

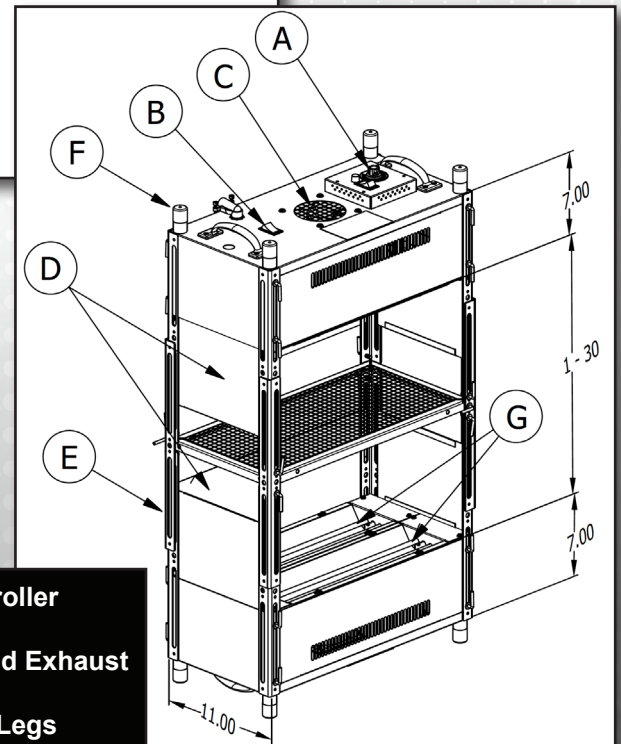
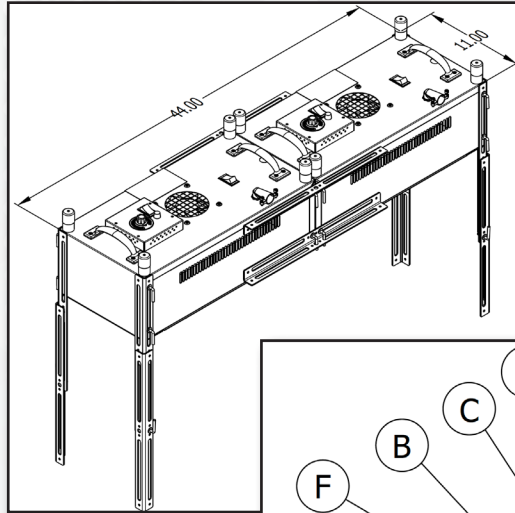
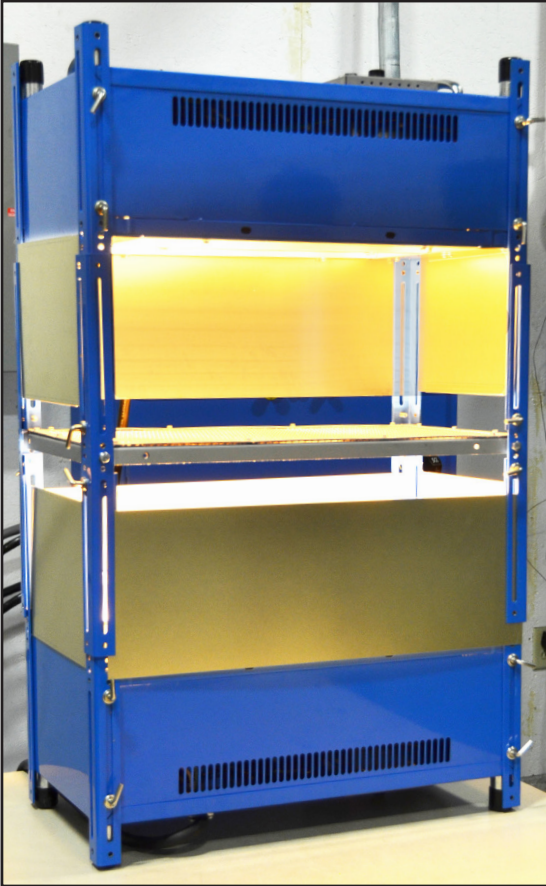
Fostoria Oven for Laboratory and R&D Testing

Model 9800001

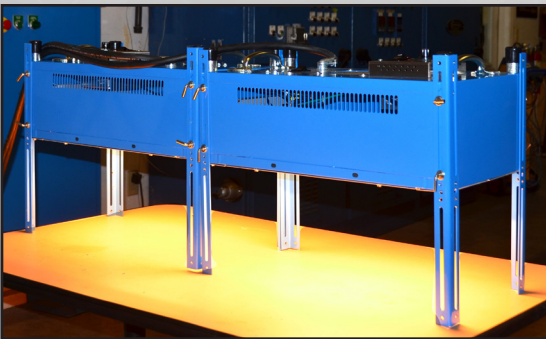


PROCESS EQUIPMENT DIVISION

- Easily converts to three configurations, to match the application
- Infinite heat output
- T-3, short-wave infrared lamps for fast and precise control
- Oven tray and baffles to simulate actual oven performance



- A. Proportional Controller
- B. On-Off Switch
- C. Fan for Cooling and Exhaust
- D. Side Baffles
- E. Support Brackets/Legs
- F. Protective Bumpers
- G. 8 Quartz Infrared Lamps (1600W / 240V ea)



This versatile lab oven allows our customers to perform a variety of initial tests in their own R&D facilities, without the time and expense involved with shipping product and materials to our test lab here in Tennessee. This oven can provide you with data that will best enable us to finalize the application at Fostoria and can help shorten long-range development projects.

Fostoria Oven for Laboratory and R&D Testing

Model 9800001



3-in-1 Testing Oven

The (2) main heat sections of the oven can be easily configured with the mounting brackets as shown in the photos, and the arrangement will depend on how the product will eventually be presented into the oven. The banks can be opposed in an 11" x 22" design for heat from opposite sides; or be converted to an 11" x 44" or 22" x 22" pattern for one sided heat. The frame brackets allow heat sections in the opposing position to extend from 1" to 30" apart. Handles on the top allow for easy handling, and rubber feet prevent marring of table tops.

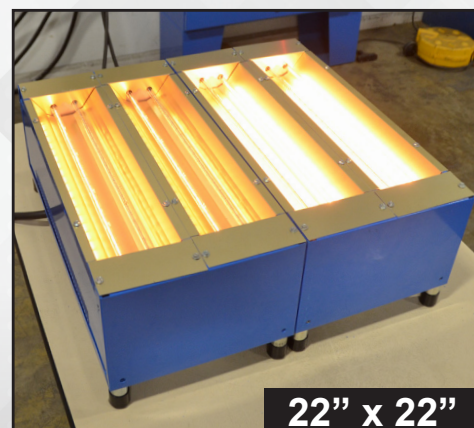
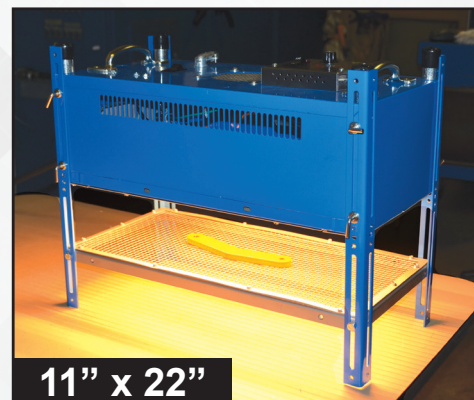
A set of baffles is provided to enclose all four sides in any configuration, if necessary. A product tray is also included.

The oven includes a total of (8) T-3 short-wave, clear quartz infrared lamps, which can be controlled in an infinite range to impinge short-medium-or long wave infrared on the product. Each lamp is 1600 watts, at 240 volt. Total electrical draw is 12.8 Kw (53.4 amps, 240 V, single phase) at full power. Each heater section has a 12-ft, #12/3 cable. Cable termination to the power source (by customer) can be made with a plug/receptacle or wired directly to a J-box with disconnect or other acceptable and safe device. The disconnect, breaker or any other device must be rated for at least 35 amps per heater section.

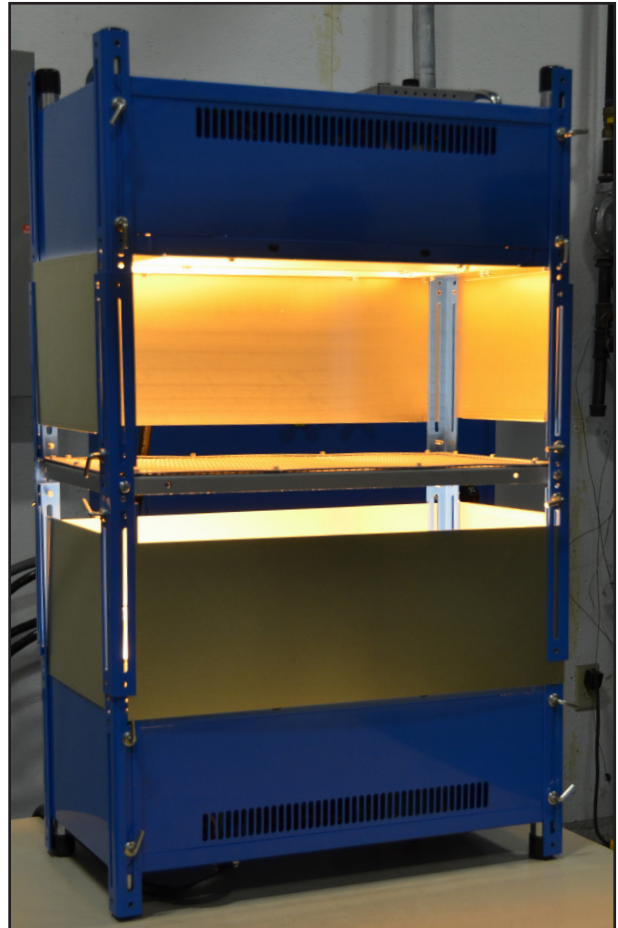
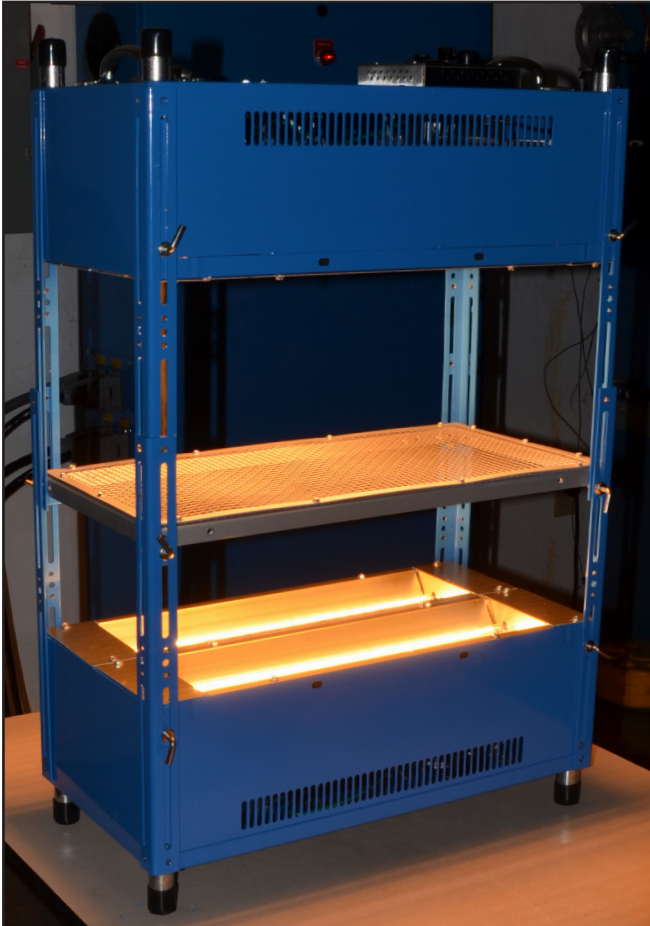
Controls

Each of the two banks has a separate proportional controller, fan motor and on/off switch. When switched to the ON position, two of the four lamps energize. The potentiometer will regulate the other two lamps from zero to full output. A radiometer (optical pyrometer) is available from Fostoria that reads non-contact temperatures on the surface of the product, and can be purchased as an option to this test oven. Hand held radiometers are also excellent for reading surface temperatures.

The built-in fan in each heater section removes heated air from the interior of the modular sections, to ensure safer operation and longer lamp life.



**Operating & Maintenance Manual
For Fostoria Model 9800001
IR Demo & Lab Unit**



Fostoria Process Equipment Div of TPI Corporation
Johnson City, TN 1-800-495-4525
www.fostoriaprocessequipment.com

Operating & Maintenance Manual for Fostoria Model 9800001

IR Demo & Lab Unit

Parts List

<u>Quantity</u>	<u>Description</u>
(2)	11' x 22" heater sections with (2) gold anodized aluminum reflectors per section.
(8)	1600 watt/240 volt T-3 quartz infrared lamps (2 used per reflector).
(8)	1" x 1" x 17-1/2" brackets
(4)	Gold anodized aluminum baffles 8-7/16" x 9-3/8"
(4)	Gold anodized aluminum baffles 7-1/2" x 21-9/16"
(1)	Gold anodized aluminum baffle 21-7/8" x 10-7/8"
(28)	¼ x 20 L-shaped bolts and washers

Assembly – Refer to Diagram #1

This Lab Demo oven can be configured for (3) basic test set-ups, using the adjustable frame brackets. The test set-up will depend on the manner and direction in which the product will eventually be presented into the oven:

11' x 22" each – opposable heat banks for two sided or top/bottom heat

Use two hook bolts for each corner. The remainder are used to secure the product tray for adjusting the separation of the banks. The baffles may be inserted between the brackets or bank and held in place by compression.

22" x 22 bank setup – for one sided heat

Attach the corner brackets using two hook bolts on each corner. Place two brackets in a horizontal position to join and support the middle of the sections on each end.

11" x 44" bank setup – for one sided heat

Attach the corner brackets using two hook bolts on each corner. Place two brackets back to back for each side to support the middle end of each section.

NOTE: The baffles can be held in place in all configurations. Refer to the instructions in the first paragraph above.

Operation

The units are prewired for 240 volt, 60 cycle (Hz). Each bank should have its own 240 volt/35 amp (minimum) grounded receptacle to handle a full output load of 54 amps (67 amps total with safety factor, per code).

Each of the two banks has a separate proportional controller, fan motor and on/off switch. Move the switch to the ON position for two of the lamps. The potentiometer will regulate the other two lamps from zero to full output. A radiometer (optical pyrometer) is available from Fostoria that provides non-contact temperatures on the surface of the product, and can be purchased as an option to this test oven.

The test oven is equipped with a total of (12) 1600 watt/240 volt T-3 clear quartz lamps. These lamps have several advantages:

- They react immediately to a controlling device
- There is virtually no warm-up or cool-down time required
- They offer excellent radiant efficiency, making this demo oven a very versatile testing device

The desired configuration of the heat banks will depend on the process and it may be found that several position changes have to be made. Keep in mind that the most efficient position for the product is between 6" and 8" from the lamps. This distance range should only be used for initial reference. The process will dictate the position of the product in relation to the lamps. (NOTE: Lamps should only be energized in the horizontal position).

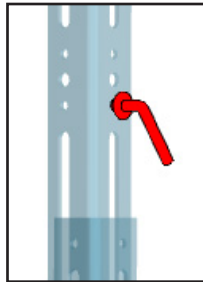
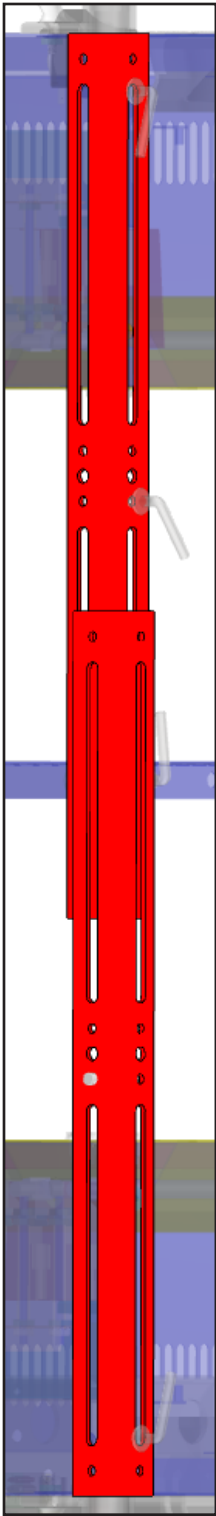
The reflectors and end caps should be cleaned on a regular basis after testing, to maintain optimum efficiency. **ALWAYS disconnect the power before cleaning or performing any maintenance.** Use warm soapy water or a non-abrasive solvent, and let the solution dissolve the matter on the reflectors. Do not scrub the reflectors since that may damage the gold anodized coating. Remove the solution with a soft rag. The lamps may also be cleaned using the same method, or with an alcohol solution.

Never operate these banks if the fan fails to operate or the cooling slots are blocked. In the event the proportional controller does not control or turn on, check to make sure the switch is in the ON position, the unit is plugged in or wired to the proper receptacle/electrical source, and the fuse or breaker for the branch circuit is not blown or tripped. If the problem cannot be isolated, disconnect the banks from the power source.

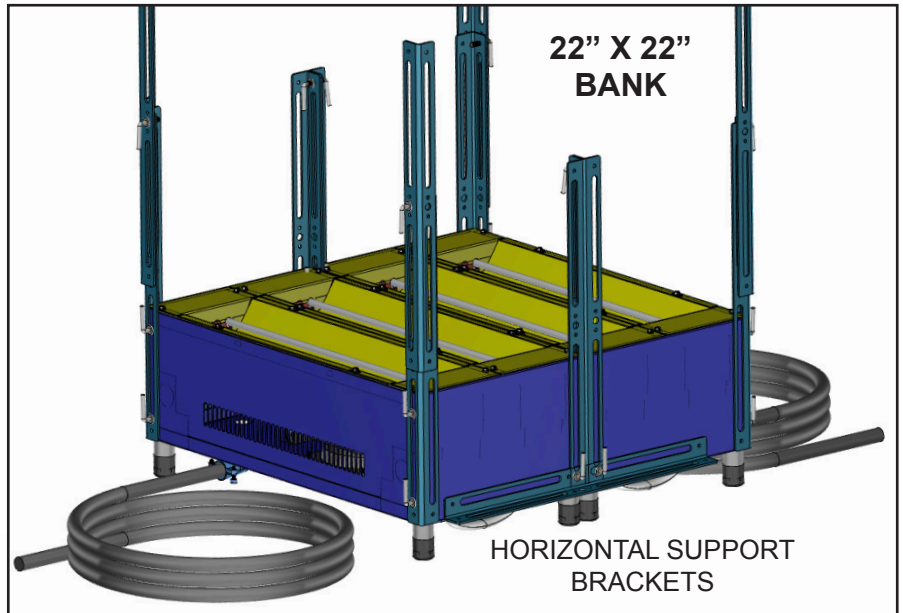
The baffles supplied with this oven can be used to enclose all 4 sides for any of the set-up arrangements. An adjustable product screen is also furnished.

**DIAGRAM #1:
TYPICAL CORNER ASSEMBLY
FOR OPPOSING BANKS**

1/4 X 20 HOOK BOLTS ARE USED TO SECURE BRACKETS
TO THE BANKS AND ALSO TO HOLD THE PRODUCT TRAY.
OPPOSING BANKS CAN BE ADJUSTED FROM 1" TO 30"

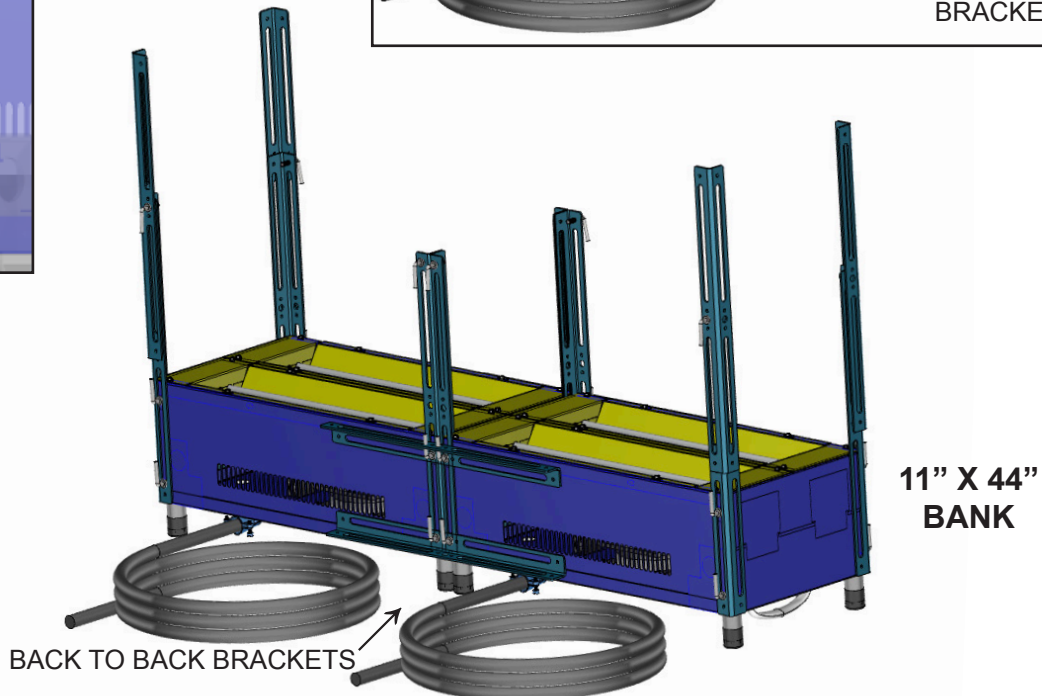


**1/4 x 20
HOOK BOLT**



**22" X 22"
BANK**

**HORIZONTAL SUPPORT
BRACKETS**



**11" X 44"
BANK**

BACK TO BACK BRACKETS

WIRING DIAGRAM

TYPICAL WIRING DIAGRAM FOR
ONE BANK OF A LABORATORY OVEN

