



# Food Service Technology Center Appliance Test Summary Report

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<b>Manufacturer</b>	Frymaster
<b>Model</b>	Protector 22.0 kW
<b>Appliance</b>	14-inch Open Deep Fat Fryer - Electric

<b>Report Number</b>	5012.08.28
<b>Test Date</b>	May, 2007
<b>Tested By</b>	D. Cowen

## 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

Test Voltage (V)	208
Rated Energy Input Rate (kW)	22.0
Measured Energy Input Rate (kW)	22.2
Difference (%)	0.23

## Preheat to 350°F

Voltage (V)	208
Duration (min)	10.8
Energy Consumption (kWh)	0.96
Preheat Rate (°F/min)	25.4

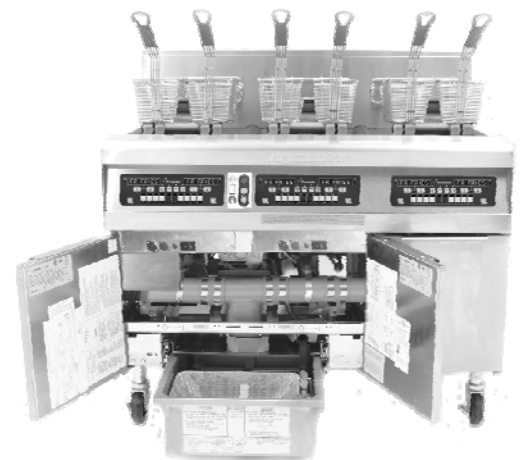
## Idle at 350°F

Voltage (V)	208
Idle Energy Rate (kW)	0.81

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

Voltage (V)	208
Food Product	French Fries
Load Size (lb)	3.00
Cook Time (min)	2.01
Average Recovery Time (sec)	< 10
Cooking Energy Rate (kW)	16.6
Energy to Food (Btu/lb)	595
Energy to Appliance (Btu/lb)	684
Cooking-Energy Efficiency (%)	86.9 ± 2.2
Production Capacity (lb/hr)	83.0 ± 1.8

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



Frymaster Protector 22 kW  
electric fryer.

## Frymaster

8700 Line Avenue  
Shreveport, LA  
[www.frymaster.com](http://www.frymaster.com)

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### Heavy-Load Test Data

	Test #1	Test #2	Test #3
<b>Measured Values</b>			
Test Voltage (V)	208	208	208
Energy Consumption (Wh)	3,047	3,007	2,967
Total Energy (Btu)	10,399	10,263	10,126
<b>Cook Time (min)</b>	<b>2.03</b>	<b>2.00</b>	<b>2.00</b>
Total Test Time (min)	11.0	10.8	10.8
Weight Loss (%)	30.20	29.70	29.80
Initial Weight (lb)	15.000	15.000	15.000
Final Weight (lb)	10.467	10.540	10.524
Initial Moisture Content (%)	72.8	72.8	72.8
Final Moisture Content (%)	53.2	53.8	53.6
Initial Temperature (°F)	0	0	0
Final Temperature (°F)	212	212	212
<b>Calculated Values</b>			
Initial Weight of Water (lb)	10.920	10.920	10.920
Final Weight of Water (lb)	5.568	5.671	5.641
Sensible (Btu)	2,210	2,210	2,210
Latent – Heat of Fusion (Btu)	1,572	1,572	1,572
Latent – Heat of Vaporization (Btu)	5,191	5,092	5,121
Total Energy to Food (Btu)	8,973	8,874	8,903
<b>Energy To Food (Btu/lb)</b>	<b>598</b>	<b>592</b>	<b>594</b>
Total Energy to Fryer (Btu)	10,399	10,263	10,126
<b>Energy to Fryer (Btu/lb)</b>	<b>693</b>	<b>684</b>	<b>675</b>
<b>Cooking-Energy Efficiency (%)</b>	<b>86.3</b>	<b>86.5</b>	<b>87.9</b>
<b>Electric Energy Rate (kW)</b>	<b>16.7</b>	<b>16.8</b>	<b>16.5</b>
<b>Production Rate (lb/h)</b>	<b>82.2</b>	<b>83.6</b>	<b>83.3</b>
<b>Average Recovery Time (sec)</b>	<b>&lt; 10</b>	<b>&lt; 10</b>	<b>&lt; 10</b>

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