



# Food Service Technology Center Appliance Test Summary Report

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<b>Manufacturer</b>	Alto-Shaam
<b>Model</b>	ASF 60G
<b>Appliance</b>	14-inch Fryer - Gas

<b>Report Number</b>	5012.08.32
<b>Test Date</b>	August, 2008
<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 fryer by applying the ASTM F1361-07 Standard Test Method.

## Energy Input Rate

Rate Energy Input Rate (Btu/h)	120,000
Measured Energy Input Rate (Btu/h)	119,538
Difference (%)	0.39

## Preheat to 350°F

Duration (min)	7.17
Energy Consumption (Btu)	13,442
Control Energy (Wh)	7.67
Preheat Rate (°F/min)	36.9

## Idle at 350°F

Idle Energy Rate (Btu/h)	4,072
Control Energy Rate (W)	23.7

## Heavy-Load Cooking Energy Efficiency <sup>a</sup>

Food Product	French Fries
Load Size (lb)	3.00
Cook Time (min)	2.02
Average Recovery Time (sec)	< 10
Cooking Energy Rate (Btu/h)	70,324
Control Energy Rate (W)	45.1
Energy to Food (Btu/lb)	565
Energy to Appliance (Btu/lb)	861
Cooking-Energy Efficiency (%)	65.6 ± 5.1
Production Capacity (lb/hr)	81.9 ± 3.4

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



Alto-Shaam ASF 60G gas fryer.

## Alto-Shaam, Inc.

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[www.alto-shaam.com](http://www.alto-shaam.com)

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### Heavy-Load Test Data

	Test #1	Test #2	Test #3	Test #4
<b>Measured Values</b>				
Electrical Energy Consumption (Wh)	8.49	8.20	8.16	8.00
Energy Consumption (Btu)	13,561	12,655	12,648	12,679
Total Energy (Btu)	13,590	12,683	12,676	12,706
<b>Cook Time (min)</b>	<b>1.98</b>	<b>2.00</b>	<b>2.00</b>	<b>2.08</b>
Total Test Time (min)	10.84	10.90	10.83	11.44
Weight Loss (%)	29.70	29.60	29.80	29.80
Initial Weight (lb)	15.000	15.000	15.000	15.000
Final Weight (lb)	10.545	10.561	10.524	10.523
Initial Moisture Content (%)	68.3	68.3	68.3	70.2
Final Moisture Content (%)	51.7	51.6	51.0	50.6
Initial Temperature (°F)	0	0	0	0
Final Temperature (°F)	212	212	212	212
<b>Calculated Values</b>				
Initial Weight of Water (lb)	10.245	10.245	10.245	10.245
Final Weight of Water (lb)	5.452	5.450	5.367	5.325
Sensible (Btu)	2,210	2,210	2,210	2,210
Latent – Heat of Fusion (Btu)	1,475	1,475	1,475	1,516
Latent – Heat of Vaporization (Btu)	4,649	4,652	4,732	5,049
Total Energy to Food (Btu)	8,334	8,337	8,417	8,775
<b>Energy To Food (Btu/lb)</b>	<b>556</b>	<b>556</b>	<b>561</b>	<b>585</b>
Total Energy to Fryer (Btu)	13,590	12,683	12,676	12,706
<b>Energy to Fryer (Btu/lb)</b>	<b>906</b>	<b>846</b>	<b>845</b>	<b>847</b>
<b>Cooking-Energy Efficiency (%)</b>	<b>61.3</b>	<b>65.7</b>	<b>66.4</b>	<b>69.1</b>
<b>Control Energy Rate (W)</b>	<b>47.0</b>	<b>45.1</b>	<b>45.2</b>	<b>43.0</b>
<b>Gas Energy Rate (Btu/h)</b>	<b>75,063</b>	<b>69,661</b>	<b>70,072</b>	<b>66,498</b>
<b>Production Rate (lb/h)</b>	<b>83.0</b>	<b>82.6</b>	<b>83.1</b>	<b>78.7</b>
<b>Average Recovery Time (sec)</b>	<b>&lt; 10</b>	<b>&lt; 10</b>	<b>&lt; 10</b>	<b>&lt; 10</b>

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