

# PS2620 Ventless Submittal Information

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# PS2620 Electric Conveyor Oven

Project \_\_\_\_\_

Item No. \_\_\_\_\_

Quantity \_\_\_\_\_



## PRINCIPLE

The PS2620 Conveyor offers all of the power and technology you would expect from Middleby Marshall, but in a space-saving countertop high-volume design. It produces faster cooking, a smaller footprint, and does not require the energy consumption and higher HVAC needs of larger ovens.

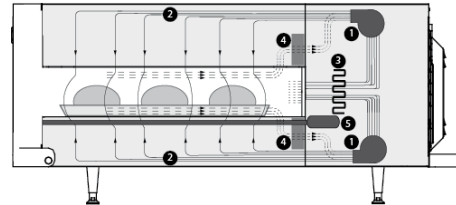
## VENTILATION - OPTIONAL

- UL (KNLZ) listed for ventless operation.
- EPA 202 test (8 hr.):
  - Product: Pepperoni Pizza (Qty. 388)
  - Results: 2.46 mg/m3

# WOW! OVEN

## STANDARD FEATURES

- 26" cooking chamber
- Variable-speed High h recirculating impingement airflow system
- Stackable design up to 2 high (requires stacking kits)
- Variable-speed blower motors
- Easy to clean mono-finger design
- Idle mode for energy conservation
- Built-in self diagnostics for monitoring oven components
- Left or right feed conveyor belt direction via software
- Includes plug and cord (6 ft. nominal)
- One year parts and labor warranty
- Smart voltage sensor technology (U.S. only)
- Cool to touch covers and panels



1. Blower motor
2. Impinged air
3. Impingement heater
4. Catalytic converter (optional)
5. Conveyor motor

## OPTIONAL FEATURES

- Catalytic converter for ventless operation
- 6" conveyor extensions

## CERTIFICATIONS



# PS2620

Electric Conveyor Oven

## GENERAL SPECIFICATIONS

### Wall Clearance

Top	10"	254 mm
Sides	0"	0 mm
Back	0"	0 mm
Bake Operating Temperature	550°F	288°C
Time Range	30 seconds - 15 minutes	

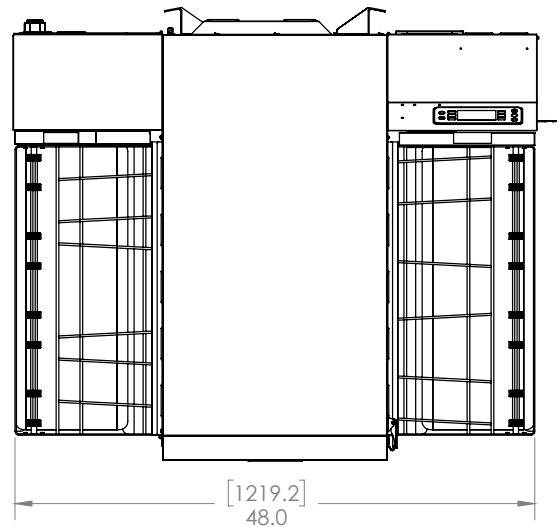
## DIMENSIONS

### Single Units

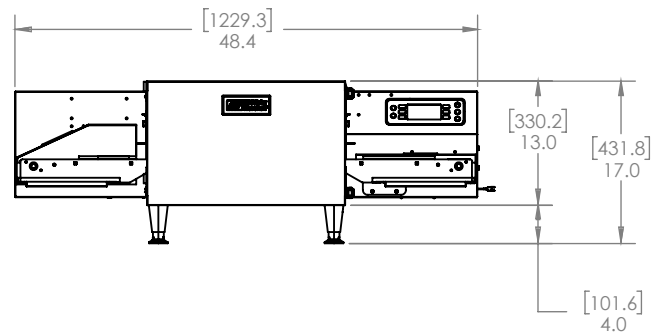
Heating Zone	26"	660 mm
Baking Area	3.6 ft <sup>2</sup>	0.33 m <sup>2</sup>
Belt Length	48.4"	1229 mm
Height	17"	432 mm
Depth	41.8"	1062 mm
Weight	260 lb.	118 kg

### Double Stacked Units

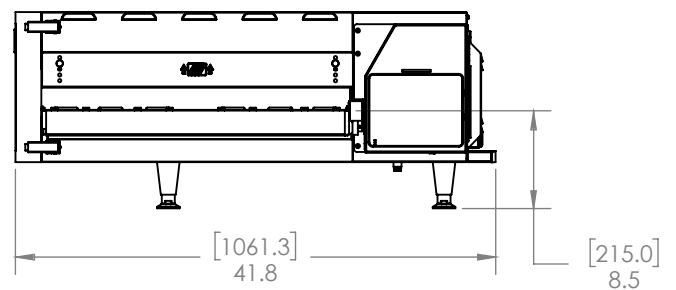
Heating Zone	52"	1016 mm
Baking Area	7.2 ft <sup>2</sup>	0.67 m <sup>2</sup>
Belt Length	48.4"	1229 mm
Height (11.25"/286 mm legs)*	30"	762 mm
Depth	41.8"	1062 mm
Weight	520 lb.	236 kg



PS2620 Top View – Electric Single Unit

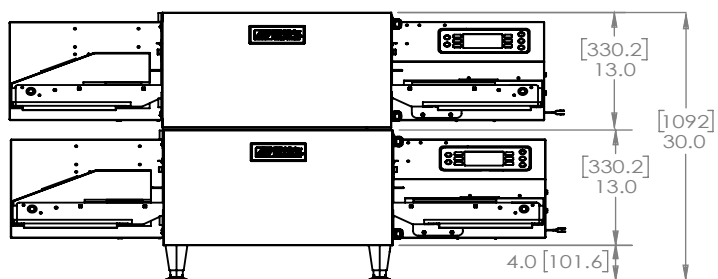


PS2620 Front View – Electric Single Unit

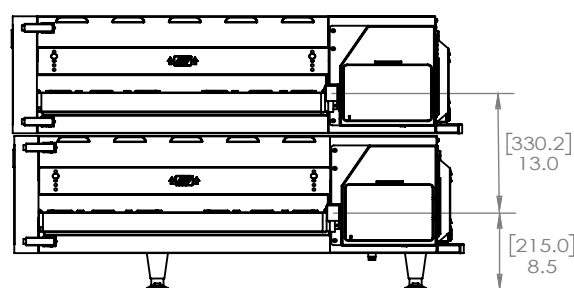


PS2620 Right Side View – Electric Single Unit

\* Height dimensions are shown for standard leg extensions. Customer-specific leg extensions will affect these dimensions. All units are shown with casters. CE-approved ovens use 6" (152 mm) adjustable feet instead of casters.



PS2620 Front View Double Stacked Units

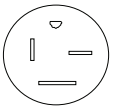
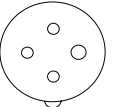
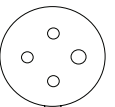
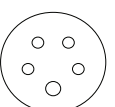
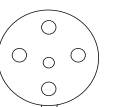


PS2620 Side View Double Stacked Units

# PS2620

Electric Conveyor Oven

## PS2620 Electric Conveyor Oven

LOCATION	VOLTAGE	PHASE	FREQUENCY	CURRENT DRAW	SUPPLY	BREAKERS	PLUG
USA [MMW-9500-1] [MMW-9500-1-V] (VENTLESS)	208/240 V	3	50/60 Hz	40A	4 wire (3L+G)	50A	 NEMA 15-50P
CANADA [MMW-9500-10C] [MMW-9500-10C-V] (VENTLESS)	208/240 V	3	50/60 Hz	40/46A	4 wire (3L+G)	50/60A	 UL 4 Pin, 60 Amp
EUROPE/ASIA (DELTA) [MMW-9500-2D] [MMW-9500-2D-V] (VENTLESS)	220/240 V	3	50/60 Hz	40A	4 wire (3L+G)	50A	 IEC 4 Pin, 63 Amp
EUROPE/ASIA (WYE) [MMW-9500-3W] [MMW-9500-3W-V] (VENTLESS)	380/415 V	3	50/60 Hz	20A	5-wire (3L + N + G)	32A	 IEC 5 Pin, 32 Amp
AUSTRALIA [MMW-9500-20W] [MMW-9500-20W-V] (VENTLESS)	380/415 V	3	50/60 Hz	20A	5-wire (3L + N + G)	32A	 IEC 5 Pin, 32 Amp

\*The current draw rating shown above are maximum values for normal operation, amperage draw will be less than the listed value.



**LISTED**

Commercial Cooking Appliance  
with Integral Systems for Limiting  
the Emissions of Grease-Laden Air

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

# CERTIFICATE OF COMPLIANCE

**Certificate Number** UL-US-L151487-11-52708002-3  
**Report Reference** E151487-20080725  
**Date** 4-Mar-2022

**Issued to:** Turbochef Technologies Inc  
2801 Trade Center Drive Carrollton, TX 75007  
United States

**This is to certify that representative samples of** KNLZ - Commercial Cooking Appliances with Integral Systems for Limiting the Emission of Grease-laden Air  
See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

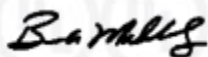
**Standard(s) for Safety:** UL 197, 10th Ed.

**Additional Information:** See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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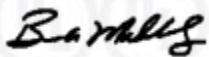


# CERTIFICATE OF COMPLIANCE

**Certificate Number** UL-US-L151487-11-52708002-3  
**Report Reference** E151487-20080725  
**Date** 4-Mar-2022

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

<b>Model</b>	<b>Category Description</b>
1618, may be prefixed by HCS, HCT, HCW or HHC	Conveyor Ovens
2020, may be prefixed by HCS, HCT, HCW or HHC	Conveyor Ovens
2620, may be prefixed by HCS, HCT, HCW or HHC	Conveyor Ovens
HCW2620	Conveyor Ovens
HHC1618	Conveyor Ovens
HHC2020	Conveyor Ovens
PS2020	Conveyor Ovens
PS2620	Conveyor Ovens



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# CERTIFICATE OF COMPLIANCE

**Certificate Number** UL-US-L151487-31-52708002-2  
**Report Reference** E151487-20080725  
**Date** 4-Mar-2022

**Issued to:** Turbochef Technologies Inc  
2801 Trade Center Drive Carrollton, TX 75007  
United States

**This is to certify that representative samples of** EJOY - Cooking Appliances, Electrical, Marine  
See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

**Standard(s) for Safety:** UL 197, 10th Ed.

**Additional Information:** See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information

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# CERTIFICATE OF COMPLIANCE

**Certificate Number** UL-US-L151487-31-52708002-2  
**Report Reference** E151487-20080725  
**Date** 4-Mar-2022

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

<b>Model</b>	<b>Category Description</b>
1618	Marine Electrical Cooking Appliances
2020	Marine Electrical Cooking Appliances
2620	Marine Electrical Cooking Appliances
PS2020	Conveyor Ovens
PS2620	Conveyor Ovens



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# CERTIFICATE OF COMPLIANCE

**Certificate Number** UL-CA-L151487-21-52708002-2  
**Report Reference** E151487-20080725  
**Date** 4-Mar-2022

**Issued to:** Turbochef Technologies Inc  
2801 Trade Center Drive Carrollton, TX 75007  
United States

**This is to certify that  
representative samples of**

KNLZ7 - Commercial Cooking Appliances with Integral  
Systems for Limiting the Emission of Grease-laden Air  
Certified for Canada

See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.

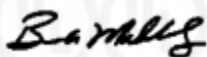
**Standard(s) for Safety:** CSA C22.2 NO. 109, 3rd Ed., Issued Date: 2017-05-01,  
Revision Date: 2021-03-01

**Additional Information:** See the UL Online Certifications Directory at  
<https://iq.ulprospector.com> for additional information

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

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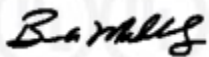


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**Report Reference** E151487-20080725  
**Date** 4-Mar-2022

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1618, may be prefixed by HCS, HCT, HCW or HHC	Conveyor Ovens
2020, may be prefixed by HCS, HCT, HCW or HHC	Conveyor Ovens
2620, may be prefixed by HCS, HCT, HCW or HHC	Conveyor Ovens
HCW2620	Conveyor Ovens
HHC1618	Conveyor Ovens
HHC2020	Conveyor Ovens
PS2020	Conveyor Ovens
PS2620	Conveyor Ovens



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2021-10-25

Mr. David Castillo  
Turbochef Technologies Inc  
2801 Trade Center Drive  
Carrollton, TX, 75007  
US

E-mail: David.Castillo@turbochef.com

Reference: Project : 4790066092 P.O. Number: N/A

Product: EPA 202 TEST METHOD: USING THE TURBOCHEF TECHNOLOGIES MODEL  
PS2620 COOKING THE BELOW FOOD PRODUCT AS MEDIA.

Dear Mr. Castillo,

Per your request, project 4790066092 was opened for the evaluation of grease-laden vapors produced from the Turbochef Technologies conveyor oven Model PS2620.

The scope of this project was to determine the total grease emissions from cooking 12 in. frozen pepperoni pizzas as the specified food load as noted in Appendix A. Testing is conducted in accordance with EPA Method 202 test guidelines to determine ultimate results. Results are used to determine compliance with Section 59 of UL710B, the Standard for Recirculating Systems, formerly Section 14 of UL 197, Eighth Edition, Supplement SB, and paragraph 4.1.1.2 of NFPA96, the Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations. The test was conducted at our facility in Northbrook, IL on October 15<sup>th</sup>, 2021. This letter will report the results of the EPA202 test.

For the record, the test was conducted using the Turbochef Technologies Inc, Model PS2620, rated 208-240 V, 37 A, 60 Hz. The test media, food load and oven programming as shown in Appendix A were taken from UL 710B, section 59. The results are considered to comply with UL710B, Section 59, formerly Section 14 of UL 197, Eighth Edition, Supplement SB, and NFPA96, paragraph 4.1.1.2 when tested with the specified food load and maximum cook times since the total amount of grease-laden effluents collected was 2.46 mg/m<sup>3</sup>, which is less than 5 mg/m<sup>3</sup> limit. No evaluation was conducted in regards to fire protection.



UL LLC did not select the samples, determine whether the samples were representative of production samples or witness the production of the test samples, nor were we provided with information relative to the formulation or identification of component materials used in the test samples. The test results apply only to the actual samples tested.

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This letter will serve to report that all tests on the subject product have been completed. All information generated will be retained for future use. This concludes all work associated with EPA 202 Test portion of the Project 4790066092. Our Accounting Department has been instructed to bill you for all charges incurred.

Thank you for the opportunity to provide your company with these services. Please do not hesitate to contact us if you should have any questions or comments.

Very truly yours,

A handwritten signature in black ink that reads "Smit Thakkar".

Smit Thakkar  
Associate Project Engineer  
E-mail: Smit.Thakkar@ul.com

Reviewed by:

A handwritten signature in black ink that reads "Fred Zaplatosch".

Fred Zaplatosch  
Senior Staff Engineer  
E-mail: Fred.Zaplatosch@ul.com

**CAPTURE TEST:**UL 710B Sec. 58  
UL 710 Sec. 31

## METHOD

The model PS2620 cooking appliance was placed under a hood operating at 500 CFM. Food product as specified below was then used for testing, see Emission Testing for specific details. The cooking area is to be observed for the presence of visible smoke and grease-laden air, and the hood assembly shall completely capture all of the emission as determined by observation.

## COOKING PRODUCT

- [x]** Conveyor Oven - 12 in. pepperoni pizza (Kirkland, with approx. 30 pepperonis per pizza), belt time set to 2 min. 15 sec. Oven was set to maintain 600°F

## COOKING METHOD

[Conveyor Oven]

12 in. pepperoni pizza, KIRKLAND Pepperoni, each cooked for 2 minutes and 15 seconds with 0 seconds between loads for 8 hours (total of 388 pizzas). The pizza was fed in a continuous straight single file line into the oven. The Oven was set to maintain 600°F. Oven Top fan set to 85%, oven bottom fan set to 90%.

600F, 2 minute 15 seconds, top fan 85%, bottom fan 90%.  
During nozzle calc there was total of 20 pizzas cooked.

## RESULTS

Their ~~[was]~~ [was not] the presence of visible smoke and grease-laden air from the appliance during testing.

The sample [did] ~~[did not]~~ capture all of the emissions from the cooking appliance.



**EMISSION TEST:**

METHOD

TEST FOR EVOLUTION OF SMOKE OR GREASE-LADEN AIR (600°F):

The model PS2620 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 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:

**[Conveyor Oven]**

12 in. pepperoni pizza, KIRKLAND Pepperoni, each cooked for 2 minutes and 15 seconds with 0 seconds between loads for 8 hours (total of 388 pizzas). The pizza was fed in a continuous straight single file line into the oven. The Oven was set to maintain 600°F. Oven Top fan set to 85%, oven bottom fan set to 90%.

Temp	Event #	Time.min:sec	% Top Fan	% Bottom Fan
600°F	1	2:15	85	90
	2			

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<sup>3</sup>/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 ( $\text{MeCl}_2$ ). 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  $\text{MeCl}_2$  approximately equivalent to the volume of  $\text{MeCl}_2$  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  $2.46 \text{ mg/m}^3$ , which is [less] [~~more~~] than  $5 \text{ mg/m}^3$ .

The total grease emissions (per clause 78.2 of 710B) in pounds per hour per linear food of hood was  $0.001156 \text{ lb/hr/ft}$ .

Note: Stack avg humidity and temperature;

Stack temperature;  $86.9^\circ\text{F}$

HUMIDITY INSIDE STACK; 29.7%



CONDENSIBLE MATTER  
(Lab Analysis)

Sample Bottle No.	Description	Volume, ml	Final Wt, mg
2	Acetone (Blank)	200.0	0.1
3	Acetone (Wash)	200.0	0.2
4&5	Solvent Phase (Wash)	300.0	5.9
4&5	Water Phase (Wash)	300.0+450.0=750.0	9.7
6&7	Solvent Phase (Blank)	300.0	0.1
6&7	Water Phase (Blank)	450.0	3.0

Filter paper weight before test- 604.3 mg

Filter paper weight after test- 608.9 mg

Analysis

1. The liquid level of all the sample bottles is to be measured.
2. The filter from sample ONE is to be removed and dried to constant weight by means of a desiccator or an oven. The weight of the filter is to be recorded.
3. The volume of sample TWO is to be determined. The liquid is then to be transferred to a beaker and evaporated to dryness. The volume of the liquid and the final weight of the condensable matter are to be recorded.
4. The volume of sample THREE is to be determined. The liquid is then to be transferred to a beaker and evaporated to dryness. The volume of the liquid and the final weight of the condensable matter are to be recorded.
5. The volumes of sample FOUR and FIVE are to be measured.
6. Samples FOUR and FIVE are to be combined. The solvent phase is to be mixed, separated, and then repeated with two MeCl<sub>2</sub> washes.
7. The solvent extracts obtained from the procedure in 6 are to be placed in a beaker and evaporated to a constant weight. The final weight is to be recorded.
8. The water phase is to be placed in a beaker and evaporated to dryness. The final weight is to be recorded.
9. The volumes of samples SIX and SEVEN are to be determined. Sample bottles SIX and SEVEN are to be analyzed according to procedures 8 and 7 respectively.



## APPENDIX: A

CLIENT INFORMATION	
Company Name	Turbochef Technologies Inc
Address	2801 Trade Center Drive Suite 110 Carrollton, Texas 75007

AUDIT INFORMATION:				
Description of Tests	Per Standard No.	UL 197	Edition/Revision Date	10 <sup>th</sup> 2020-07-10
		CSA C22.2 No. 109-17		3 <sup>rd</sup> 2017-05
		UL 710B		2 <sup>nd</sup> 2/1/2019
<b>[x]</b> Tests Conducted by <sup>1</sup> KRZYSZTOF SROKA				
<b>[X]</b> UL Staff supervising UL Staff in training Leo Carrillo				

TESTS TO BE CONDUCTED:			
Test No.	Done <sup>3</sup>	Test Name	<input type="checkbox"/> Comments/Parameters <input type="checkbox"/> Tests Conducted by <sup>2</sup> <input type="checkbox"/> Link to separate data files <sup>4</sup>
1	2021-10-14	POWER INPUT TEST (THREE PHASE): RATING (CSA 22.2 109-17):	
2	2021-10-15	CAPTURE TEST:	
3	2021-10-22	EMISSION TEST:	

## Instructions -

- 1 - When all tests are conducted by one person, name can be inserted here instead of including name on each page containing data.
- 2 - When test conducted by more than one person, name of person conducting the test can be inserted next to the test name instead of including name on each page containing data. Test dates may be recorded here instead of entering test dates on the individual datasheet pages.
- 3 - Use of this field is optional and may be employed differently. If used to include a date instead of entering the testing date on the individual datasheet pages, the date shall be the date the test was conducted.
- 4 - Link to separate data files for a test can be inserted here. The link must be to a server that is accessible to UL staff, that provides for backup, required retention periods and a path, including file name, that does not change and result in a broken link. Not applicable to DAP.

Special Instructions -



Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient Temperature, C 10-40 Relative Humidity, % ± Barometric Pressure, mBar ±

No general environmental conditions are specified in the Standard(s) or have been identified that could affect the test results or measurements.

RISK ANALYSIS RELATED TO TESTING PERFORMANCE:

The following types of risks have been identified. Take necessary precautions. This list is not all inclusive.

<input checked="" type="checkbox"/> Electric shock	<input type="checkbox"/> Radiation
<input checked="" type="checkbox"/> Energy related hazards	<input type="checkbox"/> Chemical hazards
<input checked="" type="checkbox"/> Fire	<input type="checkbox"/> Noise
<input checked="" type="checkbox"/> Heat related hazards	<input type="checkbox"/> Vibration
<input checked="" type="checkbox"/> Mechanical	<input type="checkbox"/> Other (Specify) __

GENERAL TEST CONSIDERATIONS - ALL TESTS:

[Power Supply Connections]

Unless otherwise specified in the individual test methods, the appliance was connected to a [240] volt source of supply at [60] Hz.

This supply connection was based on

- The marked voltage rating
- The highest voltage of the applicable range of voltages



TEST LOCATION: (To be completed by Staff Conducting the Testing)					
<input checked="" type="checkbox"/> UL or Affiliate	<input type="checkbox"/> WTDP	<input type="checkbox"/> CTDP	<input type="checkbox"/> TPTDP	<input type="checkbox"/> TCP	<input type="checkbox"/> PPP
Company Name: UL LLC					
Address: 333 PFINGSTEN RD, NORTHBROOK IL 60062					

TEST EQUIPMENT INFORMATION

UL test equipment information is recorded on Meter Use.

TEST SAMPLE IDENTIFICATION:

The table below is provided to establish correlation of sample numbers to specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received	<input type="checkbox"/> Test No.+	Sample No.	Manufacturer, Product Identification and Ratings
4153090	2021-08-24	All	1	Turbochef Technologies, Conveyor Oven, Model PS2620, rated 208/240 V, 37 A, 3 ph

+ - If Test Number is used, the Test Number or Numbers the sample was used in must be identified on the data sheet pages or on the Data Sheet Package cover page.

Sampling Procedure -

This document contains data or information using color and if printed, should be printed in color to retain legibility and the information represented by the color.



**POWER INPUT TEST (THREE PHASE) :**  
**RATING (CSA 22.2 109-17) :**

UL 197 Sec. 47  
 (6.2)

METHOD

**[x]** The supply voltage was adjusted to voltage and frequency as noted in "General Test Considerations", [240 V], [60 Hz].

[ ] The supply voltage was adjusted to the [rated voltage] [mean of the rated voltage range] at rated frequency, [\_\_ V], [\_\_ Hz].

The power input was measured with the appliance at the intended operating temperature under full-load conditions.

**[x]** (c-UL) - To determine the proper test voltage for the Temperature (Normal) and Temperature (Abnormal) tests, the supply voltage was adjusted to the increased test voltage as noted below. Following the test at increased test voltage, the supply voltage was adjusted to the value necessary to cause the appliance to draw the increased test [current] [and] [power], calculated as specified below.

Increased Test Voltage ( $V_t$ ): 216V for appliances rated 208V.  
 250V for appliances rated between 220V-250V.

Increased Test Current ( $I_t$ ):  $I_r(V_t/V_r) = \underline{\quad 48 \quad}$  A

Increased Test Power ( $W_t$ ):  $W_r(V_t/V_r)^2 = \underline{\hspace{2cm}}$  (W) (kW)

Where  $V_r$ ,  $I_r$ , and  $W_r$ , are the rated voltage, current, and power of the appliance, respectively. Note: when the appliance is rated for a range of voltages, the mean of the range is to be used as  $V_r$ .

PARAMETERS

Appliance Ratings:

Volts: 208/240; Current: 40 A; Power:                      (W) (kW)

Note: Unit rated - 208/240 V, 37 A. - S.T. 2021-10-25.



POWER INPUT TEST (THREE PHASE): (CONT'D)  
 RATING (CSA 22.2 109-17):

UL 197 Sec. 47  
 (6.2)

RESULTS - REF. ONLY

Operating Conditions	Specified					Measured						
	Volts	Amps			Power, (W) (kW)	Volts			Amps			Power, (W) (kW)
		L1	L2	L3		L1-L2	L2-L3	L1-L3	L1	L2	L3	
Full power operation, rated voltage	208	---	---	---	---	206	208	208	31.3	30.7	27.3	9371
<del>Full power operation, rated current</del>	---	40	40	40	---				*	*	*	
<del>Full power operation, 240 V</del>	240	---	---	---	---	240	241	241	36.2	35.6	31.5	12584
C-UL Operating Conditions												
Full power operation, increased test voltage	250	---	---	---	---	250	252	251	37.7	37.2	32.8	13662
<del>Full power operation, increased test current</del>	---	41.7	41.7	41.7	---				*	*	*	

~~Full power operation, increased test current~~ The input current ~~was~~ ~~was not~~ between 90% and 105% of the rated input current when the appliance was energized at rated voltage.

\*Note: After discussion with Smit Thakkar, it was determined that engineer will have to adjust the current ratings because the unit was unable to achieve the current. The highest recorded current was 39 amp on highest leg. The sample may have an adjusting voltage regulator that will not achieve this amp. KRZYSZTOF SROKA 2021-10-14



# KNLZ.E151487 - Commercial Cooking Appliances with Integral Systems for Limiting the Emission of Grease-laden Air

*Note: We are enhancing our systems and you may notice duplicate entries/missing/outdated data. During this interim period, please contact our Customer Service at <https://www.ul.com/about/locations>.*

## Commercial Cooking Appliances with Integral Systems for Limiting the Emission of Grease-laden Air

**Turbochef Technologies Inc**  
2801 Trade Center Drive  
Carrollton, TX 75007 United States

E151487

Trademark and/or Tradename: "BULLET"

Note: For additional marking information, refer to the [Guide Information Page](#).

**Commercial Microwave/Convection Oven**, Model(s): ECO, ECOST

**Commercial microwave/convection ovens**, Model(s): Encore 2, Encore\*, i3\*, i5\*, NGC\*, NGO\*

**Commercial ovens**, Model(s): HHB, HHB2, HDD

**Conveyor Ovens**, Model(s): HCW2620, HHC1618, HHC2020, PS2020, PS2620

**Conveyor Ovens**, Model(s): 1618 may be prefixed by HCS, HCT, HCW or HHC

**Conveyor Ovens**, Model(s): 2020 may be prefixed by HCS, HCT, HCW or HHC

**Conveyor Ovens**, Model(s): 2620 may be prefixed by HCS, HCT, HCW or HHC

**Triple Ovens, "Plexor"**, Model(s): AL-CCC followed by L or R., AL-CCI followed by L or R., AL-CCR followed by L or R., AL-CIC followed by L or R., AL-CII followed by L or R., AL-CIR followed by L or R., AL-CRC followed by L or R., AL-CRI followed by L or R., AL-CRR followed by L or R., AL-ICC followed by L or R., AL-ICI followed by L or R., AL-ICR followed by L or R., AL-IIC followed by L or R., AL-III followed by L or R., AL-IIR followed by L or R., AL-IRC followed by L or R., AL-IRI followed by L or R., AL-IRR followed by L or R., AL-RCC followed by L or R., AL-RCI followed by L or R., AL-RCR followed by L or R., AL-RIC followed by L or R., AL-RII followed by L or R., AL-RIR followed by L or R., AL-RRC followed by L or R., AL-RRI followed by L or R., AL-RRR followed by L or R.

\* - Indicated complementary listed models.

Last Updated on 2021-11-08

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

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## [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](#)

### USE AND INSTALLATION

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 under 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 investigated for the limit of 5 mg/m<sup>3</sup> for the emission of grease-laden air to the room ambient in accordance with the recommendations of ANSI/NFPA 96, "Ventilation Control and Fire Protection of Commercial Cooking Operations," 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 ANSI/NFPA 96.

In cases where the nature or construction of equipment is such that special precautions beyond the requirements of ANSI/NFPA 70, "National Electrical Code," must be observed in installations or use, suitable warning or special instructions are marked on the equipment.

Appliances covered under 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.

### FACTORS NOT INVESTIGATED

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

### PRODUCT IDENTITY

One of the following product identities appears on the product:

Commercial Cooking Appliance with Integral System for Limiting the Emission of Grease-laden Air

Cooking Appliance with Integral System for Limiting the Emission of Grease-laden Air

Other product identities may be used as shown in the individual certifications, followed by the words "with Integral System for Limiting the Emission of Grease-laden Air."

## RELATED PRODUCTS

For products with integral recirculating systems including fire extinguishing systems, see Commercial, with Integral Recirculating Systems ([KNKG](#)).

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

## ADDITIONAL INFORMATION

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

## REQUIREMENTS

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

Appliances covered under this category with an integral cooking oil filter have been additionally investigated to [ANSI/UL 1889](#), "Commercial Filters for Cooking Oil."

## UL MARK

The Certification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Certification and Follow-Up Service. The [Certification Mark](#) for these products includes the UL symbol, the words "CERTIFIED" and "SAFETY," the geographic identifier(s), and a file number.

## Alternate UL Mark

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 UL symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Commercial Cooking Appliance" or "Cooking Appliance," or other appropriate product name as shown in the individual Listings, together with the words "with integral system for limiting the emission of grease-laden air."

\* \* \* \* \*

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Last Updated on 2013-05-16

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## Middleby Marshall PS2620 Energy Calculator

Changeable Parameters		
Operating Time	12	Hours
Energy Costs	\$0.11	kWhr
% of Day in Snooze Mode	34%	Percent
% of Day Cooking (Moderate/Heavy)	25%	Percent

### Do Not Change the Following Values

	Time (min)	Power (watts)	Cost/Day	Balance of Time (hrs)
Warm up	10	14000	\$0.26	11.83
Cooking	180	11500	\$3.80	8.83
Snooze	245	5600	\$2.51	4.75
Idle	285	8400	\$4.39	0
Total/Day	\$10.96			Yearly <b>\$3,944.53</b>
Total/Month	\$328.71			

HVAC Requirements Per Operating Time -- Note: Approximations Only					
Average Energy Cooking and Idle	Warmup Energy (J)	Total Energy (J)	Total Average Power (W)	Total Environmental Load kBtu/hr	Average Cooling Requirement (ton of AC)
267,940,800.00	8,400,000.00	276,340,800.00	6,396.78	21.83	1.819

# PS2620 Oven Surface Temperatures

This document illustrates the surface temperature testing data reported for the Middleby Marshall Conveyor PS2620 oven. Measurements were recorded after four hours of idle. The oven temperature was set to 550°F (288°C) for the duration of the test.

After 4-hour Idle at 550°F/288°C (Values in °F/°C)

