



# Food Service Technology Center Appliance Test Summary Report

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<b>Manufacturer</b>	Alto Shaam
<b>Model</b>	ASC-4G
<b>Appliance</b>	Full-size convection oven - Gas

<b>Report Number</b>	5012.08.01
<b>Test Date</b>	March, 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

Rated Energy Input Rate (Btu/h)	50,000
Measured Energy Input Rate (Btu/h)	51,800
Difference (%)	3.6
Electric Energy Rate (kW)	0.87

## Preheat to 350°F

Duration (min.)	10.0
Energy Consumption (Btu)	8,633
Preheat Rate (°F/min.)	27.1
Electric Energy Rate (kW)	0.87

## Idle at 350°F

Idle Energy Rate (Btu/h)	21,013
Electric Energy Rate (kW)	0.80

## Heavy-Load Energy Efficiency\*

Food Product	Russet Potatoes
Oven Temperature (°F)	350
Cook Time (min.)	53.5
Cooking Energy Rate (Btu/h)	46,900
Electric Energy Rate (kW)	0.79
Energy to Food (Btu/lb)	252
Energy to Oven (Btu/lb)	600
Cooking Energy Efficiency (%)	42.0 ± 2.0
Production Capacity (lb/h)	82.7 ± 1.0

\* based on a minimum of three test replicates



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## Heavy-Load Potato Test Data

	Test #1	Test #2	Test #3
<b>Measured Values</b>			
<b>Gas Energy to Oven (Btu)</b>	<b>41,126</b>	<b>42,501</b>	<b>41,792</b>
<b>Electric Energy to Oven (Btu)</b>	<b>2,382</b>	<b>2,410</b>	<b>2,375</b>
<b>Cook Time (min)</b>	<b>53.3</b>	<b>53.4</b>	<b>53.8</b>
Initial Weight of Potatoes (lb)	73.634	73.730	73.695
Final Weight of Potatoes (lb)	62.719	63.190	63.015
Initial Temperature of Potatoes (°F)	76.0	71.9	70.7
Final Temperature of Potatoes (°F)	205.0	205.0	205.0
<b>Calculated Values</b>			
Sensible (Btu)	7,979	8,243	8,314
Latent (Btu)	10,588	10,224	10,360
Total Energy to Food (Btu)	18,567	18,467	18,673
<b>Energy to Food (Btu/lb)</b>	<b>252</b>	<b>250</b>	<b>253</b>
Total Energy to Oven (Btu)	43,509	44,911	44,167
<b>Energy per Pound of Food Cooked (Btu/lb)</b>	<b>591</b>	<b>609</b>	<b>599</b>
<b>Cooking-Energy Efficiency (%)</b>	<b>42.7</b>	<b>41.1</b>	<b>42.3</b>
<b>Cooking-Energy Rate (Btu/h)</b>	<b>46,340</b>	<b>47,754</b>	<b>46,607</b>
<b>Electric Energy Rate (kW)</b>	<b>0.79</b>	<b>0.79</b>	<b>0.78</b>
<b>Production Capacity (lb/h)</b>	<b>83.0</b>	<b>82.8</b>	<b>82.2</b>

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