

HL2 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.



HL2 SERIES TUBE HEATERS

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

Qty.	Model #	Gas Type (circle one)	MBTU's	Length	U-Tube Length	Weight	Stainless Steel Weight	Typ. Mount Height	Field use only	
									"Type" Tube Pkg. #1 *	"Type" Tube Pkg. #2 *
	HL2-20-65	N or LP	65 / 50	21'-7"	13'-0"	120 #	145 #	9' - 14'	20-4 Alum	N/A
	HL2-20-75	N or LP	75 / 50	21'-7"	13'-0"	120 #	145 #	10' - 15'	20-4 Alum	N/A
	HL2-20-100	N or LP	96 / 65	21'-7"	13'-0"	120 #	145 #	11' - 18'	20-4 Alum	N/A
	HL2-30-65	N or LP	65 / 50	31'-3"	**17'-10"	160 #	195 #	10' - 15'	30-4 Alum	N/A
	HL2-30-75	N or LP	75 / 50	31'-3"	**17'-10"	160 #	195 #	11' - 18'	30-4 Alum	N/A
	HL2-30-100	N or LP	100 / 65	31'-3"	**17'-10"	160 #	195 #	12' - 20'	30-4 Alum	N/A
	HL2-30-125	N or LP	125 / 95	31'-3"	**17'-10"	160 #	195 #	13' - 23'	30-4 Alum	N/A
	HL2-40-65	N or LP	65 / 50	40'-11"	22'-8"	190 #	235 #	11' - 18'	40-4 Alum	N/A
	HL2-40-75	N or LP	75 / 50	40'-11"	22'-8"	190 #	235 #	11' - 18'	40-4 Alum	N/A
	HL2-40-100	N or LP	100 / 65	40'-11"	22'-8"	190 #	235 #	12' - 20'	40-4 Alum	N/A
	HL2-40-125	N or LP	125 / 95	40'-11"	22'-8"	190 #	235 #	13' - 23'	40-4 Alum	N/A
	HL2-40-150	N or LP	150 / 100	40'-11"	22'-8"	190 #	235 #	14' - 25'	40-4 Titan	N/A
	HL2-40-175	N or LP	175 / 125	40'-11"	22'-8"	190 #	N/A	15' - 27'	40-4 Titan	N/A
	HL2-50-125	N or LP	125 / 95	50'-7"	**27'-6"	235 #	290 #	15' - 27'	40-4 Alum	10-4 Alum
	HL2-50-150	N or LP	150 / 100	50'-7"	**27'-6"	235 #	290 #	15' - 27'	40-4 Titan	10-4 Alum
	HL2-50-175	N or LP	175 / 125	50'-7"	**27'-6"	235 #	N/A	16' - 30'	40-4 Titan	10-4 Alum
	HL2-50-200	N or LP	200 / 145	50'-7"	**27'-6"	235 #	N/A	17' - 35'	40-4 Titan	10-4 Alum
	HL2-60-150	N or LP	150 / 100	60'-3"	32'-4"	265 #	330 #	16' - 30'	40-4 Titan	20-4 Alum
	HL2-60-175	N or LP	175 / 125	60'-3"	32'-4"	265 #	N/A	16' - 30'	40-4 Titan	20-4 Alum
	HL2-60-200	N or LP	200 / 145	60'-3"	32'-4"	265 #	N/A	17' - 35'	40-4 Titan	20-4 Alum
	HL2-70-175	N or LP	175 / 125	69'-11"	**37'-2"	300 #	N/A	19' - 42'	40-4 Titan	30-4 Alum
	HL2-70-200	N or LP	200 / 145	69'-11"	**37'-2"	300 #	N/A	19' - 42'	40-4 Titan	30-4 Alum

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

** - Model requires 5EA-SUB accessory package. Alternate U-tube chart on page 18 of general manual.

N/A - This model is not available with this feature.

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: _____ Phone #: _____
 Model#: _____ Serial#: _____
 Notes: _____



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Specifications & Clearances

SPECIFICATIONS

APPROVALS

- IAS, CGA, CSA (CE-EHL Series).
- Indoor / Outdoor Approval.
- Commercial / Industrial Approval.

BURNER SIGHT GLASS

- For burner inspection.

COMBUSTION AIR INLET & VENT

- 4" Male Duct.

CONTROLS

- Two-Stage gas valve (at 100% and 65%).
- Single differential pressure switch.
- Silicon carbide hot surface igniter.
- Pre and post purge controls.
- Flame rod sensing.
- 24V thermostatic control voltage.
- Self-diagnostic – LED "soft lockout".

MOUNTING ANGLE

- 0 to 45 degrees from horizontal.

ENAMELED CONTROL BOX

- Totally enclosed components.
- 4" outside air inlet collar standard.

EMITTER & COMBUSTION TUBES

- 16ga. 4" O.D. aluminized coated steel. All tubes coated with high temperature, corrosion resistant black coating .95 emissivity. Slip fit connection.
- Titanium coated combustion chamber (150-200 MBTU/H models).
- Available in "U" or "L" configurations.
- Turbulator baffle.

GAS SUPPLY-W.C.P.

- Manifold pressure 3.5"
- Min. Inlet pressure 5.0"
- Max. Inlet pressure 14.0"

NAT

- 3.5"
- 5.0"
- 14.0"

LP

- 10.0"
- 11.0"
- 14.0"

REFLECTOR

- Highly polished aluminum.
- Two end caps included.
- Anti-rattle spring clips.
- Continuous overlap design.
- One reflector center support per reflector.

GAS CONNECTION

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

POWER SUPPLY

- 120 V.A.C., 60 Hz GRD, 3-wire.
- 24 V.A.C. thermostat connection.
- Ignition current-4.8 amps.
- Running current-1.1 amps.
- 24V controls.

OPERATIONAL LIGHTS

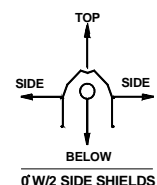
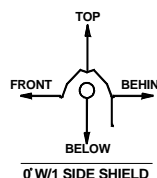
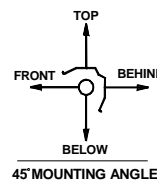
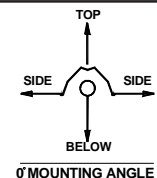
- Light #1-Indicates high fire.
- Light #2-Indicates low fire.
- Light #3 (red)-Indicates diagnostic fault code.

WARRANTY

- 1 year-Burner box components.
- 5 years-Combustion and radiant tubes.
- 10 years-Burner.

Made in the U.S.A.

CLEARANCES TO COMBUSTIBLES (IN.)					
MODEL NO.	MOUNTING ANGLE	SIDE		TOP	BELOW
		FRONT	BEHIND		
HL2 (20,30,40) - 65, 75 [N,P]	0°	9	9	6	60
	45°	39	8	10	60
	0°	29	8	6	60
	0°	9	9	6	60
	0°	7	7	6	30
HL2 (20,30,40) - 100 [N,P]	0°	14	14	6	66
	45°	39	8	10	66
	0°	29	8	6	66
	0°	16	16	6	66
	0°	7	7	6	30
HL2 (30,40,50)-125 [N,P]	0°	20	20	6	76
	45°	58	8	10	76
	0°	42	8	6	76
	0°	20	20	6	76
	0°	7	7	6	30
HL2 (40,50,60) - 150 [N,P]	0°	24	24	6	81
	45°	58	8	10	81
	0°	42	8	6	81
	0°	23	23	6	81
	0°	11	11	6	44
HL2 (40,50,60,70) - 175 [N,P]	0°	34	34	6	92
	45°	63	8	10	92
	0°	50	8	6	92
	0°	30	30	6	92
	0°	11	11	6	44
HL2 (50,60,70) - 200 [N,P]	0°	41	41	6	94
	45°	63	8	10	94
	0°	54	8	6	94
	0°	30	30	6	94
	0°	11	11	6	44



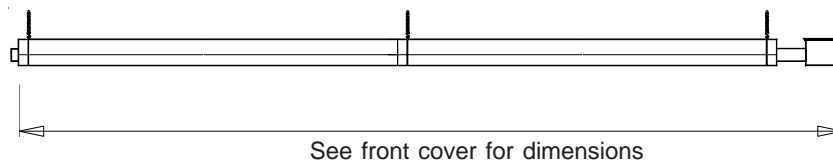
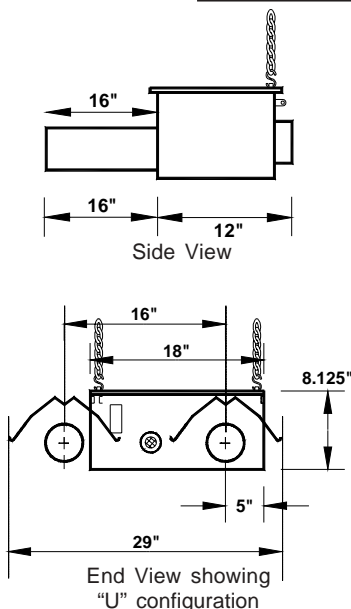
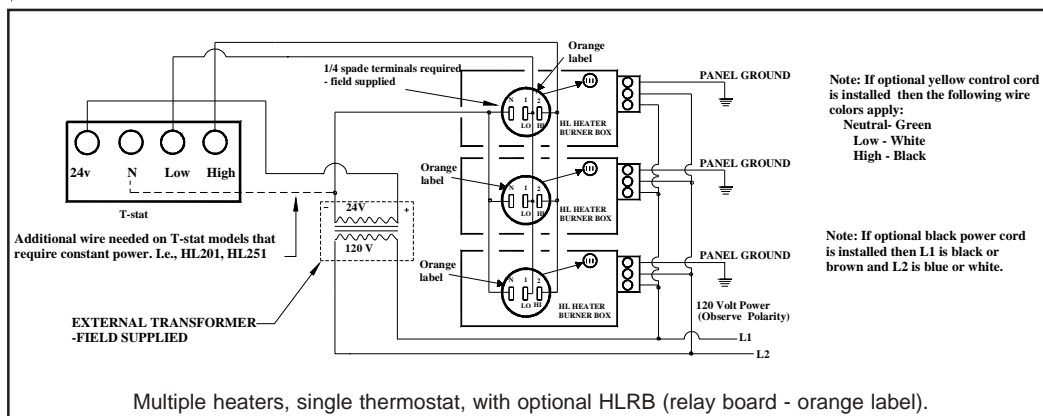
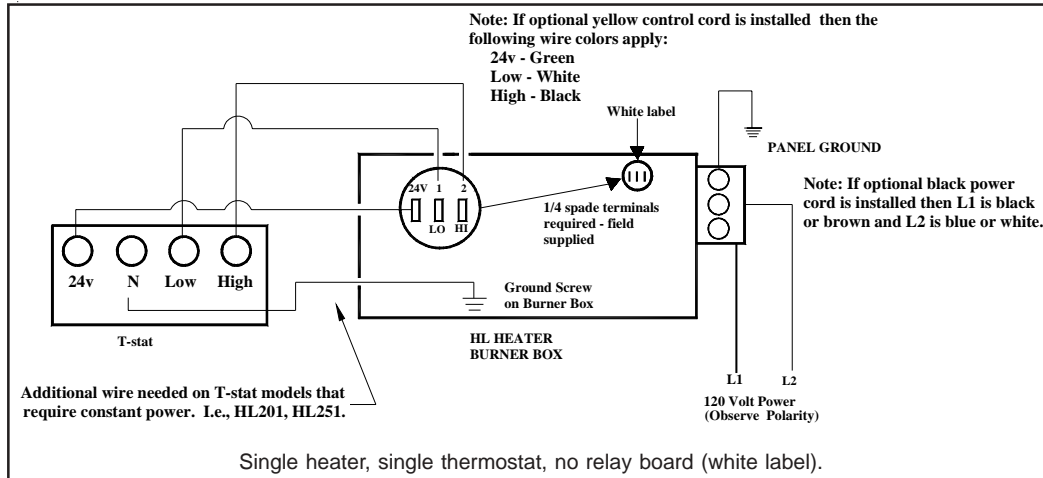
OPTIONAL ACCESSORIES

- ☐ **HLRB.** Relay board, required on heaters sharing a common thermostat or a single vent.
- ☐ **PC-36.** Three prong power cord set. Allows heater to be plugged into 120V grounded outlet.
- ☐ **SEA-SUB.** Substitute one 10' radiant tube and reflector for two 5' pieces. This is ideal for making "U" heaters from 30', 50' and 70' models. Maximum of one per heater.
- ☐ **OD-KIT.** For use when applying heaters outdoors.
- ☐ **Stainless steel upgrades.**
 - ☐ SSCBAO -Control box.
 - ☐ SSRAO -Reflectors.
 - ☐ SSTAO -Tubes (75-150MBH).
 - ☐ SSTRAO -Tubes & Reflectors (75-150MBH).
 - ☐ SSB-## -Mounting Brackets.



Field Data & Accessories

Typical Field Wiring Diagram



OPTIONAL ACCESSORIES (Consult Tube Heater Accessory Guide (LPKTH) for additional accessories)			
QTY.	PART#	DESCRIPTION	NOTES
	WIV-4	4" combustion air intake - sidewall cap	Used to duct fresh (cold) air 0-20ft. to a heater. Sidewall only.
	WVE-GALV	4" unvented exhaust termination cap	Required on all units when operating unvented.
	4-DSK	4" sidewall vent kit	Required for all single sidewall vents. No roof venting.
	6-DSK	6" sidewall vent kit	Required for all common sidewall vents. No roof venting.
	Y	4" x 4" x 6" common Y vent fitting	Used for joining two heaters on one vent. Same T-stat required.
	E6	90 degree, 4" radiant elbow	Used for making a "L" tube shaped heater. Max. two per unit.
	RE	Reflector elbow shield	Reflector and accessories used to cover E6.
	TF1B	180 degree, 4" radiant "U" bend	Used for making a "U" shaped heater. Max. one per unit.
	SMB	Single mount bracket	Provides units with "U" bend uniform mounting points. One per 10'.
	RU	Reflector "U" shield	Reflector and asseccories used to cover TF1B.
	TR60	5' x 4" tube & reflector extension	Optional 5' extension package. Max. two per unit.
	10EA	10' x 4" tube & reflector extension	Optional 10' extension package. Max. one per unit.
	SSE	Side shield extension	Reflector side guard used to lower side clearances. Each 5' in length.
	PG	Protective guard	Protects heat exchanger from contact or objects. Each 5' in length.
	PLQ	Warning plaque	Restates the clearance to combustible warning.
	BK	Angle mounting bracket 15-30-45 Deg.	Rotates unit to preset mounting angles.



Written Specifications

HEATER PARAMETER / SPECIFICATIONS

- Gas fired two-stage radiant tube heaters shall be furnished and installed in accordance with governing codes and as shown per drawing(s) provided. Two-stage radiant tube heaters shall be **RE-VERBER-RAY HL2 SERIES** of the model numbers and inputs(s) in BTU/H as manufactured by Detroit Radiant Products Company, Warren, MI 48089.
- Two-stage 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 heaters low fire and high fire modes of operation must be Design Certified by CSA.
- The supplier shall provide a manufacturer's published warranty covering the heater's stainless steel burner for a period of ten (10) years, combustion and radiant emitter tube assembly for a period of five (5) 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.
- Two-stage radiant tube heaters shall be designed to satisfactorily operate at a minimum inlet pressure of _____ inches W.C. to a maximum inlet pressure of _____ inches W.C.
- Two-stage 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.
- The heater's control system shall be designed to shut off 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 pre-purge prior to initiating burner operation and a 90 second post purge upon completion, effectively removing all products of combustion from heat exchanger and/or radiant tubes.
- Heater control assembly shall include staging indicator lights that define the units operating input ranges.
- No condensation shall form as a result of combustion in the combustion chamber or radiant tubes while at operating temperatures.
- The thermostats shall be two-stage operating on 24 volts.
- Total heater shutdown shall occur in the event of circuit control lockout, including burner operation and combustion air blower. An interruption of power (reset thermostat) will restart the firing sequence.
- The heater controls shall provide a 90 second post purge as an integral part of the control assembly.

TWO STAGE RADIANT TUBE HEATER CONSTRUCTION

TWO-STAGE RADIANT TUBE HEATER BURNER CONTROLS

- The two-stage radiant tube heater's normal sequence of operation shall include a defined input differential. Heater must be CSA Design Certified to operate at an input differential of at least 30% between the low fire and high fire modes.
- Heaters shall be equipped with a direct silicon carbide ignition system with a three (3)-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.
- 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 a safety differential pressure switch to monitor combustion air flow, so as to provide complete burner shutdown due to insufficient combustion air or flue blockage.
- The heater shall incorporate a self-diagnostic ignition module, include an external LED readout display, and recycle the heater after an inadvertent shutdown.
- 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 main burner assembly shall be constructed of stainless steel.
- Heater's combustion chamber shall be 4" O.D. 16ga. aluminized w/ titanium coated (150-200MBH) or aluminized coated (75-125MBH) steel, finished with a high emissivity rated, corrosion resistant, black coating.
- Heater's radiant emitter tube shall be 4" 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 4" slip fit connection in which the upstream tube slides into the next tube and is held by a bolted clamp.
- 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 utilize a downstream turbulator baffle for maximum thermal efficiency.
- Heaters shall be equipped with a sight glass allowing a visual inspection of ignitor and burner operation from the floor.
- The two-stage 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.

