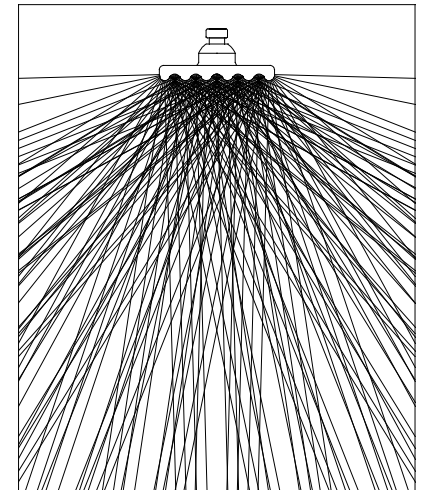
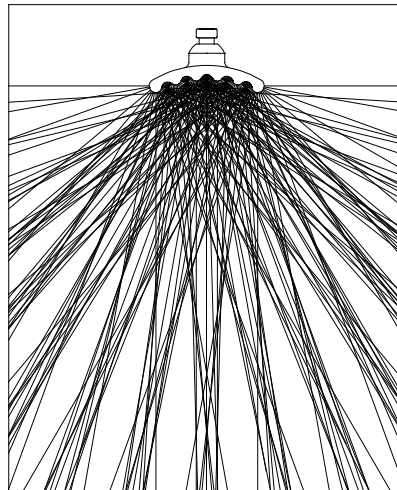




## Will I Need a Flat or Curved Element?

As part of Infrared Internationale's wide product selection, we offer the choice of a flat or convex-shaped element in both the full or half size. The most obvious difference between the flat or curved element is the radiation pattern as shown. This difference in radiation pattern is a good indicator as to which applications would be most benefited.



The flat element emits an evenly distributed radiation pattern, thus allowing close-up heating. The irradiation distance between the flat emitter and the product being heated is suggested to be between 1" and 4" (25mm to 100mm). Spacing between individual emitters is also typically between 1/4" and 1/8" (6mm to 3mm).

The main applications for using the flat emitters would be for thin film plastics that need an extremely even heat for processing or any type of drying/curing application that might exhibit streaking (uneven heating) as it passes under the heating oven or assembly. A brick work pattern of flat emitters with 1/8" (3mm) spacing would provide the ultimate "streak free" radiant oven.

The recommended irradiation distance between the parabolic curved emitter and the product being heated is between 4" and 8" (100mm and 200mm). The parabolic curve also adds additional strength to the element and would hold up better than the flat elements under vibration or stress. Curved elements are used in about 90% of all applications but should not be used as a substitute for flat elements in close processes or "streaking" or discoloration could result.

Our united effort is to sell heaters, and in order to do that effectively and repeatedly over the long term, we must place them in applications where they will operate to their peak performance. This means having a good understanding of their operational and functional differences and communicating those differences to our customers.

### Contact either of our sales locations:

**Infrared Internationale of North America, Ltd.**  
Sales Office: Mor Electric Heating Assoc., Inc.  
5880 Alpine Ave. NW, Comstock Park, MI, 49321, USA  
Tel: 616-784-1121, 800-442-2581  
Fax: 616-784-7775, [infrared@infraredheaters.com](mailto:infrared@infraredheaters.com)

**Infrared Internationale Engineering**  
Units 7-11, Granada Park Ind. Estate, Llangattock,  
Crickhowell, Powys, Wales, U.K. NP8 1HW, Great Britain  
Tel: (01873) 810999, Fax: (01873) 810599  
[irintleng@aol.com](mailto:irintleng@aol.com)

# Ohm's Law- Made simple

If you are not part of the electrical engineering world, the table to the right may look like a mathematical impossibility. But learning a simple variation of Ohm's Law can become an easy and useful tool for helping your customers and increasing the value of your stock. In laymen's terms, it's sometimes referred to as "The Rule of Fourths", and it is a simple formula that can be used for converting voltages and wattages.

Deciding what elements to stock is always a difficult decision, but it is always based on the desire to meet the customer's needs. If salespeople are aware of the relationship between wattages and voltages, you will be able to easily substitute one element on your shelf for another if need be. **The "Rule of Fourths" is to simply divide the wattage by 4 and the voltage by half**, to find an equivalent wattage and voltage.

For example:

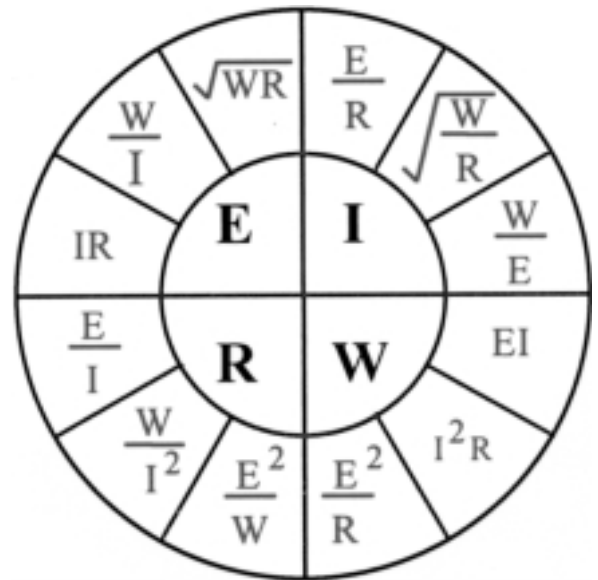
A 480 volt, 1000 watt heater is the same as:

a 240 volt, 250 watt heater or (voltage divided by 2 and wattage divided by 4)

Always work from high to low when converting voltage/wattage. Increasing wattage/voltage could cause the emitter to exceed its design criteria and significantly reduced the life of the element or cause immediate failure.

Element conversion can be used in emergency situations or when small quantities are needed. For example, if a customer calls and needs a 120 volt, 250 watt heater, and you don't have one, a 240 volt 1000 watt heater is basically the same thing. It is important to remember, that when substituting elements, to indicate on the box or somewhere on the element, what they are adapting to, so they will have this information for reordering purposes.

As mentioned above, this is the simplified version of a variation of Ohm's Law. Substitutions may be made for voltages other than these, but the U.S. sales office should be consulted, where a spreadsheet has been designed to produce conversions quickly and accurately.



**E = Volts, I = Amps**  
**R = Ohms, W = Watts**



## Checking on an Order?

The quickest way to find out the status of your order is to call, fax, or e-mail Deitz Kracker in the U.S. or Christine Hughes in the U.K. The secretary, or salesman that took your order, will only take the question to Deitz or Chris so, you can save some time by going directly to those who have the answers. Faxing or e-mailing is best because accurate checking means going on the production floor to find the most current position of your order. When checking on your order, be sure to mention if you can take a partial shipment, bulk boxing or priority shipping. All these options can all save time in speeding up your delivery.