



Food Service Technology Center Appliance Test Summary Report

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Manufacturer	Garland
Model	Xpress XG36S
Appliance	3-foot double-sided gas griddle
Griddle Plate	36 x 24 inch

Report Number	50130946
Report Date	January, 2010
Tested By	K.Sham

Purpose of Testing

This testing determined the energy input rate, preheat time and energy, idle energy rate, heavy-load cooking energy efficiency, and light-load cooking efficiency of the double-sided griddle by applying the ASTM F1605-95 (2001) Standard Test Method.

Energy Input Rate

Rated Energy Input Rates	12.99 kW	99,000 Btu/h
Measured Energy Input Rates	12.41 kW	101,284 Btu/h
Difference (%)	4.5	2.3

Preheat to 350°F

	Platens Up	Platens Down
Duration (min)	9.33	9.58
Gas Energy Consumption (Btu)	15,853	15,838
Electric Energy Consumption (kWh)	6.551	6.756
Preheat Rate (°F/min)	29.5	29.4

Idle at 350°F

	Platens Up	Platens Down
Gas Idle Energy Rate (Btu/h)	10,240	4,681
Electrical Idle Energy Rate (kW)	1.530	0.871
Normalized Idle Energy Rate (Btu/h/ft ²)		1,246

Heavy-Load Cooking Energy Efficiency ^a

Food Product	Hamburgers
Load Size (Count)	24
Cook Time (min)	3.08
Average Recovery Time (min)	2.34
Gas Cooking Energy Rate (Btu/h)	50,760
Electric Cooking Energy Rate (kW)	5.48
Energy to Food (Btu/lb)	483
Energy to Appliance (Btu/lb)	973
Cooking-Energy Efficiency (%)	49.7 ± 1.25
Production Capacity (lb/hr)	71.42 ± 2.89

^a based on a minimum of three test replicates.



Garland

185 East South Street
Freeland, PA 18224-1999
www.garland-group.com

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Heavy-Load Test Data

	Repetition #1	Repetition #2	Repetition #3
Measured Values			
Gas Energy Consumption (Btu)	25,678	25,163	26,118
Electric Energy Consumption (Wh)	2,760	2730	2820
Cook Time (min)	3.08	3.08	3.08
Total Test Time (min)	29.95	303.11	30.91
Weight Loss (%)	35.32	35.55	36.99
Initial Weight (lb)	36.096	36.053	36.115
Final Weight (lb)	23.164	23.236	22.756
Initial Fat Content (%)	17.7	17.7	17.7
Initial Moisture Content (%)	62.3	62.3	62.3
Final Moisture Content (%)	53.5	53.1	53.3
Initial Temperature (°F)	0	0	0
Final Temperature (°F)	165	164	168
Calculated Values			
Initial Weight of Water (lb)	22.485	22.458	22.496
Final Weight of Water (lb)	12.388	12.328	12.138
Weight of Fat (lb)	6.392	6.384	6.395
Weight of Solids (lb)	7.219	7.211	7.223
Sensible to Ice (Btu)	360	359	360
Sensible to Water (Btu)	2,989	2,970	3,059
Sensible to Fat (Btu)	422	419	430
Sensible to Solids (Btu)	239	237	243
Latent – Water Fusion (Btu)	3,238	3,234	3,239
Latent – Fat Fusion (Btu)	278	278	277
Latent – Heat of Vaporization (Btu)	9,794	9,826	10,047
Total Energy to Food (Btu)	17,319	17,323	17,654
Energy To Food (Btu/lb)	480	481	489
Total Energy to Griddle (Btu)	35,095	34,480	35,743
Energy to Griddle (Btu/lb)	972	956	990
Cooking-Energy Efficiency (%)	49.3	50.2	49.4
Gas Cooking Energy Rate (Btu/h)	51,443	50,141	50,698
Electric Cooking Energy Rate (kW)	5.529	5.440	5.474
Production Rate (lb/h)	72.3	71.8	70.1
Average Recovery Time (min)	2.24	2.28	2.49

Light Load Cooking Energy Efficiency ^a

Food Product	Hamburgers
Load Size (Count)	4
Cook Time (min)	2.50
Average Recovery Time (min)	0.68
Gas Cooking Energy Rate (Btu/h)	28,642
Electric Cooking Energy Rate (kW)	2.92
Energy to Food (Btu/lb)	458
Energy to Appliance (Btu/lb)	1,971
Cooking-Energy Efficiency (%)	23.3 ± 0.93
Production Capacity (lb/hr)	19.58 ± 0.1

^a based on a minimum of three test replicates.

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Light Load Test Data

	Repetition #1	Repetition #2	Repetition #3
Measured Values			
Gas Energy Consumption (Btu)	9,102	9,050	8,352
Electric Energy Consumption (Wh)	910	910	880
Cook Time (min)	2.50	2.50	2.50
Total Test Time (min)	18.47	18.69	18.35
Weight Loss (%)	35.32	34.79	33.17
Initial Weight (lb)	6.038	6.042	6.038
Final Weight (lb)	3.804	3.940	4.036
Initial Fat Content (%)	18.1	18.1	18.1
Initial Moisture Content (%)	61.9	61.9	61.9
Final Moisture Content (%)	54.8	54.9	55.9
Initial Temperature (°F)	0	0	0
Final Temperature (°F)	168	162	158
Calculated Values			
Initial Weight of Water (lb)	3.739	3.742	3.739
Final Weight of Water (lb)	2.086	2.161	2.254
Weight of Fat (lb)	1.091	10.92	1.091
Weight of Solids (lb)	1.208	1.208	1.208
Sensible to Ice (Btu)	60	60	60
Sensible to Water (Btu)	508	487	471
Sensible to Fat (Btu)	73	71	69
Sensible to Solids (Btu)	41	39	38
Latent – Water Fusion (Btu)	538	539	538
Latent – Fat Fusion (Btu)	48	49	49
Latent – Heat of Vaporization (Btu)	1,604	1,533	1,440
Total Energy to Food (Btu)	2,872	2,778	2,666
Energy To Food (Btu/lb)	476	460	442
Total Energy to Griddle (Btu)	12,207	12,156	11,355
Energy to Griddle (Btu/lb)	2,022	2,012	1,881
Cooking-Energy Efficiency (%)	23.5	22.9	23.5
Gas Cooking Energy Rate (Btu/h)	29,567	29,052	27,309
Electric Cooking Energy Rate (kW)	2.956	2.921	2.877
Production Rate (lb/h)	19.6	19.4	19.7
Average Recovery Time (min)	.68	.71	.67

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