



# Food Service Technology Center Appliance Test Summary Report

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<b>Manufacturer</b>	Duke
<b>Model</b>	613-E1V
<b>Appliance</b>	Full-size convection oven - Electric

<b>Report Number</b>	5012.08.04
<b>Test Date</b>	October, 2006
<b>Tested By</b>	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 F1496-99.

## Energy Input Rate

Test Voltage (V)	208
Rated Energy Input Rate (kW)	11.0
Measured Energy Input Rate (kW)	10.7
Difference (%)	3.0

## Preheat to 350°F

Duration (min.)	9.8
Energy Consumption (Wh)	1,700
Preheat Rate (°F/min.)	26.5

## Idle at 350°F

Idle Energy Rate (kW)	1.9
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## Heavy-Load Energy Efficiency\*

Food Product	Russet Potatoes
Oven Temperature (°F)	350
Cook Time (min.)	52.6
Cooking Energy Rate (kW)	8.0
Energy to Food (Btu/lb)	231
Energy to Oven (Btu/lb)	324
Cooking Energy Efficiency (%)	71.4 ± 1.9
Production Capacity (lb/h)	84.1 ± 4.6

\* based on a minimum of three test replicates



Duke Manufacturing Company

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### Heavy-Load Potato Test Data

	Test #1	Test #2	Test #3
<b>Measured Values</b>			
Test Voltage (V)	208	208	208
Electric Energy to Oven (kWh)	7.12	6.88	6.96
Cook Time (min)	53.8	52.1	51.9
Initial Weight of Potatoes (lb)	73.495	73.700	73.910
Final Weight of Potatoes (lb)	64.235	64.620	64.895
Initial Temperature of Potatoes (°F)	72.0	73.2	73.3
Final Temperature of Potatoes (°F)	205.0	205.0	205.0
<b>Calculated Values</b>			
Sensible (Btu)	8,211	8,159	8,177
Latent (Btu)	8,982	8,808	8,745
Total Energy to Food (Btu)	17,193	16,967	16,921
<b>Energy to Food (Btu/lb)</b>	<b>234</b>	<b>230</b>	<b>229</b>
Total Energy to Oven (Btu)	24,301	23,481	23,754
<b>Energy per Pound of Food Cooked (Btu/lb)</b>	<b>331</b>	<b>319</b>	<b>321</b>
<b>Cooking-Energy Efficiency (%)</b>	<b>70.8</b>	<b>72.3</b>	<b>71.2</b>
<b>Cooking-Energy Rate (kW)</b>	<b>7.9</b>	<b>7.9</b>	<b>8.0</b>
<b>Production Capacity (lb/h)</b>	<b>82.0</b>	<b>84.9</b>	<b>85.4</b>

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