



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	Blodgett
Model	Mark-V
Appliance	Full-size convection oven - Electric

Report Number	5012.09.08
Test Date	October, 2008
Tested By	A. Spitz

Purpose of Testing

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

Energy Input Rate

Test Voltage (V)	208
Rated Energy Input Rate (kW)	11.0
Measured Energy Input Rate (kW)	10.2
Difference (%)	7.3

Preheat to 340°F

Duration (min)	9.4
Energy Consumption (kWh)	1.6
Preheat Rate (°F/min)	28

Idle at 350°F

Idle Energy Rate (kW)	2.17
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Heavy-Load Cooking Energy Efficiency ^a

Food Product	Russet Potatoes
Oven Temperature Set-point (°F)	350
Cook Time (min)	46.72
Cooking Energy Rate (Btu/h)	n/a
Cooking Energy Rate (kW)	9.2
Energy to Food (Btu/lb)	226
Energy to Appliance (Btu/lb)	339
Cooking-Energy Efficiency (%)	66.8 ± 0.72
Production Capacity (lb/hr)	92.7 ± 6.18

^a based on a minimum of three test replicates.



Blodgett

44 Lakeside Ave.
Burlington, VT. 05401
www.blodgett.com

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Heavy-Load Potato Test Data

	Test #1	Test #2	Test #3
Measured Values			
Test Voltage (V)	208	208	208
Cook Time (min)	45.83	48.25	46.08
Electric Energy to Oven (kWh)	7.05	7.38	7.05
Initial Weight of Potatoes (lb)	72.375	72.305	71.700
Final Weight of Potatoes (lb)	64.085	63.425	63.565
Initial Temperature of Potatoes (°F)	72.0	69.5	70.7
Final Temperature of Potatoes (°F)	204.9	204.9	205.0
Calculated Values			
Sensible Heat (Btu)	8,075	8,225	8,092
Latent - Heat of Vaporization (Btu)	8,041	8,614	7,891
Total Energy to Food (Btu)	16,116	16,839	15,983
Energy to Food (Btu/lb)	223	233	223
Total Energy to Oven (Btu)	24,056	25,182	24,056
Energy per Pound of Food Cooked (Btu/lb)	332	348	336
Cooking-Energy Efficiency (%)	67.0	66.9	66.4
Cooking-Energy Rate (kW)	9.23	9.18	9.18
Production Capacity (lb/h)	94.8	89.9	93.4

Medium-Load Potato Test Data

	Test #1	Test #2	Test #3
Measured Values			
Test Voltage (V)	208	208	208
Cook Time (min)	42.92	42.67	44.25
Electric Energy to Oven (kWh)	5.04	4.89	5.13
Initial Weight of Potatoes (lb)	43.735	43.550	43.410
Final Weight of Potatoes (lb)	38.215	38.220	37.930
Initial Temperature of Potatoes (°F)	70.1	69.8	69.5
Final Temperature of Potatoes (°F)	205.0	204.9	205.0
Calculated Values			
Sensible Heat (Btu)	4,956	4,978	4,949
Latent - Heat of Vaporization (Btu)	5,354	5,170	5,316
Total Energy to Food (Btu)	10,310	10,148	10,265
Energy to Food (Btu/lb)	236	233	237
Total Energy to Oven (Btu)	17,197	16,685	17,504
Energy per Pound of Food Cooked (Btu/lb)	393	383	403
Cooking-Energy Efficiency (%)	60.0	60.8	58.6
Cooking-Energy Rate (kW)	7.05	6.88	6.96
Production Capacity (lb/h)	61.1	61.2	58.9

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Light-Load Potato Test Data

	Test #1	Test #2	Test #3
Measured Values			
Test Voltage (V)	208	208	208
Cook Time (min)	42.08	40.33	41.50
Electric Energy to Oven (kWh)	2.70	2.58	2.67
Initial Weight of Potatoes (lb)	14.395	14.675	14.560
Final Weight of Potatoes (lb)	12.46	12.915	12.675
Initial Temperature of Potatoes (°F)	72.6	75.2	73.2
Final Temperature of Potatoes (°F)	204.9	205.0	204.6
Calculated Values			
Sensible Heat (Btu)	1,601	1,600	1,607
Latent - Heat of Vaporization (Btu)	1,877	1,707	1,829
Total Energy to Food (Btu)	3,478	3,308	3,435
Energy to Food (Btu/lb)	242	225	236
Total Energy to Oven (Btu)	9,213	8,803	9,110
Energy per Pound of Food Cooked (Btu/lb)	640	600	626
Cooking-Energy Efficiency (%)	37.8	37.6	37.7
Cooking-Energy Rate (kW)	3.85	3.84	3.86
Production Capacity (lb/h)	20.5	21.8	21.1

Frozen Macaroni and Cheese Cooking Uniformity Test Data

	Test #1	Test #2	Test #3
Measured Values			
Cook Time (min)	60.92	62.67	63.17
Final Average Temperatures per Rack (°F)			
Rack #1 (Bottom)	201.2	176.4	194.9
Rack #2	160.2	173.7	170.5
Rack #3 (Center)	158.1	161.8	155.3
Rack #4	145.9	155.1	151.0
Rack #5 (Top)	183.6	181.1	180.0

Sheet Cake Uniformity

Food Product	White Cake Mix
Bake Time (min)	27



Food Service Technology Center Appliance Test Summary Report

Top



Lower Center



Upper Center



Bottom



Center



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