Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 12/12/2025

Completed By: National TAB

PROJECT

02-02-26 QT #1176 CAYCE, SC

1600 DIXIANNA RD

CAYCE, SC

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 02-02-26 QT #1176 CAYCE, SC

Table Of Contents

Project Summary

Project Summary
The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report are further details 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)
Each of the RTU's was measured with a flow hood to establish total flow. The total flow was then adjusted via the VFD so that airflow fell within design tolerances. All diffusers on the kitchen RTU were balanced to the engineer's design flow. The diffusers on the sales floor were only adjusted when there were noticeable issues present like drafting or dampers that were found completely closed. The Hoods On outside air rate was set by first establishing the typical QT set point at the Emerson controller and then making manually adjustments on the roof. The hoods off airflow setpoint was found by adjusting the damper position at the Emerson controller until the design airflow was achieved. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. After completion of TAB all overrides were released.

Kitchen Exhaust Hood & Associated Fans
The kitchen exhaust fan was measured at the 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 within tolerance of the design flow.

Restroom Exhaust Fans
The restroom exhaust fans were measured with a flow hood. The total flow was balanced for the fan with the exception of the new grille over the combi-oven, which was balanced to the listed design.

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. The hood capture was tested at the perimeter of the hood and the cook top level with the equipment heat on to ensure satisfactory hood capture and containment.

Issue List

- Damper 3-1 Not Present
- Incorrect Kitchen Diffusers
- No Hood End Panels Installed
- RTU-3 Economizer Actuator Malfunction
- RTU-4 Low Flow

02-02-26 QT #1176 CAYCE, SC

Project Issue Information

Issue Name : Damper 3-1 Not Present

Description : The damper for 3-1 is not present.

Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	Urgent	**Asset Tag :**	SGRD1
Originated Date :	02/03/2026 - Alex Bauer - National TAB		

Project Issue File Details

1. Open MicrosoftTeams_video_3_529257102.mp4
   02/03/2026

02/03/2026

02-02-26 QT #1176 CAYCE, SC

Project Issue Information

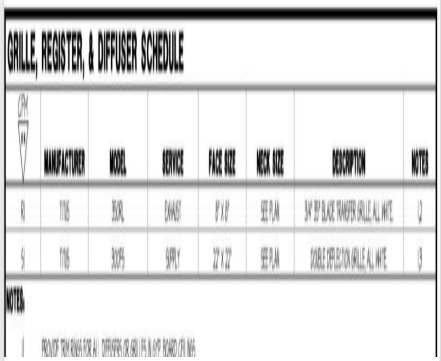
Issue Name : Incorrect Kitchen Diffusers

Description : The kitchen diffusers 3-2 through 3-5 are the incorrect type. They need to be the TITUS 300FS diffuser with the installed deflection blades.

Created By :	National TAB	**Assigned To :**	National TAB - Dan Hertenstein
Status :	Open		
Priority :	High	**Asset Tag :**	RT-3
Originated Date :	02/03/2026 - Alex Bauer - National TAB		

Project Issue File Details

02/03/2026



02/03/2026

02/03/2026

02-02-26 QT #1176 CAYCE, SC

Project Issue Information

Issue Name : No Hood End Panels Installed

Description : There are no hood end panels installed as per the Hood Schedule.

Created By : National TAB

Assigned To : National TAB - Dan Hertenstein

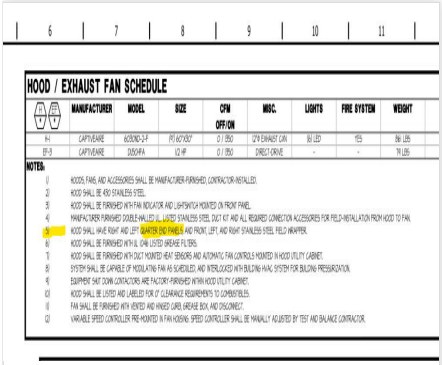
Status : Open

Priority : High

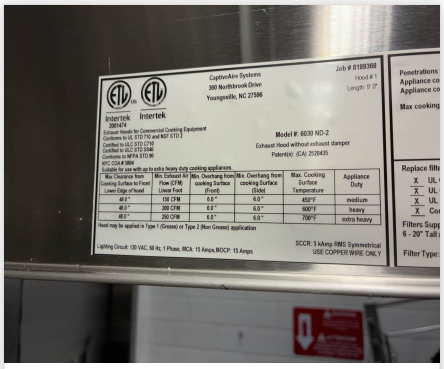
Asset Tag : HD1

Originated Date : 02/03/2026 - Alex Bauer - National TAB

Project Issue File Details



02/03/2026



02/03/2026

02/03/2026

02-02-26 QT #1176 CAYCE, SC

Project Issue Information

Issue Name : RTU-3 Economizer Actuator Malfunction

Description : The actuator for the economizer stopped responding to commands from the store computer when setting the outside air when the hood is off. The outside air was set manually.

Created By : National TAB

Assigned To : National TAB - Dan Hertenstein

Status : Open

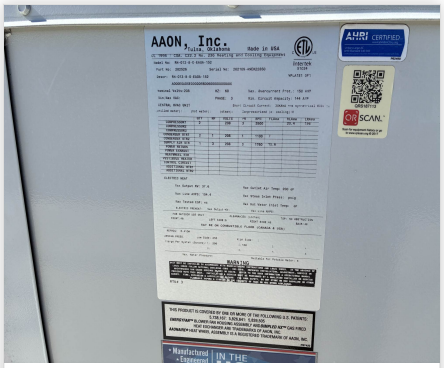
Priority : Urgent

Asset Tag :

Originated Date : 02/03/2026 - Alex Bauer - National TAB

Project Issue File Details

02/03/2026



02/03/2026

02/03/2026

02-02-26 QT #1176 CAYCE, SC

Project Issue Information

Issue Name : RTU-4 Low Flow

Description : The Yaskawa J1000 VFD is set to its maximum speed option and the RTU is not producing enough airflow as it should (79%/100%). It is recommended to ensure the dampers are fully open and existent as well to check for resistance in the system. 66 CFM/ton is within the acceptable range for a unit of this size.

Created By : National TAB

Assigned To : National TAB - Dan Hertenstein

Status : Open

Priority : High

Asset Tag : RT-4

Originated Date : 02/03/2026 - Alex Bauer - National TAB

Project Issue File Details

02/03/2026

02/03/2026

NATIONAL TAB

AIR BALANCE SCHEDULE

UNIT	AREA SERVED	HOOD ON OA		HOOD OFF OA		HOOD ON EXHAUST		HOOD OFF EXHAUST	
		DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL	DESIGN	ACTUAL
RTU 1	SALES	860	883	410	417				
RTU-2	SALES	860	855	410	424				
RTU-3	KITCHEN/SALES	860	878	410	389				
RTU-4	BOH	270	264	270	264				
EF-1	MEN'S RR					650	610	650	610
EF-2	WOMEN'S RR					350	357	350	357
EF-3	HOOD					1350	1298	0	0
TOTALS		2850	2880	1500	1494	2350	2265	1000	967

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2850	2880
TOTAL EXHAUST	2350	2265
NET AIRFLOW	500	615

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0041
SIDE	0.0122
REAR	0.0084
AVERAGE	**0.0082**

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1500	1494
TOTAL EXHAUST	1000	967
NET AIRFLOW	500	527

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	0.0029
SIDE	0.0014
REAR	0.0029
AVERAGE	**0.0024**

NOTES:

FaciliBuild make it easy

CheckList List

- 01: RTU’s/AHU’s
- 02: Exhaust Fans
- 03: Hoods
- 04: Final Tests

02-02-26 QT #1176 CAYCE, SC

CheckList Information

Name :	01: RTU’s/AHU’s	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	12/12/2025 - Trinity Dodds - National TAB		
Completed Date :	02/03/2026 - Alex Bauer - National TAB		

CheckList Item Details

RTU's/AHU's

Evaporator coils are clean?	Pass
Comment:	
Condenser coils are clean?	Pass
Comment:	
Gas piping is installed and valves are turned on?	N/A
Comment:	
Unit free of noticeable noise and vibration	Pass
Comment:	

02-02-26 QT #1176 CAYCE, SC

CheckList Information

Name :	02: Exhaust Fans	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	12/12/2025 - Trinity Dodds - National TAB		
Completed Date :	02/03/2026 - Alex Bauer - National TAB		

CheckList Item Details

EF's

Hinge kit installed installed on hood fan?	Pass
Comment:	
Flex conduit is long enough so that fan can be completely tilted back?	Pass
Comment:	
No major leakage around the fan base	Pass
Comment:	
Unit is free of noise and vibration	Pass
Comment:	

02-02-26 QT #1176 CAYCE, SC

CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	12/12/2025 - Trinity Dodds - National TAB		
Completed Date :	02/03/2026 - Alex Bauer - National TAB		

CheckList Item Details

HOODS

Hood is free of alarms?	Pass
Comment:	
Hood is free of damage?	Pass
Comment:	
End panels are installed per prototype?	Fail
Comment:	

02-02-26 QT #1176 CAYCE, SC

CheckList Information

Name :	04: Final Tests	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	12/12/2025 - Trinity Dodds - National TAB		
Completed Date :	02/03/2026 - Alex Bauer - National TAB		

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

OVEN, FRYER.

List smoke candle type used

Comment:

SMOKE PELLET.

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed	02/02/2026

FaciliBuild make it easy

Comment:	
TAB tech name / Firm	
Comment: ALEX BAUER/NTAB	
Site super name / Firm	
Comment: NA	
Owner representative name / Firm (if Applicable)	
Comment: NA	
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)	Pass
Comment:	

National TAB

Project: 02-02-26 QT #1176 CAYCE, SC

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202109-ANEL22848
Model Num	RN-015-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	22.5X44.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5X2

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

Test Data		
	Design	**Actual**
SF CFM	5000	4805
SF RPM	-	1255
OA CFM (Hoods On)	860	883
OA CFM (Hoods Off)	410	417
RL Voltage	-	132 VFD
RL Amperage	-	8.79 VFD
VFD Max SetPt	-	42.8 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	30%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.54”
Fan Suction SP	-	-0.80”
Fan Discharge SP	-	0.36”
Total ESP	-	0.90”
Fan Total SP	-	1.16”

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

FaciliBuild make it easy

Unit Data - PHOTO LOG

02/03/2026

02/03/2026

02/03/2026

National TAB

Project: 02-02-26 QT #1176 CAYCE, SC

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data	
	Actual
MFG	AAON
Serial Num	202109-ANEL22849
Model Num	RN-015-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	22.5X44.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5X2

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

Test Data		
	Design	**Actual**
SF CFM	5000	4982
SF RPM	-	1467
OA CFM (Hoods On)	860	855
OA CFM (Hoods Off)	410	424
RL Voltage	-	178 VFD
RL Amperage	-	10.4 VFD
VFD Max SetPt	-	50 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	30%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.68”
Fan Suction SP	-	-1.00”
Fan Discharge SP	-	0.68”
Total ESP	-	1.36”
Fan Total SP	-	1.68”

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

FaciliBuild make it easy

Unit Data - PHOTO LOG

02/03/2026

02/03/2026

02/03/2026

National TAB

Project: 02-02-26 QT #1176 CAYCE, SC

System/Unit: AHU/RTU

Asset: RT-3 AREA:KITCHEN

Unit Data	
	Actual
MFG	AAON
Serial Num	202109-ANEK22850
Model Num	RN-013-8-0-EA0A-152
Num OA Filters 1	1
OA Filter Size 1	22.5X44.5
Num Final Filter 1	2
Final Filter Size 1	19.5X46.5X2

Motor Data	
	Actual
Motor MFG	NA
Frame	NA
Horsepower	3
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	10.6

Test Data		
	Design	**Actual**
SF CFM	4200	4490
SF RPM	-	1408
OA CFM (Hoods On)	860	878
OA CFM (Hoods Off)	410	389
RL Voltage	-	172 VFD
RL Amperage	-	8.73 VFD
VFD Max SetPt	-	48 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	3/16”

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.63”
Fan Suction SP	-	-0.90”
Fan Discharge SP	-	0.60”
Total ESP	-	1.23”
Fan Total SP	-	1.50”

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

Notes:
See issues list.

Written By: Alex Bauer on 02/03/2026

FaciliBuild make it easy

Unit Data - PHOTO LOG

02/03/2026

02/03/2026

02/03/2026

National TAB

Project:02-02-26 QT #1176 CAYCE, SC

AHU/RTU

Diffuser Supply (GRD)

RT-3/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SUPPORT SERVICE	SI	12"	700	1	962	911	962	137.4
SGRD2	SUPPORT SERVICE	SI	12"	875	1	863	745	863	98.6
SGRD3	SUPPORT SERVICE	SI	12"	875	1	940	959	940	107.4
SGRD4	SUPPORT SERVICE	SI	12"	875	1	888	865	888	101.5
SGRD5	DOCK	ES	12"	875	1	837	650	837	95.7
Total				4200		4490	4130	4490	106.9%

FaciliBuild make it easy

National TAB

Project: 02-02-26 QT #1176 CAYCE, SC

System/Unit: AHU/RTU

Asset: RT-4 AREA:BOH

Unit Data	
	Actual
MFG	AAON
Serial Num	202108-AYEF05035
Model Num	RQ-006-8-V-EA09-132
Num OA Filters 1	1
OA Filter Size 1	12X17
Num Final Filter 1	1
Final Filter Size 1	20X34X2

Motor Data	
	Actual
Motor MFG	NA
Frame	NA
Horsepower	2
Motor Rpm	1760
Phase	3
Rated Voltage	208
Rated Amperage	7.5

Test Data		
	Design	**Actual**
SF CFM	2800	2229
SF RPM	-	1760
OA CFM (Hoods On)	270	264
OA CFM (Hoods Off)	270	264
RL Voltage	-	214 VFD
RL Amperage	-	5.43 VFD
VFD Max SetPt	-	60 Hz
OA Damper Position (Hoods On)	-	46%
OA Damper Position (Hoods Off)	-	46%

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-1.02”
Fan Suction SP	-	-1.41”
Fan Discharge SP	-	0.79”
Total ESP	-	1.81”
Fan Total SP	-	2.20”

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

FaciliBuild make it easy

Unit Data - PHOTO LOG

02/03/2026

02/03/2026

02/03/2026

National TAB

Project: 02-02-26 QT #1176 CAYCE, SC

System/Unit: FAN - Exhaust

Asset: EF1 AREA:MEN'S RR/COMBI

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVE AIRE
Model Num	NA	DR33HFA
Serial Num	-	5019669
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	TELCO GREEN
Frame	-	NA
Horsepower	-	0.333
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	NA
Service Factor	-	NA

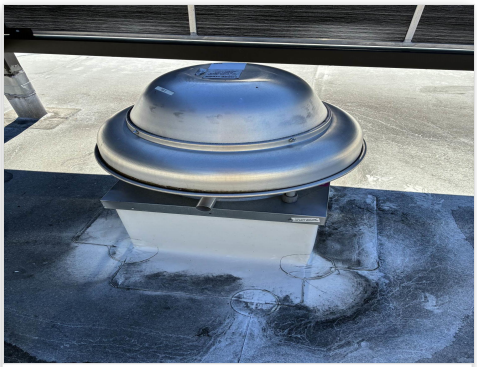
Test Data		
	Design	**Actual**
CFM	650	610
Fan RPM	-	1201
Fan Rotation	-	CCW
Motor RPM	-	1201
System SetPt	-	64%
RL Voltage	-	11.7
RL Amperage	-	NA
Total ESP	-	0.21”
Fan Inlet SP	-	-0.21”
Fan Discharge SP	-	ATM

Notes:
These diffusers do not have dampers.

Written By: Alex Bauer on 02/03/2026

FaciliBuild make it easy

Unit Data - PHOTO LOG



02/03/2026

National TAB

Project:02-02-26 QT #1176 CAYCE, SC

Diffuser Ret/Exh (GRD)

EF1/MEN'S RR/COMBI

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD1	COMBI-OVEN	RI	8"	150	1	213	213	213	142.0
Total				150		213	213	213	142%

FaciliBuild make it easy

National TAB

Project: 02-02-26 QT #1176 CAYCE, SC

System/Unit: FAN - Exhaust

Asset: EF2 AREA:WOMEN'S RR

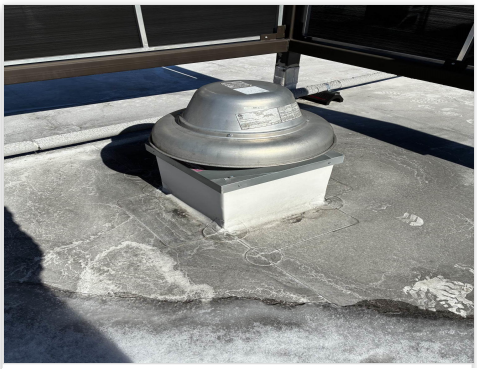
Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVE AIRE
Model Num	NA	DR12HFA
Serial Num	-	5019669
Type	-	DOWNBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	TELCO GREEN
Frame	-	NA
Horsepower	-	0.25
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	NA
Service Factor	-	NA

Test Data		
	Design	**Actual**
CFM	350	357
Fan RPM	-	1451
Fan Rotation	-	CCW
Motor RPM	-	1451
System SetPt	-	75%
RL Voltage	-	17.4
RL Amperage	-	NA
Total ESP	-	0.18”
Fan Inlet SP	-	-0.18”
Fan Discharge SP	-	ATM

FaciliBuild make it easy

Unit Data - PHOTO LOG



02/03/2026

National TAB

Project: 02-02-26 QT #1176 CAYCE, SC

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HD

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	8189368
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	TELCO GREEN
Frame	-	NA
Horsepower	1/2	0.50
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	NA
Service Factor	-	NA

Test Data		
	Design	**Actual**
CFM	1350	1298
Fan RPM	-	1140
Fan Rotation	-	CCW
Motor RPM	-	1140
System SetPt	-	50.8 Hz
RL Voltage	-	NA
RL Amperage	-	NA
Total ESP	-	0.49”
Fan Inlet SP	-	-0.49”
Fan Discharge SP	-	ATM

FaciliBuild make it easy

Unit Data - PHOTO LOG

02/03/2026

National TAB

Project: 02-02-26 QT #1176 CAYCE, SC

System/Unit: Kitchen Hood Type I

Asset: HD1 AREA:GRIDDLE

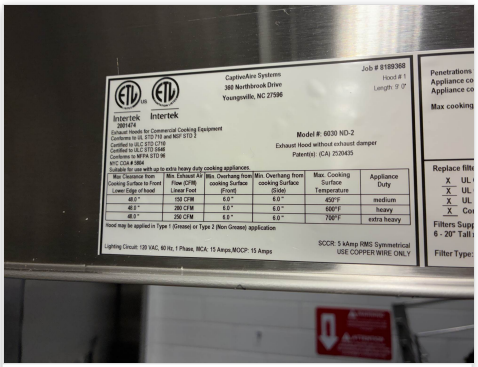
Unit Data		
	Design	**Actual**
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	6030ND-2-F	6030ND-2
Job / Serial Num	-	8189368
Type	-	TYPE I CANOPY
Hood length	-	108"
Hood Width	-	60"

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE FILTERS
Filter Size 1	-	16X20
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	117
Filter2 FPM	-	103
Filter3 FPM	-	97
Filter4 FPM	-	99
Filter5 FPM	-	105
Filter6 FPM	-	100
Filter Ave FPM(corr)	-	104
CFM	1350	1298

Cooking Equipment	
	Actual
Item 1	OVEN
Item 2	FRYER

FaciliBuild make it easy

Unit Data - PHOTO LOG



02/03/2026

02/03/2026

FaciliBuild make it easy