# Deck Oven Performance Test for Revent

*ET 09.08 Report*


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Southern California Edison's Design & Engineering Services (D&ES) group is responsible for this project. It was developed as part of Southern California Edison's Emerging Technology program under internal project number ET 09.08. D&ES project manager Angelo Rivera conducted this technology evaluation with overall guidance and management from Juan Menendez and Paul Delaney. For more information on this project, contact *Angelo.Rivera*@sce.com.



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# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ASTM | American Society for Testing and Materials |
| BTU | British Thermal Unit |
| CFM | Cubic Feet Per Minute |
| CT | Current Transducers |
| DAS | Data Acquisition System |
| F | Fahrenheit |
| ft | Feet |
| FTC | Foodservice Technology Center |
| HV | Heavy-load test |
| in | Inches |
| kW | Kilowatt |
| KWh | Kilowatt Hour |
| lb | Pound |
| SCE | Southern California Edison |

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# EXECUTIVE SUMMARY

Deck ovens have one or more baking chambers allowing large volumes of food to bake simultaneously, and are a popular choice in commercial baking. Each baking chamber in a single oven has its own deck (floor) at the bottom of the chamber and the heat, typically is supplied through a heating element above and beneath the deck. The food products are placed directly on the floor of the heated chamber. The design of the oven ceiling, floor, and walls is to absorb heat quickly and radiate that heat back slowly and evenly. To accomplish this, the deck is often made of ceramic material, steel, brick, or a type of composite material. Deck ovens are typically double-stacked, with many varying configurations that can directly affect cooking performance and efficiency.

This project assesses the energy efficiency level of the Revent modular deck oven to determine an appliance baseline and a minimum energy efficiency level in order to qualify for the food service qualifying product list. This project also assesses the energy input rate, amount of energy consumed during oven preheating, idle energy rate, production rate, and the level of energy efficiency during cook time.

Testing was performed at the Southern California Edison Foodservice Technology Center (FTC) in Irwindale, CA. The test data provides key information to help determine the operation costs and the percentage of total kitchen productivity a single appliance can deliver.

The heavy-load testing began after the deck oven was preheated and stabilized at 475° Fahrenheit (F) for one hour. Once the oven door opened, pizzas were loaded from rear to front and from left to right in every square foot of the oven. Six pizzas were cooked for the heavy-load pizza test. The cook time determination and heavy-load cook time was 8 minutes and 30 seconds.

It was concluded that the Revent modular deck oven is able to cook 56.32 pizzas per hour per deck at the manufacturer's recommended settings while demonstrating a heavy-load cooking energy efficiency of 63.4%. The cook time for heavy-load testing was 8 minutes and 30 seconds to cook the pizzas to a temperature of 195 ± 3°F. It is predicted that the double-deck Revent modular deck oven will have an American Society for Testing and Materials (ASTM) production capacity of 168.96 pizzas per hour, with both decks operating at their maximum capacity.

# INTRODUCTION

Deck ovens have one or more baking chambers allowing large volumes of food products to be baked simultaneously and are a popular choice in commercial baking. Each baking chamber in a single oven has its own deck (floor) at the bottom of the chamber and the heat is typically supplied through a heating element above and beneath the deck. The food products are placed directly on the floor of the heated chamber. The oven ceiling, floor, and walls are designed to absorb heat quickly and radiate that heat back slowly and evenly. To accomplish this, the deck is often made of ceramic material, steel, brick, or a type of composite material. Deck ovens are typically double-stacked with many varying configurations that can directly affect cooking performance and efficiency.

## BACKGROUND

Southern California Edison (SCE) is committed to the advancement of the food service industry and is part of a statewide team offering a food service qualifying product list. The qualifying product list identifies the most efficient commercial kitchen appliances within a specific appliance category. The qualifying appliances are eligible to receive incentives for their use. Currently, deck ovens are not listed in any of the appliance categories on the food service qualifying list.

Deck ovens are used in 45% of restaurants, 30% of school districts, 70% of supermarkets, and 65% of hotels and hospitality establishments. Because such a large number of deck ovens are used, creating more efficient deck ovens will have a significant energy savings impact.

## OBJECTIVE

This project examines the operation and performance of the Revent modular deck oven. The operation and performance of the oven are evaluated using American Society for Testing and Materials (ASTM) standard test methods. The testing seeks to determine the efficiency level of the appliance. Once a large enough sampling of ovens is tested, an appliance baseline and a minimum efficiency level for inclusion into the food service qualifying product list can be determined. The testing examines the:

- **Energy Input Rate:** The peak rate at which a deck oven consumes energy, kilowatt (kW).
- **Preheat Energy:** The amount of energy consumed, kilowatt hours (kWh), by the deck oven while preheating its cavity from the ambient temperature to the specified thermostat setpoint.
- **Idle Energy Rate:** The deck oven's rate of energy consumption (kW) when empty that is required to maintain its cavity temperature at a specified thermostat setpoint.
- **Production Rate:** The rate (pounds per hour) (lbs/hr) at which a deck oven brings the specified food product to a specified cooked condition. This does not necessarily refer to the maximum rate. Production rate varies with the amount of food cooked.

- **Cooking Energy Efficiency:** Quantity of energy imparted to the specific food product; this is expressed as a percentage of energy consumed by the deck oven during the cooking event.

## APPLIANCE EVALUATED

The Revent modular deck oven, shown in Figure 1, is an electric triple-stacked deck oven. It is comprised of a bottom refractory brick deck and stainless steel walls. The deck oven has a bottom heating element located below the brick and exposed top heating elements. The deck oven has a maximum baking temperature of 542° Fahrenheit (F). The chamber has a nominal depth of 2 feet (ft) and a nominal width of 4 ft. The chamber doors are top hinged with a tempered glass window. The temperature controls are electronic with independent controls for the ceiling, floor, and window heating elements. The oven contains one cooling vent per deck for cooking steam exhaust. The Revent modular deck oven has a rated electrical input rate of 7.5 kW. Appliance specifications and the manufacturer's literature are included in Appendix A.


FIGURE 1. REVENT MODULAR DECK OVEN

# TEST METHODOLOGY

Laboratory testing of the Revent electric deck oven was performed according to the ASTM F1965 test method for deck ovens.[1] Testing methods are outlined for single-chamber testing. The test data provides key information to determine:

- Energy input rate
- Preheat energy
- Idle energy rate
- Cooking energy efficiency
- Cooking energy rate
- Production rate

## LABORATORY AND INSTRUMENTATION DESCRIPTION

Testing was performed at the SCE Foodservice Technology Center (FTC). The FTC is a 2,000 square-foot demonstration and equipment test center. The center is a part of the Customer Technology Application Center, located in Irwindale, CA. It is a certified ASTM and ENERGY STAR® test lab. The FTC is equipped with regulated voltages of 120, 208, and 240. These outlets have amperages that range from 20 to 100 amps and have a wide variety of plug configurations that can accommodate the multiple appliance tests. The FTC is also equipped with a Data Acquisition System (DAS). The DAS interface is a National Instruments LabVIEW-based piece of software pictured in Figure 2. The DAS interface can monitor power, amperage, voltage, power factor, frequency, and VAR from all outlets and display results in a real-time graph during testing. The electrical use is logged in intervals of 1 second. The DAS system, can also log and display data from 36 thermocouples and 8 resistant temperature detection sensors. The interface allows the user to configure the monitoring parameters and select the specific monitoring hardware.

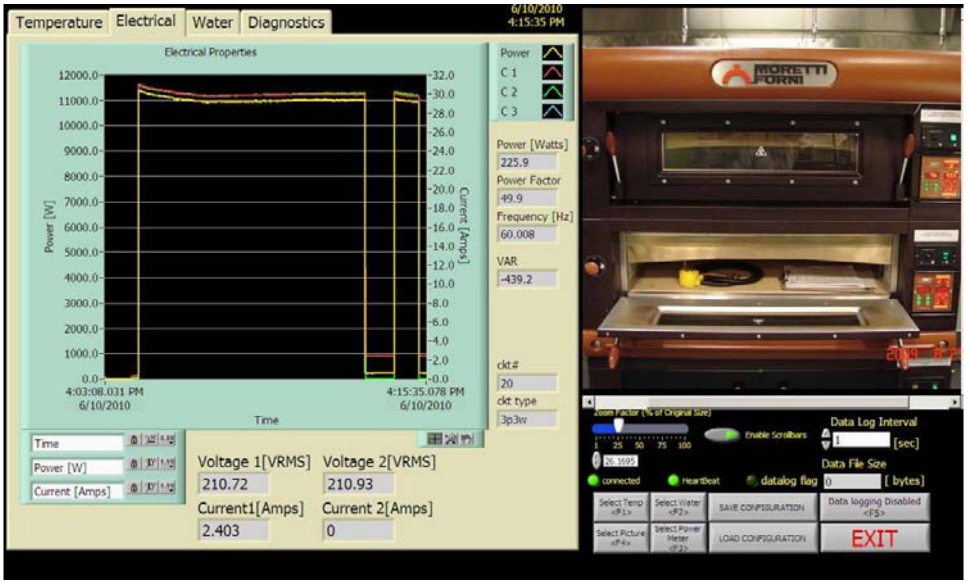



FIGURE 2. DAS INTERFACE WITH NATIONAL INSTRUMENTS LABVIEW

The DAS system is equipped with multi-functional digital transducers, integrated serial current transducers (CTs) and voltage leads. The multi-functional digital transducers create power readings from CT and voltage inputs and have an accuracy of ± 0.5% over the full-scale readings. The CTs used in this project are Data Stream RS485 and have an accuracy of ± 0.5% over the full-scale readings. The DAS system uses Omega K type[2] thermocouples and connectors. The K type thermocouples can read a temperature range of -328 to 2,282°F. To determine the cavity temperature, a fiberglass insulated 24-gage thermocouple was used. For the pizza probes, a micro needle product probe with a response time from ambient to 200°F of less than 20 seconds was used. The margin of error for the micro needle thermocouples is the greater of 2.2°F or 0.75% above 32°F or 2.0% below 32°F. The DAS system was calibrated in November 2009. When determining weight of the pizzas, a model A&D FG-60KAL digital scale, shown in Figure 3, was used. The digital scale has a resolution of 0.01 pound (lb) and an uncertainty of 0.01 lb.

**Comment:** Is this supposed "A&D®"?

FIGURE 3. AND FG-60KAL MODEL DIGITAL SCALE

**Comment:** Is this supposed "A&D®"?

## TEST SITE SETUP

The test site setup refers to the installation of the deck oven, condition of the environment, the creation of the pizza probe, and the creation of the test pizzas. At this test site, the deck oven was placed under a canopy exhaust hood and positioned so a 6 inch (in.) space was maintained between the edge of the hood and the vertical plane of the front and sides of the appliance. Both sides of the deck oven were 3 ft. away from any nearby walls. The exhaust ventilation rate was set to 300 cubic feet per minute (CFM) per linear foot of hood length. The ambient conditions were kept at a temperature of 75 ± 5°F during operation of the exhaust ventilation system.

The pizza probe takes the temperature of the test pizzas before and after they are cooked, and maintains uniformity of distance and depth of temperature measurements of the test pizzas. It consists of six micro needle thermocouples mounted to a rigid structure. The rigid structure used in this evaluation is a 12 in. diameter sheet of Plexiglas®. The six thermocouples are mounted 3 inches from the center of the circular sheet of Plexiglas and spaced equal distance from each other. The rigid structure and probes were then attached to a drill press. Attaching the Plexiglas and the probes to the drill press provides the user with more control of the depth of the probes placed into the pizza. The user can also lock the drill press position during measurement that allows for a steady accurate reading. The pizza probe used in this evaluation is shown in Figure 4.

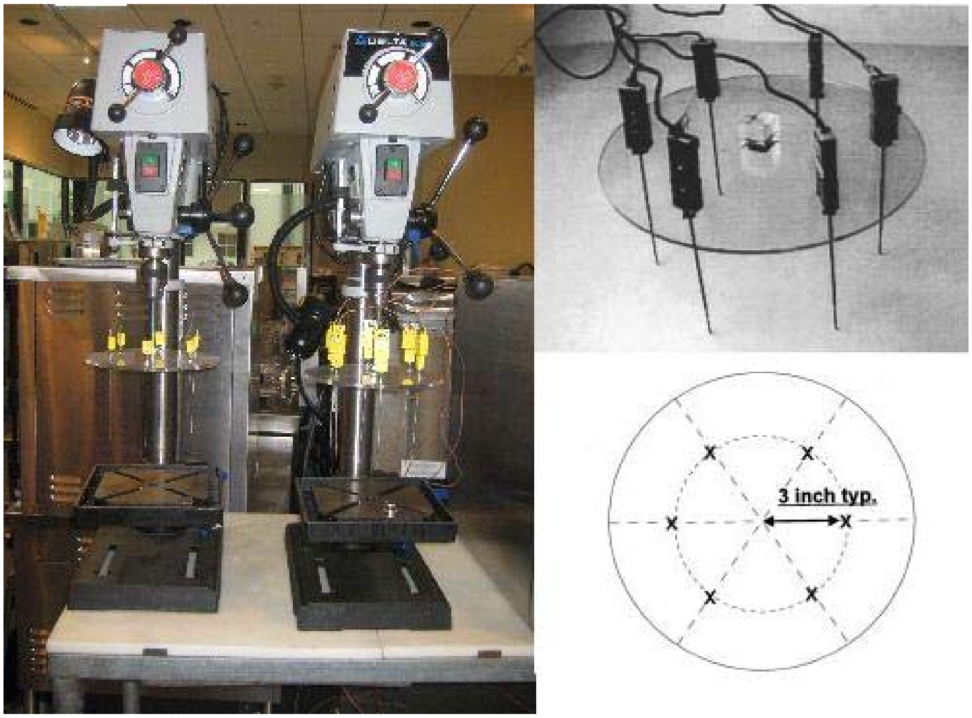



FIGURE 4. PIZZA PROBES

The test pizzas consisted of:

- A prebaked pizza crust with 12 in. diameter weighing 0.9 ± 0.2 lb and moisture content of 36 ± 3% by weight.
- A simple tomato-based pizza sauce with a moisture content of 90 ± 2% by weight. A weight of 0.25 lb of pizza sauce was uniformly spread on top of the pizza crust within 0.5 in. of the edge of the crust.
- Part-skim, low moisture shredded mozzarella cheese with a moisture content of 50 ± 2% by weight. A weight of 0.375 lb of cheese uniformly covered the pizza sauce.

All ingredients used, as well as the completed test pizza, were refrigerated at 39 ± 1°F.

## ENERGY INPUT RATE AND THERMOSTAT CALIBRATION

The energy input rate and thermostat calibration are used to confirm proper operation of the deck oven and to ensure that all test results are determined at the same temperature. The energy input rate is the peak energy consumption of the deck oven while preheating the oven from ambient temperature to a setpoint of 475°F. The peak energy consumption must be operating within 5% of the nameplate energy input rate. Thermostat calibration is verified by installing a thermocouple in the center of the oven cavity. By placing a thermocouple in the center of the cavity, a consistent temperature for all types of deck ovens can be measured. Calibration is necessary since the placement of deck oven temperature sensors can differ greatly between varying models and manufacturers. The deck oven display temperature typically differs from the reading taken by the cavity thermocouple. When performing a thermostat calibration, the oven is allowed to stabilize for 1 hour before readings of the cavity thermocouple are taken. After the cavity, the thermocouple reads an average temperature of 475 ± 5°F for a 30-minute period, and then the thermostat is calibrated.

## PREHEAT AND IDLE ENERGY RATE

The preheat test records the required amount of time and energy needed to raise the deck oven cavity temperature from ambient to a ready-to-cook-condition. In this test, the oven was considered to be in ready-to-cook-condition when the cavity reached 465°F. Once the oven reached its setpoint of 475°F, it stabilized for 1 hour. After stabilization, the idle energy rate was taken by monitoring the consumption of the deck oven for a 2-hour period. The idle energy rate is the deck oven's required rate of energy consumption (kW), when empty, needed to maintain its cavity temperature at a specified thermostat setpoint.

## COOK TIME DETERMINATION AND HEAVY-LOAD PIZZA TEST

Cook time determination is necessary in order to decide the amount of time a test pizza is cooked. The pizza's cook time is determined by testing multiple pizzas using varying times. After the oven was preheated and stabilized at 475°F for 1 hour, a test pizza was cooked for varying times. Within 10 seconds of removing the pizza, a temperature reading was taken using the pizza probe. The pizza was placed underneath the probes and the probes were lowered into the pizza. The probes only penetrated the cheese and rested on the sauce-crust interface directly beneath the cheese. The probes were locked into position for 60 seconds and during that time temperature readings were taken at 30, 40, 50, and 60 seconds from each of the six probes. For each time the temperature was averaged between the six probes and the highest average temperature was used to determine the pizza temperature. The pizza temperature must be 195 ± 3°F. The cook time associated with the desired temperature was used as the cook time for the heavy-load pizza test.

Heavy-load testing is the testing of a deck oven's ability to cook at peak capacity. Capturing heavy-load testing requires the following measurements:

- Weight of an uncooked pizza
- Weight of a cooked pizza
- Temperature of an uncooked pizza
- Temperature of a cooked pizza
- Energy consumption (kWh) of the deck oven during testing

The peak capacity of a deck oven is determined by the nominal depth and width of the oven deck as listed in Table 1.

**TABLE 1. NUMBER OF PIZZAS REQUIRED FOR EACH RUN OF A HEAVY-LOAD TEST**

| NOMINAL DEPTH, (FT) | NO. OF PIZZAS | NOMINAL WIDTH, (FT) | NO. OF PIZZAS | NOMINAL WIDTH, (FT) |
|---|---|---|---|---|
| | **1** | **2** | **3** | **4** |
| **1** | 1 | 2 | 3 | 4 |
| **2** | 2 | 4 | 6 | 8 |
| **3** | 3 | 6 | 9 | 12 |
| **4** | 4 | 8 | 12 | 16 |

After preheating and stabilizing the oven at 475°F for 1 hour, the heavy-load test began and the required amount of test pizza(s) were removed from the refrigerator. The weight and temperatures of all test pizza(s) were taken and recorded. Once the heating elements within the deck oven cycled from "on" to "off", the deck oven door was opened and the pizzas were loaded from rear to front and from left to right as shown in Figure 5. Pizzas were placed in every square foot of the oven. Monitoring of time and energy began when the first pizza was placed on the oven deck. No more than 5 seconds elapsed between the loadings of any two successive pizzas and when all the pizzas were loaded, the deck oven door was shut. The pizzas cooked for the entire pre-determined cooking time and when finished were removed from front to back and from left to right. No more than 5 seconds elapsed between the unloading of any two consecutive pizzas and the deck oven door was shut immediately after the last pizza was removed. When all the pizzas were removed, the final pizza temperature was determined using the pizza probe on the first, middle, and last pizza removed from the oven. The time and energy consumption monitoring was complete after the oven cavity temperature recovered back to 465°F.

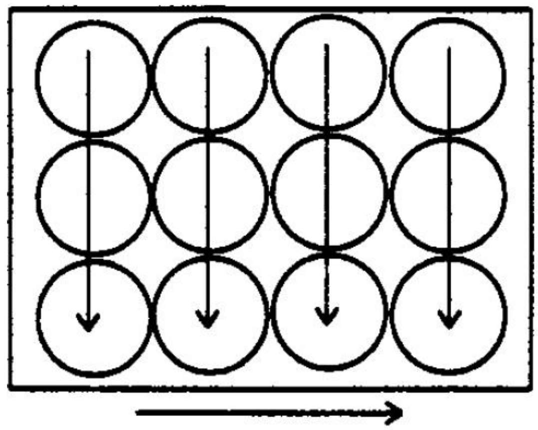


FIGURE 5. EXAMPLE OF PIZZA LOADING INTO A 3 FT DEEP BY 4 FT WIDE OVEN DECK

## COOKING ENERGY EFFICIENCY, COOKING ENERGY RATE AND PRODUCTION CAPACITY

The cooking energy efficiency is the quantity of energy imparted to the specific food product and is expressed as a percentage of energy consumed by the deck oven during the heavy-load test (HV). Cooking energy efficiency is a precise indicator of oven energy performance when cooking a typical food product. Equation 1 calculates the cooking energy efficiency.

EQUATION 1. COOKING ENERGY EFFICIENCY

$$\eta_{cook} = \frac{E_{food}}{E_{appliance}} \times 100 = \frac{[W_{uncooked} \times C_p(P) \times (T_2 - T_1)] + [(W_{uncooked} - W_{cooked}) \times H_{fgt2}]}{E_{appliance}} \times 100$$

Where:

$\eta_{cook}$ = Cooking energy efficiency (%)

$E_{food}$ = Amount of energy into the food (British Thermal Unit (Btu))

$W_{uncooked}$ = Total weight of test pizzas before they are cooked (lbs)

$W_{cooked}$ = Total weight of cooked test pizzas (lbs)

$C_p(P)$= The specific heat of pizzas based on the average specified pizza (0.593Btu/lb°F)

$H_{fgt2}$ = Heat of vaporization of water as found from a table of thermodynamic properties of water at saturation[3] (982Btu/lb)

$T_2$ = Average final temperature of the pizzas (°F)

$T_1$ = Average initial temperature of the pizzas (°F)

$E_{appliance}$ = Amount of energy into the appliance (Btu)

The cooking energy rate is the average rate of energy consumption (kW) during the heavy-load test. The cook energy rate is calculated using Equation 2.

**EQUATION 2. COOKING ENERGY RATE**

$$E_{cookrate} = \frac{E_{appliance} \times 60}{t}$$

Where:

$E_{cookrate}$ = Cooking energy rate (kW)

$E_{appliance}$ = Amount of energy consumed by an appliance during cook testing (kWh)

t = Cook test period (min.)

Production capacity information is the production capability of a deck oven as it is used to cook a typical food product. This information can be used to determine the proper size and the quantity needed to fit any user's needs. Equation 3 calculates the production capacity.

**EQUATION 3. PRODUCTION CAPACITY**

$$PC = \frac{P_{num} \times 60}{t}$$

Where:

PC= Production capacity of the deck oven (pizza/hr)

$P_{num}$ = Number of pizzas required for a heavy load

t = Cook test period (min.)

For cooking energy efficiency and production capacity results, the percentage of uncertainty in each result is specified to be no greater than ±10% based on at least three test runs.

# RESULTS

## ENERGY INPUT RATE AND THERMOSTAT CALIBRATION

The input rates were always checked to be within ± 5% before any tests were taken on any given day. The input rates listed in Table 2 were taken on each of the individual test days.

TABLE 2. INPUT RATE

| TEST | RATE (KW) | NAMEPLATE INPUT RATE (KW) | PERCENT DIFFERENCE (%) | TEST DATE | TEST PERFORMED |
|---|---|---|---|---|---|
| Input 1 | 7.65 | 7.5 | 2.0 | 3/17/2010 | Input, Thermostat |
| Input 2 | 7.67 | 7.5 | 2.3 | 3/22/2010 | Input, Thermostat, Idle, Preheat |
| Input 3 | 7.71 | 7.5 | 2.8 | 5/10/2010 | Input, HV1, HV2 |
| Input 4 | 7.68 | 7.5 | 2.3 | 6/21/2010 | Input, HV3 |

The thermostat calibration reading was verified by installing a thermocouple in the center of the cavity, as shown in Figure 6. The readings gave a consistent cavity temperature during testing. When performing a thermostat calibration, the oven was allowed to stabilize for 1 hour before a 30-minute average reading of the cavity thermocouple was taken. Through testing and verification, the setpoint of _465°F at a power level of 80% on the top, 10% on the bottom and 30% on the window heating element, which kept the cavity temperature at 475 ± 5°F for the 30-minute average.

FIGURE 6. CAVITY THERMOCOUPLE INSTALLATION

## PREHEAT AND IDLE ENERGY RATE

The oven was preheated from room temperature at the thermostat calibration temperature of 465°F at a power level of 80% on the top, 10% on the bottom, and 30% on the window heating element. The deck reached 465°F after 99.1 minutes while the oven consumed 7.92 kWh. The oven's preheat curve is shown in Figure 7. The preheat curve shows that the heating elements never turned off or cycled while heating to the deck oven setpoint.

The oven was stabilized for 1 hour following the preheat test and then the energy demand was monitored for a 2-hour period. The idle energy rate was 1.83 kW. The duty cycle, or percentage of the oven's actual energy consumption rate compared to the 7.5 kW measured energy input rate was 24.4% during idle conditions.

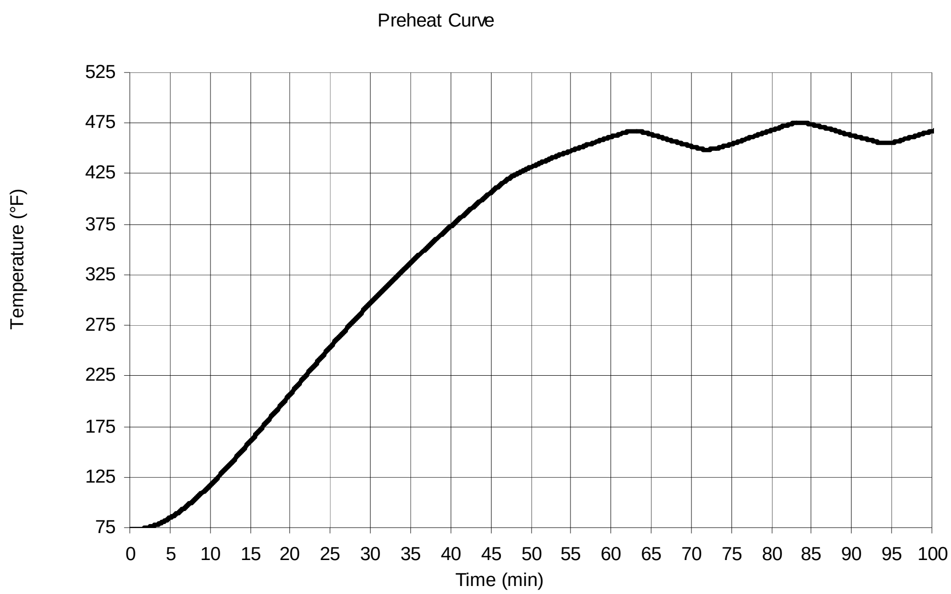



FIGURE 7. PREHEAT CHARACTERISTICS

## COOK TIME DETERMINATION AND HEAVY-LOAD PIZZA TEST

ASTM standard testing for deck ovens only outlines testing of a single-deck oven chamber. Since the Revent modular deck oven is a triple-stacked deck oven and all three decks are equivalent, all cooking tests were conducted on the upper deck with the lower decks turned off and cool. The oven deck has a nominal depth of 2 ft. and a nominal width of 4 ft. The oven's nominal size requires eight pizzas to be cooked for the heavy-load pizza test. The cook time determination and heavy-load cook time was 8 minutes and 30 seconds and the temperature of the pizzas was 195 ± 3°F.

# Cooking Energy Efficiency, Cooking energy Rate and Production Capacity

From the heavy-load tests, it was determined that the average cooking energy efficiency is 63.30%. The cooking energy efficiency is defined as the quantity of energy consumed by the pizzas expressed as a percentage of energy consumed by the oven during the cooking test. The energy transferred to the food was calculated using the measured values of the initial and the final pizza temperature, the initial and final pizza weight, the specific heat of the pizza, energy consumed by the oven, time it took to cook pizzas and for the oven to recover to 465°F and the heat of vaporization of water. Additionally, based on data from the heavy-load testing it was determined that the cooking energy rate is 3.50 Btu/hr and the production capacity is 56.32 pizzas per hour. The triple-deck Revent modular deck oven has an estimated ASTM production capacity of 168.96 pizzas per hour, with all three decks operating at their maximum capacity. Table 3 lists all the measured values recorded during each heavy-load test.

**Table 3. Heavy-Load Test Data**

| | Heavy-Test 1 | Heavy-Test 2 | Heavy-Test 3 |
|---|---|---|---|
| Initial total weight (lbs) of pizza | 11.86 | 11.89 | 11.88 |
| Final total weight (lbs) of pizza | 11.35 | 11.42 | 11.39 |
| Initial temperature (°F) of pizza | 39.3 | 40.4 | 39.5 |
| Final temperature (°F) of pizza | 196.6 | 196.7 | 197.3 |
| Specific heat of the pizza (Btu/lb °F) | 0.593 | 0.593 | 0.593 |
| Heat of vaporization (Btu/lb) | 970 | 970 | 970 |
| Energy consumed by the oven (kWh) | 0.72 | 0.76 | 0.72 |
| Time to cook pizzas and for the oven to recover to 465°F (min) | 12.55 | 12.95 | 12.47 |
| Cooking energy efficiency (%) | 64.90 | 60.43 | 64.56 |
| Cooking energy rate (Btu/hr) | 3.46 | 3.50 | 3.47 |
| Production capacity (lb/hr) | 56.70 | 55.09 | 57.18 |

# CONCLUSION

During testing, the oven was preheated from room temperature to the thermostat calibration temperature of 465°F at a power level of 80% on the top, 10% on the bottom, and 30% on the window heating element. The deck reached 465°F after 99.1 minutes while the oven consumed 7.92 kWh. During the preheat period the heating elements never turned off or cycled while heating to the deck oven setpoint. The idle energy rate was 1.83 kW. The duty cycle or percentage of the oven's actual energy consumption rate compared to the 7.5 kW measured energy input rate was 24.4% during idle conditions.

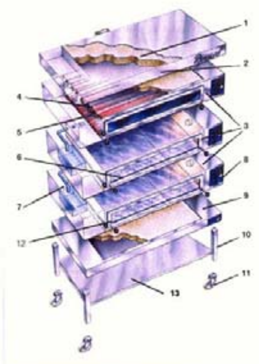
The Revent modular deck oven was able to cook 56.32 pizzas per hour at the manufacturer's recommended settings while demonstrating a heavy-load cooking energy efficiency of 63.30%. The cook time for heavy-load testing was 8 minutes and 30 seconds to cook the pizzas to a temperature of 195 ± 3°F. The triple-deck Revent modular deck oven has an estimated ASTM production capacity of 168.96 pizzas per hour, with all three decks operating at their maximum capacity.

# APPENDIX A

| Module | No of trays | kW/ deck | Chamber | | | Exterior | | |
|---|---|---|---|---|---|---|---|---|
| | | | Width | Depth | Height | Width | Depth | Height |
| TRAY SIZE 600x800 mm / 23,6"x31,5" (TRAY SIZE 400x600: double tray capacity, 2 trays in depth.) | | | | | | | | |
| Deck LC * | 2 (4) | 7 | 1300 | 820 | 150 | 1912 | 1090 | 320 |
| Deck HC ** | 2 (4) | 7 | 1300 | 820 | 200 | 1912 | 1090 | 370 |
| Top | 2 | | | | | 1930 | 1040 | 102 |
| Bottom | 2 | | | | | 1930 | 1040 | 110 |
| Tray size 457x762 mm / 18"x30" | | | | | | | | |
| Deck LC * | 2 | 5,5 | 960 | 820 | 150 | 1912 | 1090 | 320 |
| Deck HC ** | 2 | 5,5 | 960 | 820 | 200 | 1912 | 1090 | 370 |
| Top | 2 | | | | | 1930 | 1040 | 102 |
| Bottom | 2 | | | | | 1930 | 1040 | 110 |
| Deck LC * | 3 | 8,5 | 1440 | 820 | 150 | 1912 | 1090 | 320 |
| Deck HC ** | 3 | 8,5 | 1440 | 820 | 200 | 1912 | 1090 | 370 |
| Top | 3 | | | | | 1930 | 1040 | 102 |
| Bottom | 3 | | | | | 1930 | 1040 | 110 |
| Tray size 457x660 mm / 18"x26" | | | | | | | | |
| Deck LC * | 2 | 4,7 | 960 | 675 | 150 | 1572 | 950 | 320 |
| Deck HC ** | 2 | 4,7 | 960 | 675 | 200 | 1572 | 950 | 370 |
| Top | 2 | | | | | 1590 | 900 | 102 |
| Bottom | 2 | | | | | 1590 | 900 | 110 |
| Deck LC * | 3 | 6,9 | 1440 | 675 | 150 | 2052 | 950 | 320 |
| Deck HC ** | 3 | 6,9 | 1440 | 675 | 200 | 2052 | 950 | 370 |
| Top | 3 | | | | | 2070 | 900 | 102 |
| Bottom | 3 | | | | | 2070 | 900 | 110 |
| OPTIONALS | | | | | | | | |
| Underbuilt prover | 2x6 | 1,79 | 12 tray 457 x 660 mm | | | 1527 | 900 | 840 |
| Underbuilt prover | 3x6 | 2,28 | 18 tray 457 x 660 mm | | | 2052 | 900 | 840 |
| Underbuilt prover | 2x6 | 1,79 | 12 tray 457 x 762 mm | | | 1527 | 1040 | 840 |
| Underbuilt prover | 3x6 | 1,79 | 18 tray 457 x 660 mm | | | 2052 | 1040 | 840 |
| Underbuilt prover | 2x6 | 2,28 | 12 tray 800 x 600 mm | | | 1912 | 1040 | 840 |
| Steam generator | | 2 | | | | | | |
| Stone soles | | | | | | | | |
| Legs (set of 4), lenght 100 mm, 250 mm, 400 mm, 550 mm, 700 mm | | | | | | | | |
| Castors (set of 4), height 190 mm | | | | | | | | |
| Grid for oven chamber sole 675 x 960 mm | | | | | | | | |
| Grid for oven chamber sole 675 x 1440 mm | | | | | | | | |
| Grid for oven chamber sole 820 x 960 mm | | | | | | | | |
| Grid for oven chamber sole 820 x 1300 mm | | | | | | | | |
| Grid for oven chamber sole 820 x 1440 mm | | | | | | | | |

*LC=low crown **HC=high crown

Continuous product development is a Revent policy. Therefore, we reserve the right to change specifications and/or design without prior notice. Pictures or drawings may include product options.




## Features

1. Oven top with thick mineral wool insulation.
2. Stainless steel outside lining.
3. Oven decks.
4. Top heat electric elements.
5. Bottom heat electric elements.
6. Oven chamber door with glass window. The doors pivot upwards and inwards meaning that an open door will not limit the working area in front of the oven.
7. Self contained steam generator (optional). Just connect the water!
8. Easy to operate instrumentation including baking timer, set temperature, temperature read out, control for top, bottom and front zone heating and steam control. Electronic optional.
9. Oven bottom with on/off switch.
10. Oven legs available in various heights.
11. Castors
12. Handle (optional)
13. Shelf (optional)

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