



# Food Service Technology Center Appliance Test Summary Report

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<b>Manufacturer</b>	Intek
<b>Model</b>	XS208-18-3
<b>Appliance</b>	Single Compartment 6 Pan Steamer - Electric

<b>Report Number</b>	5012.08.57 Rev.1
<b>Test Date</b>	November, 2008
<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)	213
Rated Energy Input Rate (kW)	18.0
Measured Energy Input Rate (kW)	18.0
Difference (%)	0

## Preheat to 210°F

Duration (min)	10.0
Energy Consumption (kWh)	1.68

## Idle

Average Cavity Temperature (°F)	210
Idle Energy Rate (kW)	0.20

## 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)	21.0	21.4
Total Energy Consumed (kWh)	2.47	0.83
Energy to Food (Btu/lb)	108	107
Energy to Steamer (Btu/lb)	175	355
Cooking Energy Rate (kW)	7.08	2.33
Cooking Energy Efficiency (%)	64.4 ± 5.5	31.5 ± 2.5
Production Capacity (lb/h)	137.6 ± 2.9	22.4 ± 0.0
Water Consumption Rate (gal)	< 3	< 3

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



### Intek Manufacturing LLC

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### Frozen Green Pea Cooking Energy Efficiency and Production Capacity Test Results

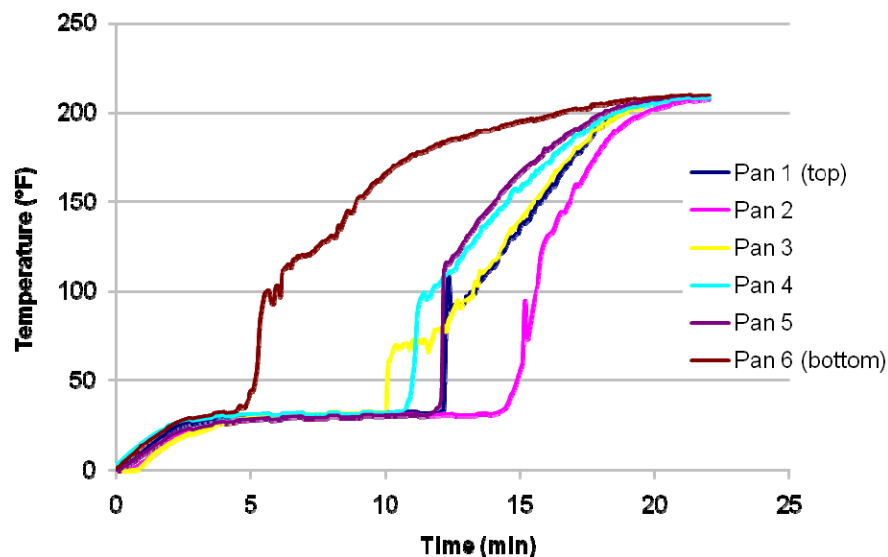
Load <sup>a</sup>	Heavy Load	Light Load
Number of Pans	6	1
Cook Time (min)	13.9	9.8
Total Energy Consumed (kWh)	3.98	0.85
Energy to Food (Btu/lb)	257	259
Energy to Steamer (Btu/lb)	283	363
Cooking Energy Rate (kW)	17.19	5.20
Cooking Energy Efficiency (%)	93.2 ± 2.5	73.3 ± 1.3
Production Capacity (lb/h)	207.4 ± 1.9	49.0 ± 1.9
Water Consumption Rate (gal)	< 3	< 3

<sup>a</sup> Each Load 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)	17.79
Average Initial Ice-Load Temperature (°F)	-3.2
Average Final Ice Load Temperatures (°F):	189.5
Pan #1 (Top)	185
Pan #2	170
Pan #3	187
Pan #4	195
Pan #5	197
Pan #6 (Bottom)	204

<sup>a</sup> 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	Run #4
<b>Measured Values</b>				
Number of Pans	6	6	6	6
Cook Time (min)	21.00	21.33	20.33	21.17
Electric Energy Consumed (kWh)	2.62	2.34	2.54	2.38
Temperature of Uncooked Potatoes (°F)	70.4	72.4	72.9	70.4
Temperature of Cooked Potatoes (°F)	195.2	195.5	195.1	195.5
Weight of Stainless Steel Pans (lbs)	17.437	17.437	17.437	17.437
Weight of Potatoes (lbs)	48.107	48.067	48.036	48.031
Total Potato Count	300	300	300	300
Moisture Content (%)	84	84	84	84
Condensate Temperature (°F)	n/a	n/a	n/a	n/a
Water Consumption (gal)	< 3	< 3	< 3	< 3
<b>Calculated Values</b>				
Moisture Weight in Potatoes (lbs)	40.410	40.376	40.350	40.346
Average Weight of Each Potato (lbs)	0.160	0.160	0.160	0.160
Energy Consumed by Potatoes (Btu)	5,223	5,148	5,107	5,228
Energy to Food (Btu/lb)	109	107	106	109
Energy Consumed by Pans (Btu)	239	236	234	240
Energy of Boiler re-init (Btu)	n/a	n/a	n/a	n/a
Energy Consumed by the Steamer (Btu)	8,942	7,986	8,669	8,123
Energy to Steamer (Btu/lb of food cooked)	186	166	180	169
Cooking Energy Rate (kW)	7.49	6.58	7.50	6.75
Production Capacity (lb/h)	137.4	135.2	141.8	136.1
Energy Efficiency (%)	61.1	67.4	61.6	67.3

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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)	21.67	21	21.58
Electric Energy Consumed (kWh)	0.84	0.8	0.86
Temperature of Uncooked Potatoes (°F)	72	72.2	71
Temperature of Cooked Potatoes (°F)	195.1	195.1	195.1
Weight of Stainless Steel Pans (lbs)	2.59	2.59	2.59
Weight of Potatoes (lbs)	8.002	8.002	8.007
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)	6.722	6.722	6.726
Average Weight of Each Potato (lbs)	0.160	0.160	0.160
Energy Consumed by Potatoes (Btu)	857	856	864
Energy to Food (Btu/lb)	107	107	108
Energy Consumed by Pans (Btu)	35	35	35
Energy of Boiler re-init (Btu)	n/a	n/a	n/a
Energy Consumed by the Steamer (Btu)	2,867	2,730	2,935
Energy to Steamer (Btu/lb of food cooked)	358	341	367
Cooking Energy Rate (kW)	2.33	2.29	2.39
Production Rate (lb/h)	22.2	22.9	22.3
Energy Efficiency (%)	31.1	32.6	30.7

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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)	14	13.75	13.92
Electric Energy Consumed (kWh)	3.99	3.96	3.99
Initial Water Temperature (°F)	75.76	72.44	17.7
Final Water Temperature (°F)	120	114.64	115.06
Frozen Food Temperature (°F)	1	0	0
Weight of Empty Calorimeter (lbs)	41.03	41.01	41.04
Weight of Full Calorimeter (lbs)	150.01	150.26	150.2
Weight of Calorimeter Water (lbs)	60	60	60
Weight of Cooked Food (lbs)	48.98	49.25	49.16
Weight of Frozen Food (lbs)	48	48	48
Weight of Stainless Steel Pans (lbs)	15.84	17.62	17.27
Moisture Content (%)	81	81	81
Condensation Temperature (°F)	n/a	n/a	n/a
Water Consumption (gal)	< 3	< 3	< 3
<b>Calculated Values</b>			
Moisture Weight in Green Peas (lbs)	38.88	38.88	38.88
Final Food Temp (°F)	184.52	175.84	176.61
Energy Consumed by Green Peas (Btu)	12,528	12,225	12,246
Energy to Food (Btu/lb)	261	255	255
Energy Consumed by Pans (Btu)	320	341	335
Energy of Boiler re-init (Btu)	n/a	n/a	n/a
Energy Consumed by the Steamer (Btu)	13,615	13,516	13,618
Energy to Steamer (Btu/lb of food cooked)	283.6	281.5	283.6
Cooking Energy Rate (kW)	17.10	17.28	17.20
Productivity (lb/h)	205.7	209.5	206.9
Energy Efficiency (%)	94.4	93.0	92.4

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### Light-Load Frozen Green Peas Data

	Run #1	Run #2	Run #3	Run #4
<b>Measured Values</b>				
Number of Pans	1	1	1	1
Cook Time (min)	9.5	10.3	9.5	10.0
Electric Energy Consumed (kWh)	0.84	0.86	0.86	0.84
Initial Water Temperature (°F)	65.6	62.3	64.4	61.7
Final Water Temperature (°F)	112.7	110.4	113.1	108.1
Frozen Food Temperature (°F)	0.0	-0.4	0.9	-0.7
Weight of Empty Calorimeter (lbs)	5.95	5.95	5.95	5.95
Weight of Full Calorimeter (lbs)	24.280	24.230	24.228	24.185
Weight of Calorimeter Water (lbs)	10.0	10.0	10.0	10.0
Weight of Cooked Food (lbs)	8.330	8.280	8.278	8.235
Weight of Frozen Food (lbs)	8.000	8.000	8.000	8.000
Weight of Stainless Steel Pans (lbs)	2.59	2.63	2.78	2.78
Moisture Content (%)	81	81	81	81
Condensation Temperature (°F)	n/a	n/a	n/a	n/a
Water Consumption (gal)	< 3	< 3	< 3	< 3
<b>Calculated Values</b>				
Moisture Weight in Green Peas (lbs)	6.48	6.48	6.48	6.48
Final Food Temp (°F)	180.0	179.6	183.1	175.2
Energy Consumed by Green Peas (Btu)	2,081	2,073	2,094	2,039
Energy to Food (Btu/lb)	260	259	262	255
Energy Consumed by Pans (Btu)	51	52	56	54
Energy of Boiler re-init (Btu)	n/a	n/a	n/a	n/a
Energy Consumed by the Steamer (Btu)	2,867	2,935	2,935	2,867
Energy to Steamer (Btu/lb of food cooked)	358	367	367	358
Cooking Energy Rate (kW)	5.31	5.03	5.43	5.04
Production Rate (lb/h)	50.5	46.8	50.5	48.0
Energy Efficiency (%)	74.4	72.4	73.2	73.0

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