Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 10/23/2025

Completed By: National TAB

PROJECT

10-06-25 QT #1121 EASLEY, SC

4855 CALHOUN MEMORIAL HWY

EASLEY, SC

Client

QUIKTRIP

4705 SOUTH 129TH EAST AVENUE

TULSA, OK 74134

National TAB

Project: 10-06-25 QT #1121 EASLEY, SC

Table Of Contents

Section	Page #
Summary	3
Issue Data	4
Balance Schedule	9
Checklist	10
RTU-1	17
RTU-2	19
RTU-3	21
EF-1 - Exhaust	23
EF-2 - Exhaust	25
Combi-Oven Grille	27
EF-3 - Hood Exhaust	28
Kitchen Hood Type I	30
GRD Layout	32

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

- EF-1 not working
- EF-2 no speed controller
- RTU 2 & 3 economizers don’t work
- RTU-3 wrong diffusers

10-06-25 QT #1121 EASLEY, SC

Project Issue Information

Issue Name : EF-1 not working
Description : When attempting to turn on the fan the motor began to smoke.

Created By : National TAB
Assigned To : National TAB - Brianna Biggs
Status : Open
Priority : High
Asset Tag : EF1
Originated Date : 10/08/2025 - Christian Moller - National TAB

Project Issue File Details

10/08/2025

10-06-25 QT #1121 EASLEY, SC

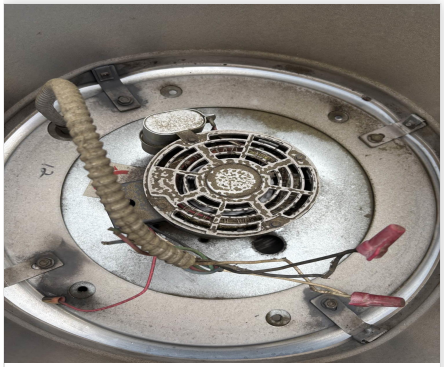
Project Issue Information

Issue Name : EF-2 no speed controller

Description : EF-2 does not have a speed controller, airflow is less than design. Left low.

Created By :	National TAB	**Assigned To :**	National TAB - Brianna Biggs
Status :	Open		
Priority :	High	**Asset Tag :**	EF2
Originated Date :	10/08/2025 - Christian Moller - National TAB		

Project Issue File Details



10/08/2025

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10-06-25 QT #1121 EASLEY, SC

Project Issue Information

Issue Name : RTU 2 & 3 economizers don’t work

Description : RTU 2&3 economizers do not work. When using the dial on the economizer itself as well as the Emerson board the flaps do not open.

Created By : National TAB

Assigned To : National TAB - Brianna Biggs

Status : Open

Priority : High

Asset Tag :

Originated Date : 10/08/2025 - Christian Moller - National TAB

Project Issue File Details

10/08/2025

10/08/2025

10-06-25 QT #1121 EASLEY, SC

Project Issue Information

Issue Name : RTU-3 wrong diffusers

Description : The new diffusers for RTU-3 are not the correct ones. The correct ones are Titus 300F's with deflection blades. Unit was still balanced to design.

Created By : National TAB

Assigned To : National TAB - Brianna Biggs

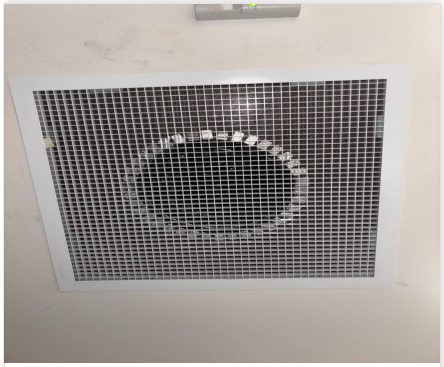
Status : Open

Priority : Medium

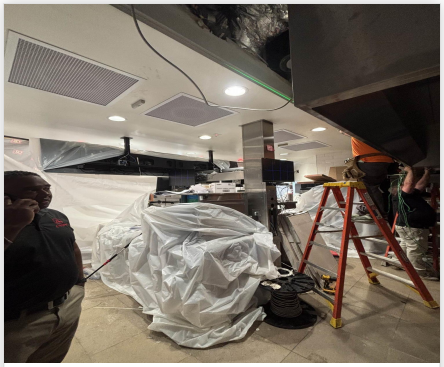
Asset Tag : RT-3

Originated Date : 10/08/2025 - Christian Moller - National TAB

Project Issue File Details



10/08/2025



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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	800	855	350	0				
RTU-2	SALES	800	0	350	0				
RTU-3	BOH/KITCHEN	800	800	350	0				
EF-1	WOMEN'S RR					225	0	225	0
EF-2	MEN'S RR					525	386	525	
EF-3	HOOD					1350	1410	0	0
TOTALS		2400	1655	1050	0	2100	1796	750	0

HOODS ON

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2400	1655
TOTAL EXHAUST	2100	1796
NET AIRFLOW	300	-141

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

HOODS OFF

NET AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	1050	0
TOTAL EXHAUST	750	0
NET AIRFLOW	300	0

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS
FRONT	-0.0011
SIDE	
REAR	
AVERAGE	**-0.0011**

NOTES:

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CheckList List

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

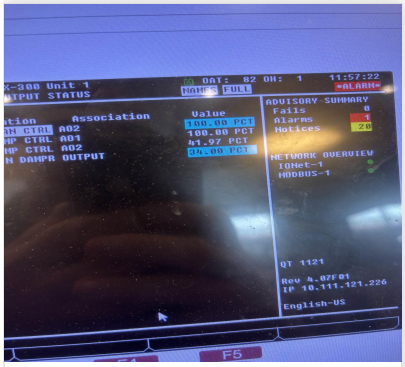
10-06-25 QT #1121 EASLEY, SC

CheckList Information

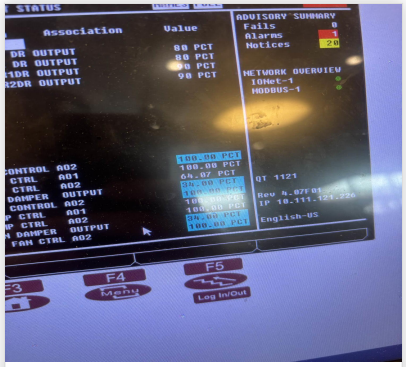
Name :	01: RTU's/AHU's	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/26/2025 - Trinity Dodds - National TAB		
Completed Date :	10/24/2025 - Christian Moller - National TAB		

CheckList Item Details

RTU's/AHU's

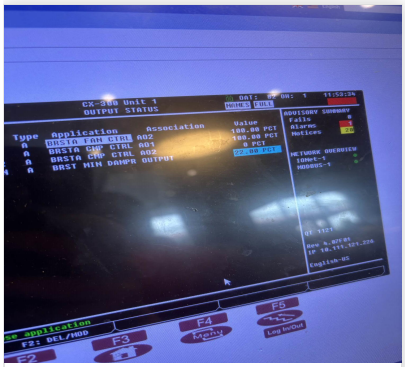


10/24/2025



10/24/2025

Evaporator coils are clean?	Pass
Comment:	



10/24/2025

10/24/2025

Condenser coils are clean?	Pass
Comment:	

Gas piping is installed and valves are turned on?	Pass
Comment:	

Unit free of noticeable noise and vibration	Pass
Comment:	

10-06-25 QT #1121 EASLEY, SC

CheckList Information

Name :	02: Exhaust Fans	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/26/2025 - Trinity Dodds - National TAB		
Completed Date :	10/15/2025 - Christian Moller - 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:	

10-06-25 QT #1121 EASLEY, SC

CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/26/2025 - Trinity Dodds - National TAB		
Completed Date :	10/15/2025 - Christian Moller - 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?	Pass
Comment:	

10-06-25 QT #1121 EASLEY, SC

CheckList Information

Name :	04: Final Tests	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	09/26/2025 - Trinity Dodds - National TAB		
Completed Date :	10/15/2025 - Christian Moller - National TAB		

CheckList Item Details

FINAL CHECKS

HOOD CAPTURE TEST

List kitchen equipment turned on for testing

Comment:

NONE

List smoke candle type used

Comment:

S102 - 45 SECOND CANDLES

Smoke test capture % - Perimeter of hood

Comment:

100%

Smoke test capture % - Top of cooking surface

Comment:

100%

WITNESS

Date test was completed	10/14/2025

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Comment:

TAB tech name / Firm

Comment:

Christian Moller / NTAB

Site super name / Firm

Comment:

Kevin Green / Ascent Construction

Owner representative name / Firm (if Applicable)

Comment:

N/A

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:

Front: +0.0014 (fix issues to increase)

National TAB

Project: 10-06-25 QT #1121 EASLEY, SC

System/Unit: AHU/RTU

Asset: RT-1 AREA:SALES FLOOR

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	201206-ANEK06806
Model Num	NA	RN -013-8-0-EAOA-152
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	45x25
Num Final Filter 1	-	
Final Filter Size 1	-	
Num Final Filter 2	-	
Final Filter Size 2	-	

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

Drive Data	
	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	4200	4040
RA CFM	3400	3185
OA CFM	800	855
RL Voltage	-	210/211/211
RL Amperage	-	4.2/4.5/3.8
SF Rotation	-	CCW
SF System SetPt	-	LOW: 24Hz HIGH: 34.8Hz
RA Damper Position	-	LOW: 78% HIGH: 66%
Min OA Damper Position	-	LOW: 22% HIGH: 34%
Min OA Damper Type	-	ECON

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.49”
Fan Suction SP	-	-0.67”
Fan Discharge SP	-	0.49”
Total ESP	-	1.16”
Fan Total SP	-	1.16”

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

Completed By: Christian Moller on 10/08/2025

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Unit Data - PHOTO LOG

10/08/2025

National TAB

Project: 10-06-25 QT #1121 EASLEY, SC

System/Unit: AHU/RTU

Asset: RT-2 AREA:SALES FLOOR

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	201205-ANEK06804
Model Num	NA	RN-013-8-0-EA0A-512
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	45x25

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

Drive Data	
	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	4200	4082
RA CFM	3400	4082
OA CFM	800	NR
RL Voltage	-	210/210/210
RL Amperage	-	4.3/5.6/5.3
SF Rotation	-	CCW
SF System SetPt	-	LOW: 24Hz HIGH: 35.4Hz
RA Damper Position	-	LOW: 78% HIGH: 66%
Min OA Damper Position	-	LOW: 22% HIGH: 34%
Min OA Damper Type	-	ECON

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.53"
Fan Suction SP	-	-0.68"
Fan Discharge SP	-	0.77"
Total ESP	-	1.21"
Fan Total SP	-	1.45"

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

Completed By: Christian Moller on 10/10/2025

Notes:
ECONOMIZER does not work.

Written By: Christian Moller on 10/08/2025

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Unit Data - PHOTO LOG

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National TAB

Project: 10-06-25 QT #1121 EASLEY, SC

System/Unit: AHU/RTU

Asset: RT-3 AREA:BOH/KITCHEN

Unit Data		
	Design	**Actual**
MFG	NA	AAON
Serial Num	-	201206-ANEK06805
Model Num	NA	RN-013-8-0-EA0A-152
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	45X25

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

Drive Data	
	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	4200	4185
RA CFM	3400	3385
OA CFM	800	800
RL Voltage	-	209/209/208
RL Amperage	-	3.5/3.9/4.5
SF Rotation	-	CCW
SF System SetPt	-	LOW: 24Hz HIGH: 33.8Hz
RA Damper Position	-	LOW: 78% HIGH: 66%
Min OA Damper Position	-	LOW: 22% HIGH: 34%
Min OA Damper Type	-	ECON

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.42"
Fan Suction SP	-	-0.61"
Fan Discharge SP	-	0.56"
Total ESP	-	1.03"
Fan Total SP	-	1.17"

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

Completed By: Christian Moller on 10/10/2025

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National TAB

Project:10-06-25 QT #1121 EASLEY, SC

AHU/RTU

Diffuser Supply (GRD)

RT-3/BOH/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	SUPPORT SERVICE	SI	12"	800	1	1238	868	868	108.5
SGRD2	SUPPORT SERVICE	SI	12"	800	1	980	821	821	102.6
SGRD3	SUPPORT SERVICE	SI	12"	800	1	767	769	769	96.1
SGRD4	SUPPORT SERVICE	SI	12"	800	1	942	801	801	100.1
SGRD5	DOCK	ES	12"	750	1	678	682	682	90.9
SGRD6	WORKROOM	ES	8"	250	1	263	244	244	97.6
Total				4200		4868	4185	4185	99.64%

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National TAB

Project: 10-06-25 QT #1121 EASLEY, SC

System/Unit: FAN - Exhaust

Asset: EF1 AREA:WOMEN'S RR

Unit Data		
	Design	**Actual**
MFG	NA	COOK
Model Num	NA	90 ACEH 90C15DH
Serial Num	-	418SE15927-00/0000701
Type	-	UPBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	COOK
Frame	-	NL
Horsepower	-	0.125
Motor Rpm	-	1550
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	1.7
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	225	
Fan RPM	-	
Fan Rotation	-	
Motor RPM	-	
System SetPt	-	
RL Voltage	-	
RL Amperage	-	
Total ESP	-	
Fan Inlet SP	-	
Fan Discharge SP	-	

Completed By: Christian Moller on 10/15/2025

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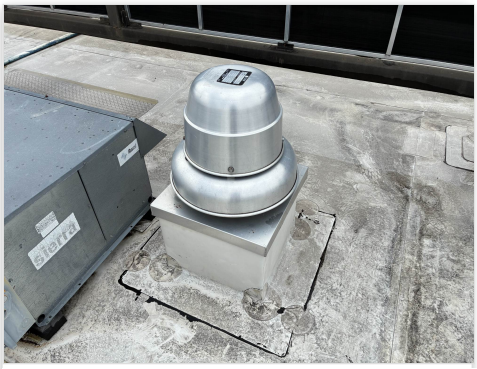
Unit Data - PHOTO LOG



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National TAB

Project: 10-06-25 QT #1121 EASLEY, SC

System/Unit: FAN - Exhaust

Asset: EF2 AREA:MEN'S RR

Unit Data		
	Design	**Actual**
MFG	NA	COOK
Model Num	NA	120 ACE 120C13D
Serial Num	-	418SDE15927-00/0001901
Type	-	UPBLAST
Configuration	-	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	COOK
Frame	-	NL
Horsepower	-	0.250
Motor Rpm	-	1300
Phase	-	1
Voltage (rated)	-	115
Amperage (rated)	-	3.3
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	525	
Fan RPM	-	
Fan Rotation	-	
Motor RPM	-	
System SetPt	-	
RL Voltage	-	
RL Amperage	-	
Total ESP	-	
Fan Inlet SP	-	
Fan Discharge SP	-	

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Unit Data - PHOTO LOG

10/08/2025

Diffuser Ret/Exh (GRD)

EF2/MEN'S RR

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EGRD1	SUPPORT SERVICE	RI	8"	150	1	87			-
Total				150		87	0	0	0%

National TAB

Project: 10-06-25 QT #1121 EASLEY, SC

System/Unit: FAN - Exhaust

Asset: EF3 AREA:KITCHEN HD

Unit Data		
	Design	**Actual**
MFG	NA	CAPTIVEAIRE
Model Num	NA	DU50HFA
Serial Num	-	7657309
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	CAPTIVEAIRE
Frame	-	NL
Horsepower	1/2	0.5
Motor Rpm	-	1800
Phase	-	1
Voltage (rated)	-	208
Amperage (rated)	-	3.6
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	1350	1410
Fan RPM	-	
Fan Rotation	-	CCW
Motor RPM	-	
System SetPt	-	HMI/55.0Hz
RL Voltage	-	208
RL Amperage	-	2.5
Total ESP	-	NR
Fan Inlet SP	-	NR
Fan Discharge SP	-	ATM

Completed By: Christian Moller on 10/14/2025

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Unit Data - PHOTO LOG

10/08/2025

National TAB

Project: 10-06-25 QT #1121 EASLEY, 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	-	7657309
Type	-	TYPE I CANOPY
Hood length	-	122”
Hood Width	-	60”

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE FILTER
Filter Size 1	-	16X20
Filter Qty 1	-	6
Filter AK factor size 1	-	2.08
Filter Total AK Area	-	12.48
Filter1 FPM	-	102
Filter2 FPM	-	115
Filter3 FPM	-	117
Filter4 FPM	-	116
Filter5 FPM	-	109
Filter6 FPM	-	122
Filter Ave FPM(corr)	-	113
CFM	1350	1410

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	PIZZA OVEN

Completed By: Christian Moller on 10/14/2025

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Unit Data - PHOTO LOG

10/08/2025

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