

EPA Certification Test Report

The following models are EPA certified under the following attached test report:

F2400-M-FS

	<u>Model #</u>
Wood Stoves	F2400 S2400 CS2400
Wood Inserts	HI300 I2400
Wood Fireplaces	n/a
Pellet Stoves	n/a
Pellet Inserts	

Full US Environmental Protection Agency ("EPA") certification test reports have been reported to the EPA. Test reports may contain sensitive, confidential business information which has been specifically excluded and/or redacted from this publicly posted test report.

Model: F2400-M-FS
Fireplace Products International Ltd.
6988 Venture Street
Delta, BC
V4G 1H4

Certification Test Report

Fireplace Products International Ltd.

Freestanding Wood Stove Model: F2400-M-FS

Prepared for: Fireplace Products International Ltd.
6988 Venture Street
Delta, BC
V4G 1H4

Prepared by: OMNI-Test Laboratories, Inc.
5465 SW Western Avenue, Suite G
Beaverton, Oregon 97005
(503) 643-3788

Test Period: September 30, 2002 – October 5, 2002

Report Date: October 2002

Project Number: 219-S-02-3

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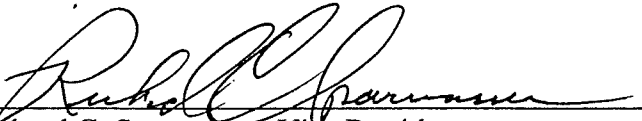
Model: F2400-M-FS
Fireplace Products International Ltd.
6988 Venture Street
Delta, BC
V4G 1H4

AUTHORIZED SIGNATORIES

This report has been reviewed and approved by the following authorized signatories.



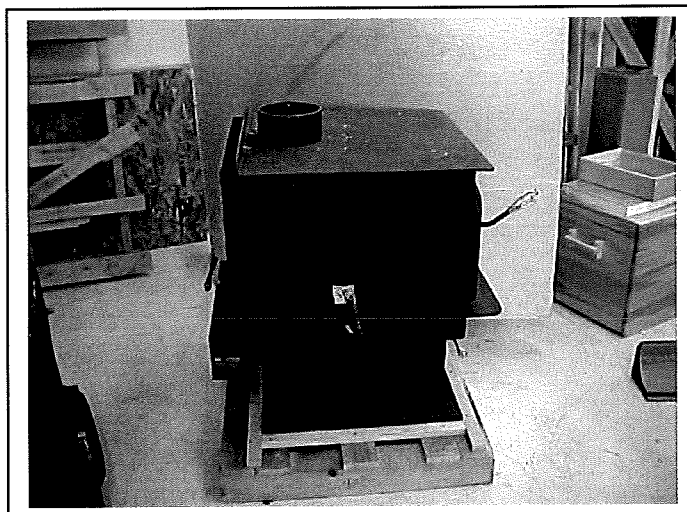
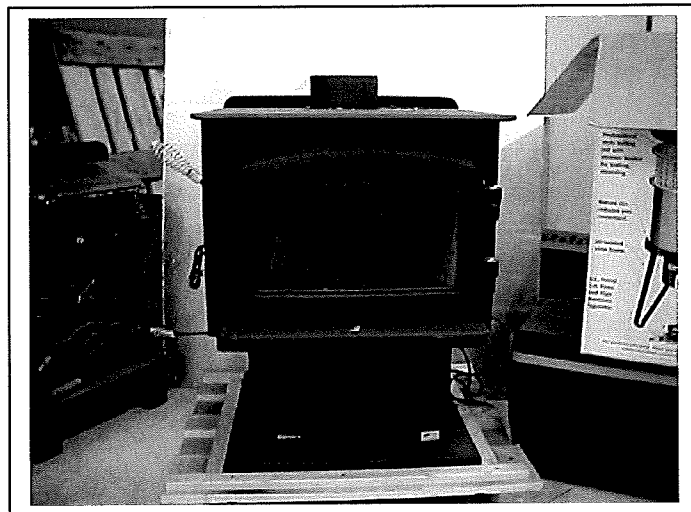
Paul E. Tiëgs, President
OMNI-Test Laboratories, Inc.



Richard C. Sparwasser, Vice President
OMNI-Test Laboratories, Inc.

Model: F2400-M-FS
Fireplace Products International Ltd.
6988 Venture Street
Delta, BC
V4G 1H4

Fireplace Products International Ltd.
Model: F2400-M-FS
Test Dates: September 30, 2002 – October 5, 2002



Model: F2400-M-FS
 Fireplace Products International Ltd.
 6988 Venture Street
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Table 1.1 – Particulate Emissions

Run	Burn Rate (kg/hr dry)	Method 5G Emissions (g/hr)
1	1.24	3.82
2	1.11	3.29
3	0.99	4.71
4	2.06	1.75
5	3.05	2.73
6	1.83	2.09
Weighted particulate emission average of six test runs: 3.44 grams per hour.		

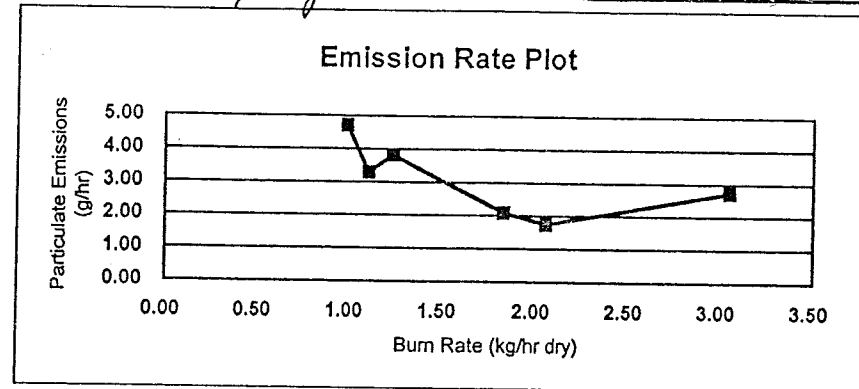
Table 1.2 – Test Facility Conditions

Run	Room Temperature (°F)		Barometric Pressure (in Hg)		Air Velocity (ft/min)	
	Before	After	Before	After	Before	After
1	72	70	29.94	29.96	<50	<50
2	72	77	30.17	30.17	<50	<50
3	74	72	30.12	30.07	<50	<50
4	75	72	30.06	30.05	<50	<50
5	76	74	30.05	30.04	<50	<50
6	74	73	30.13	30.14	<50	<50

EPA Weighted Average Emissions EPA Method 28

Client: FPI Regency *F 240-M-FS* Status: FINAL
 Stove Model: E2100M-NS-A Stove Type: Non-Catalytic Stove
 Test Dates: 9-30-02 to 10-05-02
 Project Number: 219-S-02-3
 Tracking Number: 408
 Signature/Date: *K.J. Morgan 10-14-02*

Weighted Average
(g/hr)
3.44



Run # 3	Run # 4
Burn Rate (dry kg/hr) 0.99	Burn Rate (dry kg/hr) 2.06
Catagory 2	Catagory 4
Overall Efficiency (%) 63%	Overall Efficiency (%) 63%
Emissions (g/hr) 4.71	Emissions (g/hr) 1.75
Cap (g/hr) 15	Cap (g/hr) 18
Weighting Factor 0.466 28.85%	Weighting Factor 0.106 6.55%
Heat Output (BTU/hr) 11963	Heat Output (BTU/hr) 24892
Run # 2	Run # 5
Burn Rate (dry kg/hr) 1.11	Burn Rate (dry kg/hr) 3.05
Catagory 2	Catagory 4
Overall Efficiency (%) 63%	Overall Efficiency (%) 63%
Emissions (g/hr) 3.29	Emissions (g/hr) 2.73
Cap (g/hr) 15	Cap (g/hr) 18
Weighting Factor 0.198 12.26%	Weighting Factor 0.079 4.89%
Heat Output (BTU/hr) 13413	Heat Output (BTU/hr) 36855
Run # 1	
Burn Rate (dry kg/hr) 1.24	
Catagory 2	
Overall Efficiency (%) 63%	
Emissions (g/hr) 3.82	
Cap (g/hr) 15	
Weighting Factor 0.413 25.58%	
Heat Output (BTU/hr) 14984	
Run # 6	
Burn Rate (dry kg/hr) 1.83	
Catagory 3	
Overall Efficiency (%) 63%	
Emissions (g/hr) 2.09	
Cap (g/hr) 18	
Weighting Factor 0.353 21.88%	
Heat Output (BTU/hr) 22113	

Model: F2400-M-FS
Fireplace Products International Ltd.
6988 Venture Street
Delta, BC
V4G 1H4

Run 1

Wood Heater Test Data - EPA Method 5G

Run: 1
 Manufacturer: FPI Regency
 Model: F2400M-NS-1 FS 4L
 Tracking No.: 408
 Project No.: 219-S-02-3
 Test Date: 30-Sep-02
 Beginning Clock Time: 13:42
 Recording Interval: 10 min.
 Total Sampling Time: 300 min.

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8
Initial dP	0.034	0.036	0.038	0.036	0.030	0.036	0.038	0.030
Initial Temp.	90	90	90	90	89	89	89	89

OMNI Equipment Numbers: _____

PM Control Module: 20
 Dilution Tunnel MW(dry): 29.60 lb/lb-mole
 Dilution Tunnel MW(wet): 28.56 lb/lb-mole
 Dilution Tunnel H2O: 4.00 percent
 Dilution Tunnel Static: -0.550 "H2O
 Pitot Tube Cp: 0.99
 Meter Box Y Factor: 0.972
 Barometric Pressure: 29.94 29.94 29.96 29.95 "Hg

Signature/Date: K.A. Morgan 10-14-02
 Tunnel Velocity: 12.65 ft/sec.
 Initial Tunnel Flow: 137.3 scfm
 Average Tunnel Flow: 137.4 scfm
 Tunnel Area: 0.196 ft²
 Post-Test Leak Check: .002 @ 18 cfm@"Hg
 Fuel Moisture (dry basis) 20.8 %
 Total Particulate: 45.2 mg
 Filter Holder No.: _____

Elapsed Time	Particulate Sampling Data									Fuel Weight, lb		Wood Heater Temperature Data, °F													Stack	
	Gas Meter Cubic Feet	Sample Rate, cfm	Orifice dH	Meter oF	Meter Vac. In. Hg.	Dilution Tunnel Temp.	Dilution Tunnel dP	Pro. Rate (10%)	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Filter	Impinger exit	Ambient	Draft In. H2O				
0	308.000	/	0.00	76	0	90	0.035	/	16.5	/	353	305	186	392	397		326.6	253	76	72	72	-0.048				
10	313.405	0.54	0.75	79	3	95	0.035	103	15.3	-1.2	423	301	293	369	366		350.4	302	77	63	72	-0.055				
20	318.815	0.54	0.75	84	3	91	0.035	102	14.6	-0.7	386	293	275	334	323		322.2	290	77	63	72	-0.058				
30	324.230	0.54	0.75	88	3	97	0.035	102	13.2	-1.4	484	278	252	314	290		323.6	379	77	64	72	-0.070				
40	329.685	0.55	0.75	91	3	103	0.035	102	11.4	-1.8	621	265	211	318	284		339.8	438	78	65	73	-0.075				
50	335.125	0.54	0.75	94	3	104	0.035	102	9.7	-1.7	652	251	152	339	299		338.6	440	79	66	75	-0.075				
60	340.590	0.55	0.75	96	3	103	0.035	102	8.2	-1.5	641	244	152	357	307		340.2	426	79	66	75	-0.073				
70	346.070	0.55	0.75	98	3	103	0.035	101	6.9	-1.3	618	239	159	374	326		343.2	415	80	67	75	-0.073				
80	351.600	0.55	0.75	99	3	101	0.035	102	5.8	-1.1	593	236	167	382	346		344.8	387	80	67	75	-0.068				
90	357.120	0.55	0.75	100	3	99	0.035	102	4.9	-0.9	558	236	171	381	359		341.0	363	81	68	75	-0.065				
100	362.560	0.54	0.75	101	3	98	0.035	100	4.2	-0.7	520	237	178	382	366		336.6	342	80	68	75	-0.063				
110	368.070	0.55	0.75	101	3	94	0.035	101	3.7	-0.5	465	239	182	376	374		327.2	312	79	68	75	-0.058				
120	373.580	0.55	0.75	102	3	92	0.035	100	3.3	-0.4	428	240	181	369	377		319.0	287	79	68	74	-0.053				
130	379.090	0.55	0.75	102	3	91	0.035	100	3.0	-0.3	395	241	177	365	377		311.0	267	79	68	74	-0.050				
140	384.600	0.55	0.75	102	3	88	0.035	100	2.7	-0.3	359	245	171	358	371		300.8	250	78	67	73	-0.048				
150	390.150	0.55	0.75	102	3	88	0.035	101	2.5	-0.2	340	247	172	355	366		296.0	237	78	67	74	-0.045				
160	395.700	0.56	0.75	102	3	87	0.035	101	2.3	-0.2	335	249	171	353	360		293.6	230	78	67	74	-0.043				
170	401.310	0.56	0.75	102	3	87	0.035	102	2.1	-0.2	314	251	170	351	356		288.4	223	77	67	73	-0.043				
180	406.850	0.55	0.75	102	3	84	0.035	100	1.9	-0.2	307	252	165	348	353		285.0	220	76	67	72	-0.043				
190	412.255	0.54	0.75	102	3	84	0.035	98	1.7	-0.2	300	253	164	346	352		283.0	214	76	67	73	-0.041				
200	417.790	0.55	0.75	102	3	84	0.035	100	1.5	-0.2	294	255	163	343	349		280.8	210	76	66	72	-0.040				
210	423.330	0.55	0.75	102	3	83	0.035	100	1.4	-0.1	283	255	161	339	344		276.4	205	75	66	72	-0.040				
220	428.865	0.55	0.75	102	3	82	0.035	100	1.2	-0.2	278	254	160	337	340		273.8	204	75	65	71	-0.040				
230	434.405	0.55	0.75	102	3	82	0.035	100	1.0	-0.2	277	254	161	335	337		272.8	202	75	64	71	-0.040				
240	439.950	0.55	0.75	101	3	82	0.035	100	0.8	-0.2	277	254	163	332	336		272.4	201	75	64	71	-0.038				
250	445.500	0.56	0.75	101	3	82	0.035	100	0.7	-0.1	274	253	164	327	334		270.4	199	74	64	71	-0.038				
260	451.120	0.56	0.75	101	3	81	0.035	101	0.5	-0.2	266	254	159	318	326		264.6	193	74	64	70	-0.038				
270	456.550	0.54	0.75	101	3	80	0.035	98	0.4	-0.1	258	253	151	308	316		257.2	191	73	63	70	-0.038				
280	462.120	0.56	0.75	101	3	80	0.035	100	0.2	-0.2	256	252	150	304	312		254.8	190	73	63	70	-0.038				
290	467.665	0.55	0.75	100	3	80	0.035	100	0.1	-0.1	249	247	148	298	305		249.4	186	73	63	71	-0.035				
300	473.200	0.55	0.75	100	3	80	0.035	100	0.0	-0.1	243	244	147	293	300		245.4	182	73	63	70	-0.035				
Avg/Total	165.200	0.55	0.73	97.94	/	89.50	0.035	100.64	/	/	/	/	/	/	/	/	81	/	76.77	65.81	/	-0.051				

STOVE TEMPERATURE TEST DATA - METHOD 5G

Client/Model: FPI Requery / F2100M-MS-A FS Project #: 219-S-02-3 Tracking #: 408

Date: 9-30-02 Test Crew: K. MORGAN Run #: 1

OMNI Equipment ID #: _____

Preburn Test	Fuel Weight		Delta Weight	Stack Draft	Coal Bed:					TEMPERATURES (oF)				Actual:		
	Weight	Volume			Top	Bottom	Back	Left	Right	Flue	Catalyst	Coal Bed:	Flue			
0	6.7			-0.091	79	318	395	436	446							
10	5.7		1.0	-0.078	79	323	225	454	466							
20	4.7		1.0	-0.073	77	324	211	446	458							
30	4.1		0.6	-0.063	73	315	204	432	446							
40	3.8		0.3	-0.055	73	311	199	417	432							
50	3.6		0.2	-0.050	72	308	196	402	413							
60	3.4		0.2	-0.048	72	305	186	391	397							
63.70	3.4			-0.048	72	305	185	391	396							
80																
90																
00																
10																
20																
30																
40																
50																
60																
70																
80																
90																
AVG																

Technician signature: K. Morgan Date: 9-30-02

Model: F2400-M-FS
Fireplace Products International Ltd.
6988 Venture Street
Delta, BC
V4G 1H4

Run 2

Wood Heater Test Data - EPA Method 5G

H. J. Morgan 10-14-02

Run: 2
 Manufacturer: FPI Regency
 Model: F2400M-NS FS AK
 Tracking No.: 408
 Project No.: 219-S-02-3
 Test Date: 01-Oct-02
 Beginning Clock Time: 13:10
 Recording Interval: 10 min.
 Total Sampling Time: 330 min.

Velocity Traverse Data								
	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8
Initial dP	0.034	0.036	0.038	0.036	0.030	0.038	0.038	0.032
Initial Temp.	88	88	88	87	87	87	87	87

OMNI Equipment Numbers: _____

PM Control Module: 20
 Dilution Tunnel MW(dry): 29.00 lb/lb-mole
 Dilution Tunnel MW(wet): 28.56 lb/lb-mole
 Dilution Tunnel H2O: 4.00 percent
 Dilution Tunnel Static: -0.540" H2O
 Pitot Tube Cp: 0.99
 Meter Box Y Factor: 0.972
 Barometric Pressure: Begin Middle End Average
 30.17 30.17 30.17 30.17 "Hg

Signature/Date: _____
 Tunnel Velocity: 12.76 ft/sec.
 Initial Tunnel Flow: 139.1 scfm
 Average Tunnel Flow: 139.0 scfm
 Tunnel Area: 0.196 ft2
 Post-Test Leak Check: .002@17 cfm@*Hg
 Fuel Moisture (dry basis) 20.1 %
 Total Particulate: 40.9 mg
 Filter Holder No.: _____

Elapsed Time	Particulate Sampling Data									Fuel Weight, lb		Wood Heater Temperature Data, oF										Stack	
	Gas Meter Cubic Feet	Sample Rate, cfm	Orifice dH	Meter oF	Meter Vac. In. Hg.	Dilution Tunnel Temp.	Dilution Tunnel dP	Pro. Rate (10%)	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Filter	Impinger exit	Ambient	Draft In. H2O	
0	473.800	/	0.00	77	0	87	0.035	/	16.1	/	338	284	179	374	384		311.8	240	76	72	72	-0.043	
10	479.180	0.54	0.75	80	3	98	0.041	96	14.5	-1.6	517	279	212	364	360		346.4	346	78	65	73	-0.060	
20	484.600	0.54	0.75	85	3	96	0.035	103	13.4	-1.1	510	272	178	339	314		322.6	355	78	65	73	-0.060	
30	489.940	0.53	0.75	88	3	95	0.035	101	12.1	-1.3	548	262	170	339	300		323.8	339	78	65	72	-0.063	
40	495.350	0.54	0.75	92	3	99	0.035	102	10.6	-1.5	581	252	133	334	297		319.4	390	78	64	73	-0.070	
50	500.770	0.54	0.75	95	3	99	0.035	102	9.1	-1.5	607	241	138	351	305		328.4	377	79	63	72	-0.070	
60	506.215	0.54	0.75	96	3	98	0.035	102	7.9	-1.2	593	237	140	365	311		329.2	364	79	63	72	-0.068	
70	511.760	0.55	0.75	98	3	97	0.035	103	6.9	-1	548	234	144	370	324		324.0	342	79	63	72	-0.065	
80	517.120	0.54	0.75	99	3	95	0.035	99	6.1	-0.8	518	232	147	364	336		319.4	324	79	63	74	-0.063	
90	522.650	0.55	0.75	100	3	94	0.035	102	5.4	-0.7	462	230	152	357	342		308.6	291	79	63	74	-0.058	
100	528.060	0.54	0.75	101	3	93	0.035	100	4.9	-0.5	424	230	155	352	341		300.4	273	79	63	74	-0.053	
110	533.540	0.55	0.75	101	3	92	0.035	101	4.4	-0.5	403	229	156	349	340		295.4	264	79	63	73	-0.051	
120	539.025	0.55	0.75	102	3	92	0.035	101	3.9	-0.5	394	227	158	346	340		293.0	258	79	63	73	-0.050	
130	544.510	0.55	0.75	102	3	92	0.035	101	3.5	-0.4	388	229	157	342	343		291.8	254	79	63	73	-0.048	
140	550.010	0.55	0.75	102	3	91	0.035	101	3.2	-0.3	368	230	156	337	346		287.4	238	79	63	73	-0.045	
150	555.500	0.55	0.75	102	3	91	0.035	101	2.9	-0.3	337	232	155	334	345		280.6	219	79	63	73	-0.043	
160	560.990	0.55	0.75	103	3	90	0.035	101	2.7	-0.2	311	235	156	330	341		274.6	205	79	63	73	-0.040	
170	566.495	0.55	0.75	103	3	90	0.035	101	2.5	-0.2	301	237	159	327	340		272.8	198	79	63	74	-0.038	
180	572.000	0.55	0.75	103	3	90	0.035	101	2.3	-0.2	294	241	165	326	340		273.2	194	79	63	74	-0.038	
190	577.500	0.55	0.75	103	3	90	0.035	101	2.1	-0.2	291	242	166	326	339		272.8	191	79	63	75	-0.038	
200	583.000	0.55	0.75	104	3	90	0.035	101	1.9	-0.2	287	244	169	327	339		273.2	189	80	63	75	-0.038	
210	588.500	0.55	0.75	104	3	90	0.035	101	1.7	-0.2	284	244	168	326	337		271.8	186	80	63	76	-0.035	
220	593.970	0.55	0.75	104	3	90	0.035	100	1.5	-0.2	278	245	165	321	336		269.0	183	80	63	76	-0.035	
230	599.450	0.55	0.75	105	3	90	0.035	100	1.4	-0.1	271	245	158	314	333		264.2	180	80	64	75	-0.035	
240	604.960	0.55	0.75	105	3	90	0.035	101	1.2	-0.2	264	245	158	307	328		260.4	176	81	64	76	-0.035	
250	610.465	0.55	0.75	106	3	90	0.035	100	1.1	-0.1	259	245	157	303	324		257.6	173	81	64	77	-0.033	
260	615.910	0.54	0.75	106	3	90	0.035	99	0.9	-0.2	252	245	158	298	321		254.8	170	82	64	78	-0.033	
270	621.470	0.56	0.75	107	3	90	0.035	101	0.8	-0.1	247	244	160	295	318		252.8	168	82	64	78	-0.033	
280	626.975	0.55	0.75	108	3	90	0.035	100	0.6	-0.2	243	242	160	292	315		250.4	166	82	65	78	-0.033	
290	632.480	0.55	0.75	108	3	90	0.035	100	0.5	-0.1	239	242	160	287	313		248.2	163	82	64	78	-0.033	
300	637.990	0.55	0.75	108	3	90	0.035	100	0.4	-0.1	235	241	160	282	314		246.4	162	82	65	77	-0.031	
310	643.500	0.55	0.75	109	3	89	0.035	100	0.2	-0.2	233	241	158	277	314		244.6	162	82	65	78	-0.031	
320	649.015	0.55	0.75	109	3	89	0.035	100	0.1	-0.1	232	242	155	275	314		243.6	161	82	64	77	-0.031	
330	654.530	0.55	0.75	109	3	88	0.035	100	0.0	-0.1	229	242	152	272	313		241.6	159	82	64	77	-0.031	
Avg/Total	180.730	0.55	0.73	100.71	/	91.92	0.035	100.67	/	/	/	/	/	/	/	/	70	/	79.74	63.88	/	-0.045	

STOVE TEMPERATURE TEST DATA - METHOD 5G

Client/Model: FPI Regency / F 2400M - 445-#PS Project #: 219-5-02-3 Tracking #: 408

Date: 10-1-02 Test Crew: K. Woregan Run #: 2

OMNI Equipment ID #: _____

Preburn Test Time	Fuel Weight		Delta Weight	Stack Draft	Coal Bed Data:					TEMPERATURES (oF)				Actual:	
	Weight	Weight			Ambient	Top	Bottom	Back	Left	Right	Flue	Coal Bed			
0	6.7			-0.93	77	916	352	377	464	475	681	3.4	Net Wgt	Catalyst	
10	5.4	1.3		-1.075	77	715	342	234	467	480	442				
20	4.5	0.9		-1.065	75	595	327	201	440	456	360				
30	3.9	0.6		-1.063	74	537	317	192	417	438	323				
40	3.5	0.4		-1.055	73	462	306	184	397	421	281				
50															
60															
70															
80															
90															
00	6.9			-1.093	75	928	293	330	423	422	682				
10	5.8	1.1		-1.075	75	705	302	221	448	450	429				
20	5.0	0.8		-1.068	74	592	302	201	437	447	358				
30	4.3	0.7		-1.058	73	515	276	195	415	430	304				
40	4.0	0.3		-1.050	73	430	291	187	399	416	264				
50	3.6	0.4		-1.048	72	380	288	182	386	402	241				
60	3.4	0.2		-1.043	72	348	283	179	375	387	220				
70															
80															
90															
AVG															

Technician signature: K. Woregan Date: 10-1-02

Model: F2400-M-FS
Fireplace Products International Ltd.
6988 Venture Street
Delta, BC
V4G 1H4

Run 3

Wood Heater Test Data - EPA Method 5G

K. J. Morgan 10-14-02

Run: 3
 Manufacturer: FPI Regency
 Model: F2400M-NS-4 FS *ak*
 Tracking No.: 408
 Project No.: 219-S-02-3
 Test Date: 02-Oct-02
 Beginning Clock Time: 13:25
 Recording Interval: 10 min.
 Total Sampling Time: 350 min.

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8
Initial dP	0.036	0.042	0.040	0.036	0.034	0.040	0.036	0.034
Initial Temp. °F	91	91	91	91	91	91	91	91

OMNI Equipment Numbers: _____

PM Control Module: 20
 Dilution Tunnel MW(dry): 29.06 lb/lb-mole
 Dilution Tunnel MW(wet): 28.56 lb/lb-mole
 Dilution Tunnel H2O: 4.00 percent
 Dilution Tunnel Static: -0.520 *H2O
 Pitot Tube Cp: 0.99
 Meter Box Y Factor: 0.97
 Barometric Pressure: Begin Middle End Average
 30.12 30.1 30.07 30.10 *Hg

Signature/Date: _____
 Tunnel Velocity: 13.06 ft/sec.
 Initial Tunnel Flow: 142.3 scfm
 Average Tunnel Flow: 142.7 scfm
 Tunnel Area: 0.196 ft²
 Post-Test Leak Check: .005 @ 18 cfm @ *Hg
 Fuel Moisture (dry basis): 20.4 %
 Total Particulate: 65.2 mg
 Filter Holder No.: _____

Elapsed Time	Particulate Sampling Data									Fuel Weight, lb		Wood Heater Temperature Data, °F										Stack Draft In. H2O
	Gas Meter Cubic Feet	Sample Rate, cfm	Orifice dH	Meter °F	Meter Vac. In. Hg.	Dilution Tunnel Temp.	Dilution Tunnel dP	Pro. Rate (10%)	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Filter	Impinger exit	Ambient	
0	654.820	/	0.00	78	0	91	0.037	/	15.4	/	381	288	177	377	388		322.2	237	81	76	74	-0.048
10	660.180	0.54	0.75	81	3	100	0.037	103	14.5	-0.9	464	291	292	368	369		356.8	309	79	65	73	-0.058
20	665.525	0.53	0.75	85	3	96	0.037	101	13.6	-0.9	402	290	278	344	339		330.6	292	79	64	72	-0.060
30	670.900	0.54	0.75	91	3	97	0.037	101	12.4	-1.2	462	273	252	333	303		324.6	312	80	64	72	-0.060
40	676.335	0.54	0.75	94	3	100	0.037	102	11.1	-1.3	546	261	215	335	297		330.8	359	80	65	73	-0.068
50	681.765	0.54	0.75	97	3	101	0.037	101	9.8	-1.3	612	249	181	350	305		339.4	373	81	66	77	-0.068
60	687.200	0.54	0.75	99	3	99	0.037	101	8.7	-1.1	575	240	155	363	312		329.0	347	82	66	76	-0.068
70	692.660	0.55	0.75	101	3	99	0.037	101	7.6	-1.1	566	233	152	368	317		327.2	342	82	66	78	-0.065
80	698.125	0.55	0.75	102	3	97	0.037	101	6.8	-0.8	531	227	150	368	324		320.0	322	82	65	77	-0.063
90	703.600	0.55	0.75	104	3	96	0.037	100	6.0	-0.8	480	223	157	361	332		310.6	294	83	67	79	-0.058
100	709.090	0.55	0.75	105	3	96	0.037	100	5.4	-0.6	460	222	160	357	335		306.8	283	83	67	79	-0.053
110	714.575	0.55	0.75	106	3	94	0.037	100	4.8	-0.6	435	221	162	352	338		301.6	269	83	67	79	-0.053
120	720.065	0.55	0.75	106	3	94	0.037	100	4.3	-0.5	437	221	163	349	341		302.2	268	83	67	79	-0.053
130	725.560	0.55	0.75	107	3	93	0.037	100	3.8	-0.5	419	222	161	349	346		299.4	259	83	66	76	-0.053
140	731.065	0.55	0.75	106	3	92	0.037	100	3.4	-0.4	395	224	160	346	351		295.2	243	82	66	76	-0.048
150	736.615	0.55	0.75	106	3	91	0.037	101	3.2	-0.2	361	226	160	342	348		287.4	226	82	65	74	-0.045
160	742.170	0.56	0.75	106	3	90	0.037	101	3.0	-0.2	330	228	161	336	338		278.6	210	81	65	75	-0.043
170	747.725	0.56	0.75	106	3	89	0.037	101	2.8	-0.2	305	230	160	331	331		271.4	197	81	64	75	-0.040
180	753.270	0.55	0.75	105	3	88	0.037	101	2.6	-0.2	286	232	158	326	326		265.6	186	80	64	73	-0.038
190	758.820	0.56	0.75	105	3	87	0.037	101	2.5	-0.1	275	235	158	323	324		263.0	182	80	64	73	-0.038
200	764.350	0.55	0.75	104	3	86	0.037	100	2.3	-0.2	267	237	157	319	321		260.2	177	79	63	74	-0.038
210	769.925	0.56	0.75	104	3	85	0.037	101	2.1	-0.2	262	239	157	315	320		258.6	175	78	63	74	-0.035
220	775.455	0.55	0.75	104	3	85	0.037	100	1.9	-0.2	263	242	156	310	322		258.6	175	78	63	74	-0.035
230	781.025	0.56	0.75	104	3	85	0.037	101	1.8	-0.1	264	244	154	308	326		259.2	175	78	64	76	-0.035
240	786.558	0.55	0.75	104	3	84	0.037	100	1.6	-0.2	263	247	155	305	329		259.8	172	78	64	76	-0.035
250	792.135	0.56	0.75	104	3	83	0.037	101	1.5	-0.1	258	250	152	301	329		258.0	170	77	64	75	-0.035
260	797.685	0.55	0.75	104	3	83	0.037	100	1.3	-0.2	256	252	152	299	329		257.6	170	77	64	75	-0.035
270	803.200	0.55	0.75	104	3	83	0.037	100	1.2	-0.1	252	253	150	299	328		256.4	169	77	63	73	-0.033
280	808.775	0.56	0.75	104	3	82	0.037	101	1.0	-0.2	249	254	151	298	327		255.8	168	76	63	73	-0.033
290	814.330	0.56	0.75	103	3	82	0.037	101	0.9	-0.1	247	254	150	294	325		254.0	166	76	62	73	-0.033
300	819.885	0.56	0.75	103	3	81	0.037	101	0.7	-0.2	247	254	151	292	325		253.8	166	76	63	73	-0.033
310	825.425	0.55	0.75	103	3	81	0.037	100	0.6	-0.1	245	254	149	289	328		253.0	166	75	62	73	-0.033
320	830.970	0.55	0.75	103	3	81	0.037	100	0.4	-0.2	240	254	148	286	330		251.6	163	75	62	73	-0.033
330	836.520	0.55	0.75	103	3	80	0.037	100	0.3	-0.1	236	254	146	281	330		249.4	162	75	62	73	-0.033
340	842.065	0.55	0.75	102	3	80	0.037	100	0.1	-0.2	234	256	145	277	332		248.8	161	74	62	72	-0.031
350	847.620	0.56	0.75	102	3	79	0.037	101	0.0	-0.1	232	256	145	273	332		247.6	159	74	62	72	-0.031
Avg/Total	192.800	0.55	0.73	101.25	/	89.17	0.037	100.64	/	/	/	/	/	/	/	/	75	/	79.17	64.58	/	-0.045

Model: F2400-M-FS
Fireplace Products International Ltd.
6988 Venture Street
Delta, BC
V4G 1H4

Run 4

Wood Heater Test Data - EPA Method 5G

K. J. Morgan 10-14-02

Run: 4
 Manufacturer: FPI Regency
 Model: F2100M-2S-A FS 4K
 Tracking No.: 408
 Project No.: 219-S-02-3
 Test Date: 04-Oct-02
 Beginning Clock Time: 10:32
 Recording Interval: 10 min.
 Total Sampling Time: 180 min.

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8
Initial dP	0.036	0.044	0.046	0.040	0.036	0.046	0.046	0.040
Initial Temp.	116	116	116	116	115	115	115	115

OMNI Equipment Numbers: _____

PM Control Module: 20
 Dilution Tunnel MW(dry): 29.00 lb/lb-mole
 Dilution Tunnel MW(wet): 28.56 lb/lb-mole
 Dilution Tunnel H2O: 4.00 percent
 Dilution Tunnel Static: -0.540 *H2O
 Pitot Tube Cp: 0.99
 Meter Box Y Factor: 0.972
 Barometric Pressure: 30.06 30.06 30.05 30.06 *Hg

Signature/Date: _____
 Tunnel Velocity: 14.15 ft/sec.
 Initial Tunnel Flow: 147.3 scfm
 Average Tunnel Flow: 147.7 scfm
 Tunnel Area: 0.196 ft²
 Post-Test Leak Check: .003@18 cfm/*Hg
 Fuel Moisture (dry basis): 20.5 %
 Total Particulate: 9.8 mg
 Filter Holder No.: _____

Elapsed Time	Particulate Sampling Data									Fuel Weight, lb		Wood Heater Temperature Data, oF											Stack	
	Gas Meter Cubic Feet	Sample Rate, cfm	Orifice dH	Meter oF	Meter Vac. In. Hg.	Dilution Tunnel Temp.	Dilution Tunnel dP	Pro. Rate (10%)	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Filter	Impinger exit	Ambient	Draft In. H2O		
0	847.900		0.00	78	0	116	0.042		16.4		552	339	199	445	466		400.2	430	75	75	75	-0.073		
10	853.305	0.54	0.75	81	3	136	0.042	104	14.4	-2	757	324	177	412	429		419.8	604	84	64	75	-0.093		
20	858.695	0.54	0.75	85	3	138	0.042	104	12.0	-2.4	799	309	162	397	402		413.8	625	85	64	76	-0.093		
30	864.100	0.54	0.75	91	3	141	0.042	103	9.4	-2.6	852	290	161	400	403		421.2	648	86	64	77	-0.095		
40	869.470	0.54	0.75	94	3	136	0.042	101	7.3	-2.1	810	281	165	416	414		417.2	601	85	64	78	-0.090		
50	874.900	0.54	0.75	97	3	128	0.042	101	5.9	-1.4	718	276	170	434	426		404.8	546	86	65	78	-0.088		
60	880.400	0.55	0.75	100	3	121	0.042	101	4.7	-1.2	649	275	176	437	435		394.4	504	86	65	78	-0.083		
70	885.850	0.55	0.75	102	3	116	0.042	100	3.9	-0.8	603	276	181	431	438		385.8	466	86	65	78	-0.078		
80	891.380	0.55	0.75	103	3	113	0.042	101	3.2	-0.7	553	277	181	421	434		373.2	436	85	65	77	-0.075		
90	896.960	0.56	0.75	103	3	111	0.042	101	2.6	-0.6	527	279	181	415	429		366.2	429	84	65	76	-0.075		
100	902.580	0.56	0.75	104	3	110	0.042	102	2.0	-0.6	502	281	190	413	428		362.8	413	83	65	76	-0.072		
110	908.110	0.55	0.75	104	3	107	0.042	100	1.6	-0.4	462	283	193	410	427		355.0	388	83	64	76	-0.069		
120	913.520	0.54	0.75	104	3	104	0.042	98	1.3	-0.3	424	285	193	404	425		346.2	359	82	64	76	-0.065		
130	919.100	0.56	0.75	105	3	101	0.042	100	1.0	-0.3	400	288	194	397	424		340.6	338	82	64	76	-0.063		
140	924.580	0.55	0.75	105	3	100	0.042	98	0.7	-0.3	380	289	193	390	424		335.2	325	82	63	75	-0.060		
150	930.050	0.55	0.75	105	3	98	0.042	98	0.5	-0.2	361	293	189	382	431		331.2	314	81	63	75	-0.060		
160	935.650	0.56	0.75	105	3	96	0.042	100	0.3	-0.2	349	297	188	371	435		328.0	303	81	63	75	-0.058		
170	941.250	0.56	0.75	105	3	95	0.042	100	0.1	-0.2	334	300	181	363	425		320.6	295	80	63	74	-0.058		
180	946.725	0.55	0.75	105	3	93	0.042	98	0.0	-0.1	318	297	176	353	405		309.8	284	78	61	72	-0.055		
Avg/Total	98.825	0.55	0.71	98.74		113.66	0.042	100.55									90		82.84	64.53		-0.074		

Model: F2400-M-FS
Fireplace Products International Ltd.
6988 Venture Street
Delta, BC
V4G 1H4

Run 5

Wood Heater Test Data - EPA Method 5G

Signature/Date: *K. Morgan 10-14-02*

Run: 5
 Manufacturer: FPI Regency
 Model: F2400M-FS *AM*
 Tracking No.: 408
 Project No.: 219-S-02-3
 Test Date: 04-Oct-02
 Beginning Clock Time: 15.06
 Recording Interval: 10 min.
 Total Sampling Time: 120 min.

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8
Initial dP	0.034	0.040	0.041	0.038	0.032	0.042	0.042	0.036
Initial Temp.	122	122	121	121	121	121	121	121

OMNI Equipment Numbers: _____

PM Control Module: 20
 Dilution Tunnel MW(dry): 29.00 lb/lb-mole
 Dilution Tunnel MW(wet): 28.56 lb/lb-mole
 Dilution Tunnel H₂O: 4.00 percent
 Dilution Tunnel Static: -0.060 "H₂O
 Pitot Tube Cp: 0.99
 Meter Box Y Factor: 0.972
 Barometric Pressure:

Begin	Middle	End	Average
30.05	30.04	30.04	30.04

Tunnel Velocity: 13.77 ft/sec.
 Initial Tunnel Flow: 140.1 scfm
 Average Tunnel Flow: 138.5 scfm
 Tunnel Area: 0.196 ft²
 Post-Test Leak Check: .003 @ 19 cfm@"Hg
 Fuel Moisture (dry basis): 21.3 %
 Total Particulate: 11.9 mg
 Filter Holder No.: _____

Elapsed Time	Particulate Sampling Data									Fuel Weight, lb		Wood Heater Temperature Data, °F										Stack	
	Gas Meter Cubic Feet	Sample Rate, cfm	Orifice dH	Meter °F	Meter Vac. In. Hg.	Dilution Tunnel Temp.	Dilution Tunnel dP	Pro. Rate (10%)	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Filter	Impinger exit	Ambient	Draft In. H ₂ O	
0	947.200	/	0.00	95	0	121	0.038	/	16.3	/	479	304	194	443	463		375.8	419	76	76	76	-0.075	
10	952.685	0.55	0.70	95	3	153	0.038	103	13.8	-2.5	702	294	167	390	404		391.4	658	83	64	74	-0.100	
20	958.130	0.54	0.70	97	3	165	0.038	103	10.6	-3.2	853	280	155	378	387		410.6	724	88	63	78	-0.100	
30	963.590	0.55	0.70	100	3	165	0.038	103	7.7	-2.9	889	272	157	397	413		425.6	730	89	63	75	-0.100	
40	969.150	0.56	0.70	102	3	155	0.038	103	5.4	-2.3	823	271	171	427	442		426.8	670	90	62	77	-0.095	
50	974.630	0.55	0.70	103	3	148	0.038	101	3.7	-1.7	757	274	187	448	462		425.6	626	91	63	78	-0.093	
60	980.060	0.54	0.70	104	3	142	0.038	100	2.6	-1.1	700	278	196	455	470		419.8	588	90	62	80	-0.090	
70	985.560	0.55	0.70	105	3	133	0.038	100	1.8	-0.8	616	283	203	454	473		405.8	536	89	62	77	-0.085	
80	991.080	0.55	0.70	106	3	125	0.038	99	1.3	-0.5	545	287	204	445	469		390.0	476	87	62	77	-0.080	
90	996.610	0.55	0.70	106	3	119	0.038	99	0.9	-0.4	480	291	196	431	460		371.6	435	86	62	75	-0.075	
100	1002.140	0.55	0.70	106	3	116	0.038	99	0.5	-0.4	450	292	192	415	448		359.4	416	85	62	76	-0.073	
110	1007.680	0.55	0.70	106	3	113	0.038	99	0.2	-0.3	421	292	189	399	439		348.0	394	84	61	75	-0.070	
120	1013.250	0.56	0.70	106	3	111	0.038	99	0.0	-0.2	392	291	204	380	426		338.6	374	82	64	74	-0.068	
Avg/Total	66.050	0.55	0.65	102.38	/	135.87	0.038	100.75	/	/	/	/	/	/	/	/	37	/	86.15	63.54	/	-0.085	

STOVE TEMPERATURE TEST DATA - METHOD 5G

Client/Model: FPI Regency / F2400 M-FS Project #: 219-S-02-3 Tracking #: 408
 Date: 10-04-02 Test Crew: K. Morgan Run #: 5

OMNI Equipment ID #: _____

Preburn Test	Coal Bed:					Range: 3.3 - 4.0					Actual:	
	Fuel Weight	Delta Weight	Stack Draft	Ambient	Data:	Top	Bottom	Back	Left	Right	Flue	Coal Bed:
Time	TEMPERATURES (oF)											
0	18.0		-0.050	72		255	287	149	315	348	259	3.7
10	15.0	3.0	-0.075	73		624	281	150	304	332	639	
20	10.8	4.2	-0.101	74		870	273	169	326	349	777	
30	7.1	3.7	-0.100	75		954	273	210	398	415	762	
40	4.7	2.4	-0.095	76		910	284	235	455	472	703	
50	4.1	0.6	-0.083	75		627	302	226	478	503	516	
60	3.7	0.4	-0.075	76		482	305	197	446	466	423	
70												
80												
90												
00												
10												
20												
30												
40												
50												
60												
70												
80												
90												
AVG												

Technician signature: K. Morgan Date: 10-04-02

Model: F2400-M-FS
Fireplace Products International Ltd.
6988 Venture Street
Delta, BC
V4G 1H4

Run 6

Wood Heater Test Data - EPA Method 5G

Signature/Date: *K.J. Morgan 10-14-02*

Run: 6
 Manufacturer: FPI Regency
 Model: F2400M-PS
 Tracking No.: 408
 Project No.: 219-S-01-3
 Test Date: 05-Oct-02
 Beginning Clock Time: 09:50
 Recording Interval: 10 min.
 Total Sampling Time: 200 min.

Velocity Traverse Data								
	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8
Initial dP	0.032	0.042	0.044	0.042	0.038	0.044	0.044	0.038
Initial Temp.	109	109	109	109	109	108	108	108

OMNI Equipment Numbers: _____

PM Control Module: 20
 Dilution Tunnel MW(dry): 29.00 lb/lb-mole
 Dilution Tunnel MW(wet): 28.56 lb/lb-mole
 Dilution Tunnel H2O: 4.00 percent
 Dilution Tunnel Static: 4.000 "H2O
 Pitot Tube Cp: 0.99
 Meter Box Y Factor: 0.972
 Barometric Pressure: Begin Middle End Average
 30.13 30.14 30.14 30.14 "Hg

Tunnel Velocity: 13.73 ft/sec.
 Initial Tunnel Flow: 146.9 scfm
 Average Tunnel Flow: 147.6 scfm
 Tunnel Area: 0.196 ft²
 Post-Test Leak Check: .004 @ 18 cfm*"Hg
 Fuel Moisture (dry basis): 19.7 %
 Total Particulate: 13.6 mg
 Filter Holder No.: _____

Elapsed Time	Particulate Sampling Data									Fuel Weight, lb		Wood Heater Temperature Data, oF											Stack
	Gas Meter Cubic Feet	Sample Rate, cfm	Orifice dH	Meter oF	Meter Vac. In. Hg.	Dilution Tunnel Temp.	Dilution Tunnel dP	Pro. Rate (10%)	Scale Reading	Weight Change	Firebox Top	Firebox Bottom	Firebox Back	Firebox Left	Firebox Right	Firebox Interior	Average Surface	Stack	Filter	Impinger exit	Ambient	Draft In. H2O	
0	13.480	/	0.00	78	0	109	0.041	/	16.1	/	467	305	189	424	444		365.8	356	77	73	74	-0.065	
10	18.855	0.54	0.75	80	3	116	0.041	103	14.6	-1.5	553	296	166	390	402		361.4	488	81	63	74	-0.085	
20	24.250	0.54	0.75	84	3	122	0.041	103	12.7	-1.9	682	288	150	369	375		372.8	547	82	61	74	-0.088	
30	29.660	0.54	0.75	90	3	123	0.041	102	10.5	-2.2	739	273	147	371	372		380.4	563	83	61	74	-0.088	
40	35.085	0.54	0.75	95	3	123	0.041	102	8.5	-2	737	263	151	391	385		385.4	552	84	61	75	-0.088	
50	40.545	0.55	0.75	97	3	119	0.041	102	6.9	-1.6	695	258	155	407	393		381.6	514	84	61	75	-0.085	
60	46.050	0.55	0.75	102	3	113	0.041	101	5.8	-1.1	605	256	163	421	407		370.4	464	84	62	76	-0.080	
70	51.480	0.54	0.75	102	3	111	0.041	100	4.7	-1.1	588	256	167	422	410		368.6	451	84	62	76	-0.078	
80	57.000	0.55	0.75	103	3	108	0.041	101	3.9	-0.8	561	257	172	417	414		364.2	428	84	62	76	-0.075	
90	62.520	0.55	0.75	104	3	106	0.041	100	3.3	-0.6	525	260	174	406	415		356.0	404	83	62	76	-0.070	
100	68.050	0.55	0.75	104	3	103	0.041	100	2.7	-0.6	486	262	172	394	413		345.4	379	83	62	76	-0.068	
110	73.585	0.55	0.75	105	3	100	0.041	100	2.3	-0.4	458	265	172	381	410		337.2	354	83	62	75	-0.065	
120	79.125	0.55	0.75	106	3	98	0.041	100	2.0	-0.3	423	267	173	378	408		329.8	334	82	62	75	-0.063	
130	84.680	0.56	0.75	106	3	98	0.041	100	1.7	-0.3	399	270	178	371	405		324.6	321	81	62	75	-0.060	
140	90.240	0.56	0.75	106	3	96	0.041	100	1.4	-0.3	386	274	184	369	402		323.0	313	81	62	75	-0.060	
150	95.810	0.56	0.75	106	3	95	0.041	100	1.1	-0.3	374	276	183	367	398		319.6	305	81	62	75	-0.058	
160	101.370	0.56	0.75	106	3	94	0.041	100	0.9	-0.2	358	275	176	361	391		312.2	295	80	62	74	-0.058	
170	106.940	0.56	0.75	106	3	92	0.041	100	0.7	-0.2	345	277	172	359	387		308.0	292	79	61	73	-0.055	
180	112.510	0.56	0.75	106	3	92	0.041	100	0.5	-0.2	342	277	176	359	386		308.0	289	79	61	74	-0.055	
190	118.065	0.56	0.75	105	3	92	0.041	100	0.2	-0.3	340	278	171	359	385		306.6	286	79	61	73	-0.055	
200	123.635	0.56	0.75	106	3	92	0.041	100	0.0	-0.2	336	279	171	357	384		305.4	285	79	61	73	-0.053	
Avg/Total	110.155	0.55	0.71	99.86	/	104.84	0.041	100.55	/	/	/	/	/	/	/	/	60	/	81.57	62.19	/	-0.069	

