



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 Food Service Equipment Ltd
Model	EPX-5
Appliance	Single Compartment 5 Pan Steamer - Electric

Report Number	5012.08.22—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)	15.0
Measured Energy Input Rate (kW)	14.6
Difference (%)	2.7

Preheat to 210°F

Duration (min)	10.17
Energy Consumption (kWh)	1.65

Idle

Average Cavity Temperature (°F)	173
Idle Energy Rate (kW)	0.22



Red Potato Cooking Energy Efficiency and Production Capacity Test Results

Load ^a	Heavy Load	Light Load
Number of Pans	5	1
Cook Time (min)	24.8	22.2
Total Energy Consumed (kWh)	1.88	0.72
Energy to Food (Btu/lb)	105	104
Energy to Steamer (Btu/lb)	160	307
Cooking Energy Rate (kW)	4.56	1.95
Cooking Energy Efficiency (%)	68.4 ± 3.6	35.5 ± 3.5
Production Capacity (lb/h)	97.0 ± 2.5	21.7 ± 1.2
Water Consumption Rate (gph)	< 3	< 3

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

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Frozen Green Pea Cooking Energy Efficiency and Production Capacity Test Results

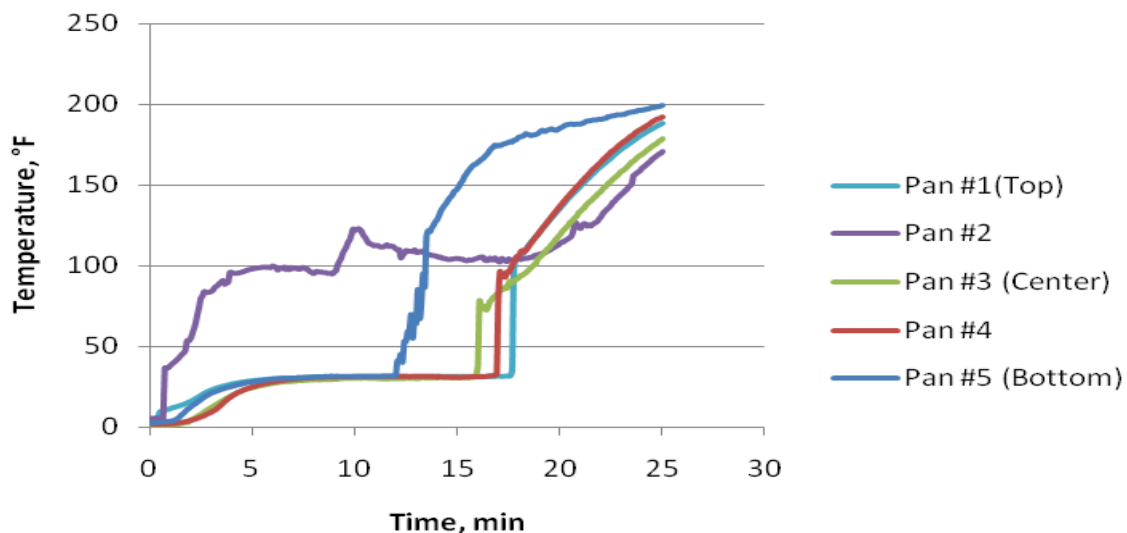
Load ^a	Heavy Load	Light Load
Number of Pans	5	1
Cook Time (min)	17.9	14.1
Total Energy Consumed (kWh)	3.35	0.80
Energy to Food (Btu/lb)	258	261
Energy to Steamer (Btu/lb)	285	341
Cooking Energy Rate (kW)	11.26	3.41
Cooking Energy Efficiency (%)	92.6 ± 1.3	78.1 ± 1.3
Production Capacity (lb/h)	136.7 ± 7.5	35.5 ± 2.7
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	5
Cook Time (min)	25
Average Initial Ice-Load Temperature (°F)	3.2
Average Final Ice Load Temperatures (°F)	186.0
Pan #1 (Top)	188.6
Pan #2	170.7
Pan #3	179.0
Pan #4	192.5
Pan #5	199.3

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



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Heavy-Load Red Potato Data

	Run #1	Run #2	Run #3
Measured Values			
Number of Pans	5	5	5
Cook Time (min)	25.0	24.5	24.8
Electric Energy Consumed (kWh)	1.86	1.92	1.86
Temperature of Uncooked Potatoes (°F)	73.5	74.2	75.0
Temperature of Cooked Potatoes (°F)	195.0	195.0	195.0
Weight of Stainless Steel Pans (lbs)	13.990	12.630	14.050
Weight of Potatoes (lbs)	40.015	40.015	40.035
Total Potato Count	250	250	250
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)	33.640	33.640	33.660
Average Weight of Each Potato (lbs)	0.160	0.160	0.160
Energy Consumed by Potatoes (Btu)	4,229	4,205	4,182
Energy Consumed by Pans (Btu)	187	168	186
Energy of Boiler re-init (Btu)	n/a	n/a	n/a
Energy to Food (Btu/lb)	106	105	104
Energy Consumed by the Steamer (Btu)	6,346	6,551	6,346
Energy to Steamer (Btu/lb)	159	164	159
Cooking Energy Rate (kW)	4.46	4.70	4.51
Production Capacity (lb/h)	96.0	98.0	97.1
Energy Efficiency (%)	69.6	66.8	68.8

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Light-Load Red Potato Data

	Run #1	Run #2	Run #3
Measured Values			
Number of Pans	1	1	1
Cook Time (min)	22.8	21.8	21.9
Electric Energy Consumed (kWh)	0.75	0.69	0.72
Temperature of Uncooked Potatoes (°F)	75.0	75.3	75.5
Temperature of Cooked Potatoes (°F)	195.0	195.0	195.1
Weight of Stainless Steel Pans (lbs)	2.820	2.820	2.790
Weight of Potatoes (lbs)	8.015	8.015	7.995
Total Potato Count	50	50	50
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)	6.740	6.740	6.720
Average Weight of Each Potato (lbs)	0.160	0.160	0.160
Energy Consumed by Potatoes (Btu)	837	835	832
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	104	104
Energy Consumed by the Steamer (Btu)	2,559	2,354	2,457
Energy to Steamer (Btu/lb)	319	294	307
Cooking Energy Rate (kW)	1.98	1.90	1.97
Production Rate (lb/h)	21.1	22.0	21.9
Energy Efficiency (%)	34.2	37.0	35.4

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Heavy-Load Frozen Green Peas Data

	Run #1	Run #2	Run #3	Run #4
Measured Values				
Number of Pans	5	5	5	5
Cook Time (min)	18.4	18.6	17.9	16.5
Electric Energy Consumed (kWh)	3.45	3.33	3.30	3.30
Initial Water Temperature (°F)	69.1	76.5	71.4	72.6
Final Water Temperature (°F)	118.8	118.5	114.0	114.7
Frozen Food Temperature (°F)	-4.0	-4.1	-3.0	-2.5
Weight of Empty Calorimeter (lbs)	40.960	40.870	40.870	40.830
Weight of Full Calorimeter (lbs)	131.770	129.780	130.860	129.730
Weight of Calorimeter Water (lbs)	50.000	50.000	50.000	50.000
Weight of Cooked Food (lbs)	40.810	38.910	39.990	38.900
Weight of Frozen Food (lbs)	40.010	40.020	40.000	40.000
Weight of Stainless Steel Pans (lbs)	12.650	12.650	12.650	12.650
Moisture Content (%)	81	81	81	81
Condensation Temperature (°F)	n/a	n/a	n/a	n/a
Water Consumption (gal)	< 3	< 3	< 3	< 3
Calculated Values				
Moisture Weight in Green Peas (lbs)	32.410	32.420	32.400	32.400
Final Food Temp (°F)	191.3	182.7	177.4	179.1
Energy Consumed by Green Peas (Btu)	10,760	10,228	10,166	10,081
Energy Consumed by Pans (Btu)	272	260	251	253
Energy of Boiler re-init (Btu)	n/a	n/a	n/a	n/a
Energy to Food (Btu/lb)	269	256	254	252
Energy Consumed by the Steamer (Btu)	11,775	11,365	11,263	11,263
Energy to Steamer (Btu/lb)	294	284	282	282
Cooking Energy Rate (kW)	11.24	10.75	11.05	12.00
Production Rate (lb/h)	132.9	125.7	133.9	136.7
Energy Efficiency (%)	93.7	92.3	92.5	91.8

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Light-Load Frozen Green Peas Data

	Run #1	Run #2	Run #3
Measured Values			
Number of Pans	1	1	1
Cook Time (min)	14.0	14.3	14.0
Electric Energy Consumed (kWh)	0.78	0.81	0.81
Initial Water Temperature (°F)	62.7	64.8	65.7
Final Water Temperature (°F)	110.1	113.5	113.7
Frozen Food Temperature (°F)	2.2	0.6	-0.2
Weight of Empty Calorimeter (lbs)	40.870	40.870	40.870
Weight of Full Calorimeter (lbs)	58.800	59.330	59.325
Weight of Calorimeter Water (lbs)	10.000	10.000	10.000
Weight of Cooked Food (lbs)	7.970	8.500	8.500
Weight of Frozen Food (lbs)	8.000	8.000	8.000
Weight of Stainless Steel Pans (lbs)	2.820	2.820	2.790
Moisture Content (%)	81	81	81
Condensation Temperature (°F)	n/a	n/a	n/a
Water Consumption (gal)	< 3	< 3	< 3
Calculated Values			
Moisture Weight in Green Peas (lbs)	6.480	6.480	6.480
Final Food Temp (°F)	180.9	181.7	180.9
Energy Consumed by Green Peas (Btu)	2,009	2,113	2,110
Energy Consumed by Pans (Btu)	54	56	56
Energy of Boiler re-init (Btu)	n/a	n/a	n/a
Energy to Food (Btu/lb)	254	264	264
Energy Consumed by the Steamer (Btu)	2,662	2,765	2,765
Energy to Steamer (Btu/lb)	333	345	345
Cooking Energy Rate (kW)	3.34	3.41	3.47
Production Rate (lb/h)	34.3	35.8	36.4
Energy Efficiency (%)	77.5	78.5	78.3

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