



Food Service Technology Center Appliance Test Summary Report

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Manufacturer	Garland
Model	Xpress XE36S
Appliance	3-foot Electric double sided griddle
Griddle Plate	36 x 24 inch

Report Number	50130947
Report Date	February, 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 Electric Energy Input Rate (kW)	25.6
Measured Electric Energy Input Rate (kW)	25.6
Difference (%)	0

Preheat to 350°F

	Platens Up	Platens Down
Duration (min)	13.25	13.00
Electric Energy Consumption (kWh)	17,095	16,992
Preheat Rate (°F/min)	20.82	21.77

Idle at 350°F

	Platens Up	Platens Down
Electric Idle Energy Rate (kW)	3.76	1.36
Normalized Idle Energy Rate (W/ft ²)	N/A	227

Heavy-Load Cooking Energy Efficiency ^a

Food Product	Hamburgers
Load Size (Count)	24
Cook Time (min)	3.08
Average Recovery Time (min)	1.81
Gas Cooking Energy Rate (Btu/h)	0
Electric Cooking Energy Rate (kW)	14.4
Energy to Food (Btu/lb)	464
Energy to Appliance (Btu/lb)	635
Cooking-Energy Efficiency (%)	73.5 ± 1.43
Production Capacity (lb/hr)	77.62 ± 7.92

^a based on a minimum of three test replicates.



Garland

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

Manufacturer	Garland
Model	Xpress XE36S
Appliance	3-foot double-sided gas griddle

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Heavy-Load Test Data

	Repetition #1	Repetition #2	Repetition #3
Measured Values			
Gas Energy Consumption (Btu)	0	0	0
Electric Energy Consumption (Wh)	6,620	6,870	6,740
Cook Time (min)	3.08	3.08	3.08
Total Test Time (min)	27.48	27.38	27.25
Weight Loss (%)	35.78	36.99	36.37
Initial Weight (lb)	36.241	36.212	36.237
Final Weight (lb)	23.275	22.818	23.058
Initial Fat Content (%)	19.3	19.3	19.3
Initial Moisture Content (%)	60.7	60.7	60.7
Final Moisture Content (%)	54.1	53.5	64.0
Initial Temperature (°F)	0	0	0
Final Temperature (°F)	165	168	166
Calculated Values			
Initial Weight of Water (lb)	22.01	22.00	22.01
Final Weight of Water (lb)	12.59	12.21	12.45
Weight of Fat (lb)	6.98	6.97	6.98
Weight of Solids (lb)	7.25	7.24	7.25
Sensible to Ice (Btu)	352	352	352
Sensible to Water (Btu)	2,924	2,991	2,957
Sensible to Fat (Btu)	460	469	464
Sensible to Solids (Btu)	239	243	241
Latent – Water Fusion (Btu)	3,170	3,167	3,170
Latent – Fat Fusion (Btu)	326	325	325
Latent – Heat of Vaporization (Btu)	9,141	9,497	9,278
Total Energy to Food (Btu)	16,612	17,044	16,788
Energy To Food (Btu/lb)	458	471	463
Total Energy to Griddle (Btu)	22,588	23,447	23,004
Energy to Griddle (Btu/lb)	623	647	635
Cooking-Energy Efficiency (%)	73.5	72.7	73.0
Gas Cooking Energy Rate (Btu/h)	0	0	0
Electric Cooking Energy Rate (kW)	14.454	14.030	14.840
Production Rate (lb/h)	79.1	74.0	79.8
Average Recovery Time (min)	1.78	2.04	1.60

Light Load Cooking Energy Efficiency ^a

Food Product	Hamburgers
Load Size (Count)	4
Cook Time (min)	2.50
Average Recovery Time (min)	0.73
Gas Cooking Energy Rate (Btu/h)	0
Electric Cooking Energy Rate (kW)	7.27
Energy to Food (Btu/lb)	483
Energy to Appliance (Btu/lb)	1,271
Cooking-Energy Efficiency (%)	38.0 ± 2.69
Production Capacity (lb/hr)	19.5 ± 0.13

^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)	0	0	0
Electric Energy Consumption (Wh)	2,310	2,200	2,210
Cook Time (min)	2.50	2.50	2.50
Total Test Time (min)	18.53	18.47	18.45
Weight Loss (%)	35.25	35.36	35.57
Initial Weight (lb)	6.013	6.007	6.020
Final Weight (lb)	3.894	3.883	3.878
Initial Fat Content (%)	17.4	17.4	17.4
Initial Moisture Content (%)	62.6	62.6	62.6
Final Moisture Content (%)	55.4	54.6	55.2
Initial Temperature (°F)	0	0	0
Final Temperature (°F)	163	164	164
Calculated Values			
Initial Weight of Water (lb)	3.765	3.761	3.769
Final Weight of Water (lb)	2.064	2.058	2.055
Weight of Fat (lb)	1.046	1.045	1.047
Weight of Solids (lb)	1.203	1.201	1.204
Sensible to Ice (Btu)	60	60	60
Sensible to Water (Btu)	495	495	499
Sensible to Fat (Btu)	68	68	69
Sensible to Solids (Btu)	39	39	40
Latent – Water Fusion (Btu)	542	542	543
Latent – Fat Fusion (Btu)	45	45	45
Latent – Heat of Vaporization (Btu)	1,650	1,652	1,662
Total Energy to Food (Btu)	2,900	2,901	2,917
Energy To Food (Btu/lb)	482	483	485
Total Energy to Griddle (Btu)	7,882	7,509	7,543
Energy to Griddle (Btu/lb)	1,311	1,250	1,253
Cooking-Energy Efficiency (%)	36.8	38.7	38.7
Gas Cooking Energy Rate (Btu/h)	0	0	0
Electric Cooking Energy Rate (kW)	7.48	7.15	7.19
Production Rate (lb/h)	19.5	19.5	19.6
Average Recovery Time (min)	0.70	0.69	0.82

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