



# Food Service Technology Center Appliance Test Summary Report

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This program is funded by the California utility rate payers under the auspices of the California Public Utilities Commission.

<b>Manufacturer</b>	Garland
<b>Model</b>	HEEE-36CL
<b>Appliance</b>	Underfired broiler - Gas

<b>Report Number</b>	5012.09.06
<b>Publish Date</b>	February, 2009
<b>Tested By</b>	G. Sorensen

## Purpose of Testing

This testing determined the energy input rate, preheat time and energy, temperature distribution and heavy-load cooking-energy efficiency of the broiler by applying ASTM F1695.

## Energy Input Rate

Rated Energy Input Rate (Btu/h)	70,000
Measured Energy Input Rate (Btu/h)	70,932
Difference (%)	1.3

## Preheat

Duration (min)	n/a
Energy Consumption (kWh)	n/a
Preheat Rate (°F/min)	n/a

## Idle

Idle Energy Rate (Btu/h)	58,882
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## Heavy-Load Cooking Energy Efficiency <sup>a</sup>

Food Product	Hamburger patties
Cook Time (min)	7.25
Test Time (min)	24.75
Cooking Energy Rate (Btu/h)	58,882
Electric Energy Rate (W)	0.7
Energy to Food (Btu/lb)	374
Energy to Appliance (Btu/lb)	1,097
Cooking-Energy Efficiency (%)	34.1 ± 1.2
Production Capacity (lb/hr)	47.3 ± 0.4

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

Garland Commercial Industries, LLC

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Freeland, PA 18224-1999

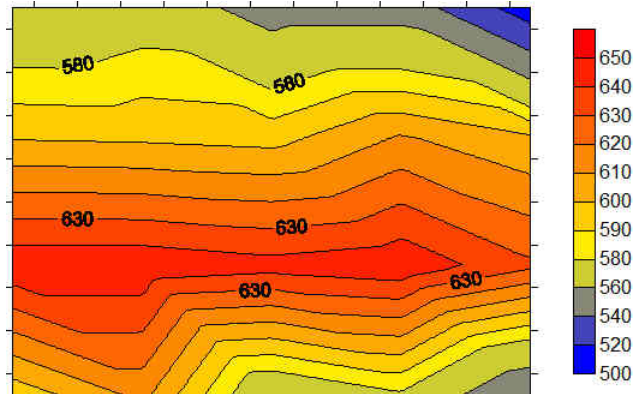
[www.garland-group.com](http://www.garland-group.com)

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### Temperature Distribution

564	572	552	552	509
599	598	596	611	601
648	648	644	648	632
593	613	565	578	540



### Heavy-Load Hamburger Test Data

	Test #1	Test #2	Test #3
<b>Measured Values</b>			
Cook Time (min)	7.25	7.25	7.25
Test Time (min)	24.75	24.75	24.75
Gas Energy to Broiler (Btu)	21,345	21,345	21,345
Electric Energy to Broiler (Wh)	0.28	0.28	0.28
Initial Weight of Hamburgers (lb)	19.605	19.485	19.500
Final Weight of Hamburgers (lb)	12.530	12.600	12.475
Initial Temperature of Hamburgers (°F)	40.0	40.0	40.0
Final Temperature of Hamburgers (°F)	177.7	176.1	177.5
<b>Calculated Values</b>			
Sensible Heat (Btu)	1,943	1,909	1,931
Latent - Heat of Vaporization (Btu)	5,452	5,274	5,347
Total Energy to Food (Btu)	7,396	7,183	7,278
Energy to Food (Btu/lb)	377	369	373
Total Energy to Broiler (Btu)	21,345	21,345	21,345
Energy per Pound of Food Cooked (Btu/lb)	1,089	1,095	1,095
Cooking-Energy Efficiency (%)	34.6	33.7	34.1
Cooking-Energy Rate (Btu/h)	58,882	58,882	58,882
Production Capacity (lb/h)	47.5	47.2	47.3

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