



Food Service Technology Center Appliance Test Summary Report

The information in this report is based on data generated at the PG&E Food Service Technology Center.
California consumers are not obligated to purchase any full service or other service not funded by the program.
This program is funded by the California utility rate payers under the auspices of the California Public Utilities Commission.

Manufacturer	Garland
Model	Master 200
Appliance	Full-Size Convection Oven - Gas

Report Number	5012.08.52
Test Date	February, 2006
Tested By	L. Wilson

Purpose of Testing

This testing determined the energy input rate, preheat time and energy, idle energy rate, uniformity and heavy-load cooking-energy efficiency of the oven by applying ASTM F1496.

Energy Input Rate

Rated Energy Input Rate (Btu/h)	60,000
Measured Energy Input Rate (Btu/h)	59,560
Difference (%)	0.7
Electric Energy Rate (kW)	0.77

Preheat to 350°F

Duration (min)	12.3
Gas Energy Consumption (Btu)	12,060
Electric Energy Consumption (kWh)	0.16
Preheat Rate (°F/min)	21.9

Idle at 350°F

Idle Energy Rate (Btu/h)	15,600
Electric Energy Rate (kW)	0.77

Heavy-Load Cooking Energy Efficiency ^a

Food Product	Russet Potatoes
Cook Time (min)	50.3
Cooking Energy Rate (Btu/h)	48,800
Electric Energy Rate (kW)	0.70
Energy to Food (Btu/lb)	254
Energy to Appliance (Btu/lb)	586
Cooking-Energy Efficiency (%)	43.4 ± 1.2
Production Capacity (lb/hr)	87.3 ± 1.1

^a based on a minimum of three test replicates.



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Oven Browning Uniformity

Sheet Cakes

Rack #1 (Top)



Rack #2



Rack #3 (Middle)



Rack #4



Rack #5 (Bottom)



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Ice-Load Cooking Uniformity Test Results

Cook Time (min)	51.8
Cooking Energy Rate (Btu/h)	55,450
Average Rack Temperatures (°F):	
Rack #1	165
Rack #2	149
Rack #3	171
Rack #4	155
Rack #5	202
Maximum Temperature Difference	53

Heavy-Load Potato Test Data

	Test #1	Test #2	Test #3
Measured Values			
Number of Potatoes	150	150	150
Cook Time (min)	49.9	50.6	50.5
Gas Energy to Oven (Btu)	40,467	41,203	41,149
Electric Energy to Oven (Btu)	1,942	1,962	1,963
Initial Weight of Potatoes (lb)	72.8875	73.1840	73.5060
Final Weight of Potatoes (lb)	62.6050	62.3275	62.4800
Initial Temperature of Potatoes (°F)	70.3	72.0	71.5
Final Temperature of Potatoes (°F)	205.0	205.0	205.0
Calculated Values			
Sensible Heat (Btu)	8,247	8,176	8,243
Latent - Heat of Vaporization (Btu)	9,974	10,531	10,695
Total Energy to Food (Btu)	18,221	18,707	18,938
Energy to Food (Btu/lb)	250	256	258
Total Energy to Oven (Btu)	42,409	43,165	43,112
Energy per Pound of Food Cooked (Btu/lb)	582	590	587
Cooking-Energy Efficiency (%)	43.0	43.3	43.9
Cooking Energy Rate (Btu/h)	48,657	48,857	48,890
Cooking-Energy Rate (kW)	0.70	0.70	0.70
Production Capacity (lb/h)	87.6	86.8	87.3

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