



Food Service Technology Center Appliance Test Summary Report

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Manufacturer	TMB Baking
Model	XL2
Appliance	Double rack oven - Gas

Report Number	5012.09.33
Publish Date	October, 2009
Tested By	G. Sorensen

Purpose of Testing

This testing determined the energy input rate, preheat time and energy, idle energy rate and heavy-load cooking-energy efficiency of the oven by applying ASTM F2093-06.

Energy Input Rate

Rated Energy Input Rate (Btu/h)	360,000
Measured Energy Input Rate (Btu/h)	351,695
Difference (%)	2.3

Preheat to 400°F

Duration (min.)	15.8
Energy Consumption (Btu)	88,430
Preheat Rate (°F/min.)	20.2
Fan/Control Energy Rate (kW)	3.2

Idle at 400°F

Idle Energy Rate (Btu/h)	35,890
Electric Energy Rate (kW)	2.60

Heavy-Load Energy Efficiency*

Food Product	Apple Pie
Oven Temperature (°F)	400
Cook Time (min.)	53.5
Baking Energy Rate (Btu/h)	132,260
Fan/Control Energy Rate (kW)	2.5
Energy to Food (Btu/lb)	240
Energy to Oven (Btu/lb)	479
Baking Energy Efficiency (%)	53.3 ± 2.6
Production Capacity (lb/h)	294.4 ± 4.9

* based on a minimum of three test replicates



TMB Baking

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Heavy-Load Pie Test Data

	Test #1	Test #2	Test #3
Measured Values			
Bake Time	53.0	54.0	53.5
Gas Energy Consumption (Btu)	119,863	117,704	116,195
Fan /Control Energy Consumption (Wh)	2,240	2,240	2,280
Initial Temperature of Frozen Pies (°F)	2.4	3.2	2.4
Final Temperature of Baked Pies (°F)	185.9	186.8	182.9
Weight of Sheet Pans (lb)	106.14	107.20	107.20
Initial Weight of Raw Frozen Pies (lb)	261.8	263.2	262.3
Final Weight of Baked Pies (lb)	248.8	249.2	250.4
Initial Moisture Content of the Apple Pies (%)	53.6	53.6	53.6
Calculated Values			
Initial Weight of Water (lb)	140.4	141.1	140.6
Weight Loss During Baking (lb)	13.0	14.0	11.9
Sensible Heat (Btu)	30,265	30,446	29,832
Latent - Heat of Fusion (Btu)	20,211	20,320	20,252
Latent - Heat of Vaporization (Btu)	12,610	13,580	11,592
Total Energy to Food (Btu)	63,086	64,363	61,676
Energy to Food (Btu/lb)	241	244	235
Energy to Pans (Btu)	3,895	3,936	3,870
Total Energy to Oven (Btu)	127,509	125,350	123,976
Energy per Pound of Food Cooked (Btu/lb)	487	476	473
Baking-Energy Rate (Btu/h)	135,694	130,783	130,312
Fan/Control Energy Rate (kW)	2.54	2.49	2.56
Baking-Energy Efficiency (%)	52.5	54.5	52.9
Production Capacity (lb/h)	296.4	292.5	294.2

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