TurboChef Technologies, Inc.

Double Batch (HHD) Ventless Submittal Information

TURBOCHEF

THE Double Batch™

Project _____

Item No. _____

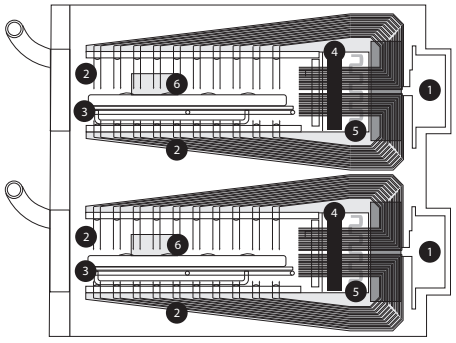
Quantity _____

PERFORMANCE

The TurboChef® Double Batch™ oven has two independent cavities that circulate impinged air at speeds of up to 50 mph to create high heat transfer rates and reduced cook time. The oven utilizes variable speed blowers, oscillating racks, and catalytic converter, resulting in minimal energy input, high food quality, and ventless operation.

VENTILATION

- UL (KNLZ) listed for ventless operation.†
- EPA 202 test (8 hr):
  - Product: Pepperoni Pizzas
  - Results: 1.04 mg/m^3
  - Ventless Requirement: <5.00 mg/m^3
- Internal catalytic filtration to limit smoke, grease, and odor emissions.



1. Blower Motor
2. Impinged Air
3. Oscillating Rack
4. Catalytic Converter
5. Impingement Heater
6. Halogen Lights

EXTERIOR CONSTRUCTION

- Stainless steel front, top and sides
- Rubber seal for surface mounting

INTERIOR CONSTRUCTION

- 304 stainless steel
- Two fully insulated cook chambers
- Top and bottom jetplates

STANDARD FEATURES

- Simple and intuitive touch controls
- Multi-language user interface
- Integral recirculating catalytic converter for UL (KNLZ) listed ventless operation
- Variable-speed High h recirculating air impingement system
- Oscillating rack for high heat transfer without spotting
- Half-sheet pan/16-inch pizza capacity
- Stackable design (requires stacking kit)
- Smart menu system capable of storing up to 128 recipes: 64 recipes per cavity
- Built-in self diagnostics for monitoring oven components and performance
- USB compatible
- Wi-Fi compatible
- Free one-year subscription to TurboChef Connect menu management web portal
- Smart Voltage Sensor Technology* (N.A. only)
- Includes plug and cord (6 ft. nominal)
- Warranty – 1 year parts and labor

STANDARD ACCESSORIES

- 1 Aluminum Paddle (NGC-1478)
- 1 Bottle Oven Cleaner (103180)
- 1 Bottle Oven Guard (103181)
- 2 Trigger Sprayers (103182)
- 4 Oven Legs (HHB-3205) – Optional

c UL US

ANSI/NSF #4
81Y5

This product conforms to the ventilation recommendations set forth by NFPA96 using EPA202 test method.

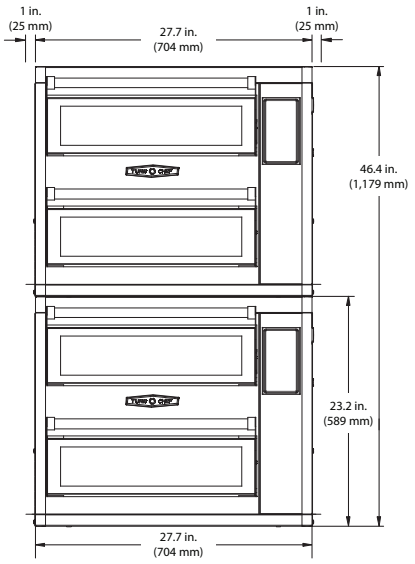
* Smart Voltage Sensor Technology does not compensate for lack of or over voltage situations. It is the responsibility of the owner to supply voltage to the unit according to the specifications on the back of this sheet.

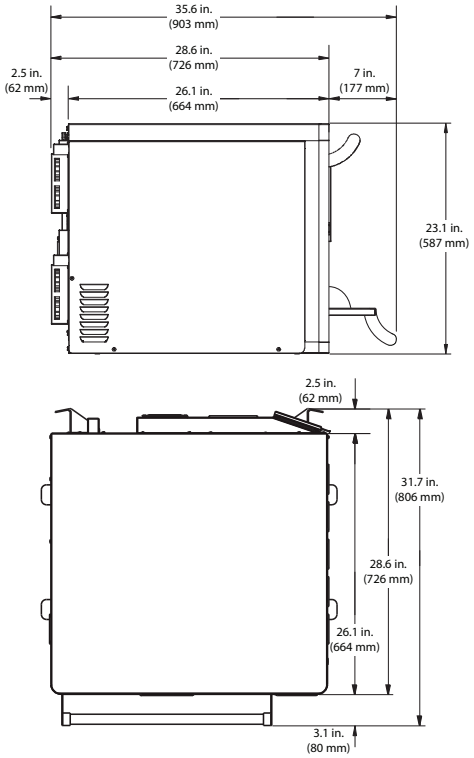
† Ventless certification is for all food items except for foods classified as "fatty raw proteins." Such foods include bone-in, skin-on chicken, raw hamburger meat, raw bacon, raw sausage, steaks, etc. If cooking these types of foods, consult local HVAC codes and authorities to ensure compliance with ventilation requirements.

Ultimate ventless allowance is dependent upon AHJ approval, as some jurisdictions may not recognize the UL certification or application. If you have questions regarding ventless certifications or local codes please email ventless.help@turbochef.com

TurboChef reserves the right to make substitutions of components or change specifications without prior notice.

Double Batch™





DIMENSIONS		
Single Units		
Height	23.2″	589 mm
Width	27.7″	704 mm
Depth (Door Open/ Closed)	35.6″ / 31.7″	903 mm / 806 mm
Weight	262 lb.	119 kg
Stacked Units		
Height	46.4″	1,179 mm
Width	27.7″	704 mm
Depth (Door Open/ Closed)	31.7″ / 35.6″	806 mm / 903 mm
Weight	524 lb.	238 kg
Cook Chamber		
Height	3.3″	84 mm
Width	18.1″	318 mm
Depth	17.07″	434 mm
Volume	0.59 cu.ft.	16.7 liters
Wall Clearance (Oven not intended for built-in installation)		
Top	2″	51 mm
Sides	2″	51 mm

ELECTRICAL SPECIFICATIONS-SINGLE PHASE		
Double Batch US Model (HHD-9500-1) - United States		
Voltage	208/240 VAC	
Frequency	60 Hz	
Current (Max Circuit Requirement)	50 amp (50 amp)	NEMA 6-50P
Max Input	10,720/12,480 watts	

ELECTRICAL SPECIFICATIONS-3-PHASE		
Double Batch US Model (HHD-9500-14-DL) - United States		
Voltage	208/240 VAC	
Frequency	60 Hz	
Current (Max Circuit Requirement)	30 amp (30 amp)	NEMA 15-30P
Max Input	6,683/7,552 watts	

SHIPPING INFORMATION
U.S.: All ovens shipped within the U.S. are packaged in a double-wall corrugated box banded to a wooden skid. International: All International ovens shipped via Air or Less than Container Loads are packaged in wooden crates.
Box size: 37″ x 36″ x 35″ (940 mm x 914 mm x 889 mm) Crate size: 39″ x 40″ x 36″ (991 mm x 1016 mm x 914 mm) Item class: 110 NMFC #26710 HS code 8419.81
Appx. boxed weight: 322 lb. (146 kg) Appx. crated weight: 405 lb. (184 kg)
Minimum entry clearance required for box: 35.5″ Minimum entry clearance required for crate: 39.5″

TurboChef Global Operations
2801 Trade Center Drive / Carrollton, Texas 75007 USA
US: 800.90TURBO (800.908.8726) / International: +1 214.379.6000
Fax: +1 214.379.6073 / turbochef.com

TurboChef recommends installing a type D circuit breaker for all installations.

TurboChef reserves the right to substitute components or change specifications without notice.

c UL us LISTED 81Y5

Convection Oven with Integral Systems for Limiting the Emissions of Grease Laden Air

This Product Conforms to the Ventilation Recommendations Set Forth by NFPA96 Using EPA202 Test Method

NOTICE OF COMPLETION
AND
AUTHORIZATION TO APPLY THE UL MARK

08/25/2016

TurboChef Technologies Inc
David Castillo
2801 Trade Center Drive
Carrollton Tx 75007, United States

Our Reference:	File E151488, Vol. 1	Project Number	4787358539
Your Reference:	David Castillo - 26Feb2016		
Project Scope:	New Oven Model HHD: Sanitation Investigation		

Dear David Castillo:

Congratulations! UL's investigation of your product(s) has been completed under the above Reference Number and the product was determined to comply with the applicable requirements. This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Mark at authorized factories under UL's Follow-Up Service Program. To provide your manufacturer(s) with the intended authorization to use the UL Mark, you must send a copy of this notice to each manufacturing location currently authorized under File E151488, Vol. 1 and *including any special instructions as indicated in the addendum to this letter*.

Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent in the near future. Until then, this letter authorizes application of the UL Mark for 90 days from the date indicated above.

Additional requirements related to your responsibilities as the Applicant can be found in the document “Applicant responsibilities related to Early Authorizations” that can be found at the following web-site:
http://www.ul.com/EAResponsibilities

Any information and documentation provided to you involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

We are excited you are now able to apply the UL Mark to your products and appreciate your business. Feel free to contact me or any of our Customer Service representatives if you have any questions.

Very truly yours,

R. Rynkiewicz
847-664-2631
Senior Staff Engineer
Richard.P.Rynkiewicz@ul.com

Reviewed by:

Bruce A. Mahrenholz
847-664-3009
CPO Director
Bruce.A.Mahrenholz@ul.com

NBKB622-2E6192

NOTICE OF COMPLETION
AND
AUTHORIZATION TO APPLY THE UL MARK

08/09/2016

TurboChef Technologies Inc
David Castillo
2801 Trade Center Drive
Carrollton, TX 75007, United States

Our Reference:	File E319600, Vol. 1	Project Number	4787358539
Your Reference:	David Castillo – 26 Feb 2016		
Project Scope:	E319600 V2 – Commercial Double Oven Model HHD: Safety Certification Project Completion		

Dear David Castillo:

Congratulations! UL's investigation of your product(s) has been completed under the above Reference Number and the product was determined to comply with the applicable requirements. This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Mark at authorized factories under UL's Follow-Up Service Program. To provide your manufacturer(s) with the intended authorization to use the UL Mark, you must send a copy of this notice to each manufacturing location currently authorized under File E151487, Vol. 1.

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Reviewed by:

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CPO Director
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NBKB621-6DDE84

ONLINE CERTIFICATIONS DIRECTORY

KNLZ.GuideInfo
Commercial Cooking Appliances with Integral Systems for Limiting the Emission of Grease-laden Air

View Listings Page Bottom

[Heaters and Heating Equipment] (Heaters, Cooking Appliances) Commercial Cooking Appliances with Integral Systems for Limiting the Emission of Grease-laden Air

See General Information for Heaters, Cooking Appliances

This category covers cooking equipment intended for commercial use, such as pressurized deep fat fryers and other appliances for use in commercial kitchens, restaurants or other business establishments where food is prepared. Each appliance covered in this category is manufactured with an integral system feature to limit the emission of grease-laden air from the cooking process to the room ambient.

These appliances have been evaluated for the limit of 5 mg/m^3 for the emission of grease-laden air to the room ambient in accordance with the recommendations of the National Fire Protection Association Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, NFPA 96, using the EPA-202 test method prescribed for cooking appliances provided with integral recirculating air systems.

These products are not intended for connection to a ducted exhaust system.

Appliances in this category are not provided with an integral fire extinguishing system. Authorities having jurisdiction should be consulted as to the requirements for this equipment with respect to fire extinguishing systems, such as the need for field installed systems in accordance with NFPA 96.

For products with integral recirculating systems including fire extinguishing systems, refer to Commercial, with Integral Recirculating Systems (KNKG).

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of the National Electrical Code must be observed in installations or use, suitable warning or special instructions are marked on the equipment.

Appliances Listed in this category are suitable for wiring with either copper or aluminum power supply conductors unless marked "Use Copper Wire Only For Power Supply Connections" .

Commercial cooking appliances of certain types are designed for permanent connections to water supply and sewer lines at the point of installation. Authorities having jurisdiction should be consulted as to the requirements for this equipment with respect to sanitation and connection to water supply and waste disposal lines.

Neither the toxicity of coatings nor the physiological effects on persons consuming food products prepared by use of these appliances has been investigated.

For cooking oil filters that are not an integral part of another appliance, see Commercial Filters for Cooking Oil (KNRF).

For additional information, see Electrical Equipment for Use in Ordinary Locations (AALZ) and Heating, Cooling, Ventilating and Cooking Equipment (AAHC).

The basic standard used to investigate products in this category is ANSI/UL 197, "Commercial Electric Cooking Appliances".

Appliances Listed in this category with an integral cooking oil filter have been additionally investigated to the requirements in the standard "Commercial Filters for Cooking Oil", ANSI/UL 1889.

The Listing Mark of UL on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the name and/or symbol of Underwriters Laboratories Inc. (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number and one of the following product names as appropriate: "Commercial Cooking Appliance," "Cooking Appliance," or other appropriate product identity specified in the individual Listing, along with the words "with integral system for limiting the emission of grease-laden air. "

* *

Last Updated on 1999-02-19

2016-08-02

Mr. David Castillo
Turbochef Technologies Inc
4240 International Pky
Carrollton, TX 75007
Suite 105

E-mail: David.Castillo@turbochef.com

Our Reference: File E151487, Project 4787369694
Your Reference: D Castillo 22APR2014
Subject: E151487 - COMPLEMENTARY LISTING FOR MODEL HHD OVEN

Mr. Castillo:

Per your request, project 4787369694 was opened for the evaluation of grease-laden vapors produced by the Model HHD oven. The scope of the project was to test this model in accordance with EPA Method 202 test guidelines to demonstrate compliance with UL710B, the Standard for Recirculating Systems, Sec. 17 and NFPA96, the Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations, paragraph 4.1.1.2 for Complimentary Listing under UL's KNLZ category. The test was conducted at our facility in Northbrook, IL on April 17th, 2016. This letter will report the results of the EPA202 test.

For the record, the test was conducted on the Model HHD oven, cooking frozen 12 in. pepperoni pizzas (Tombstone, with 19 pepperonis per pizza) as specified in Appendix A. Please see the attached page (Appendix A) for the test method and results of the tests. The results are considered to comply with UL710B, Section 17 and NFPA96, paragraph 4.1.1.2 since the measured values were less than the 5 mg/m^3 limit.

Due to the Safety evaluation (4787358539) not being completed, this letter will serve to report that all tests on the subject product have been completed with acceptable results. After the successful completion of the safety project (4787358539), a Service Request will be opened to add the Complementary Listing to the Model HHD oven. All information generated will be retained for future use. This concludes all work associated with project 4787369694 and we are therefore closing this project. Our Accounting Department has been instructed to bill you for all charges incurred.

Should you have any questions or comments concerning the above, please feel free to contact the undersigned.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC or any authorized licensee of UL.

Sincerely,

William G. Morler

Bill Morler
Sr. Project Engineer
Tel: 847-664-1852
E-mail: William.Morler@ul.com

Reviewed by:

Fred Zaplatosch

Fred Zaplatosch
Sr. Staff Engineer
E-mail: fred.zaplatosch@ul.com

APPENDIX: A

TEST FOR EVOLUTION OF SMOKE OR GREASE-LADEN AIR (500 °F):

The model _HHD_ cooking appliance was placed under a hood operating at 500 CFM, and was tested using a method derived from EPA Method 202. The Underwriters Laboratories also provided Pepperoni Pizza for the test.

A _12_ in. by _6_ in. rectangular, 108 in. tall sheet metal stack was constructed on top of the hood. A sampling port was located approximately 80 in. downstream from the hood exhaust, at which point it was determined there was laminar flow. The sampler was assembled and an out of stack filter was used. A pre-leak check was conducted and determined to be < 0.02 ft/min. Sampling was determined to be done at 8 traverse points.

The oven was operated normally by cooking the following foods:

Convection Oven:

12 in. pepperoni pizza (Tombstone, with 19 pepperonis per pizza), each cooked for _4_ minutes with _30_ seconds (top) and 4 minutes (bottom) between loads for 8 hours (total of _214_ pizzas). Oven was set to maintain _500_ °F

Temp	Event #	% Time.m:s	% Top Fan	% Bottom Fan	% Microwave Energy
500 °F	1	4:30	50	--	N/A
500 °F	2	4:00	--	50	N/A

The cooking cycle was repeated for 8 hours of continuous cooking.

During the cooking operation, it was noted whether or not visible effluents evolved from the air exhaust of the hood. Gauge, meter and temperature readings were taken and recorded every 10 min. After cooking, the condition of the duct was noted and a post-leak check was conducted and determined to be < 0.02 ft^3/min.

After being allowed to cool, the sampling equipment was disassembled. The glass-filter is to be removed using a pair of forceps and placed in a clean petri dish. The dish is to be sealed and labeled "SAMPLE 1".

A sample of the acetone of the same volume that will be used to rinse-out the nozzle and probe is to be placed into a clean sample bottle, sealed, and labeled "SAMPLE 2". The level of the liquid in the sample bottle is to be recorded.

The inside of the nozzle and probe is to be rinsed with acetone taking care to collect all the rinse material in a clean sample bottle. The sample bottle is to be sealed, labeled "SAMPLE 3", and the level of the liquid in the bottle is to be recorded.

The liquid in the first three impingers is to be measured and the total volume is to be recorded which will be compared to the original volume. The liquid is to be quantitatively transferred to a clean sample bottle. Each impinger and the connecting glassware including the probe extension are to be rinsed twice with water. The rinse water is to be collected and added to the same sample bottle. The sample bottle is to be sealed, labeled "SAMPLE 4" and the level of the liquid in the bottle is to be recorded.

This rinse process is to be repeated with two rinses of methylene chloride ($MeCl_2$). The rinses are to be recovered in a clean sample bottle. The sample bottle is to be sealed, labeled "SAMPLE 5" and the level of the liquid in the bottle is to be recorded.

A volume of water approximately equivalent to the volume of water used to rinse and a volume of $MeCl_2$ approximately equivalent to the volume of $MeCl_2$ used to rinse is to be placed in two clean sample bottles. The sample bottles are to be sealed, labeled "SAMPLE 6" and "SAMPLE 7" respectively, and the level of the liquid in the bottles is to be recorded.

The weight of the fourth impinger containing the silica gel is to be recorded and then the silica gel can be discarded.

The analysis phase was done in accordance with EPA Method 202, using the out of stack filter.

RESULTS

The results **[are]** ~~[are not]~~ considered acceptable because there ~~[was]~~ **[was no]** visible smoke emitted from the exhaust of the hood during the normal cooking operation. There ~~[was]~~ **[was no]** noticeable amounts of smoke accumulated in the test room after 8 hours of continuous cooking.

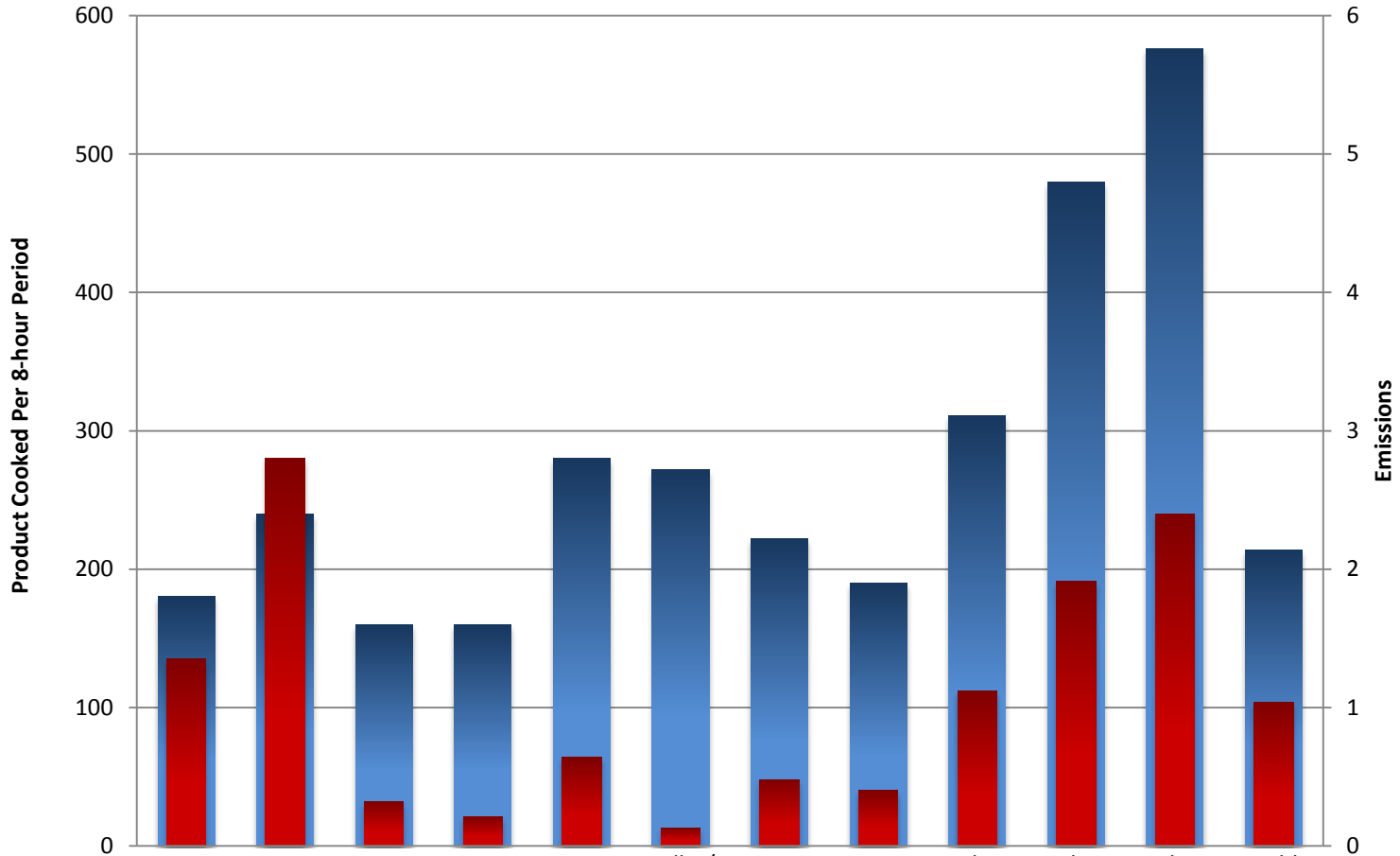
The total amount of grease-laden effluents collected by the sampling equipment was found to be 1.04 mg/m³, which is **[less]** ~~[more]~~ than 5 mg/m³.

The total grease emissions (per clause 78.2 of 710B) in pounds per hour per linear food of hood was 0.000593 lb/hr/ft.

Note: Total avg. temp/humidity for 8hrs:
Average Stack temperature: 27.2°C
Average Stack humidity: 26.3%

UL LLC
333 Pfingsten Road, Northbrook, IL 60062-2096 USA
T: 847.272.8800 / F: 847.272.8129 / W: UL.com

UL® (KNLZ)
Emissions by Product
Ventless Requirement: <5.00 mg/m³



	C3	i5	i3	Tornado	Sota	Bullet/ Encore	Fire	HhB	HhC 1618	HhC 2020	HhC 2620	Double Batch
Product Cooked Per 8-hour Period	180	240	160	160	280	272	222	190	311	480	576	214
Emissions	1.35	2.8	0.32	0.21	0.64	0.13	0.48	0.4	1.12	1.91	2.4	1.04

Double Batch

Changeable Parameters		
Operating Time	12	Hours
Energy Costs	$0.11	kWHr
Snooze Mode	0.00	Hours
Cook Cycles/Day	100	Cooks/Day
Typical Cook Time	180	Seconds

Do Not Change the following values

	Time (min)	Power (Watts)	Cost/Day	Balance of Time (hrs)
Warm up	19	7300	$0.25	11.68
Cooking	300	7100	$3.91	6.68
Idle	401	2100	$1.54	0
Total/Day			$5.70	**Yearly**
Total/Month			$171.09	**$2,053.13**

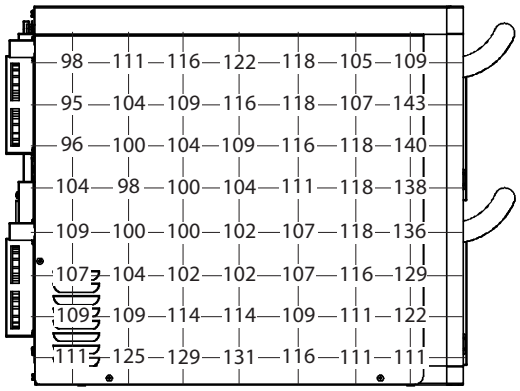
HVAC Requirements Per Operating Time - Note: Approximations Only					
Average Energy Cooking and Idle (J)	**Warmup Energy (J)**	**Total Energy (J)**	**Total Average Power (W)**	**Total Environmental Load KBtu/hr**	**Average Cooling Requirement (ton of AC)**
178,326,000	8,322,000	186,648,000	4,321	14.743128	1.229

TURBOCHEF TECHNOLOGIES, INC.

Double Batch Oven Surface Temperatures

The illustrations in this document represent the surface testing data reported for the TurboChef oven model HhD during idle and during cooking after two and a half hours of idle at 500ºF (260ºC), simulating the highest temperature condition.

Fahrenheit Measurements (Idle/Cooking)



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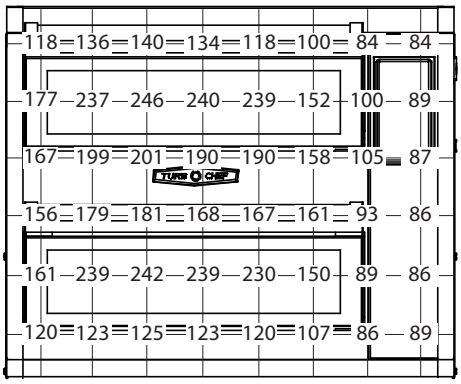

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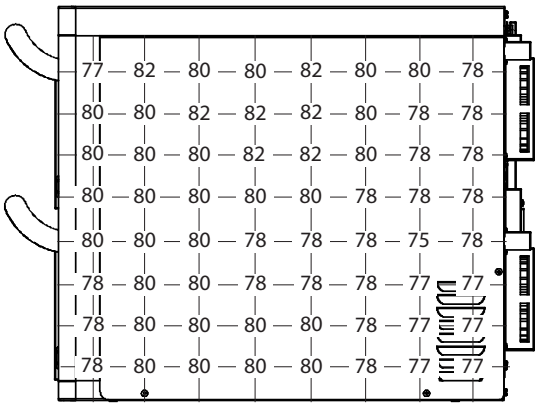

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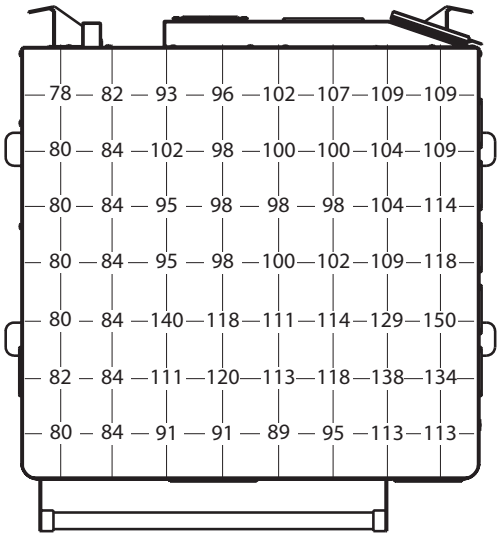

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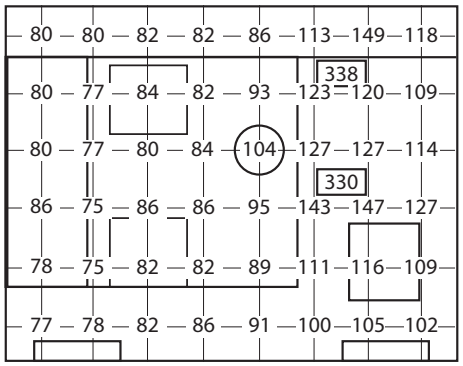

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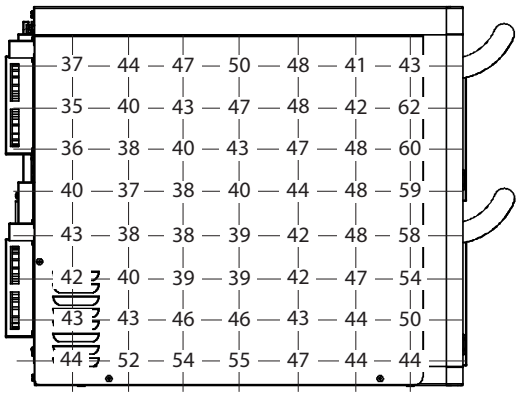
Celsius Measurements (Idle/Cooking)



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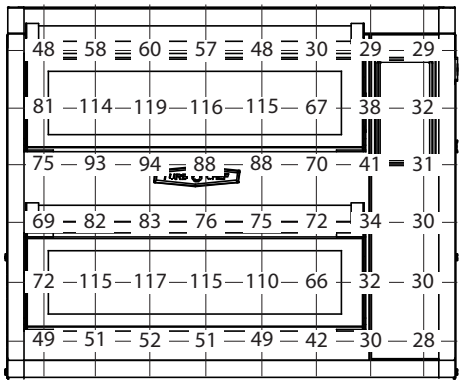

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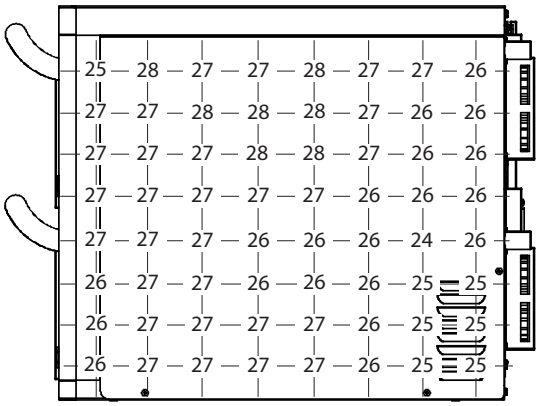

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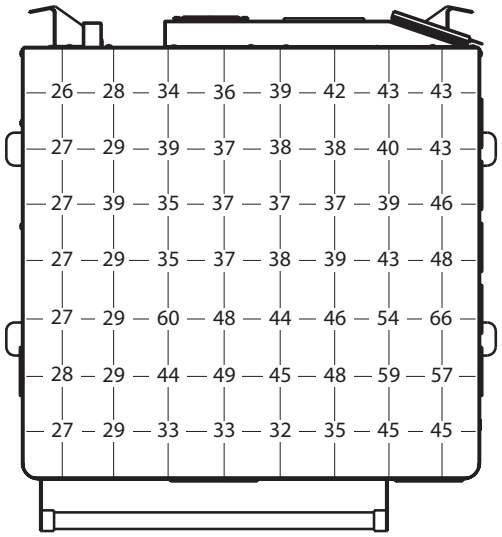

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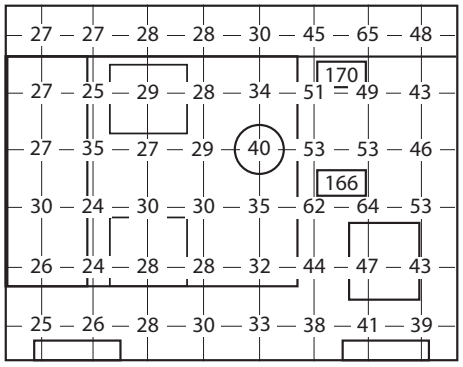


Back

TURBOCHEF TECHNOLOGIES, INC.

Installation Recommendations

TurboChef ventless ovens have internal systems for destroying grease laden vapor prior to the grease escaping the oven; therefore, the ovens are certified as non-grease emitting appliances. When following our recommendations, TurboChef ovens can be installed without the aid of a Type I or Type II hood per International Mechanical Code (2006, 2009, and 2012), NFPA 96, NFPA 101 (Life Safety Code), EPA 202, and Underwriter's Laboratory (UL KNLZ).

The following guide is intended to give relevant information for the ventless installation, operation, and maintenance of TurboChef ovens. It is important that these guidelines are followed and that the oven and surrounding areas be maintained regularly for optimal performance.

Certifications

Safety – cULus, TUV (CE)
Sanitation – NSF*, UL EPH*
Ventless – UL (KNLZ)

Electrical Requirements

TurboChef ovens must be installed on a circuit equal to the ratings listed below, per NEC sec 210.23, permissable loads.

Oven	Voltage	Current	Phase
Sōta (i1)	208/240 VAC	30 amp	1 Ph
Sōta Single Mag (i1)	208/240 VAC	20 amp	1 Ph
i3	208/240 VAC 208/240 VAC	40 amp 30 amp	1 Ph 3 Ph
i5	208/240 VAC 208/240 VAC	50 amp 30 amp	1 Ph 3 Ph
Encore/Encore 2	208/240 VAC	30 amp	1 Ph
Tornado	208/240 VAC	30 amp	1 Ph
C3	208/240 VAC	50 amp	1 Ph
HhC 2620	208/240 VAC	50 amp	3 Ph
HhC 2020	208/240 VAC	50 amp	3 Ph
HhC 1618	208/240 VAC 208/240 VAC	30 amp 50 amp	3 Ph 1 Ph
HhB 2	208/240 VAC	30 amp	1 Ph
Double Batch	208/240 VAC 208/240 VAC	50 amp 30 amp	1 Ph 3 Ph
Waterless Steamer (i1)	208/240 VAC	30 amp	1 Ph
Panini (i1)	208/240 VAC	30 amp	1 Ph
Fire	208/240 VAC	30 amp	1 Ph
Bullet	208/240 VAC	30 amp	1 Ph

* NSF certification applies to the Tornado, C3, and HhB 2 ovens only. UL EPH certification applies to all ovens except the C3.

Menu Requirements

TurboChef ovens have been approved by Underwriter's Laboratory for ventless operation (UL KNLZ listing) for all food items EXCEPT for foods classified as "fatty raw proteins." Such foods include bone-in, skin-on chicken, raw hamburger meat, raw bacon, raw sausage, steaks, etc.

The TurboChef certification includes precooked food items such as pizza toppings, sandwich meats, frozen appetizers, and cheeses. Additionally, raw, lean meats such as boneless, skinless chicken breasts and fish fall within the certification.

Cleaning Requirements

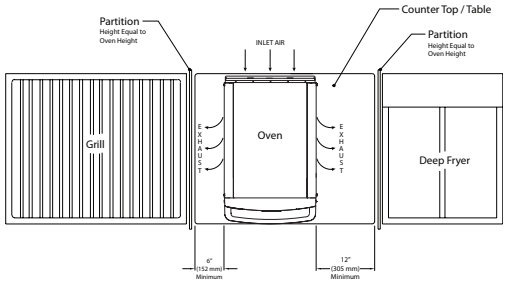
To ensure continued compliance with all health, building, and fire codes, users are required to:

- ☐ Use only TurboChef-approved cleaning chemicals.
- ☐ Follow monthly and quarterly cleaning instructions provided in the manual. Post cleaning instructions near the oven.
- ☐ Ventless installation requires that the areas around the oven (walls, ceilings, kitchen equipment, etc.) be cleaned as needed but no less than once every other month.

Installation Near Open Heat Source

When placing a TurboChef oven near an open heat source (see illustration below), strictly adhere to the following:

- If the oven is being placed near a grill or stove, a divider must exist between the oven and the open heat source, with a minimum of 6" (152 mm) between the oven and the divider.
- If the oven is being placed near a fryer, a divider must exist between the oven and fryer, with a minimum of 12" (305 mm) between the oven and the divider.
- The height of the divider must be greater than or equal to the height of the oven.



Oven Clearances

Verify the oven location has the following clearances on the top and each side. TurboChef ovens have built-in back bumpers that allow for the necessary spacing from the oven to the back wall.

Oven	Top	Sides
Sŏta / Sŏta Single Mag (i1)	5" (127 mm)	2" (51 mm)
i3	19" (483 mm)	2" (51 mm)
i5	19" (483 mm)	2" (51 mm)
Encore/Encore 2	5" (127 mm)	2" (51 mm)
Tornado	4" (102 mm)	2" (51 mm)
C3	4" (102 mm)	2" (51 mm)
HhC 2620	10" (254 mm)	0" (0 mm)
HhC 2020	10" (254 mm)	0" (0 mm)
HhC 1618	10" (254 mm)	0" (0 mm)
HhB 2	2" (51 mm)	2" (51 mm)
Double Batch	2" (51 mm)	2" (51 mm)
Waterless Steamer (i1)	5" (127 mm)	2" (51 mm)
Panini (i1)	5" (127 mm)	2" (51 mm)
Fire	2" (51 mm)	2" (51 mm)
Bullet	5" (127 mm)	2" (51 mm)

Ventilation

TurboChef ovens must be installed in a well-ventilated space. The space should have an exhaust rate of .70 cfm per square foot of kitchen space and an additional 100 sq. ft. (9.3 m^2) of virtual space per ventless cooking appliance (TurboChef or any other).

If the air inlet is for general exhaust, pursuant to requirements for 507.2.2, paragraph 2, locate the air inlet above the center point of each oven.

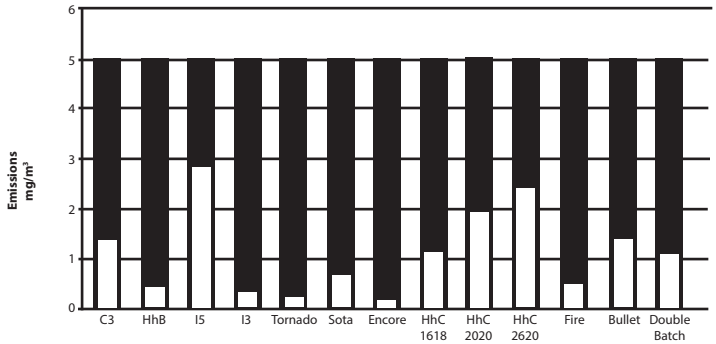
The heat load from TurboChef ovens is mostly sensible. The only latent heat present is due to evaporation during the cooking process. When installing a TurboChef oven, the space must have the following tons of AC per oven installed.

Oven	Tons of AC
Sŏta (i1)	0.29
Sŏta Single Mag (i1)	0.29
i3	0.94
i5	1.31
Encore/Encore 2	0.45
Tornado	0.58
C3	0.63
HhC 2620	1.82
HhC 2020	1.47
HhC 1618	1.00
HhB 2	0.84
Double Batch	1.04
Waterless Steamer (i1)	0.29
Panini (i1)	0.29
Fire	0.50
Bullet	0.13

How the Ovens are Tested

TurboChef ovens are evaluated according to UL. The evaluation entails placing the test oven in an environmental chamber built to capture all emissions escaping during idle, cooking, and door-open conditions. During the eight-hour test period, a typical worst-case food item is cooked continuously, and 100% of condensable and non-condensable emissions from the product are collected and analyzed according to the EPA 202 Test Method. At the conclusion of the test, the total concentration of particulate matter (emissions) must be less than 5.0 mg/m^3 for the oven to be certified for ventless operation. Cooking devices that measure above the 5.0 mg/m^3 threshold are considered to produce grease and must be installed under Type I ventilation, according to International Mechanical Code.

TurboChef ovens are well below the 5.0 mg/m^3 threshold as shown below.



	C3	HhB	I5	I3	Tornado	Sota	Encore	HhC 1618	HhC 2020	HhC 2620	Fire	Bullet	Double Batch
Ventless Requirement	5	5	5	5	5	5	5	5	5	5	5	5	5
Emissions	1.35	0.4	2.8	0.32	0.21	0.64	0.13	1.12	1.91	2.4	0.48	0.13	1.04

NOTE: Certain configurations of TurboChef ovens, such as a triple stacked HhC 2620, may cause emissions to be greater than 5.0 mg/m^3. In these situations, TurboChef recommends that the ovens be installed under a Type I or Type II hood.

Contact Information

For questions regarding a ventless installation, email ventless.help@turbochef.com. For questions or concerns regarding an existing installation, contact Customer Service at 1.800.908.8726, Option 1.