

Report By:

National TAB
1329 E. KEMPER ROAD
SUITE 4210
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Report: TAB REPORT
Function: Test, Adjust, & Balance
Date: 10/22/2024
Completed By: National TAB

PROJECT

10-21-24 CHIPOTLE #5229 MEADVILLE, PA

11277 VERNON PLACE RD

MEADVILLE, PA 16335

Client

Chipotle Mexican Grill
610 Newport Center Drive, Suite 1100
Newport Beach, CA 92660

National TAB

Project: 10-21-24 CHIPOTLE #5229 MEADVILLE, PA

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Project Summary

The summary below provides a quick understanding of our scope of work and general testing procedures. Enclosed in the report is further detail 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.

MUA (Make Up Air Unit) w/ PSP

Total flow for the MAU (Make-up Air Unit) unit was measured 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 design tolerance. Any MUA's that fell outside of this tolerance is noted throughout the report.

General Exhaust Fans w/ Grilles

The general exhaust fans were measured by reading each air device with a flow hood. The total airflow for each fan is equivalent to the sum of these readings. Fan speed was then adjusted so that the airflow was within tolerance of design. Each terminal device was balanced to within tolerance of the design volume using the installed volume dampers. Any equipment that fell outside of this tolerance is noted throughout the report.

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 of $-0.02''$ wc to $+0.02''$ wc 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

- HD-1 Alarms
- RTU-1/RTU-2 Final Filters

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Project Issue Information

Issue Name : HD-1 Alarms
Description : HD-1 has two alarms showing: 1. Core #01 Fault 2. Tamper Switch
Created By : National TAB **Assigned To :** National TAB - Dylan Crisman
Status : Open
Priority : High **Asset Tag :**
Originated Date : 10/22/2024 - Dylan Crisman - National TAB

Project Issue Response Details

- **10/22/2024 National TAB - Dylan Crisman**
 - Updated with photos



10/22/2024



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Project Issue Information

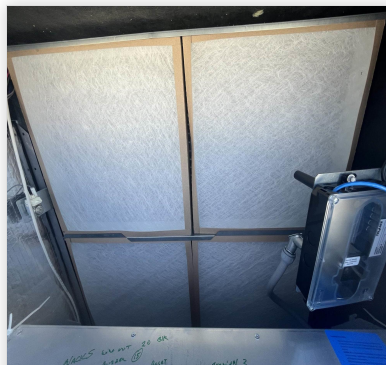
Issue Name : RTU-1/RTU-2 Final Filters
Description : Construction filters still installed on RTU-1/RTU-2. Recommend replacing with correct size (20x20x2) Merv 8 Rated Pleated filters.
Created By : National TAB **Assigned To :** National TAB - Dylan Crisman
Status : Open
Priority : Low **Asset Tag :**
Originated Date : 10/22/2024 - Dylan Crisman - National TAB

Project Issue Response Details

- **10/22/2024 National TAB - Dylan Crisman**
 - Updated with Photos



10/22/2024



10/22/2024

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	3400	3416	2900	2909	500	507	14.7%	14.8%						
RTU-2	DINING	3750	3835	2750	2835	1000	1000	26.7%	26.1%						
MUA-1	KITCHEN HOOD									1300	1352				
EF-1	KITCHEN HOOD											2550	2551		
EF-2	RESTROOM													150	152
TOTALS		7150	7251	5650	5744	1500	1507			1300	1352	2550	2551	150	152

NET BUILDING AIRFLOW CALCULATION

TOTALS	DESIGN	ACTUAL
TOTAL OA	2800	2859
TOTAL EXHAUST	2700	2703
NET AIRFLOW	100	156

DOOR TESTED	BUILDING PRESSURE MEASUREMENTS (IN. H2O)
FRONT	0.0046
SIDE	0.003
REAR	0.0033
AVERAGE	0.0036

FINAL CHECKS

- ACTUAL NET AIRFLOW COINCIDES WITH DESIGN: ✓

- MEASURED PRESSURES COINCIDES WITH ACTUAL NET AIRFLOW: ✓

- PRESSURE FALLS WITHIN IMC TOLERANCE OF +/-0.02" W.C. ✓

NOTES:

CheckList List

- 01: RTUs/AHUs
- 02:EF's
- 03:MUA
- 04: HOODS
- 05: FINAL TESTS



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CheckList Information

Name : 01: RTUs/AHUs **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/18/2024 - Wale Odofin - National TAB

Completed Date : 10/21/2024 - Dylan Crisman - National TAB

CheckList Item Details

RTU's/AHU's

Thermostats installed and have power? Yes

Comment:

All diffusers and grilles are installed and match design? Yes

Comment:

Deflector plates are removed from 1x1 diffusers on the serve line (double check that this is specified on the diffuser schedule first) Yes

Comment:

Economizer blank plate is installed below the outside air intake (Trane only) (N/A = not applicable) N/A

Comment:

Economizers are assembled and functional? Yes

Comment:

DCV Max damper opening position is set to minimum?

Yes

Comment:

Free cooling enthalpy set point set for lowest setting (Typically "D")

Yes

Comment:

Motors are all operating below the FLA rating?

Yes

Comment:

Are belts tight?

N/A

Comment:

If direct drive unit is the speed controller working?

Yes

Comment:

Is gas piping installed and valves turned on?

Yes

Comment:

Unit free of noticeable noise and vibration

Yes

Comment:

Final outside air damper position is marked with permanent marker?

Yes

Comment:



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CheckList Information

Name : 02:EF's **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/18/2024 - Wale Odofin - National TAB

Completed Date : 10/21/2024 - Dylan Crisman - National TAB

CheckList Item Details

EF's

Rotation is correct?	Yes
-----------------------------	-----

Comment:

Belts are tight?	N/A
-------------------------	-----

Comment:

Viroguard installed on hood fan(s)?	Yes
--	-----

Comment:

Hinge kit installed installed on hood fan?	Yes
---	-----

Comment:

Lean fan back. Is grease duct installation adequate and is duct ran all the way to the base of the fan?	Yes
--	-----

Comment:



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Flex conduit is long enough so that fan can be completely tilted back?

Yes

Comment:

There is no major leakage around base of fan?

Yes

Comment:

Is the motor operating below the motor FLA rating?

Yes

Comment:

For restroom fan(s) is the back draft damper installed and can it fully open?

Yes

Comment:



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Unit free of noticeable noise and vibration?

Yes

Comment:



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CheckList Information

Name : 03:MUA **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/18/2024 - Wale Odofin - National TAB

Completed Date : 10/21/2024 - Dylan Crisman - National TAB

CheckList Item Details

MUA

Rotation is correct?	Yes
----------------------	-----

Comment:

Gas piping is installed and valves are in on position?	Yes
--	-----

Comment:

Internal motorized damper is fully opening?	Yes
---	-----

Comment:

Motor is operating below the FLA rating?	Yes
--	-----

Comment:

Unit free of noticeable noise and vibration?	Yes
--	-----

Comment:



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CheckList Information

Name : 04: HOODS **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/18/2024 - Wale Odofin - National TAB

Completed Date : 10/21/2024 - Dylan Crisman - National TAB

CheckList Item Details

HOODS

All hood filters installed and accounted for? Yes

Comment:

Hoods are wired and have power? Yes

Comment:

Hood is free of alarms? No

Comment:

2 alarms, Issue created.

Hood is free of damage? Yes

Comment:

Quarter or full vertical end panels are installed if specified? Yes

Comment:



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CheckList Information

Name : 05: FINAL TESTS **Status :** Completed

Assigned Organization : National TAB **Asset :**

Requesting Organization : National TAB

Created Date : 10/18/2024 - Wale Odofin - National TAB

Completed Date : 10/22/2024 - Dylan Crisman - National TAB

CheckList Item Details

FINAL CHECKS

Is space free of drafting? Yes

Comment:

Is space comfortable in all areas? Yes

Comment:

Is the space free of ventilation noise? Yes

Comment:

List kitchen equipment turned on for testing Yes

Comment:

Griddle, stove, fryer

List smoke candle type used

Comment:

CE0163 45 sec 150CF

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

10/22/2024

Comment:

TAB tech name / Firm

Comment:

Dylan Crisman / NTi

Site super name / Firm

Comment:

Mark Stefanini

Owner representative name / Firm (if Applicable)

Comment:

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:



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Project: 10-21-24 CHIPOTLE #5229 MEADVILLE, PA

System/Unit: AHU/RTU



Asset: RTU1

AREA:

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	0524P63188
Model Num	48FC-M	48FCFN09D3M5A6W4F0
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35x19.5
Num Final Filter 1	-	4
Final Filter Size 1	-	20x20x2
Num Final Filter 2	-	
Final Filter Size 2	-	

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

Drive Data	
	Actual
Motor Sheave Size	DD
Motor Bore Size	DD
Motor Sheave SetPt	8.5VDC
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	3396	3416
SF RPM	-	1990
RA CFM	2896	2909
OA CFM	500	507
RL Voltage	-	205/207.3/204.3
RL Amperage	-	6.4/6.1/6.2
SF Rotation	-	CW
SF System SetPt	-	8.5VDC
RA Damper Position	-	6.85V
Min OA Damper Position	-	3.15V
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	ES5

Performance Data		
	Design	Actual
MA Plenum SP	-	-1.10"
Fan Suction SP	-	-1.23"
Fan Discharge SP	-	0.53"
Total ESP	-	1.63"
Fan Total SP	-	1.76"

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

Unit Data - PHOTO LOG



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Project:10-21-24 CHIPOTLE #5229 MEADVILLE, PA

AHU/RTU



Diffuser Supply (GRD)

RTU1/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	KITCHEN	CD1	12	350	1.0	490	345	358	102.3
SGRD2	KITCHEN	CD1	12	350	1.0	426	367	355	101.4
SGRD3	KITCHEN	CD1	8	150	1.0	197	233	161	107.3
SGRD4	KITCHEN	CD2	8	250	1.0	176	256	237	94.8
SGRD5	KITCHEN	CD2	8	250	1.0	178	236	240	96.0
SGRD6	KITCHEN	CD2	8	250	1.0	195	227	234	93.6
SGRD7	KITCHEN	CD2	8	250	1.0	161	196	229	91.6
SGRD8	KITCHEN	CD1	12	425	1.0	511	404	420	98.8
SGRD9	KITCHEN	CD1	12	425	1.0	508	483	438	103.1
SGRD10	KITCHEN	ACPSP	165X6	696	5.65	713	744	744	106.9
Total				3396		3555	3491	3416	100.59%

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System/Unit: AHU/RTU



Asset: RTU2

AREA: DINING

Unit Data		
	Design	Actual
MFG	CARRIER	CARRIER
Serial Num	-	0424P62916
Model Num	48FC-M	48FCN12D3M5A6W4F0
Type	-	RTU
Configuration	-	VERTICAL
Num OA Filters 1	-	1
OA Filter Size 1	-	35x19.5
Num Final Filter 1	-	4
Final Filter Size 1	-	20x20x2
Num Final Filter 2	-	
Final Filter Size 2	-	

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

Drive Data	
	Actual
Motor Sheave Size	DD
Motor Bore Size	DD
Motor Sheave SetPt	7.4VDC
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	3750	3835
SF RPM	-	1759
RA CFM	2750	2835
OA CFM	1000	1000
RL Voltage	-	205.7/207.3/204.1
RL Amperage	-	4.2/4.4/4.4
SF Rotation	-	CW
SF System SetPt	-	7.4VDC
RA Damper Position	-	6.70V
Min OA Damper Position	-	4.30V
Min OA Damper Type	-	ECONOMIZER
OA Enthalpy Setpt	-	ES5

Performance Data		
	Design	Actual
MA Plenum SP	-	-0.83"
Fan Suction SP	-	-1.22"
Fan Discharge SP	-	0.35"
Total ESP	-	1.18"
Fan Total SP	-	1.57"

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

Unit Data - PHOTO LOG



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Project:10-21-24 CHIPOTLE #5229 MEADVILLE, PA

AHU/RTU



Diffuser Supply (GRD)

RTU2/DINING

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
SGRD1	DINNING	SR2	18/6	400	1.0	383	318	403	100.8
SGRD2	DINNING	SR2	18/6	500	1.0	457	550	511	102.2
SGRD3	DINNING	SR1	14	750	1.0	841	698	776	103.5
SGRD4	DINNING	SR1	14	650	1.0	789	655	655	100.8
SGRD5	DINNING	SR1	14	550	1.0	939	779	567	103.1
SGRD6	DINNING	SR1	14	450	1.0	678	563	480	106.7
SGRD7	DINNING	SR1	14	400	1.0	434	360	396	99.0
SGRD8	DINNING	CD3	6	50	1.0	0	11	47	94.0
Total				3750		4521	3934	3835	102.27%

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Project: 10-21-24 CHIPOTLE #5229 MEADVILLE, PA

System/Unit: FAN - Exhaust



Asset: EF1

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVAIRE	CAPTIVAIRE
Model Num	DU180HFA	DU180HFA
Serial Num	-	6765907
Type	UPBLAST	UPBLAST
Configuration	VERTICAL	VERTICAL

Test Data		
	Design	Actual
CFM	2550	2551
Fan RPM	1240	1004
Fan Rotation	-	CCW
Motor RPM	-	1004
System SetPt	-	51.7Hz
RL Voltage	-	103@VFD
RL Amperage	-	4.8@VFD
Total ESP	1.450	0.90"
Fan Inlet SP	-	-0.90"
Fan Discharge SP	-	ATM

Motor Data		
	Design	Actual
Motor MFG	-	TECO- WESTINGHOUSE
Frame	-	184T
Horsepower	-	2.0
Motor Rpm	-	1170
Phase	3	3
Voltage (rated)	208	230
Amperage (rated)	-	6.44
Service Factor	-	1.25

Unit Data - PHOTO LOG



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System/Unit: FAN - Exhaust



Asset: EF2

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	DR12HFA	DR12HFA
Serial Num	-	6765907
Type	DOWNBLAST	DOWNBLAST
Configuration	VERTICAL	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TELCO-GREEN
Frame	-	NL
Horsepower	-	0.250
Motor Rpm	-	1800
Phase	1	1
Voltage (rated)	115	115
Amperage (rated)	-	2.9
Service Factor	-	1.15

Test Data		
	Design	Actual
CFM	150	152
Fan RPM	1316	1031
Fan Rotation	-	CCW
Motor RPM	-	1031
System SetPt	-	54P
RL Voltage	-	N/A
RL Amperage	-	N/A
Total ESP	0.60"	0.18"
Fan Inlet SP	-	-0.18"
Fan Discharge SP	-	ATM

Unit Data - PHOTO LOG



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Project: 10-21-24 CHIPOTLE #5229 MEADVILLE, PA

FAN - Exhaust



Diffuser Ret/Exh (GRD)

EF2/

Asset									
Asset Name	Location	Type	Size	DESIGN CFM	AK	CFM(1)	CFM(2)	FINAL CFM	% to design
EF2-EGRD1	RESTROOMS	ER1	6/6	75	1.0	110	73	73	97.3
EF2-EGRD2	RESTROOMS	ER1	6/6	75	1.0	88	79	79	105.3
Total				150		198	152	152	101.33%

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Asset: MAU1

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	A1-D250-15D	A1-D250-15D
Serial Num	-	6765907
Type	-	MUA
Configuration	-	VERTICAL

Motor Data		
	Design	Actual
Motor MFG	-	TECO-WESTINGHOUSE
Frame	-	143T
Horsepower	-	1.0
Motor Rpm	-	1740
Phase	-	3
Voltage (rated)	-	230
Amperage (rated)	-	2.9
Service Factor	-	1.15

Gas Heat		
	Design	Actual
Heater Operates (y/n)	-	Y
Flame Status (pass/fail)	-	PASS
Inlet Air Temp SetPt	-	55
Discharge Air Temp SetPt	-	60
Air Flow Switch SP Actual	-	0.29"

Test Data		
	Design	Actual
CFM	-	1352
SF RPM	-	1496
Motor RPM	-	1496
SF System SetPt	-	51.6Hz
RL Voltage	-	139@VFD
RL Amperage	-	2.5@VFD
Total ESP	-	N/A
Fan Discharge SP	-	N/A

General	
	Actual
Fan Rotation Correct	YES

Unit Data - PHOTO LOG



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Project: 10-21-24 CHIPOTLE #5229 MEADVILLE, PA

System/Unit: Kitchen Hood Type I



Asset: HD1

AREA:

Unit Data		
	Design	Actual
MFG	CAPTIVEAIRE	CAPTIVEAIRE
Model Num	5424 ND2 ACPSP	5424 ND2 ACPSP
Job / Serial Num	-	6765907
Type	-	TYPE II CANOPY
Hood length	-	153"
Hood Width	-	54"
Supply Plenum Type	-	ACPSP
Supply Plenum Width	-	9"
Supply Plenum Length	-	165"

Test Data Exhaust		
	Design	Actual
Filter Type	-	CAPTRATE SOLO
Filter Size 1	-	16x16
Filter Size 2	-	
Filter Qty 1	-	9
Filter Qty 2	-	
Filter AK factor size 1	-	1.62
Filters AK factor size 2	-	
Filter Total AK Area	-	14.58
Filter1 FPM	-	167
Filter2 FPM	-	171
Filter3 FPM	-	175
Filter4 FPM	-	171
Filter5 FPM	-	198
Filter6 FPM	-	197
Filter7 FPM	-	180
Filter8 FPM	-	161
Filter9 FPM	-	155
Filter10 FPM	-	
Filter11 FPM	-	
Filter12 FPM	-	
Filter Ave FPM(corr)	-	175
CFM	-	2551

Cooking Equipment	
	Actual
Item 1	GRIDDLE
Item 2	STOVE
Item 3	RICE COOKER
Item 4	FRYER
Item 5	

Test Data Supply		
	Design	Actual
Total AK Area	-	10.31
Kv factor (Vel)	-	0.81
Num of Readings	-	14
Reading1 FPM	-	221
Reading2 FPM	-	181
Reading3 FPM	-	166
Reading4 FPM	-	104
Reading5 FPM	-	175
Reading6 FPM	-	174
Reading7 FPM	-	173
Reading8 FPM	-	131
Reading9 FPM	-	119
Reading10 FPM	-	199
Reading11 FPM	-	178
Reading12 FPM	-	135
Reading13 FPM	-	123
Reading14 FPM	-	190
Ave FPM(corr)	-	162
CFM	-	1352

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