



# Food Service Technology Center Appliance Test Summary Report

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<b>Manufacturer</b>	AccuTemp Products, Inc.
<b>Model</b>	Evolution Steamer E62083E170
<b>Appliance</b>	Single Compartment 6 Pan Steamer - Electric

<b>Report Number</b>	501310040
<b>Test Date</b>	February, 2010
<b>Tested By</b>	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)	17.0
Measured Energy Input Rate (kW)	17.1
Difference (%)	0.0

Preheat to 210°F	Cook Mode
Duration (min)	9.58
Energy Consumption (kWh)	1.59

Idle	Hold Mode	Cook Mode
Average Cavity Temperature (°F)	180.5	212.9
Idle Energy Rate (kW)	0.10	1.59



**AccuTemp Products, Inc.**  
8415 North Clinton Park Drive  
Fort Wayne, IN. 46825

## Red Potato Cooking Energy Efficiency and Production Capacity Test Results

Load <sup>a</sup>	Heavy Load	Light Load
Number of Pans	6	1
Cook Time (min)	22.78	21.92
Total Energy Consumed (kWh)	2.30	0.94
Energy to Food (Btu/lb)	110	109
Energy to Steamer (Btu/lb)	164	401
Cooking Energy Rate (kW)	6.06	2.57
Cooking Energy Efficiency (%)	70.0 ± 1.7	28.2 ± 1.5
Production Capacity (lb/h)	126.5 ± 12.0	21.9 ± 0.2
Water Consumption Rate (gal)	< 3.0	< 3.0

<sup>a</sup> Each result 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 <sup>a</sup>	Heavy Load	Light Load
Number of Pans	6	1
Cook Time (min)	15.14	10.47
Total Energy Consumed (kWh)	3.93	0.82
Energy to Food (Btu/lb)	260	248
Energy to Steamer (Btu/lb)	280	350
Cooking Energy Rate (kW)	15.59	4.70
Cooking Energy Efficiency (%)	95.3 ± 0.6	72.2 ± 5.0
Production Capacity (lb/h)	190.3 ± 3.1	45.5 ± 1.8
Water Consumption Rate (gal)	< 3.0	< 3.0

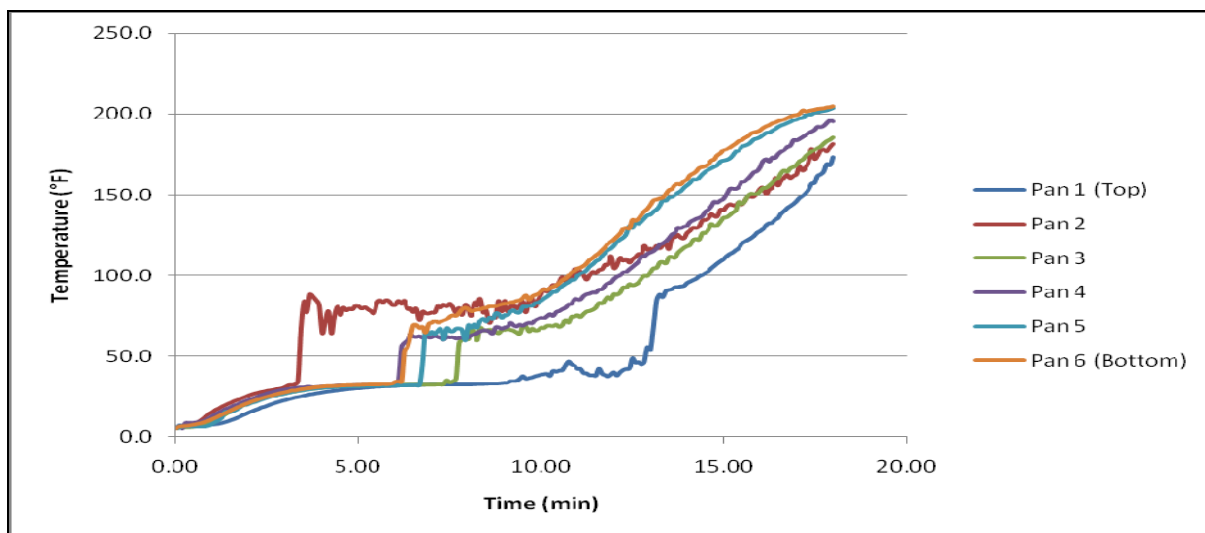
<sup>a</sup> Each result is based on a minimum average of three test replicates.

### Ice Load Uniformity Test Results

Load <sup>a</sup>	Heavy Load
Number of Pans	6
Cook Time (min)	18.00
Time Delay (min) <sup>b</sup>	3.33
Average Initial Ice-Load Temperature (°F)	5.0
Average Final Ice Load Temperatures (°F)	190.9
Pan #1 (Top)	173.3
Pan #2	181.5
Pan #3	185.8
Pan #4	197.1
Pan #5	203.3
Pan #6 (Bottom)	204.6

<sup>a</sup> Each result is based on a minimum average of three test replicates.

<sup>b</sup> Time required for ice load in the final pan to reach 170°F after first pan reaches the endpoint.



\*Each result is based on an average of three replicate test runs.

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### Heavy-Load Red Potato Data

	Run #1	Run #2	Run #3
<b>Measured Values</b>			
Number of Pans	6	6	6
Cook Time (min)	23.58	22.00	22.75
Electric Energy Consumed (kWh)	2.30	2.30	2.30
Temperature of Uncooked Potatoes (°F)	67.3	67.1	69.7
Temperature of Cooked Potatoes (°F)	195.2	193.3	194.3
Weight of Stainless Steel Pans (lbs)	15.8	16.2	16.2
Weight of Potatoes (lbs)	47.8	48.1	48.1
Total Potato Count	300	300	300
Moisture Content (%)	84	84	84
Condensate Temperature (°F)	n/a	n/a	n/a
Water Consumption (gal)	< 3.0	< 3.0	< 3.0
<b>Calculated Values</b>			
Moisture Weight in Potatoes (lbs)	40.1	40.4	40.4
Average Weight of Each Potato (lbs)	0.16	0.16	0.16
Energy Consumed by Potatoes (Btu)	5,314	5,282	5,210
Energy to Food (Btu/lb)	111	110	108
Energy Consumed by Pans (Btu)	222	225	222
Energy of Boiler re-init (Btu)	n/a	n/a	n/a
Energy Consumed by the Steamer (Btu)	7,848	7,848	7,848
Energy to Steamer (Btu/lb of food cooked)	164	163	163
Cooking Energy Rate (kW)	5.85	6.27	6.07
Production Capacity (lb/h)	121.5	131.2	126.7
Energy Efficiency (%)	70.5	70.2	69.2

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### Light-Load Red Potato Data

	Run #1	Run #2	Run #3
<b>Measured Values</b>			
Number of Pans	1	1	1
Cook Time (min)	21.83	22.00	21.92
Electric Energy Consumed (kWh)	0.96	0.93	0.93
Temperature of Uncooked Potatoes (°F)	71.1	69.7	71.0
Temperature of Cooked Potatoes (°F)	195.0	195.5	195.3
Weight of Stainless Steel Pans (lbs)	2.8	2.6	2.6
Weight of Potatoes (lbs)	8.0	8.0	8.0
Total Potato Count	50	50	50
Moisture Content (%)	84	84	84
Condensate Temperature (°F)	n/a	n/a	n/a
Water Consumption (gal)	< 3	< 3	< 3
<b>Calculated Values</b>			
Moisture Weight in Potatoes (lbs)	6.7	6.7	6.7
Average Weight of Each Potato (lbs)	0.16	0.16	0.16
Energy Consumed by Potatoes (Btu)	864	876	867
Energy to Food (Btu/lb)	108	109	108
Energy Consumed by Pans (Btu)	39	36	36
Energy of Boiler re-init (Btu)	n/a	n/a	n/a
Energy Consumed by the Steamer (Btu)	3,276	3,173	3,173
Energy to Steamer (Btu/lb of food cooked)	409	397	396
Cooking Energy Rate (kW)	2.64	2.54	2.55
Production Rate (lb/h)	22.0	21.8	21.9
Energy Efficiency (%)	27.5	28.7	28.5

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### Heavy-Load Frozen Green Peas Data

	Run #1	Run #2	Run #3
<b>Measured Values</b>			
Number of Pans	6	6	6
Cook Time (min)	15.08	15.08	15.25
Electric Energy Consumed (kWh)	3.91	3.94	3.95
Initial Water Temperature (°F)	64.8	63.5	63.7
Final Water Temperature (°F)	112.5	112.0	113.3
Frozen Food Temperature (°F)	2.0	0.0	0.0
Weight of Empty Calorimeter (lbs)	42.1	42.2	42.2
Weight of Full Calorimeter (lbs)	150.7	150.9	150.5
Weight of Calorimeter Water (lbs)	60.0	60.0	60.0
Weight of Cooked Food (lbs)	48.5	48.7	48.3
Weight of Frozen Food (lbs)	48.0	48.0	48.0
Weight of Stainless Steel Pans (lbs)	16.0	16.2	16.1
Moisture Content (%)	81	81	81
Condensation Temperature (°F)	n/a	n/a	n/a
Water Consumption (gal)	< 3.0	< 3.0	< 3.0
<b>Calculated Values</b>			
Moisture Weight in Green Peas (lbs)	38.9	38.9	38.9
Final Food Temp (°F)	182.8	183.2	186.7
Energy Consumed by Green Peas (Btu)	12,381	12,456	12,546
Energy to Food (Btu/lb)	258	260	261
Energy Consumed by Pans (Btu)	318	326	330
Energy of Boiler re-init (Btu)	n/a	n/a	n/a
Energy Consumed by the Steamer (Btu)	13,345	13,444	13,481
Energy to Steamer (Btu/lb of food cooked)	278	280	281
Cooking Energy Rate (kW)	15.56	15.68	15.54
Productivity (lb/h)	191.0	191.0	188.9
Energy Efficiency (%)	95.2	95.1	95.5

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### Light-Load Frozen Green Peas Data

	Run #1	Run #2	Run #3
<b>Measured Values</b>			
Number of Pans	1	1	1
Cook Time (min)	10.50	10.42	10.75
Electric Energy Consumed (kWh)	0.81	0.83	0.86
Initial Water Temperature (°F)	66.7	67.0	71.2
Final Water Temperature (°F)	111.4	110.5	113.0
Frozen Food Temperature (°F)	1.0	0.0	-1.0
Weight of Empty Calorimeter (lbs)	42.5	42.5	42.5
Weight of Full Calorimeter (lbs)	60.1	60.4	60.3
Weight of Calorimeter Water (lbs)	10.0	10.0	10.0
Weight of Cooked Food (lbs)	7.6	7.9	7.8
Weight of Frozen Food (lbs)	8.0	8.0	8.0
Weight of Stainless Steel Pans (lbs)	2.4	2.8	2.8
Moisture Content (%)	81	81	81
Condensation Temperature (°F)	n/a	n/a	n/a
Water Consumption (gal)	< 3.0	< 3.0	< 3.0
<b>Calculated Values</b>			
Moisture Weight in Green Peas (lbs)	6.5	6.5	6.5
Final Food Temp (°F)	181.3	176.1	176.6
Energy Consumed by Green Peas (Btu)	1,995	2,001	1,999
Energy to Food (Btu/lb)	249	250	250
Energy Consumed by Pans (Btu)	48	55	55
Energy of Boiler re-init (Btu)	n/a	n/a	n/a
Energy Consumed by the Steamer (Btu)	2,765	2,832	2,935
Energy to Steamer (Btu/lb of food cooked)	346	354	367
Cooking Energy Rate (kW)	4.63	4.78	4.80
Production Rate (lb/h)	45.7	46.1	44.7
Energy Efficiency (%)	73.9	72.6	70.0

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