terminal devices utilizing a flow hood. The sum of these readings is equal to the total flow for that particular unit. Each RTU was adjusted to within +/- 10% of the engineer's design flow. Each terminal diffuser was balanced to within +/-10% of the engineer's design volume utilizing the provided hand damper located at the takeoff of the main & branch trunk line(s). Any equipment or air devices that fell outside of these tolerances are noted throughout the report.

Miscellaneous Diffusers

There were some diffusers specified with airflow on the mechanical drawings that did not include a balance of the unit they serve. These air devices were measured with a flow hood and balanced to within +/-10% of the engineer's design. Any air devices that could not be balanced within this tolerance are noted throughout the report.

Kitchen Exhaust Hood & Associated Fans

The kitchen exhaust fan was measured at the main hood filter bay utilizing a velocity matrix and a manufacturer's correction factor. Each filter velocity is multiplied by the manufacturer's corrected area. The sum of these readings equals the total flow of the exhaust fans. The total flow of the exhaust was then adjusted to +/-10% of the engineer's design flow.

Total flow for the MUA unit has been determined by readings taken at the discharge of the hood's perforated supply plenum. Readings taken with a velocity matrix were averaged and multiplied by a manufacturer's corrected area. Adjustments to the fan speed were made in order to bring the unit to within +/-10% of design criteria.

Bakery Exhaust Fans

The bakery exhaust fans were measured by traversing the B-vent ductwork. The average velocity of these readings was multiplied by the cross-sectional area of the duct to calculate airflow. Adjustments were made to the fan speed so that the airflow is within +/-10% of design criteria.

General Exhaust Fans

The remaining building EF's were measured by reading each air device with a flow hood. The total airflow is equivalent to the sum of these readings. The fan speed for each EF was then adjusted when necessary, so that the airflow was within +/-10% of design. Each terminal device was balanced to within +/-10% of the design volume using the installed volume dampers. Any equipment that falls outside of this tolerance is noted throughout the report.

Final Building Tests

After completing the test and balance, the final building pressure was recorded at [X.XXX]" W.C. average with all fans running. The building is designed for a net positive pressure and this measurement coincides with that requirement.

A smoke containment test was performed on each hood by using a smoke emitter. The test was performed at the hood perimeter and the cook top level with the equipment heat "on" and ___% capture was observed.



Comfort. Under control.

06-20 KROGER #024-292 - LOUISVILLE, KY

Project Issue Information

Issue Name : RTU-1 PULLY

Description : RTU-1's pully is frozen and needs to be freed to be speed up to increase cfm

Created By : National TAB

Assigned To : National TAB - Wendy Biggs

Status : Open

Originated Date : 06/24/2022 - Zack Eismin - National TAB



Comfort. Under control.

06-20 KROGER #024-292 - LOUISVILLE, KY

Project Issue Information

Issue Name : RTU-5 VFD is bypassed
Description : RTU-5 VFD is bypassed.
Created By : National TAB **Assigned To :** National TAB - Wendy Biggs
Status : Open
Originated Date : 06/23/2022 - Zack Eismin - National TAB



Comfort. Under control.

06-20 KROGER #024-292 - LOUISVILLE, KY

CheckList Information

Name : TECH - SITE PICTURES **Status :** NotSubmitted
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB

CheckList Item Details

STORE FRONT



processed_06571444_2f...

AHU-1



processed_0123ab53_a9...

RTU-1



processed_f5566a9e_91...

RTU-2



processed_401f4061_3c...

RTU-3



processed_e6631f9d_f9...

RTU-4

RTU-5



processed_21240483_30...

RTU-6



processed_53b908ce_42...

RTU-7



processed_839b5489_96...

RTU-8



processed_f5566a9e_91...

MAU-1

EF-1



processed_e59e02cd_0e...

EF-2



processed_3dbea4f4_d8...

EF-3



processed_79b0f927_42...

EF-4



processed_be911c6a_a5...

EF-5



processed_89037e24_a9...

EF-6



processed_89037e24_a9...

EF-7

EF-8

EF-9

HOOD-1



processed_085101c8_a7...

Notes/Comments :



Comfort. Under control.

06-20 KROGER #024-292 - LOUISVILLE, KY

CheckList Information

Name : TECH - STEP 1: INITIAL WALKTHROUGH **Status :** NotSubmitted
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB

CheckList Item Details

INITIAL SITE WALKTHROUGH

All diffusers and grilles are installed and match design?	Yes
All hood filters installed and accounted for?	Yes
Hoods are wired and have power?	Yes
Hood is free of alarms?	Yes
Thermostats have power?	Yes
Have trades/general contractor been notified about any issues and are they created on FaciliBuild?	Yes

Notes/Comments :



Comfort. Under control.

06-20 KROGER #024-292 - LOUISVILLE, KY

CheckList Information

Name : TECH - STEP 2: UNIT DATA AND EVAL **Status :** NotSubmitted

Assigned Organization : National TAB **Asset :**

Requesting Organization : 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
DCV Max damper opening position is set to minimum?	Yes
Free cooling enthalpy set point set for lowest setting (Typically "D")	N/A
Motors are all operating below the FLA rating?	Yes
Are belts tight?	Yes
If direct drive unit is the speed controller working.	Yes
Is gas piping installed and valves turned on?	Yes
Unit free of noticeable noise and vibration	Yes
Sales floor RTU/AHU diffusers are directed away from open coolers and freezers	Yes

EF's

Rotation is correct?	Yes
Belts are tight?	Yes
Grease cup installed on hood fan?	No
Hinge kit installed installed on hood fan?	Yes

Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	Yes
Flex conduit is long enough so that fan can be completely tilted back?	Yes
There is no major leakage around base of fan?	Yes
Is the motor operating below the motor FLA rating?	Yes
For restroom fan(s) is the back draft damper installed and can it fully open?	Yes
Unit free of noticeable noise and vibration?	Yes

MUA

Rotation is correct?	N/A
Gas piping is installed and valves are in on position?	N/A
Heater tested and is functional?	N/A
Internal motorized damper is fully opening?	N/A
Motor is operating below the FLA rating?	N/A
Unit free of noticeable noise and vibration?	N/A

HOODS

Kitchen equipment installed in proper places?	Yes
Can kitchen equipment be turned on for final smoke test?	Yes

DOCUMENTATION

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

Notes/Comments :



Comfort. Under control.

06-20 KROGER #024-292 - LOUISVILLE, KY

CheckList Information

Name : TECH - STEP 3: TEST, ADJUST AND BALANCE **Status :** NotSubmitted
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB

CheckList Item Details

TEST, ADJUST, AND BALANCE ALL EQUIPMENT:

DURING TESTING MAKE NOTE OF THE FOLLOWING:

Is space free of drafting?	Yes
Is space comfortable in all areas?	Yes
Is the space free of ventilation noise?	Yes
If deviations from design were necessary to resolve 1-3 what were they? Otherwise put "NA".	Yes

Notes/Comments :



Comfort. Under control.

06-20 KROGER #024-292 - LOUISVILLE, KY

CheckList Information

Name : TECH - STEP 4: FINAL TESTS **Status :** NotSubmitted
Assigned Organization : National TAB **Asset :**
Requesting Organization : National TAB

CheckList Item Details

FINAL TESTS

HOOD CAPTURE TEST

List equipment turned on for testing	Boiler, Fryer, and Ovens
List smoke candle type used	S102
Smoke test capture - Perimeter of hood	100%
Smoke test capture - Top of cooking surface	100%

WITNESS

Date test was completed	06/23/2022
TAB tech name / Firm	Zack / National TAB
Site super name / Firm	N/A
Owner representative name / Firm (if Applicable)	N/A
Building pressure at front & back doors (All Systems On)	Unable to get building pressure due to store being very busy

ADDITIONAL

Do actual net building airflow, design net building airflow, and pressure coincide? If not why? (All three should either be positive or negative)	N/A
Thermostats are programmed?	No

Notes/Comments :

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: AHU/RTU



Comfort. Under control.

Asset: AHU1

AREA:SALES FLOOR

Unit Data		
	Design	Actual
MFG	AHU	Air Zone International
Serial Num	-	508180
Model Num	EXISTING	VDT-PL-2-40-I
Type	-	AHU
Configuration	-	VERTICAL
Num OA Filters 1	-	N/A
OA Filter Size 1	-	N/A
Num Final Filter 1	-	16
Final Filter Size 1	-	16X24X2
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	NEMA
Frame	-	213T
Horsepower	-	7.5
Motor Rpm	-	878
Phase	-	3
Rated Voltage	-	230/460
Rated Amperage	-	9.5/19.1

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD
Belt Alignment	-	DD

Test Data		
	Design	Actual
SF CFM	-	24356
SF RPM	-	878
RA CFM	-	24356
OA CFM	-	75
RL Voltage	-	80 V (LOAD)
RL Amperage	-	12.2
SF Rotation	-	ccw
RA Damper Position	-	N/A
Min OA Damper Position	-	N/A
Min OA Damper Type	-	N/A
OA Enthalpy Setpt	-	
Brake Horse Power	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	ATM
Fan Suction SP	-	
Fan Discharge SP	-	0.045"
Total ESP	-	
Fan Total SP	-	

General		
	Design	Actual
Fan Rotation Correct	-	Yes
Unit Filters Clean	-	Yes
Condensate Drain Installed	-	Yes

Completed By: Zack Eismin

Notes: 2 SUPPLY FAN MOTORS 50.7 HZ INITIAL

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU1

AREA:SALES FLOOR

Unit Data		
	Design	Actual
MFG	AAON	AAON
Serial Num	-	200704-AMGK32178
Model Num	HB-005-B-V-AA01-242	RM-013-8-0-BA02-232
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	N/A
OA Filter Size 1	-	N/A
Num Final Filter 1	-	6
Final Filter Size 1	-	
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	BALDOR
Frame	-	182T
Horsepower	0.88	3
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	200
Rated Amperage	-	9.3

Drive Data		
	Design	Actual
Motor Sheave Size	-	1VP-50
Motor Bore Size	-	1"
Motor Sheave SetPt	-	3 turns open
Fan Sheave Size	-	BK-52
Fan Sheave Bore	-	1"
Belt CL Distance	-	26"
Num of Belts	-	1
Belt Size	-	BX62
Belt Alignment	-	Verified

Test Data		
	Design	Actual
SF CFM	4550	3341
SF RPM	-	NA
RA CFM	-	2809
OA CFM	500	532
RL Voltage	-	206/205/204
RL Amperage	-	6.6/7.2/7.8
SF Rotation	-	Cw
RA Damper Position	-	80%
Min OA Damper Position	-	20%
Min OA Damper Type	-	Manual
OA Enthalpy Setpt	-	
Brake Horse Power	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.38"
Fan Suction SP	-	-0.78"
Fan Discharge SP	-	0.22"
Total ESP	0.82"	0.58
Fan Total SP	-	1"

General		
	Design	Actual
Fan Rotation Correct	-	Yes
Unit Filters Clean	-	Yes
Condensate Drain Installed	-	Yes

Completed By: Zack Eismín

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU2

AREA:BAKERY/DELI

Unit Data		
	Design	Actual
MFG	AAON	AAON
Serial Num	-	200704-AMGG32192
Model Num	RM-007-8-0-BA01-222	RM-007-8-0-BA01-222
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	N/A
OA Filter Size 1	-	N/A
Num Final Filter 1	-	4
Final Filter Size 1	-	15X20
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	BALDOR
Frame	-	143T
Horsepower	2	1
Motor Rpm	-	1740
Phase	-	3
Rated Voltage	-	200
Rated Amperage	-	3.2

Drive Data		
	Design	Actual
Motor Sheave Size	-	1
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	3 turns open
Fan Sheave Size	-	BK52
Fan Sheave Bore	-	1"
Belt CL Distance	-	17"
Num of Belts	-	1
Belt Size	-	BX46
Belt Alignment	-	Verified

Test Data		
	Design	Actual
SF CFM	2400	2324
SF RPM	-	NA
RA CFM	1680	1641
OA CFM	720	683
RL Voltage	-	205/204/205
RL Amperage	-	2.6/2.7/2.9
SF Rotation	-	CW
RA Damper Position	-	80%
Min OA Damper Position	-	20%
Min OA Damper Type	-	Manual
OA Enthalpy Setpt	-	
Brake Horse Power	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.26"
Fan Suction SP	-	-0.49"
Fan Discharge SP	-	0.15"
Total ESP	1.04"	0.41"
Fan Total SP	-	0.64"

General		
	Design	Actual
Fan Rotation Correct	-	Yes
Unit Filters Clean	-	Yes
Condensate Drain Installed	-	Yes

Completed By: Zack Eismín

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU3

AREA: BREAKROOM/OFFICE

Unit Data		
	Design	Actual
MFG	AAON	AAON
Serial Num	-	
Model Num	RM-013-8-0-BA02-232	HB-005-B-V-AA01-252
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	N/A
OA Filter Size 1	-	N/A
Num Final Filter 1	-	2
Final Filter Size 1	-	20X24X2
Num Final Filter 2	-	
Final Filter Size 2	-	

Test Data		
	Design	Actual
SF CFM	5200	1841
SF RPM	-	1075
RA CFM	4600	1841
OA CFM	600	343
RL Voltage	-	204/206
RL Amperage	-	1.16/2.1
SF Rotation	-	Cw
RA Damper Position	-	80%
Min OA Damper Position	-	20%
Min OA Damper Type	-	Manual
OA Enthalpy Setpt	-	
Brake Horse Power	-	

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	7.5	NL
Motor Rpm	-	1075
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	2.6

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.56"
Fan Suction SP	-	-0.82"
Fan Discharge SP	-	0.19"
Total ESP	1.60"	0.75"
Fan Total SP	-	1.01

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD
Belt Alignment	-	DD

General		
	Design	Actual
Fan Rotation Correct	-	Yes
Unit Filters Clean	-	Yes
Condensate Drain Installed	-	Yes

Completed By: Zack Eismin

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU4

AREA:

Unit Data		
	Design	Actual
MFG	RTU	RTU
Serial Num	-	
Model Num	EXISTING	EXISTING
Type	-	
Configuration	-	
Num OA Filters 1	-	
OA Filter Size 1	-	
Num Final Filter 1	-	
Final Filter Size 1	-	
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	-	
Motor Rpm	-	
Phase	-	
Rated Voltage	-	
Rated Amperage	-	

Drive Data		
	Design	Actual
Motor Sheave Size	-	
Motor Bore Size	-	
Motor Sheave SetPt	-	
Fan Sheave Size	-	
Fan Sheave Bore	-	
Belt CL Distance	-	
Num of Belts	-	
Belt Size	-	
Belt Alignment	-	

Test Data		
	Design	Actual
SF CFM	-	
SF RPM	-	
RA CFM	-	
OA CFM	-	
RL Voltage	-	
RL Amperage	-	
SF Rotation	-	
RA Damper Position	-	
Min OA Damper Position	-	
Min OA Damper Type	-	
OA Enthalpy Setpt	-	
Brake Horse Power	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	
Fan Suction SP	-	
Fan Discharge SP	-	
Total ESP	-	
Fan Total SP	-	

General		
	Design	Actual
Fan Rotation Correct	-	
Unit Filters Clean	-	
Condensate Drain Installed	-	

Completed By: Brianna Biggs

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU5

AREA: VESTIBULE

Unit Data		
	Design	Actual
MFG	RTU	AAON
Serial Num	-	170864
Model Num	EXISTING	RN-011-8-0-BA02-2F2
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	39X21
Num Final Filter 1	-	4
Final Filter Size 1	-	20X24X2
Num Final Filter 2	-	
Final Filter Size 2	-	

Test Data		
	Design	Actual
SF CFM	-	3352
SF RPM	-	NA
RA CFM	-	2711
OA CFM	-	641
RL Voltage	-	206/205/205
RL Amperage	-	8.1/7.9/8.1
SF Rotation	-	Cw
RA Damper Position	-	80%
Min OA Damper Position	-	20%
Min OA Damper Type	-	Manual
OA Enthalpy Setpt	-	
Brake Horse Power	-	

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	3
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	10.6

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.82"
Fan Suction SP	-	-0.9"
Fan Discharge SP	-	1.30"
Total ESP	-	2.12"
Fan Total SP	-	2.2"

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD
Belt Alignment	-	DD

General		
	Design	Actual
Fan Rotation Correct	-	Yes
Unit Filters Clean	-	Yes
Condensate Drain Installed	-	Yes

Completed By: Zack Eismin

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU6

AREA:CASHIER

Unit Data		
	Design	Actual
MFG	RTU	AAON
Serial Num	-	200704-APCE00106
Model Num	EXISTING	HB-005-B-V-AA01-000
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	N/A
OA Filter Size 1	-	N/A
Num Final Filter 1	-	2
Final Filter Size 1	-	20X24X2
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	.75
Motor Rpm	-	1625
Phase	-	3
Rated Voltage	-	230
Rated Amperage	-	6.2

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD
Belt Alignment	-	DD

Test Data		
	Design	Actual
SF CFM	-	1917
SF RPM	-	NA
RA CFM	-	1560
OA CFM	-	357
RL Voltage	-	204/206
RL Amperage	-	3.9/4.5
SF Rotation	-	Cw
RA Damper Position	-	80%
Min OA Damper Position	-	20%
Min OA Damper Type	-	Manual
OA Enthalpy Setpt	-	
Brake Horse Power	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.33"
Fan Suction SP	-	-0.58"
Fan Discharge SP	-	0.59"
Total ESP	-	0.92"
Fan Total SP	-	1.17"

General		
	Design	Actual
Fan Rotation Correct	-	Yes
Unit Filters Clean	-	Yes
Condensate Drain Installed	-	Yes

Completed By: Zack Eismín

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU7

AREA:PHARMACY

Unit Data		
	Design	Actual
MFG	RTU	AAON
Serial Num	-	201001-ANEL02775
Model Num	EXISTING	RN-015-8-0-CA02-172
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	N/A
OA Filter Size 1	-	N/A
Num Final Filter 1	-	4
Final Filter Size 1	-	20X24X2
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	5
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	16.7

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD
Belt Alignment	-	DD

Completed By: Zack Eismin

Notes:

Test Data		
	Design	Actual
SF CFM	-	5558
SF RPM	-	NA
RA CFM	-	4527
OA CFM	-	1031
RL Voltage	-	204/205/205
RL Amperage	-	12.2/12.7/12.4
SF Rotation	-	cw
RA Damper Position	-	80%
Min OA Damper Position	-	20%
Min OA Damper Type	-	Manual
OA Enthalpy Setpt	-	
Brake Horse Power	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.77"
Fan Suction SP	-	-0.98"
Fan Discharge SP	-	0.53"
Total ESP	-	1.3"
Fan Total SP	-	1.51"

General		
	Design	Actual
Fan Rotation Correct	-	YES
Unit Filters Clean	-	YES
Condensate Drain Installed	-	YES

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: AHU/RTU



Comfort. Under control.

Asset: RTU8

AREA:SALES FLOOR

Unit Data		
	Design	Actual
MFG	RTU	AAON
Serial Num	-	201001-ANEL02776
Model Num	EXISTING	RN-015-8-0-CA02-172
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	N/A
OA Filter Size 1	-	N/A
Num Final Filter 1	-	4
Final Filter Size 1	-	20X24X2
Num Final Filter 2	-	
Final Filter Size 2	-	

Motor Data		
	Design	Actual
Motor MFG	-	NL
Frame	-	NL
Horsepower	-	5
Motor Rpm	-	1760
Phase	-	3
Rated Voltage	-	208
Rated Amperage	-	16.7

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD
Belt Alignment	-	DD

Completed By: Zack Eismin

Notes:

Test Data		
	Design	Actual
SF CFM	-	5882
SF RPM	-	NA
RA CFM	-	4669
OA CFM	-	1213
RL Voltage	-	204/204/205
RL Amperage	-	12.1/12.3/11.9
SF Rotation	-	Cw
RA Damper Position	-	80%
Min OA Damper Position	-	20%
Min OA Damper Type	-	Manual
OA Enthalpy Setpt	-	
Brake Horse Power	-	

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.44"
Fan Suction SP	-	-0.73"
Fan Discharge SP	-	0.52"
Total ESP	-	0.96"
Fan Total SP	-	1.25"

General		
	Design	Actual
Fan Rotation Correct	-	Yes
Unit Filters Clean	-	Yes
Condensate Drain Installed	-	Yes

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF1

AREA:HD1

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	NCA16HPFA	NCA16FA
Serial Num	-	1570952
Type	CENTRIFUGAL	Upblast
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	WEG
Frame	-	D56
Horsepower	1	1
Motor Rpm	-	1720
Phase	-	3
Voltage (rated)	-	230/460
Amperage (rated)	-	4.7
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	1VL40
Motor Bore Size	-	5/8"
Motor Sheave SetPt	-	5 turns open
Fan Sheave Size	-	5"
Fan Sheave Bore	-	1"
Belt CL Distance	-	7.5"
Num of Belts	-	1
Belt Size	-	FHP

Test Data		
	Design	Actual
CFM	2800	2008
Fan RPM	-	873
Fan Rotation	-	cw
Motor RPM	-	1720
RL Voltage	-	NA
RL Amperage	-	NA
Suction ESP	-	
Discharge ESP	-	
Total ESP	1.0"	

Completed By: Zack Eismin

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF2

AREA:OVEN

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	NCA14HPFA	NCA14HPFA
Serial Num	-	559363
Type	CENTRIFUGAL	Upblast
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	Weg
Frame	-	NL
Horsepower	1/3	1/3
Motor Rpm	-	1735
Phase	-	3
Voltage (rated)	-	115/230
Amperage (rated)	-	9.4
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	3"
Motor Bore Size	-	.5"
Motor Sheave SetPt	-	2 turns open
Fan Sheave Size	-	4"
Fan Sheave Bore	-	5/8"
Belt CL Distance	-	6"
Num of Belts	-	1
Belt Size	-	FHP

Test Data		
	Design	Actual
CFM	750	753
Fan RPM	-	825
Fan Rotation	-	CW
Motor RPM	-	1735
RL Voltage	-	NA
RL Amperage	-	NA
Suction ESP	-	
Discharge ESP	-	
Total ESP	1.0"	

Completed By: Zack Eismin

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF3

AREA:PUBLIC RESTROOM

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DR12HFA	DR12HFA
Serial Num	-	NL
Type	CENTRIFUGAL	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	FASCO
Frame	-	NL
Horsepower	0.16	0.18
Motor Rpm	-	1625
Phase	-	3
Voltage (rated)	-	115
Amperage (rated)	-	2.0
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD

Test Data		
	Design	Actual
CFM	400	387
Fan RPM	-	1020
Fan Rotation	-	CW
Motor RPM	-	1020
RL Voltage	-	NA
RL Amperage	-	NA
Suction ESP	-	
Discharge ESP	-	
Total ESP	0.125"	

Completed By: Zack Eismín

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF4

AREA:PUBLIC RESTROOM

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DR12HFA	DR12HFA
Serial Num	-	559363
Type	CENTRIFUGAL	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	FASCO
Frame	-	NL
Horsepower	0.16	0.18
Motor Rpm	-	1625
Phase	-	3
Voltage (rated)	-	115
Amperage (rated)	-	2
Service Factor	-	

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD

Test Data		
	Design	Actual
CFM	400	282
Fan RPM	-	950
Fan Rotation	-	CW
Motor RPM	-	950
RL Voltage	-	NA
RL Amperage	-	NA
Suction ESP	-	
Discharge ESP	-	
Total ESP	0.125"	

Completed By: Zack Eismín

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF5

AREA:BACKROOM

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	CFA400CA	DR30HFA
Serial Num	-	559363
Type	INLINE	DOWNBLAST
Configuration	HORIZONTAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	48Y
Horsepower	0.06	0.25
Motor Rpm	-	1725
Phase	-	3
Voltage (rated)	-	115
Amperage (rated)	-	2.8
Service Factor	-	1.15

Test Data		
	Design	Actual
CFM	400	799
Fan RPM	-	1535
Fan Rotation	-	CW
Motor RPM	-	1535
System SetPt	-	70%
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	0.1"	
Fan Inlet SP	-	
Fan Discharge SP	-	

Completed By: Zack Eismín

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF6

AREA:EMPLOYEE RESTROOM

Unit Data		
	Design	Actual
MFG	EF	FanTech
Model Num	EXISTING	5DDU10AA
Serial Num	-	1002847175
Type	-	Upblast
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	US MOTOR
Frame	-	42YZ
Horsepower	-	1/8
Motor Rpm	-	1650
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	2.7
Service Factor	-	1.15

Drive Data		
	Design	Actual
Motor Sheave Size	-	DD
Motor Bore Size	-	DD
Motor Sheave SetPt	-	DD
Fan Sheave Size	-	DD
Fan Sheave Bore	-	DD
Belt CL Distance	-	DD
Num of Belts	-	DD
Belt Size	-	DD

Test Data		
	Design	Actual
CFM	-	118
Fan RPM	-	100%
Fan Rotation	-	ccw
Motor RPM	-	1650
RL Voltage	-	NA
RL Amperage	-	NA
Suction ESP	-	-0.23"
Discharge ESP	-	atm
Total ESP	-	-0.23"

Completed By: Zack Eismin

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF7

AREA:

Unit Data		
	Design	Actual
MFG	EF	EF
Model Num	EXISTING	EXISTING
Serial Num	-	
Type	-	
Configuration	-	

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	-	
Motor Rpm	-	
Phase	-	
Voltage (rated)	-	
Amperage (rated)	-	
Service Factor	-	

Drive Data		
	Design	Actual
Motor Sheave Size	-	
Motor Bore Size	-	
Motor Sheave SetPt	-	
Fan Sheave Size	-	
Fan Sheave Bore	-	
Belt CL Distance	-	
Num of Belts	-	
Belt Size	-	

Test Data		
	Design	Actual
CFM	-	
Fan RPM	-	
Fan Rotation	-	
Motor RPM	-	
RL Voltage	-	
RL Amperage	-	
Suction ESP	-	
Discharge ESP	-	
Total ESP	-	

Completed By: Brianna Biggs

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF8

AREA:

Unit Data		
	Design	Actual
MFG	EF	EF
Model Num	EXISTING	EXISTING
Serial Num	-	
Type	-	
Configuration	-	

Test Data		
	Design	Actual
CFM	-	
Fan RPM	-	
Fan Rotation	-	
Motor RPM	-	
RL Voltage	-	
RL Amperage	-	
Suction ESP	-	
Discharge ESP	-	
Total ESP	-	

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	-	
Motor Rpm	-	
Phase	-	
Voltage (rated)	-	
Amperage (rated)	-	
Service Factor	-	

Drive Data		
	Design	Actual
Motor Sheave Size	-	
Motor Bore Size	-	
Motor Sheave SetPt	-	
Fan Sheave Size	-	
Fan Sheave Bore	-	
Belt CL Distance	-	
Num of Belts	-	
Belt Size	-	

Completed By: Brianna Biggs

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF9

AREA:

Unit Data		
	Design	Actual
MFG	EF	EF
Model Num	EXISTING	EXISTING
Serial Num	-	
Type	-	
Configuration	-	

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	-	
Motor Rpm	-	
Phase	-	
Voltage (rated)	-	
Amperage (rated)	-	
Service Factor	-	

Drive Data		
	Design	Actual
Motor Sheave Size	-	
Motor Bore Size	-	
Motor Sheave SetPt	-	
Fan Sheave Size	-	
Fan Sheave Bore	-	
Belt CL Distance	-	
Num of Belts	-	
Belt Size	-	

Test Data		
	Design	Actual
CFM	-	
Fan RPM	-	
Fan Rotation	-	
Motor RPM	-	
RL Voltage	-	
RL Amperage	-	
Suction ESP	-	
Discharge ESP	-	
Total ESP	-	

Completed By: Brianna Biggs

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: FAN - Supply



Comfort. Under control.

Asset: MAU1

AREA:

Unit Data		
	Design	Actual
MFG	MAU	MAU
Model Num	EXISTING	EXISTING
Serial Num	-	
Type	-	
Configuration	-	

Motor Data		
	Design	Actual
Motor MFG	-	
Frame	-	
Horsepower	-	
Motor Rpm	-	
Phase	-	
Voltage (rated)	-	
Amperage (rated)	-	
Service Factor	-	

Drive Data		
	Design	Actual
Motor Sheave Size	-	
Motor Bore Size	-	
Fan Sheave Size	-	
Fan Sheave Bore	-	
Belt CL Distance	-	
Num of Belts	-	
Belt Size	-	
Belt Alignment Verified	-	

Gas Heat		
	Design	Actual
Heater Operates (y/n)	-	
Flame Status (pass/fail)	-	
Inlet Air Temp SetPt	-	
Discharge Air Temp SetPt	-	
Air Flow Switch SP Actual	-	

Test Data		
	Design	Actual
CFM	-	
SF RPM	-	
Motor RPM	-	
RL Voltage	-	
RL Amperage	-	
Total ESP	-	
Fan Discharge SP	-	

General		
	Design	Actual
Fan Rotation Correct	-	

Completed By: Brianna Biggs

Notes:

National TAB

Project: 06-20 KROGER #024-292 - LOUISVILLE, KY

System/Unit: Kitchen Hood Type I



Comfort. Under control.

Asset: HD1

AREA:DELI/BAKERY

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030 ND	6030 ND
Job / Serial Num	-	NL
Type	TYPE I LOW PROXIMITY	TYPE II CANOPY
Hood length	-	48"
Hood Width	-	192"
Supply Plenum Type	-	N/A
Supply Plenum Width	-	N/A
Supply Plenum Length	-	N/A

Test Data Exhaust		
	Design	Actual
Filter Type	-	CAPTRATE SOLO
Filter Size 1	-	16x16
Filter Size 2	-	
Filter Qty 1	-	10
Filter Qty 2	-	
Filter AK factor size 1	-	1.62
Filters AK factor size 2	-	16.2
Filter Total AK Area	-	16.2
Filter1 FPM	-	125
Filter2 FPM	-	95
Filter3 FPM	-	130
Filter4 FPM	-	123
Filter5 FPM	-	124
Filter6 FPM	-	119
Filter7 FPM	-	121
Filter8 FPM	-	127
Filter9 FPM	-	133
Filter10 FPM	-	141
Filter11 FPM	-	
Filter12 FPM	-	
Filter Ave FPM(corr)	-	124
CFM	2800	2008

Cooking Equipment		
	Design	Actual
Item 1	-	BOILER
Item 2	-	FRYER
Item 3	-	OVEN
Item 4	-	OVEN
Item 5	-	

Test Data Supply		
	Design	Actual
Total AK Area	-	N/A
Kv factor (Vel)	-	N/A
Num of Readings	-	N/A
Reading1 FPM	-	N/A
Reading2 FPM	-	N/A
Reading3 FPM	-	N/A
Reading4 FPM	-	N/A
Reading5 FPM	-	N/A
Reading6 FPM	-	N/A
Reading7 FPM	-	N/A
Reading8 FPM	-	N/A
Reading9 FPM	-	N/A
Reading10 FPM	-	N/A
Reading11 FPM	-	
Reading12 FPM	-	
Reading13 FPM	-	
Reading14 FPM	-	
Ave FPM(corr)	-	N/A
CFM	-	

Performance Data		
	Design	Actual
Exh-Supply Net CFM	-	
Smoke Generation Type	-	S102
Cooking Equip Heat On	-	YES
Hood Capture %	-	100%
End Panels Installed (Y/N)	-	YES
Space Offset Temp Riser 1	-	
Space Offset Temp Riser 2	-	
Riser Temp F (idle) Riser 1	-	
Riser Temp F (idle) Riser 2	-	
Ambient Room Temp	-	

General		
	Design	Actual
Third Party Witness	-	N/A
Third Party Company	-	N/A
Tech Witness	-	ZACK EISMIN

Completed By: Zack Eismin

Notes:

