



Food Service Technology Center Appliance Test Summary Report

The information in this report is based on data generated at the PG&E Food Service Technology Center. California consumers are not obligated to purchase any full service or other service not funded by the program. This program is funded by the California utility rate payers under the auspices of the California Public Utilities Commission.

| | |
|----------------------|------------------------------|
| Manufacturer | Vulcan |
| Model | RRE36 |
| Appliance | 3-foot flat electric griddle |
| Griddle Plate | 24 x 36 inch |

| | |
|----------------------|----------------|
| Report Number | 5012.08.51 |
| Test Date | December, 2008 |
| Tested By | 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 griddle by applying the ASTM F1275-05 Standard Test Method.

Energy Input Rate

| | |
|---------------------------------|------|
| Voltage (V) | 208 |
| Rated Energy Input Rate (kW) | 16.2 |
| Measured Energy Input Rate (kW) | 16.1 |
| Difference (%) | 0.37 |

Preheat to 375°F

| | |
|-----------------------------------|------|
| Voltage (V) | 208 |
| Duration (min) | 7.50 |
| Electric Energy Consumption (kWh) | 1.89 |
| Preheat Rate (°F/min) | 40.6 |

Idle at 375°F

| | |
|--|------|
| Voltage (V) | 208 |
| Idle Energy Rate (kW) | 1.93 |
| Normalized Idle Energy Rate (W/ft ²) | 322 |

Heavy-Load Cooking Energy Efficiency ^a

| | |
|-----------------------------------|------------|
| Voltage (V) | 208 |
| Food Product | Hamburgers |
| Load Size (Count) | 24 |
| Cook Time (min) | 7.10 |
| Average Recovery Time (min) | 1.03 |
| Electric Cooking Energy Rate (kW) | 7.97 |
| Energy to Food (Btu/lb) | 463 |
| Energy to Appliance (Btu/lb) | 610 |
| Cooking-Energy Efficiency (%) | 76.0 ± 1.7 |
| Production Capacity (lb/hr) | 44.6 ± 2.0 |

^a based on a minimum of three test replicates.



Vulcan RRE36 electric griddle.

Vulcan-Hart

3600 North Point Boulevard
Baltimore, MD 21222
www.vulcanhart.com

| | |
|--------------|------------------------------|
| Manufacturer | Vulcan |
| Model | RRE36 |
| Appliance | 3-foot flat electric griddle |

| | |
|---------------|----------------|
| Report Number | 5012.08.51 |
| Test Date | December, 2008 |
| Tested By | D. Cowen |

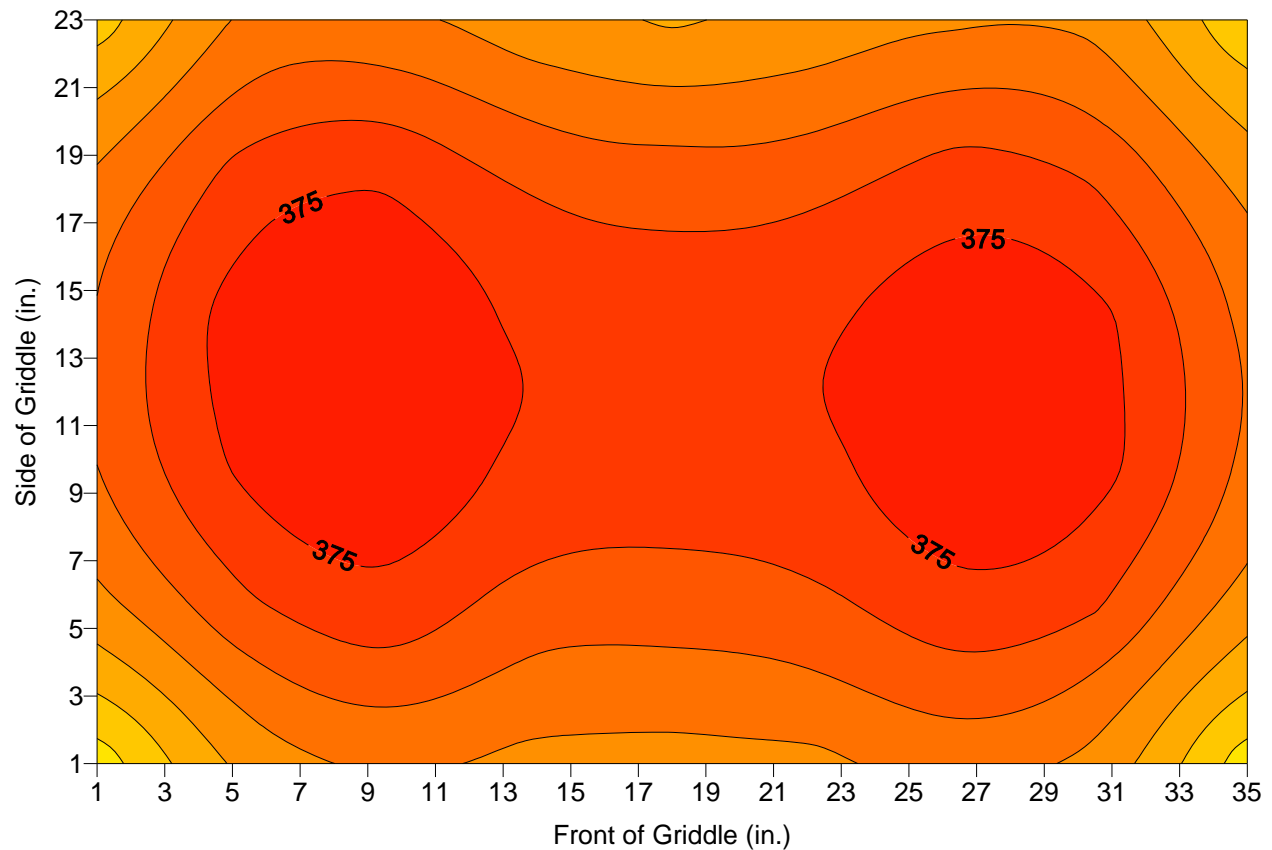
Temperature Uniformity a

| | |
|---|------|
| Thermostat Setting (°F) ^a | 375 |
| Average Surface Temperature (°F) | 365 |
| Maximum Temperature Difference Across Griddle Plate (°F) ^b | 37.3 |
| Useable Cooking Surface Area (in ²) ^c | 666 |
| Standard Deviation of Surface Temperatures (°F) | 9.42 |

^a Thermostat accuracy is the thermostat setting required to maintain 375 ± 5°F on the cooking surface.

^b Maximum temperature difference to within 1-inch of the edge of the griddle plate.

^c Area that is between 360°F and 390°F.



| | |
|---------------------|------------------------------|
| Manufacturer | Vulcan |
| Model | RRE36 |
| Appliance | 3-foot flat electric griddle |

| | |
|----------------------|----------------|
| Report Number | 5012.08.51 |
| Test Date | December, 2008 |
| Tested By | D. Cowen |

Heavy-Load Test Data

| | Repetition #1 | Repetition #2 | Repetition #3 |
|--------------------------------------|---------------|---------------|---------------|
| Measured Values | | | |
| Voltage (V) | 208 | 208 | 208 |
| Electrical Energy Consumption (Wh) | 6,510 | 6,510 | 6,420 |
| Cook Time (min) | 7.25 | 7.05 | 7.00 |
| Total Test Time (min) | 49.67 | 48.54 | 48.09 |
| Weight Loss (%) | 34.88 | 35.33 | 34.20 |
| Initial Weight (lb) | 36.188 | 36.258 | 36.304 |
| Final Weight (lb) | 23.567 | 23.446 | 23.888 |
| Initial Fat Content (%) | 18.4 | 18.4 | 18.4 |
| Initial Moisture Content (%) | 61.6 | 61.6 | 61.6 |
| Final Moisture Content (%) | 53.9 | 54.1 | 53.1 |
| Initial Temperature (°F) | 0 | 0 | 0 |
| Final Temperature (°F) | 162 | 164 | 161 |
| Calculated Values | | | |
| Initial Weight of Water (lb) | 22.292 | 22.335 | 22.363 |
| Final Weight of Water (lb) | 12.703 | 12.683 | 12.686 |
| Weight of Fat (lb) | 6.659 | 6.671 | 6.680 |
| Weight of Solids (lb) | 7.238 | 7.252 | 7.261 |
| Sensible to Ice (Btu) | 357 | 357 | 358 |
| Sensible to Water (Btu) | 2,909 | 2,941 | 2,879 |
| Sensible to Fat (Btu) | 433 | 437 | 429 |
| Sensible to Solids (Btu) | 235 | 237 | 233 |
| Latent – Water Fusion (Btu) | 3,210 | 3,216 | 3,220 |
| Latent – Fat Fusion (Btu) | 300 | 300 | 300 |
| Latent – Heat of Vaporization (Btu) | 9,302 | 9,362 | 9,387 |
| Total Energy to Food (Btu) | 16,745 | 16,851 | 16,808 |
| Energy To Food (Btu/lb) | 463 | 465 | 463 |
| Total Energy to Griddle (Btu) | 22,219 | 22,219 | 21,911 |
| Energy to Griddle (Btu/lb) | 614 | 613 | 604 |
| Cooking-Energy Efficiency (%) | 75.4 | 75.8 | 76.7 |
| Cooking Energy Rate (kW) | 7.86 | 8.05 | 8.01 |
| Production Rate (lb/h) | 43.7 | 44.8 | 45.3 |
| Average Recovery Time (min) | 1.03 | 1.04 | 1.02 |

Legal Notice

This report was prepared as a result of work sponsored by the California Public Utilities Commission (Commission). It does not necessarily represent the views of the Commission, its employees, or the State of California. The Commission, the State of California, its employees, contractors, and subcontractors make no warranty, express or implied, and assume no legal liability for the information in this report; nor does any party represent that the use of this information will not infringe upon privately owned rights. This report has not been approved or disapproved by the Commission nor has the Commission passed upon the accuracy or adequacy of the information in this report.

Disclaimer

Neither Fisher-Nickel, inc. nor the Food Service Technology Center nor any of its employees makes any warranty, expressed or implied, or assumes any legal liability of responsibility for the accuracy, completeness, or usefulness of any data, information, method, product or process disclosed in this document, or represents that its use will not infringe any privately-owned rights, including but not limited to, patents, trademarks, or copyrights.

Reference to specific products or manufacturers is not an endorsement of that product or manufacturer by Fisher-Nickel, inc., the Food Service Technology Center or Pacific Gas & Electric Company (PG&E).

Retention of this consulting firm by PG&E to develop this report does not constitute endorsement by PG&E for any work performed other than that specified in the scope of this project.