



Food Service Technology Center Appliance Test Summary Report

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Manufacturer	Lincoln
Model	Impinger 1600-000-U-K1827-AQ
Appliance	Pizza Conveyor Oven - Gas

Report Number	501310049
Test Date	February, 2011
Tested By	K. Sham

Purpose of Testing

This testing determined the energy input rate, preheat time and energy, idle energy rate, and heavy/light-load cooking-energy efficiency of the conveyor oven by applying ASTM F 1817-09.

Energy Input Rate

Rated Energy Input Rate (Btu/hr)	110,000
Measured Energy Input Rate (Btu/h)	115,540
Difference (%)	5.00
Electric Control Energy Rate	0.57

Preheat to 465°F

Duration (min)	8.5
Energy Consumption (Btu)	14,751
Preheat Rate (°F/min)	47.21

Idle at 475°F^a

Idle Energy Rate (Btu/hr)	23,402
Electric Idle Energy Rate (kW)	0.35

^a Idle mode automatically switches the fan to low speed until product is loaded.

Heavy Load Cooking Energy Efficiency Test Results^b

Number of 12" Cheese Pizzas	18
Cook Time – Belt Speed (min)	3.17
Test Time (min)	6.16
Cooking Energy Rate (Btu/hr)	71,598
Electric Control Energy Rate (kW)	0.57
Energy to Food (Btu/lb)	131
Energy to Appliance (Btu/lb)	283
Cooking Energy Efficiency (%)	46.4 ± 0.66
Production Capacity (pizzas/hr)	175 ± 4.6

^b Each Load is based on a minimum average of three test replicates.



Lincoln Foodservice Products, Inc.

1111 North Hadley Road
Fort Wayne, Indiana 4680

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Light Load Cooking Energy Efficiency Test Results ^c

Number of 12" Cheese Pizzas	4
Cook Time – Belt Speed (min)	3.17
Test Time (min)	9.43
Cooking Energy Rate (Btu/hr)	41,794
Electric Control Energy Rate (kW)	0.56
Energy to Food (Btu/lb)	135
Energy to Appliance (Btu/lb)	1142
Cooking Energy Efficiency (%)	11.9 ± 0.4
Production Capacity (pizzas/hr)	25

^c Each Load is based on a minimum average of three test replicates.

Heavy-Load Pizza Data

	Run #1	Run #2	Run #3
Measured Values			
Number of Pizzas	18	18	18
Cook Time – Belt speed (min)	3.17	3.17	3.17
Test Time (min)	6.22	6.16	6.09
Gas Energy to Oven (Btu)	7,400	7,298	7,342
Electric Energy to Oven (Btu)	200	195	203
Initial Weight of pizza (lbs)	26.62	26.64	26.82
Final weight of Pizza (lbs)	25.55	25.58	25.80
Temperature of Uncooked Pizza (°F)	40	40	40
Temperature of Cooked Pizza (°F)	198	196	196
Calculated Values			
Sensible Heat (Btu)	2,487	2,462	2,486
Latent – Heat of Vaporization (Btu)	1,033	1,033	993
Total Energy to Food (Btu)	3,520	3,495	3,497
Energy to Food (Btu/lb)	132	131	130
Total Energy to Oven (Btu)	7,600	7,493	7,545
Energy to appliance (Btu/lb)	286	281	281
Cooking Energy Efficiency (%)	46.3	46.6	46.1
Cooking Energy Rate (Btu/hr)	71,382	71,081	72,333
Electric Cooking Energy Rate (kW)	0.57	0.56	0.59
Production Capacity (pizzas/hr)	174	175	177
Production Capacity (lbs/hr)	257	259	264

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Light-Load Pizza Data

	Run #1	Run #2	Run #3
Measured Values			
Number of Pizzas	4	4	4
Cook Time – Belt speed (min)	3.17	3.17	3.17
Test Time (min)	9.33	9.40	9.55
Gas Energy to Oven (Btu)	6,539	6,581	6,576
Electric Energy to Oven (Btu)	300	301	304
Initial Weight of pizza (lbs)	6.11	6.03	5.91
Final weight of Pizza (lbs)	5.85	5.74	5.65
Temperature of Uncooked Pizza (°F)	40	40	40
Temperature of Cooked Pizza (°F)	195	195	197
Calculated Values			
Sensible Heat (Btu)	560	554	550
Latent – Heat of Vaporization (Btu)	252	273	252
Total Energy to Food (Btu)	812	827	803
Energy to Food (Btu/lb)	133	137	136
Total Energy to Oven (Btu)	6,840	6,882	6,881
Energy to appliance (Btu/lb)	1,120	1,142	1,164
Cooking Energy Efficiency (%)	11.9	12.0	11.7
Cooking Energy Rate (Btu/hr)	42,054	42,008	41,318
Electric Cooking Energy Rate (kW)	0.57	0.56	0.56
Production Capacity (pizzas/hr)	26	26	25
Production Capacity (lbs/hr)	39	38	37

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