LS Series - Tube Heater Specification Sheet

WARNING: This heater must be installed and serviced by trained gas installation and service personnel only! Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. Protect yourself and others by observing all safety information. Retain instructions for future reference.



LS SERIES TUBE HEATERS

ENGINEERING SUBMITTAL DATA - LOW INTENSITY GAS FIRED INFRA-RED TUBE HEATERS & ACCESSORIES.

									Field use only
			Gas Type			U-Tube		Typ. Mount	"Type" Tube
Qty.	\checkmark	Model #	(circle one)	BTU's	Length	Length	Weight	Height	Pkg #1 ***
		LS 10-25 *	N or LP	25,000	12'-3"	N/A	85#	8' Min.	10-3 Titanium
		LS 10-30 *	N or LP	30,000	12'-3"	N/A	85#	8' Min.	10-3 Titanium
		LS 10-40	N or LP	40,000	12'-3"	N/A	85#	10' Min.	10-3 Titanium
		LS 15-40 *	N or LP	40,000	17'-0"	N/A	100#	10' Min.	15-3 Titanium
		LS 15-50	N or LP	50,000	17'-0"	N/A	100#	10' Min.	15-3 Titanium
		LS 20-40 *	N or LP	40,000	21'-7"	13'-0"	120#	8' Min.	20-3 Titanium
		LS 20-50	N or LP	50,000	21'-7"	13'-0"	120#	9' Min.	20-3 Titanium
		LS 30-50 *	N or LP	50,000	31'-3"	**17'-10"	160#	9' Min.	30-3 Titanium

* CSA Design Certifed for installation in residential applications.

** Model requires 5EA-SUB accessory package.

*** Type packages refer to the tube package that will ship with models (length, diameter, combustion tube type and radiant tube).

For additional literature on this and other products, please visit www.reverberray.com.

Project:	Date:		
Location:			
City:	State:	Zip:	
Contractor:			
Engineer:			
Local Representative:			
Customer Name:			
Address:			
City:	State: Zip:PI	none#:	
Model#:	Date of Installation:		
Serial#:			
Notes:			



Printed in U.S.A. © 2003 Detroit Radiant Products 21400 Hoover Rd., Warren, MI 48089 T. (586) 756-0950 F. (586) 756-2626 http://www.reverberray.com Email: sales@detroitradiant.com Form# LSLS-3M-07/03 (ID)



Specifications & Clearances

Product Features

APPROVALS

- IAS, CGA, CSA.
- Certain models are residentially certified to CSA No. 7-89.

EMMITER & COMBUSTION TUBES

- 16ga. 3" O.D. titanium alloy treated combustion chamber.
- 16ga. 3" O.D. aluminized steel radiant tubes

GAS SUPPLY	NAT.	LP.	
Manifold Pressure	3 5"	10.0"	

Widinioid Tressure	5.5	10.0
•Min. Inlet Pressure	5.0"	11.0"
•Max. Inlet Pressure	14.0"	14.0"

GAS CONNECTION

- 7/8" flare-M FPT connection to 1/2"x2" SS (304) flex connector provided.
- 1/2" F NPT gas cock included.

ENAMELED CONTROL BOX

- Sight glass for burner inspection.
- 4" Male duct air intake.
- Outside air collar (4") attached.
- Totally enclosed components.

CONTROLS

- •
- Moisture and corrosion resistant ignition module.
- Silicon carbide hot surface igniter.
- Pre-purge controls.

- Sidewall or roof venting 3" diameter pipe. Up to 20 feet.
- Venting is required for residential installations.



*See cover page for models certified for residential use.

- 100% safety shut off.
- Dual pressure switches.
- Flame rod sensing.

VENTING

OPERATIONALLIGHTS

- Light #1- Indicates switch operation.
- Light #2- Indicates gas valve power.

POWER SUPPLY

- 120 V.A.C., 60 Hz GRD, 3-wire.
- Ignition current 4.8 amps.
- Running current 1.1 amps.

WARRANTY

- 1 year Burner box components.
- 3 years-Combustion and radiant tubes.
- 5 years-Stainless steel burner.

OTHER

SIDE

REHIND

BEHIND

SIDE

BELOW

BELOW

BELOW

BELOW 0 W/2 SIDE SHIELDS

- One reflector center support per reflector.
- Stainless steel turbulator baffle included. Stainless steel upgrades (burner box
- and reflectors only) are available.
- Made in U.S.A.
- Visit www.reverberray.com for additional information and parts.

OPTIONAL ACCESSORIES

- **SSCBAO.** Upgrade burner box to 304 series stainless steel.
- **SSRAO.** Upgrade aluminum reflector to 304 series stainless steel.
- **PC-36.** Three prong power cord set. Allows heater to be plugged into 120V grounded outlet.
- **5EA3"-SUB.** Substitute one 10' radiant tube and reflector for two 5' pieces. This is ideal for making "U" heaters on 30' models. Maximum of one per heater.
- **OD-KIT**. For use when applying heaters outdoors.
- **24VAO.** For use with low voltage thermostat. Provide field 24V supply (10VA is sufficient.) Specify 24 VAO (add on) to install optional, internal 24V relay. Provide external 24V supply with this option.





Field Data & Accessories





Written Specifications

HEATER PARAMETERS/SPECIFICATIONS

- Gas fired radiant tube heaters shall be furnished and installed in accordance with governing codes and as shown per drawing(s) provided. Radiant tube heaters shall be RE-VERBER-RAY LS SERIES of the model numbers and inputs(s) in BTU/H as manufactured by Detroit Radiant Products Company, Warren, MI 48089.
- Radiant tube heaters shall be Design Certified by CSA and comply with current Occupational Safety and Health Act (OSHA) Requirements. The supplier shall provide the CSA Certification Number and the heaters shall bear the CSA Seal of Certification.
- The supplier shall provide a manufacturer's published warranty covering the heater's stainless steel burner for a period of five (5) years, combustion and radiant emitter tube assembly for a period of three (3) years, and all components utilized in the heater control assembly for a period of one (1) year.
- The supplier shall furnish the owner/contractor with ______ copies of the engineering specification forms, showing physical dimensions, installation detail, recommendations, control wiring diagrams, and spare parts list.
- Radiant tube heaters shall be designed to satisfactorily operate at a minimum inlet pressure of ______ inches W.C.P. to a maximum inlet pressure of ______ inches W.C.P.
- Radiant tube heaters shall be designed to operate without adjustments when burning natural gas having a heat value of _______. BTU per cubic foot with a specific gravity of _______, or when burning propane gas have a heat value of 2500 BTU per cubic foot with a specific gravity of 1.53.
- An Installation, Operation, and Maintenance Manual shall be supplied with each heater.

RADIANT TUBE HEATER BURNER CONTROLS

- Heaters shall be equipped with a direct silicon carbide ignition system with a one (1)-time ignition trial to sensing mode and an infinite trial after sensing mode. Power supplied to each burner shall be 120 VAC, 60 Hz. Flame sensing shall be via an independent sensing rod and circuit.
- Heater shall incorporate a moisture and corrosion resistant potted circuit board.
- The main burner shall be constructed of stainless steel.
- The control assembly shall be Design Certified by CSA, shall provide main burner regulation, and shall be of the redundant type.
- Heater controls shall include two safety differential pressure switches: one to monitor exhaust back pressure and one to monitor combustion air flow, so as to provide complete burner shutdown due to insufficient combustion air or flue blockage.
- The heater's control system shall be designed to shutoff the gas flow to the main burner in the event either a gas supply or power supply interruption occurs.

- The heater's air flow control system shall provide a 45 second prepurge prior to initiating burner operation.
- No condensation shall form as a result of combustion in the combustion chamber or radiant tubes while at operating temperatures.
- The heater shall incorporate moisture and corrosion resistant circuitry.
- Total heater shutdown shall occur in the event of circuit control lockout. An interruption of power (reset thermostat) will restart the firing sequence.

RADIANT TUBE HEATER CONSTRUCTION

- The heater's control housing shall be totally enclosed with a corrosion resistant enameled steel exterior. The controls shall be easily serviceable by removing one (1) panel.
- The heater's combustion chamber shall be 3" O.D. 16ga. treated titanium alloy with a high emissivity rated, corrosion resistant, black coating.
- The heater's radiant emitter tube shall be 3" O.D. 16ga. aluminized steel finished with a high emissivity rated, corrosion resistant, black coating.
- The heater's combustion chamber and radiant emitter tube shall incorporate a 3" slip fit connection in which the upstream tube slides into the next tube and is held by a bolted clamp.
- Safety pressure switches shall incorporate atmospheric sensing termination fittings designed to eliminate blockage due to moisture or foreign matter.
- The silicon carbide ignitor shall be readily accessible and serviceable without the use of tools.
- Reflectors shall be .025 polished aluminum with a multi-faceted design which includes reflector end caps. Reflectors shall be rotatable from 0 to 45 degrees when required. The heater's reflector hanging system shall be designed to permit expansion while minimizing noise and/or rattles. Reflectors shall be assembled to the heater without the use of tools.
- The heaters shall include a downstream stainless steel turbulator baffle for maximum thermal efficiency, 2' stainless steel flex connector, hanging kit, and 1/2" gas cock shut-off.
- Heaters shall be equipped with a sight glass allowing a visual inspection of ignitor and burner operation from the floor.
- The radiant tube heaters shall be designed such that, at the customer's option, outside combustion air may be supplied without the use of additional supply fans. An air intake collar shall be supplied as part of the burner control assembly to accept a 4" O.D. supply duct.
- Only the heater's burner box and reflector may be upgraded to 304 series stainless steel.



