



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	Crown
Model	EPX3
Appliance	Single Compartment 3 Pan Steamer - Electric

Report Number	5012.08.21—2 nd Edition
Test Date	June, 2008
Tested By	A.Spitz

Purpose of Testing

This testing determined the energy input rate, preheat time and energy, idle energy rate, uniformity and heavy/light-load cooking-energy efficiency of the steamer by applying ASTM F1484-05.

Energy Input Rate

Test Voltage (V)	208
Rated Energy Input Rate (kW)	9.00
Measured Energy Input Rate (kW)	8.91
Difference (%)	1.1

Preheat to 210°F

Duration (min)	11.3
Energy Consumption (kWh)	1.16

Idle

Average Cavity Temperature (°F)	179
Idle Energy Rate (kW)	0.13



Red Potato Cooking Energy Efficiency and Production Capacity Test Results

Load ^a	Heavy Load	Light Load
Number of Pans	3	1
Cook Time (min)	21.8	20.7
Total Energy Consumed (kWh)	1.23	0.62
Energy to Food (Btu/lb)	105	105
Energy to Steamer (Btu/lb)	175	264
Cooking Energy Rate (kW)	3.39	1.80
Cooking Energy Efficiency (%)	63.0 ± 1.4	41.7 ± 4.1
Production Capacity (lb/h)	66.1 ± 5.4	23.5 ± 1.5
Water Consumption Rate (gph)	< 3	< 3

^a Each Load is based on a minimum average of three test replicates.

**Crown Food Service
Equipment Ltd**
70 Oakdale Road
Toronto ON, M3N 1V9
Tel: 416-746-2358
Fax: 416-746-8324
Email: crown@crowfood.com

Manufacturer	Crown
Model	EPX3
Appliance	Single Compartment 3 Pan Steamer - Electric

Report Number	5012.08.21—2 nd Edition
Test Date	June, 2008
Tested By	A.Spitz

Frozen Green Pea Cooking Energy Efficiency and Production Capacity Test Results

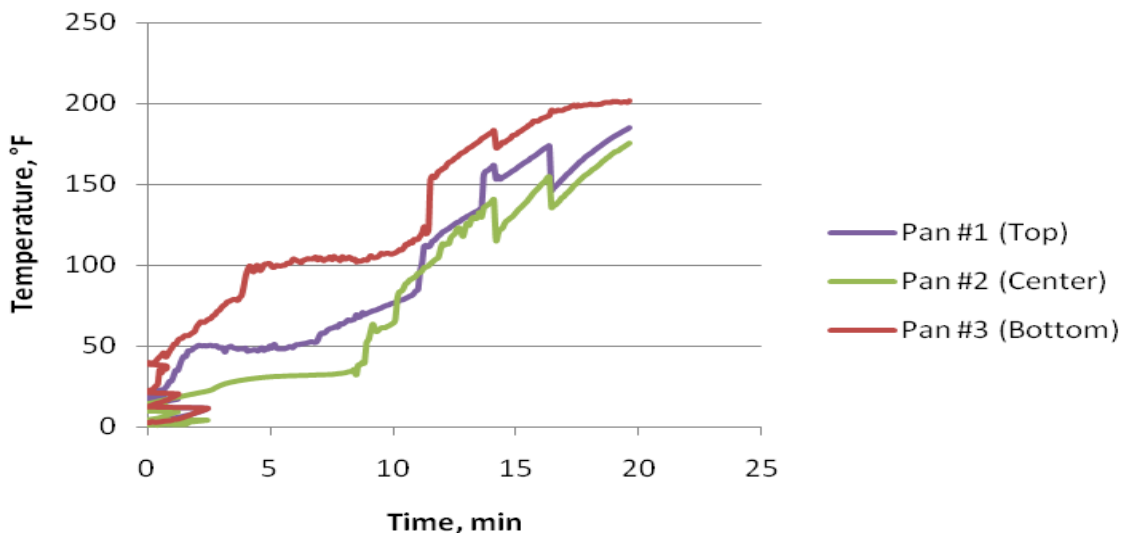
Load ^a	Heavy Load	Light Load
Number of Pans	3	1
Cook Time (min)	18.4	12.6
Total Energy Consumed (kWh)	2.01	0.78
Energy to Food (Btu/lb)	257	259
Energy to Steamer (Btu/lb)	286	333
Cooking Energy Rate (kW)	6.55	3.72
Cooking Energy Efficiency (%)	92.15 ± 3.1	80.8 ± 1.9
Production Capacity (lb/h)	78.2 ± 6.0	41.30 ± 1.7
Water Consumption Rate (gph)	< 3	< 3

^a Each Load is based on a minimum average of three test replicates.

Average Ice Load Uniformity Test Results

Load ^a	Heavy Load
Number of Pans	3
Cook Time (min)	18.86
Average Initial Ice-Load Temperature (°F)	3.0
Average Final Ice Load Temperatures (°F)	185.7
Pan #1 (Top)	179.2
Pan #2	175.1
Pan #3 (Bottom)	202.8

^a Each Load is based on a minimum average of three test replicates.



Manufacturer	Crown
Model	EPX3
Appliance	Single Compartment 3 Pan Steamer - Electric

Report Number	5012.08.21—2 nd Edition
Test Date	June, 2008
Tested By	A.Spitz

Heavy-Load Red Potato Data

	Run #1	Run #2	Run #3
Measured Values			
Number of Pans	3	3	3
Cook Time (min)	6	21.2	21.7
Electric Energy Consumed (kWh)	1.23	1.23	1.23
Temperature of Uncooked Potatoes (°F)	73.2	75.0	74.0
Temperature of Cooked Potatoes (°F)	195.0	195.0	195.0
Weight of Stainless Steel Pans (lbs)	8.440	8.440	8.440
Weight of Potatoes (lbs)	24.005	24.015	24.015
Total Potato Count	150	150	150
Moisture Content (%)	84.07	84.07	84.07
Condensate Temperature (°F)	n/a	n/a	n/a
Water Consumption (gal)	< 3	< 3	< 3
Calculated Values			
Moisture Weight in Potatoes (lbs)	20.200	20.200	20.200
Average Weight of Each Potato (lbs)	0.160	0.160	0.160
Energy Consumed by Potatoes (Btu)	2,551	2,506	2,532
Energy Consumed by Pans (Btu)	113	111	113
Energy of Boiler re-init (Btu)	n/a	n/a	n/a
Energy to Food (Btu/lb)	106	104	105
Energy Consumed by the Steamer (Btu)	4,197	4,197	4,197
Energy to Steamer (Btu/lb)	175	175	175
Cooking Energy Rate (kW)	3.27	3.49	3.40
Production Capacity (lb/h)	63.8	68.1	66.5
Energy Efficiency (%)	63.5	62.4	63.0

Manufacturer	Crown
Model	EPX3
Appliance	Single Compartment 3 Pan Steamer - Electric

Report Number	5012.08.21—2 nd Edition
Test Date	June, 2008
Tested By	A.Spitz

Light-Load Red Potato Data

	Run #1	Run #2	Run #3
Measured Values			
Number of Pans	1	1	1
Cook Time (min)	20.0	21.0	21.0
Electric Energy Consumed (kWh)	0.60	0.63	0.63
Temperature of Uncooked Potatoes (°F)	75.5	75.1	75.2
Temperature of Cooked Potatoes (°F)	194.2	196.0	195.6
Weight of Stainless Steel Pans (lbs)	2.810	2.790	2.790
Weight of Potatoes (lbs)	8.000	8.000	8.000
Total Potato Count	51	52	52
Moisture Content (%)	84.07	84.07	84.07
Condensate Temperature (°F)	n/a	n/a	n/a
Water Consumption (gal)	< 3	< 3	< 3
Calculated Values			
Moisture Weight in Potatoes (lbs)	6.730	6.720	6.720
Average Weight of Each Potato (lbs)	0.157	0.154	0.154
Energy Consumed by Potatoes (Btu)	833	841	838
Energy Consumed by Pans (Btu)	37	37	37
Energy of Boiler re-init (Btu)	n/a	n/a	n/a
Energy to Food (Btu/lb)	104	105	105
Energy Consumed by the Steamer (Btu)	2,047	2,150	2,150
Energy to Steamer (Btu/lb)	255	269	269
Cooking Energy Rate (kW)	1.80	1.80	1.80
Production Rate (lb/h)	24.0	22.8	23.7
Energy Efficiency (%)	42.5	40.8	40.7

Manufacturer	Crown
Model	EPX3
Appliance	Single Compartment 3 Pan Steamer - Electric

Report Number	5012.08.21—2 nd Edition
Test Date	June, 2008
Tested By	A.Spitz

Heavy-Load Frozen Green Peas Data

	Run #1	Run #2	Run #3
Measured Values			
Number of Pans	3	3	3
Cook Time (min)	18.6	18.6	18.1
Electric Energy Consumed (kWh)	2.01	2.01	2.01
Initial Water Temperature (°F)	75.0	74.8	76.5
Final Water Temperature (°F)	117.6	118.2	118.1
Frozen Food Temperature (°F)	-1.5	0.0	0.0
Weight of Empty Calorimeter (lbs)	40.830	40.840	40.940
Weight of Full Calorimeter (lbs)	95.060	94.940	94.980
Weight of Calorimeter Water (lbs)	30.000	30.000	30.000
Weight of Cooked Food (lbs)	24.230	24.100	24.080
Weight of Frozen Food (lbs)	24.000	24.000	24.000
Weight of Stainless Steel Pans (lbs)	7.840	8.420	7.840
Moisture Content (%)	81	81	81
Condensation Temperature (°F)	n/a	n/a	n/a
Water Consumption (gal)	< 2.5	< 2.5	< 2.5
Calculated Values			
Moisture Weight in Green Peas (lbs)	19.440	19.440	19.440
Final Food Temp (°F)	180.4	182.5	179.8
Energy Consumed by Green Peas (Btu)	6,173	6,184	6,127
Energy Consumed by Pans (Btu)	157	169	155
Energy of Boiler re-init (Btu)	n/a	n/a	n/a
Energy to Food (Btu/lb)	257	258	255
Energy Consumed by the Steamer (Btu)	6,860	6,860	6,860
Energy to Steamer (Btu/lb)	286	286	286
Cooking Energy Rate (kW)	6.49	6.49	6.67
Productivity (lb/h)	78.3	77.8	79.7
Energy Efficiency (%)	92.3	92.6	91.6

Manufacturer	Crown
Model	EPX3
Appliance	Single Compartment 3 Pan Steamer - Electric

Report Number	5012.08.21—2 nd Edition
Test Date	June, 2008
Tested By	A.Spitz

Light-Load Frozen Green Peas Data

	Run #1	Run #2	Run #3	Run #4
Measured Values				
Number of Pans	1	1	1	1
Cook Time (min)	12.9	12.9	12.0	12.5
Electric Energy Consumed (kWh)	0.75	0.78	0.78	0.81
Initial Water Temperature (°F)	77.4	80.1	80.8	78.4
Final Water Temperature (°F)	118.0	121.1	121.0	121.1
Frozen Food Temperature (°F)	-1.0	-1.0	0.0	-1.5
Weight of Empty Calorimeter (lbs)	40.800	40.110	40.880	40.810
Weight of Full Calorimeter (lbs)	58.990	58.680	58.980	58.990
Weight of Calorimeter Water (lbs)	10.000	10.000	10.000	10.000
Weight of Cooked Food (lbs)	8.190	8.570	8.100	8.180
Weight of Frozen Food (lbs)	8.000	8.000	8.000	8.000
Weight of Stainless Steel Pans (lbs)	2.790	2.820	2.820	2.820
Moisture Content (%)	81	81	81	81
Condensation Temperature (°F)	n/a	n/a	n/a	n/a
Water Consumption (gal)	< 2.5	< 2.5	< 2.5	< 2.5
Calculated Values				
Moisture Weight in Green Peas (lbs)	6.480	6.480	6.480	6.480
Final Food Temp (°F)	177.0	178.1	180.1	183.2
Energy Consumed by Green Peas (Btu)	2,047	2,101	2,053	2,090
Energy Consumed by Pans (Btu)	55	55	56	57
Energy of Boiler re-init (Btu)	n/a	n/a	n/a	n/a
Energy to Food (Btu/lb)	256	263	257	261
Energy Consumed by the Steamer (Btu)	2,560	2,662	2,662	2,662
Energy to Steamer (Btu/lb)	320	333	333	346
Cooking Energy Rate (kW)	3.48	3.62	3.90	3.89
Production Rate (lb/h)	41.0	42.9	40.5	40.9
Energy Efficiency (%)	82.1	81.0	79.2	80.7

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.