



RE-VERBER-RAY

# The Re-Verber-Ray Product Selector & Internet Guide

Tips on navigating our website, finding helpful tools online, selecting a quality infra-red heater and the ten basic steps of applying infra-red heat.



Detroit Radiant Products, the leader in gas-fired infra-red heaters, offers the most complete and interactive website amongst infra-red manufacturers. This site is designed for Specifying Engineers, Installing Contractors and End Users. A list of the key features, found on our website, is shown below.

- Product Specification Sheets
- CAD Library
- Dealer Locator
- Product Installation Manuals
- Design and Application Guides
- Local Dealer Locator
- Replacement Parts Library
- Troubleshooting Assistance
- Features Comparison Charts
- Online Product Registration

## Not All Infra-Red Heaters are Designed Alike.

Five Key Features to a Quality Infra-red Tube Heater - <http://www.reverberray.com/5key>

- 1. Two-Stage Operation.** Advanced two-stage heaters fire at 100% or 65% of rated output. This varied operation reduces on/off cycles by 35%, improves comfort levels, provides faster recoveries, offers design protection benefits and has been proven to save a minimum of 12% fuel savings over single stage. By reducing on/off cycles you directly reduce wasted energy.
- 2. Burner Design.** A burner that produces an elongated and spiraled flame is superior to a "cup" style burner that produces a shortened flame. An elongated flame emits more flame radiation than other flames (P.6 N. American Combustion Handbook, VII) and improves heat distribution. Detroit Radiant's stainless steel burner is specifically designed for an elongated flame.
- 3. Tube Construction.** Radiant tubes are constructed of stainless steel, titanium coated, aluminized coated and hot rolled steel. Different tubes have different tolerances to heat and corrosion. An efficient radiant heater will use 100% aluminized coated tubes, at a minimum. A highly emissive (.95+) black coating will further enhance performance.
- 4. Highly Polished Reflectors.** Highly polished aluminum reflectors transmit nearly 90% (ASHRAE 1996 p 3.8) of radiant energy. Mill finish reflectors have an absorption value of 40% to 60% (ASHRAE 1996 p 3.8). Reflector construction material is more critical than the reflector design.
- 5. Other.** Hot surface ignition is superior to spark ignition, complete mounting kits (hangers, clamps, flex connectors, end caps & gas cocks) save time during installation, interlocking tubes are easier to install and offer a superior fit to non-swaged tubes, titanium combustion chambers offer more protection over aluminized tubes.



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## Ten Basic Steps to Applying an Infra-Red Heat System

<b>Step 1</b>	<b>Contact Us</b>	Our distribution offers complete no charge design assistance. Local representatives are factory trained and will provide heat loss calculations, designs, equipment lists and much more. Toll free at 800-222-1100. On the web at <a href="http://www.reverberray.com/dealerlocator">www.reverberray.com/dealerlocator</a> .
<b>Step 2</b>	<b>Determine Type of Application</b>	Infra-red heaters are ideal for use in firestations, warehouses, autobody shops, sporting facilities, pole barns, garages and much more. Infra-red heaters are NOT explosion proof and may not be placed in a Class 1 or 2 Explosive Environment, such as a paint booth.
<b>Step 3</b>	<b>Discuss Performance Expectations</b>	Discuss the customer expectations. What temperature do they wish to maintain? What will they do in the work environment? Where are the work and storage areas? Do they seek even heat distribution? What are the available mounting heights?
<b>Step 4</b>	<b>Calculate the Heat Loss</b>	Determine the heat loss of the building using standard ASHRAE Guidelines. Determine design temperature and desired temperature rise. Pay particular attention to the air changes per hour.
<b>Step 5</b>	<b>Determine the Heater Type</b>	There are a variety of heater types. Select high or low intensity heaters. If low intensity, select straight or 'U' configuration, negative or positive pressure, unitary or system design. Refer to the Design Guide. Multiple heaters, of lower BTU's, are preferred over single large BTU models.
<b>Step 6</b>	<b>Review Min. &amp; Max. Mounting Heights</b>	Critical. All infra-red heaters have a minimum and maximum recommended mounting height. This is established to ensure effective and comfortable heat patterns at the floor levels. This data may be found in the series spec sheet and should always be considered.
<b>Step 7</b>	<b>Clearances to Combustibles</b>	Warning - Clearance Distance Must Always Be Maintained. Pay particular attention to storage, overhead doors and car lift areas. Signs are recommended in accordance with the ANSI Standards.
<b>Step 8</b>	<b>Review Coverage</b>	Infra-red heaters are best applied in an outer perimeter design pattern. Place burners in the areas of greatest heat loss, opposite of each other and spaced equally. Consult the design guide.
<b>Step 9</b>	<b>Select Model</b>	Choose the specific model. Select single stage or two-stage models. Specify BTU's, lengths, gas type and voltage. Utilize upgrade options based on the applications. Review construction features and pricing of each Series and select the best models.
<b>Step 10</b>	<b>Other</b>	Other related considerations include venting, controls, guards, signs and whether to utilize outside combustion air. Many accessories are also offered for use in the application, configuration and usage of your infra-red heater.

## Detroit Radiant Products Infra-Red Heater Offering

	Heater Series	Description	www.
<b>High Intensity</b>	o DR Series	<b>Gas Fired, Unvented, High Intensity Heater</b> <i>Usage: Areas of high air infiltration, high ceilings, spot heat and other applications.</i>	<a href="http://reverberray.com/DR">reverberray.com/DR</a>
	o PT Series	<b>Gas Fired, Unvented, Portable Construction Heaters</b> <i>Usage: Temporary heat applications, construction sites, loading docks.</i>	<a href="http://reverberray.com/PT">reverberray.com/PT</a>
	o BAH Series	<b>Quartz Glass Electric High Intensity Heater</b> <i>Usage: Walkways, entrances, spot heat applications and more.</i>	<a href="http://reverberray.com/BAH">reverberray.com/BAH</a>
<b>Low Intensity Tubes</b>	o HL2 Series	<b>Premier Two-Stage Unitary Tube Heater</b> <i>Usage: Comm/Ind applications where highest efficiencies, comfort &amp; features are needed.</i>	<a href="http://reverberray.com/HL2">reverberray.com/HL2</a>
	o DX2 Series	<b>Premier Single Stage Unitary Tube Heater</b> <i>Usage: Comm/Ind applications where high efficiencies, comfort &amp; features are needed.</i>	<a href="http://reverberray.com/DX2">reverberray.com/DX2</a>
	o XTS Series	<b>Single Stage Unitary Tube Heater</b> <i>Usage: Comm/Ind applications where features and lower acquisition costs are needed.</i>	<a href="http://reverberray.com/XTS">reverberray.com/XTS</a>
	o DET Series	<b>Economy Two-Stage Unitary Tube Heater</b> <i>Usage: Comm/Ind applications where two-stage oper. and low acquisition costs are needed.</i>	<a href="http://reverberray.com/DET">reverberray.com/DET</a>
	o DES Series	<b>Economy Single-Stage Unitary Tube Heater</b> <i>Usage: Comm/Ind applications where lowest acquisition prices are needed.</i>	<a href="http://reverberray.com/DES">reverberray.com/DES</a>
<b>Specialty Low Intensity</b>	o -SS Series	<b>Stainless Steel Upgrades to the HL2 &amp; DX2 Series</b> <i>Usage: Harsh environment applications such as car washes.</i>	<a href="http://reverberray.com/-SS">reverberray.com/-SS</a>
	o LD Series	<b>Two-Stage Low Output Tube Heater</b> <i>Usage: Low BTU, low ceiling and select residential applications.</i>	<a href="http://reverberray.com/LD">reverberray.com/LD</a>
	o LS Series	<b>Single-Stage Low Output Tube Heater</b> <i>Usage: Low BTU, low ceiling and select residential applications.</i>	<a href="http://reverberray.com/LS">reverberray.com/LS</a>
	o SV Series	<b>Negative Pressure Single-Stage Unitary Tube Heater</b> <i>Usage: Comm/Ind applications where negative pressure operation is needed.</i>	<a href="http://reverberray.com/SV">reverberray.com/SV</a>
	o HLV Series	<b>Two-Stage, Optional Condensing, Engineered Vacuum System.</b> <i>Usage: Large applications where an engineered vacuum system is needed.</i>	<a href="http://reverberray.com/HLV">reverberray.com/HLV</a>