

Report By:

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

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Comfort. Under control.

**Report: Prelim
Function: Test, Adjust, & Balance
Date: 11/09/2022**

PROJECT

11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

1021 SOUTHERN RIDGE LANE

ST. LOUIS, MO

Client

**M&M CUSTARD, LLC
7111 W. 151st Street, Suite 112
OVERLAND PARK, KS 66223**

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

System/Unit: AHU/RTU



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Asset: DOAS1

AREA:KITCHEN

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Serial Num	-	5244772
Model Num	CASRTU3-I.400-15-20T-DOAS	CASRTU3-I.400-15-20T-DOAS
Type	DOAS	DOAS
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	4
OA Filter Size 1	-	14x23
Num Final Filter 1	-	8
Final Filter Size 1	-	20x25x2

Motor Data		
	Design	Actual
Motor MFG	-	TECO
Frame	-	145T
Horsepower	2	2
Motor Rpm	-	1740
Phase	3	3
Rated Voltage	208	230/460
Rated Amperage	-	5.48/2.74

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

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Test Data		
	Design	Actual
SF CFM	2800	2881
SF RPM	-	1769 (60.5 HZ)
RA CFM	0	0
OA CFM	2800	2881
RL Voltage	-	214/214/214
RL Amperage	-	5.4/5.4/5.4
SF Rotation	-	CCW, CORRECT
RA Damper Position	-	0%
Min OA Damper Position	-	100%
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual

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

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

AHU/RTU



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Diffuser Supply (GRD)

DOAS1/KITCHEN

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	CUSTOMER SERVICE	SD2	12"	300	1	333	400	315	105.0
SGRD2	CUSTARD	SD3	12"	300	1	270	338	272	90.7
SGRD3	CUSTARD	SD3	12"	300	1	267	324	323	107.7
SGRD4	DRIVE THRU	SD3	12"	300	1	245	299	329	109.7
SGRD5	FOOD PREP	SD3	12"	300	1	240	295	327	109.0
SGRD6	KITCHEN	SD3	12"	300	1	291	346	328	109.3
SGRD7	KITCHEN	SD3	12"	300	1	214	261	316	105.3
SGRD8	KITCHEN	SD3	12"	300	1	165	186	273	91.0
SGRD9	FOOD PREP	SD2	12"	246	1	148	181	239	97.2
SGRD10	OFFICE	SD4	8"	154	1	0	152	159	103.2

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

System/Unit: AHU/RTU



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Asset: RTU1

AREA:DINING

Unit Data		
	Design	Actual
MFG	LENNOX	TRANE
Serial Num	-	223110592D
Model Num	LGH150H4M	YHD150G3RHD19K7C1A200B0A
Type	RTU	RTU
Configuration	VERTICAL	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	59.5x16.75
Num Final Filter 1	-	4
Final Filter Size 1	-	20x20x2
Num Final Filter 2	-	4
Final Filter Size 2	-	20x25x2

Motor Data		
	Design	Actual
Motor MFG	-	MARATHON
Frame	-	56HZ
Horsepower	5	3
Motor Rpm	-	1725
Phase	3	3
Rated Voltage	208	208-230/460
Rated Amperage	-	9.4-9.2/4.6

Drive Data		
	Design	Actual
Motor Sheave Size	-	3.625"
Motor Bore Size	-	0.875"
Motor Sheave SetPt	-	1
Fan Sheave Size	-	10.5"
Fan Sheave Bore	-	1.25"
Belt CL Distance	-	22"
Num of Belts	-	1
Belt Size	-	BX68
Belt Alignment	-	GOOD

Test Data		
	Design	Actual
SF CFM	5000	4902
SF RPM	-	639
RA CFM	4100	4044
OA CFM	900	858
RL Voltage	-	213/213/213
RL Amperage	-	7.7/7.7/7.7
SF Rotation	-	CW, CORRECT
RA Damper Position	-	74% HI / 40% LOW
Min OA Damper Position	-	26% HI / 60% LOW
Min OA Damper Type	-	ECONOMIZER

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.22"
Fan Suction SP	-	-0.37"
Fan Discharge SP	-	0.53"
Total ESP	1.0"	0.75"
Fan Total SP	-	0.90"

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

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

AHU/RTU



Comfort. Under control.

Diffuser Supply (GRD)

RTU1/DINING

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	VESTIBUL E	SD6	6"	150	1	130	161	161	107.3
SGRD2	DINING	SD1	12"	475	1	0	0	0	0.0
SGRD3	DINING	SD1	12"	475	1	438	521	521	109.7
SGRD4	DINING	SD1	12"	475	1	491	519	519	109.3
SGRD5	DINING	SD1	12"	475	1	474	511	511	107.6
SGRD6	DINING	SD1	12"	425	1	514	466	466	109.6
SGRD7	DINING	SD1	12"	425	1	377	459	459	108.0
SGRD8	DINING	SD1	12"	475	1	318	506	506	106.5
SGRD9	DINING	SD1	12"	475	1	445	512	512	107.8
SGRD10	DINING	SD1	12"	425	1	441	458	458	107.8
SGRD11	DINING	SD1	12"	475	1	490	519	519	109.3
SGRD12	RR HALLWAY	SD5	6"	50	1	68	54	54	108.0
SGRD13	RESTROO M	SD5	6"	50	1	49	53	53	106.0
SGRD14	RESTROO M	SD5	6"	100	1	88	108	108	108.0
SGRD15	RESTROO M	SD5	6"	50	1	71	55	55	110.0

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

System/Unit: FAN - Exhaust



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Asset: EF1

AREA:RESTROOM

Unit Data		
	Design	Actual
MFG	COOK	LOREN COOK
Model Num	GC-146	GEMINI 140 SERIES
Serial Num	-	NL
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Frame	-	NL
Horsepower	30.3W	15W
Motor Rpm	-	1550
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.4
Service Factor	-	1.0

Test Data		
	Design	Actual
CFM	75	81
Fan RPM	900	DD
Fan Rotation	-	CW, CORRECT
Motor RPM	-	DD
System SetPt	-	MED
RL Voltage	-	93
RL Amperage	-	0.3
Total ESP	0.25"	[1]
Fan Inlet SP	-	ATM
Fan Discharge SP	-	[1]

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF2

AREA:RESTROOM

Unit Data		
	Design	Actual
MFG	COOK	LOREN COOK
Model Num	GC-1686	GEMINI 140 SERIES
Serial Num	-	NL
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Frame	-	NL
Horsepower	50.4W	16W
Motor Rpm	-	1100
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.51
Service Factor	-	1.0

Test Data		
	Design	Actual
CFM	150	140
Fan RPM	1099	DD
Fan Rotation	-	CW, CORRECT
Motor RPM	-	DD
System SetPt	-	MED HIGH
RL Voltage	-	106
RL Amperage	-	0.45
Total ESP	0.25"	[1]
Fan Inlet SP	-	ATM
Fan Discharge SP	-	[1]

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: EF3

AREA:RESTROOM

Unit Data		
	Design	Actual
MFG	COOK	LOREN COOK
Model Num	GC-146	GEMINI 140 SERIES
Serial Num	-	NL
Type	CEILING	CEILING
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	QUEACE
Frame	-	NL
Horsepower	30.3W	15W
Motor Rpm	-	1550
Phase	1	1
Voltage (rated)	120	115
Amperage (rated)	-	0.4
Service Factor	-	1.0

Test Data		
	Design	Actual
CFM	75	82
Fan RPM	900	DD
Fan Rotation	-	CW, CORRECT
Motor RPM	-	DD
System SetPt	-	HIGHEST
RL Voltage	-	121
RL Amperage	-	0.4
Total ESP	0.25"	[1]
Fan Inlet SP	-	ATM
Fan Discharge SP	-	[1]

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

System/Unit: FAN - Exhaust



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Asset: KEF1

AREA:HOOD 1

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	CASRE18DD	CASRE18DD
Serial Num	-	5244772
Type	UTILITY	UTILITY
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TECO
Frame	-	145T
Horsepower	1	1
Motor Rpm	-	1150
Phase	3	3
Voltage (rated)	208	230/460
Amperage (rated)	-	3.44/1.72
Service Factor	-	1.15

Test Data		
	Design	Actual
CFM	1600	1571
Fan RPM	1105	
Fan Rotation	-	CCW, CORRECT
Motor RPM	-	
System SetPt	-	63.7 HZ
RL Voltage	-	213/213/213
RL Amperage	-	3.3/3.3/3.2
Total ESP	1.400"	[1]
Fan Inlet SP	-	[1]
Fan Discharge SP	-	ATM

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: KEF2

AREA:HOOD 2

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU50HFA	DU50HFA
Serial Num	-	5244772
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TECO GREEN
Frame	-	NL
Horsepower	0.5	0.5
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	6.3
Service Factor	-	1.0

Test Data		
	Design	Actual
CFM	775	787
Fan RPM	1532	1134
Fan Rotation	-	CCW, CORRECT
Motor RPM	-	1134
System SetPt	-	63%
RL Voltage	-	122
RL Amperage	-	2.7
Total ESP	1.250"	0.53"
Fan Inlet SP	-	-0.53"
Fan Discharge SP	-	ATM

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

System/Unit: FAN - Exhaust



Comfort. Under control.

Asset: KEF3

AREA:HOOD 3

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DU33HFA	DU33HFA
Serial Num	-	5244772
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO GREEN
Frame	-	NL
Horsepower	0.333	0.33
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	4.3
Service Factor	-	1.0

Test Data		
	Design	Actual
CFM	525	539
Fan RPM	1630	946
Fan Rotation	-	CCW, CORRECT
Motor RPM	-	946
System SetPt	-	52%
RL Voltage	-	123
RL Amperage	-	0.9
Total ESP	0.800"	0.33"
Fan Inlet SP	-	-0.33"
Fan Discharge SP	-	ATM

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

System/Unit: Kitchen Hood Type I



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Asset: HD1

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-2	5424 ND-2
Job / Serial Num	-	5244772
Type	TYPE I LOW PROXIMITY	TYPE I
Hood length	96"	96"
Hood Width	54"	54"

Test Data Exhaust		
	Design	Actual
Filter Type	CAPTRATE	CAPTRATE SOLO
Filter Size 1	16X16	16x16
Filter Qty 1	5	5
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	8.1	8.1
Filter1 FPM	-	187
Filter2 FPM	-	201
Filter3 FPM	-	209
Filter4 FPM	-	178
Filter5 FPM	-	193
Filter Ave FPM(corr)	-	194
CFM	1600	1571

Cooking Equipment		
	Design	Actual
Item 1	-	GRIDDLE
Item 2	-	GRIDDLE

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

System/Unit: Kitchen Hood Type I



Comfort. Under control.

Asset: HD2

AREA:

Unit Data

	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND-2	5424 ND-2
Job / Serial Num	-	5244772
Type	TYPE I LOW PROXIMITY	TYPE I
Hood length	60"	60"
Hood Width	54"	54"

Test Data Exhaust

	Design	Actual
Filter Type	CAPTRATE	CAPTRATE SOLI
Filter Size 1	16X16	16x16
Filter Qty 1	3	3
Filter AK factor size 1	1.62	1.62
Filter Total AK Area	4.86	4.86
Filter1 FPM	-	163
Filter2 FPM	-	176
Filter3 FPM	-	146
Filter Ave FPM(corr)	-	162
CFM	775	787

Cooking Equipment

	Design	Actual
Item 1	-	FRYER

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Project: 11-07 FREDDY'S - ST. LOUIS, MO (LAKE ST)

System/Unit: Kitchen Hood Type II



Comfort. Under control.

Asset: HD3

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	4224 VHB-G	4224 VHB
Serial Num	-	5244772
Type	TYPE II CANOPY	TYPE II
Hood length	42"	42"
Hood Width	42"	42"

Test Data		
	Design	Actual
Exhaust CFM	525	539

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