Report By:

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

Report: TAB Report

Function: Test, Adjust, & Balance

Date: 03/02/2026

Completed By: National TAB

PROJECT

02-23-26 WHATABURGER #1572 GLENDALE, AZ

9700 W Northern Ave

GLENDALE, AZ

Client

Whataburger Restaurants

300 Concord Plaza Dr

San Antonio, TX 78216

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

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) w/ Diffusers
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 tolerance of the engineer's design flow. Each outlet was then adjusted to within tolerance of the design flow. Outside air was measured by reading the intake air opening with a velocity grid and multiplying by the free area. The outside air damper was adjusted until the airflow was within the design requirements. Any equipment that fell outside of that tolerance is noted throughout the report.

Kitchen Exhaust Hood & Associated Fans
Each 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. Any EF's that fell outside of this tolerance is noted throughout the report.

Exhaust Fans w/ Registers
The exhaust fan was measured at the grilles to measure the total flow. The fan was then adjusted to bring airflow within tolerance of the engineer's design flow. Each grille was then adjusted to within tolerance of design flow.

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

- GRD Layout for RTU-1 adjusted

02-23-26 WHATABURGER #1572 GLENDALE, AZ

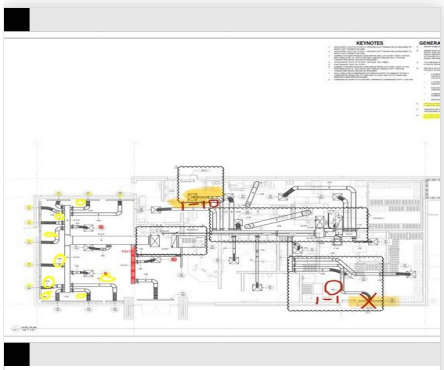
Project Issue Information

Issue Name : GRD Layout for RTU-1 adjusted

Description : SGRD 1-1 and 1-10 were changed from linear diffusers to square diffusers. There are separate air curtains where the diffusers were supposed to be.

Created By :	National TAB	**Assigned To :**	National TAB - Brianna Biggs
Status :	Open		
Priority :	InfoOnly	**Asset Tag :**	RTU-1
Originated Date :	02/23/2026 - Ethan Van Orden - National TAB		

Project Issue File Details



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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	KITCHEN	3850	3902	1390	1529	2460	2373	63.9%	60.8%						
RTU-2	DINING	2050	2039	500	528	1550	1511	75.6%	74.1%						
KEF-1	GRILL HOOD											1995	2052		
KEF-2	FRYER HOOD											1216	1206		
EF-1	RESTROOMS													300	301
TOTALS		5900	5941	1890	2057	4010	3884			0	0	3211	3258	300	301

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	4010	3884
TOTAL EXHAUST	3511	3559
NET AIRFLOW	499	325

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H20)
FRONT	0.007
SIDE	0.0103
REAR	0.0083
AVERAGE	**0.0085**

FINAL CHECKS

ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓

MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

NOTES:

CheckList List

- 01: RTU's
- 02: EF's
- 03: Hoods
- 04: Final Checks

02-23-26 WHATABURGER #1572 GLENDALE, AZ

CheckList Information

Name :	01: RTU's	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/28/2026 - Trinity Dodds - National TAB		
Completed Date :	02/27/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

RTU's/AHU's

Thermostats installed and have power?	Pass
Comment:	
All diffusers and grilles are installed and match design?	Pass
Comment:	
Motors are all operating below the FLA rating?	Pass
Comment:	
Is gas piping installed and valves turned on?	Pass
Comment:	
Unit free of noticeable noise and vibration	Pass
Comment:	
Final outside air damper position is set manually and marked with permanent marker?	Pass
Comment:	
Supply airflow is 0 to +10%?	Pass

Comment:	
Outside airflow is 0 to +10%?	Pass
Comment:	
Return balance dampers are confirmed to be 100% open (if installed)?	Pass
Comment:	
Screenshot of the GRD marked up with supply and return traverse locations for RTU-1 (Add picture here)	Pass
Comment:	
Screenshot of the GRD marked up with supply and return traverse locations for RTU-2 (Add picture here)	Pass
Comment:	
For each unit supply, is the flow hood reading within 10% of the final traverse reading? If not do you feel any major points of leakage	Pass
Comment:	
For each unit return, is the flow hood reading within 10% of the final traverse reading? If not do you feel any major points of leakage	Pass
Comment:	

02-23-26 WHATABURGER #1572 GLENDALE, AZ

CheckList Information

Name :	02: EF's	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/28/2026 - Trinity Dodds - National TAB		
Completed Date :	02/27/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

EF's

Rotation is correct?	Pass
Comment:	
Belts are tight?	Pass
Comment:	
Hinge kit installed installed on hood fan?	Pass
Comment:	
Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	Pass
Comment:	
Flex conduit is long enough so that fan can be completely tilted back?	Pass
Comment:	
There is no major leakage around base of fan?	Pass
Comment:	

Is the motor operating below the motor FLA rating?	Pass
Comment:	
For restroom fan(s) is the back draft damper installed and can it fully open?	Pass
Comment:	
Unit free of noticeable noise and vibration?	Pass
Comment:	
Exhaust airflow is 0 to +10%?	Pass
Comment:	

02-23-26 WHATABURGER #1572 GLENDALE, AZ

CheckList Information

Name :	03: Hoods	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/28/2026 - Trinity Dodds - National TAB		
Completed Date :	02/27/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

HOODS

All hood filters installed and accounted for?	Pass
Comment:	
Hoods are wired and have power?	Pass
Comment:	
Hood is free of alarms?	Pass
Comment:	
Hood is free of damage?	Pass
Comment:	
Quarter or full vertical end panels are installed if specified?	Pass
Comment:	

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CheckList Information

Name :	04: Final Checks	**Status :**	Completed
Assigned Organization :	National TAB	**Asset :**	
Requesting Organization :	National TAB		
Created Date :	01/28/2026 - Trinity Dodds - National TAB		
Completed Date :	02/27/2026 - Ethan Van Orden - National TAB		

CheckList Item Details

FINAL CHECKS

Is space free of drafting?	Pass
Comment:	
Is space comfortable in all areas?	Pass
Comment:	
Is the space free of ventilation noise?	Pass
Comment:	

List kitchen equipment turned on for testing

Comment:

NA

List smoke candle type used

Comment:

Smoke Bomb

HOOD CAPTURE TEST

Smoke test capture % - Perimeter of hood

Comment:	
100%	
Smoke test capture % - Top of cooking surface	
Comment:	
100%	
WITNESS	
Date test was completed	02/27/2026
Comment:	
TAB tech name / Firm	
Comment:	
Ethan V/NTI	
Site super name / Firm	
Comment:	
Jake	
Owner representative name / Firm (if Applicable)	
Comment:	
WHATABURGER	
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 0.007” side 0.0103” back 0.0083	
Is the building pressure at least +0.02"? If not, do you see any obvious areas of external building that aren't sealed?	N/A
Comment:	
No obvious areas that aren’t sealed	

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: AHU/RTU

Asset: RTU-1 AREA:KITCHEN

Unit Data	
	Actual
MFG	CAPTIVEAIRE
Serial Num	8251795
Model Num	CAS-HVAC3-I.300-20-20T
Num OA Filters 1	4
OA Filter Size 1	16X25X2
Num Final Filter 1	4
Final Filter Size 1	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	184T
Horsepower	3.00	5
Motor Rpm	-	1750
Phase	3	3
Rated Voltage	208	230
Rated Amperage	-	13.6

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 (Traverse)	-	4082
SF CFM	3850	3902
SF RPM	-	1283
MOTOR RPM	-	1283
RA CFM (Traverse)	-	1505
RA CFM	1390	1529
OA CFM	2460	2373
RL Voltage	-	141@VFD
RL Amperage	-	9.6@VFD
SF System SetPt	-	44HZ
RA Damper Position	-	40%
Min OA Damper Position	-	60%
Min OA Damper Type	-	ECONOMIZER

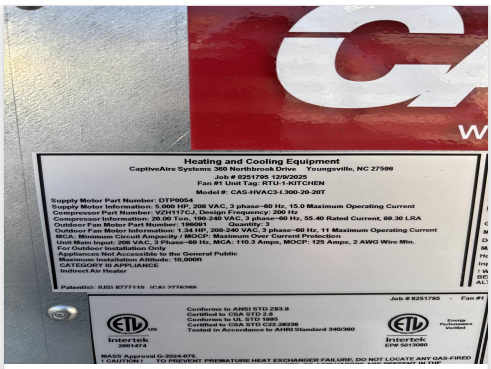
Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.30”
Fan Suction SP	-	-0.66”
Fan Discharge SP	-	0.32”
Total ESP	0.75"	0.62"
Fan Total SP	-	0.98"

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

Completed By: Ethan Van Orden on 02/23/2026

Unit Data - PHOTO LOG

02/23/2026



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Project:02-23-26 WHATABURGER #1572 GLENDALE, AZ

AHU/RTU

Diffuser Supply (GRD)

RTU-1/KITCHEN

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	BOH DOOR	H10	12"	150	1	44	145	145	96.7
SGRD2	DRY STORAGE	A5	10"	175	1	278	177	177	101.1
SGRD3	BOH	A5	10"	320	1	309	308	308	96.3
SGRD4	OFFICE	A3	6"	90	1	105	93	93	103.3
SGRD5	WASH ROOM	A3	6"	70	1	72	77	77	110.0
SGRD6	KITCHEN	A6	12"	520	1	455	505	505	97.1
SGRD7	KITCHEN	A6	12"	520	1	630	541	541	104.0
SGRD8	KITCHEN	A6	12"	470	1	624	450	450	95.7
SGRD9	KITCHEN	A6	12"	500	1	102	466	466	93.2
SGRD10	KITCHEN	P1	8"	200	1	167	186	186	93.0
SGRD11	KITCHEN	A5	10"	345	1	324	317	317	91.9
SGRD12	KITCHEN	A6	12"	520	1	530	484	484	93.1
SGRD13	WOMEN'S RR	B3	6"	75	1	93	76	76	101.3
SGRD14	MEN'S RR	B3	6"	75	1	109	77	77	102.7
Total				4030		3842	3902	3902	96.82%

Completed By: Ethan Van Orden on 02/23/2026

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Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: AHU/RTU

Asset: RTU-2 AREA:DINING

Unit Data	
	Actual
MFG	CAPTIVEAIRE
Serial Num	8251795
Model Num	CAS-HVAC3-I.200-15-15T
Num OA Filters 1	4
OA Filter Size 1	16X25X2
Num Final Filter 1	4
Final Filter Size 1	20X25X2

Motor Data		
	Design	**Actual**
Motor MFG	-	NEMA
Frame	-	145T
Horsepower	2.00	1.5
Motor Rpm	-	1740
Phase	3	3
Rated Voltage	208	230
Rated Amperage	-	4.02

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 (Traverse)	-	2170
SF CFM	2050	2039
SF RPM	-	1276
MOTOR RPM	-	1276
RA CFM (Traverse)	-	561
RA CFM	500	528
OA CFM	1550	1511
RL Voltage	-	141@VFD
RL Amperage	-	2.9@VFD
SF System SetPt	-	44HZ
RA Damper Position	-	4.0V
Min OA Damper Position	-	6.0V
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	**Actual**
MA Plenum SP	-	-0.12”
Fan Suction SP	-	-0.21”
Fan Discharge SP	-	0.15”
Total ESP	0.50"	0.27"
Fan Total SP	-	0.36"

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

Completed By: Ethan Van Orden on 02/23/2026

Unit Data - PHOTO LOG

02/23/2026

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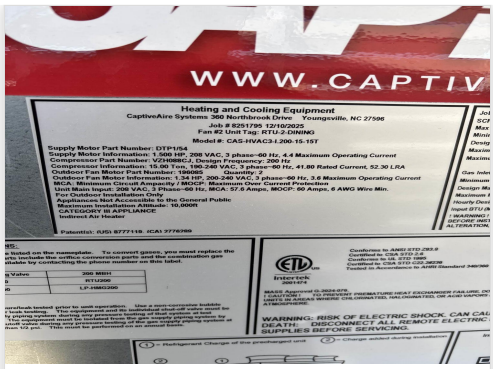

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Project:02-23-26 WHATABURGER #1572 GLENDALE, AZ

AHU/RTU

Diffuser Supply (GRD)

RTU-2/DINING

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
SGRD1	ENTRANCE	P3	10"	100	0.85	158	103	103	103.0
SGRD2	DINING	H9	10"	100	0.85	162	104	104	104.0
SGRD3	DINING	H9	10"	100	0.85	201	96	96	96.0
SGRD4	DINING	H9	10"	100	0.85	173	99	99	99.0
SGRD5	DINING	H9	10"	100	0.85	103	102	102	102.0
SGRD6	DINING	H9	10"	100	0.85	76	91	91	91.0
SGRD7	SIDE ENTRANCE	H9	10"	100	0.85	121	96	96	96.0
SGRD8	SIDE ENTRANCE	H9	10"	100	0.85	111	107	107	107.0
SGRD9	DINING	H9	10"	100	0.85	119	102	102	102.0
SGRD10	DINING	H9	10"	100	0.85	84	95	95	95.0
SGRD11	DINING	H9	10"	100	0.85	142	103	103	103.0
SGRD12	DINING	H9	10"	100	0.85	105	107	107	107.0
SGRD13	DINING	A4	8"	170	1	112	102	102	60.0
SGRD14	DINING	A4	8"	170	1	156	183	183	107.6
SGRD15	DINING	A4	8"	170	1	136	187	187	110.0
SGRD16	SERVING AREA	A4	8"	240	1	103	253	253	105.4
SGRD17	SERVING AREA	H9	8"	100	0.85	109	109	109	109.0
Total				2050		2171	2039	2039	99.46%

Completed By: Ethan Van Orden on 02/23/2026

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Project:02-23-26 WHATABURGER #1572 GLENDALE, AZ

Diffuser Supply (GRD)

TRAVERSES/

Asset					
Asset Name	**Size**	**DESIGN CFM**	**VEL(1)**	**FINAL CFM**	**% to design**
RETURN TRAVERSE - RTU1	20X18	1390	602	1505	108.3
RETURN TRAVERSE - RTU2	20X18	500	223	561	112.2
SUPPLY TRAVERSE - RTU1	24X22	3850	1113	4082	106.0
SUPPLY TRAVERSE - RTU2	28X12	2050	930	2170	105.9
Total		7790		8318	106.78%

Completed By: Ethan Van Orden on 02/23/2026

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Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: FAN - Exhaust

Asset: EF-1 AREA:RESTROOM

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	G-080-VG	G-080-VG-1-17-X
Serial Num	-	28145897
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	0.10	0.10
Motor Rpm	-	1750
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	1.38
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	300	301
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	8-DIAL
RL Voltage	-	115
RL Amperage	-	0.68
Total ESP	0.50"	0.37”
Fan Inlet SP	-	-0.37”
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/23/2026

Unit Data - PHOTO LOG

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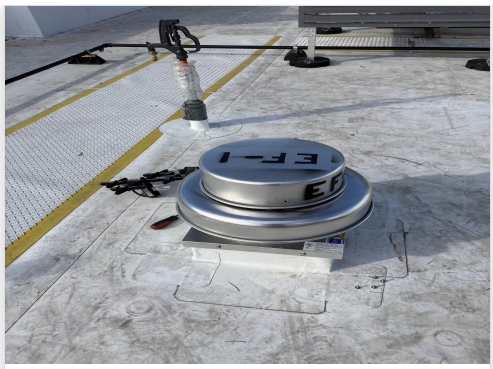

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Project:02-23-26 WHATABURGER #1572 GLENDALE, AZ

FAN - Exhaust

Diffuser Ret/Exh (GRD)

EF-1/RESTROOM

Asset									
Asset Name	**Location**	**Type**	**Size**	**DESIGN CFM**	**AK**	**CFM(1)**	**CFM(2)**	**FINAL CFM**	**% to design**
EGRD1	WOMEN'S RR	F1	6X6	150	1	157	148	148	98.7
EGRD2	MEN'S RR	F1	6X6	150	1	37	153	153	102.0
Total				300		194	301	301	100.33%

Completed By: Ethan Van Orden on 02/23/2026

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Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: FAN - Exhaust

Asset: KEF-1 AREA:GRILL HOOD

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	CUE-140-VG	CUE-140-7-VG-1-26-G
Serial Num	-	28145898 25L
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	0.75	0.75
Motor Rpm	-	1750
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	5.4
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	1995	2052
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	7-DIAL
RL Voltage	-	208
RL Amperage	-	3.2
Total ESP	1.00"	0.91”
Fan Inlet SP	-	-0.91”
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/23/2026

Unit Data - PHOTO LOG

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Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: FAN - Exhaust

Asset: KEF-2 AREA:FRYER HOOD

Unit Data		
	Design	**Actual**
MFG	GREENHECK	GREENHECK
Model Num	CUE-120-VG	CUE-120-5--VG-1-22-G
Serial Num	-	28145899 25L
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	**Actual**
Motor MFG	-	VARI-GREEN
Frame	-	NL
Horsepower	0.50	0.50
Motor Rpm	-	1750
Phase	1	1
Voltage (rated)	208	208
Amperage (rated)	-	3.8
Service Factor	-	NL

Test Data		
	Design	**Actual**
CFM	1216	1206
Fan RPM	-	NA
Fan Rotation	-	CCW
Motor RPM	-	NA
System SetPt	-	6-DIAL
RL Voltage	-	208
RL Amperage	-	2.1
Total ESP	0.75"	0.77”
Fan Inlet SP	-	-0.77”
Fan Discharge SP	-	ATMS

Completed By: Ethan Van Orden on 02/23/2026

Unit Data - PHOTO LOG

02/23/2026

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02/23/2026

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: Kitchen Hood Type I

Asset: HD-1 AREA:GRIDDLE

Unit Data		
	Design	**Actual**
MFG	H&K	H&K
Model Num	HKD027	HKD027
Job / Serial Num	-	8192986-001
Type	-	TYPE I CANOPY
Hood length	-	87”
Hood Width	-	57”

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE
Filter Size 1	-	12X20
Filter Qty 1	-	8
Filter AK factor size 1	-	1.5
Filter Total AK Area	-	12
Filter1 FPM	-	152
Filter2 FPM	-	180
Filter3 FPM	-	186
Filter4 FPM	-	163
Filter5 FPM	-	180
Filter6 FPM	-	180
Filter7 FPM	-	174
Filter8 FPM	-	154
Filter Ave FPM(corr)	-	171
CFM	1995	2052

Cooking Equipment	
	Actual
Item 1	GRIDDLE
Item 2	GRIDDLE

Completed By: Ethan Van Orden on 02/23/2026

National TAB

Project: 02-23-26 WHATABURGER #1572 GLENDALE, AZ

System/Unit: Kitchen Hood Type I

Asset: HD-2 AREA:FRYER

Unit Data		
	Design	**Actual**
MFG	H&K	H&K
Model Num	HKD023	HKD023
Job / Serial Num	-	8193792-001
Type	-	TYPE I CANOPY
Hood length	-	65”
Hood Width	-	22”

Test Data Exhaust		
	Design	**Actual**
Filter Type	-	BAFFLE
Filter Size 1	-	16X12
Filter Qty 1	-	4
Filter AK factor size 1	-	1.16
Filter Total AK Area	-	4.64
Filter1 FPM	-	272
Filter2 FPM	-	267
Filter3 FPM	-	263
Filter4 FPM	-	239
Filter Ave FPM(corr)	-	260
CFM	1216	1206

Cooking Equipment	
	Actual
Item 1	FRYER
Item 2	FRYER

Completed By: Ethan Van Orden on 02/23/2026