



# Food Service Technology Center Appliance Test Summary Report

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<b>Manufacturer</b>	American Range
<b>Model</b>	Majestic (MSD-1-GG)
<b>Appliance</b>	Full-size convection oven - Gas

<b>Report Number</b>	5012.09.59
<b>Test Date</b>	August, 2009
<b>Tested By</b>	A.Spitz

## 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.

## Energy Input Rate

Rated Energy Input Rate (Btu/h)	90,000
Measured Energy Input Rate (Btu/h)	92,283
Difference (%)	2.5
Fan/Control Energy Rate (kW)	0.26

## Preheat to 340°F

Duration (min)	9.00
Energy Consumption (Btu)	12,396
Preheat Rate (°F/min)	29.9

## Idle at 350°F

Idle Energy Rate (Btu/h)	14,548
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## Heavy-Load Cooking Energy Efficiency <sup>a</sup>

Food Product	Russet Potatoes
Oven Temperature Set-point (°F)	350
Cook Time (min)	53.58
Cooking Energy Rate (Btu/h)	44,287
Cooking Energy Rate (kW)	0.19
Energy to Food (Btu/lb)	221
Energy to Appliance (Btu/lb)	551
Cooking-Energy Efficiency (%)	40.1 ± 2.7
Production Capacity (lb/hr)	81.6 ± 8.2

<sup>a</sup> based on a minimum of three test replicates.



## American Range

13592 Desmond St.  
Pacoima, CA. 91331  
[www.americanrange.com](http://www.americanrange.com)

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## Heavy-Load Potato Test Data

	Test #1	Test #2	Test #3
<b>Measured Values</b>			
<b>Cook Time (min)</b>	<b>55.58</b>	<b>53.83</b>	<b>51.33</b>
<b>Electric Energy to Oven (kWh)</b>	<b>0.17</b>	<b>0.17</b>	<b>0.16</b>
Initial Weight of Potatoes (lb)	72.90	72.54	72.86
Final Weight of Potatoes (lb)	64.26	64.23	65.41
Initial Temperature of Potatoes (°F)	71.3	70.5	71.5
Final Temperature of Potatoes (°F)	205.0	205.0	204.9
<b>Calculated Values</b>			
Sensible Heat (Btu)	8,186	8,193	8,167
Latent - Heat of Vaporization (Btu)	8,381	8,056	7,227
Total Energy to Food (Btu)	16,567	16,249	15,393
<b>Energy to Food (Btu/lb)</b>	<b>227</b>	<b>224</b>	<b>211</b>
Total Energy to Oven (Btu)	40,367	40,321	39,568
<b>Energy per Pound of Food Cooked (Btu/lb)</b>	<b>554</b>	<b>556</b>	<b>543</b>
<b>Cooking-Energy Efficiency (%)</b>	<b>41.0</b>	<b>40.3</b>	<b>38.9</b>
<b>Electric-Only Cooking-Energy Rate (kW)</b>	<b>0.19</b>	<b>0.19</b>	<b>0.19</b>
<b>Gas-Only Cooking Energy Rate (Btu/h)</b>	<b>42,944</b>	<b>44,305</b>	<b>45,611</b>
<b>Production Capacity (lb/h)</b>	<b>78.7</b>	<b>80.9</b>	<b>85.2</b>

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