

HL2 SERIES TUBE HEATERS

SUBMITTAL DATA – TWO-STAGE LOW INTENSITY GAS-FIRED INFRARED TUBE HEATERS & ACCESSORIES

SUBMITTED BY: _____

DATE: _____

JOB TITLE: _____

CONTRACTOR: _____

ADDRESS: _____

PHONE #: _____

CITY: _____

ADDRESS: _____

PROVINCE: _____ POSTAL CODE: _____

CITY: _____

PROVINCE: _____ POSTAL CODE: _____

ENGINEER: _____

LOCAL REPRESENTATIVE: _____

NOTES: _____

QTY.	MODEL #	GAS TYPE (Circle One)	INPUT BTU/h High Fire	INPUT BTU/h Low Fire	STRAIGHT LENGTH	U-TUBE LENGTH	STND. WEIGHT	STAINLESS STEEL WEIGHT	RCMD. MOUNTING HEIGHTS ^A	FIELD USE ONLY**		
										"TYPE" TUBE PKG #1	"TYPE" TUBE PKG #2	"TYPE" TUBE PKG #3
	HL2-20-65	N or LP	65,000	50,000	21' - 9"	13' - 1"	120 lbs.	N/A	9' to 14'	2AP,2R(A)	N/A	N/A
	HL2-20-75 [†]	N or LP	75,000	50,000	21' - 9"	13' - 1"	120 lbs.	145 lbs.	10' to 15'	2AP,2R(A)	N/A	N/A
	HL2-20-80	N or LP	80,000	65,000	21' - 9"	13' - 1"	120 lbs.	N/A	8' to 14'	2AP,2R(A)	N/A	N/A
	HL2-30-65	N or LP	65,000	50,000	31' - 5"	*17' - 9"	160 lbs.	N/A	10' to 15'	3AP,3R(B)	N/A	N/A
	HL2-30-75 [†]	N or LP	75,000	50,000	31' - 5"	*17' - 9"	160 lbs.	195 lbs.	11' to 18'	3AP,3R(B)	N/A	N/A
	HL2-30-80	N or LP	80,000	52,000	31' - 5"	*17' - 9"	160 lbs.	N/A	8' to 14'	3AP,3R(B)	N/A	N/A
	HL2-30-100 [†]	N or LP	100,000	65,000	31' - 5"	*17' - 9"	160 lbs.	195 lbs.	12' to 20'	3AP,3R(B)	N/A	N/A
	HL2-30-125 [†]	N or LP	125,000	95,000	31' - 5"	*17' - 9"	160 lbs.	195 lbs.	13' to 23'	3AP,3R(B)	N/A	N/A
	HL2-40-65	N or LP	65,000	50,000	41' - 1"	22' - 9"	190 lbs.	N/A	11' to 18'	3AP(C)	1AP,4R(D)	N/A
	HL2-40-75 [†]	N or LP	75,000	50,000	41' - 1"	22' - 9"	190 lbs.	235 lbs.	11' to 18'	3AP(C)	1AP,4R(D)	N/A
	HL2-40-80	N or LP	80,000	52,000	41' - 1"	22' - 9"	190 lbs.	N/A	8' to 14'	3AP(C)	1AP,4R(D)	N/A
	HL2-40-100 [†]	N or LP	100,000	65,000	41' - 1"	22' - 9"	190 lbs.	235 lbs.	12' to 20'	3AP(C)	1AP,4R(D)	N/A
	HL2-40-125 [†]	N or LP	125,000	95,000	41' - 1"	22' - 9"	190 lbs.	235 lbs.	13' to 23'	3AP(C)	1AP,4R(D)	N/A
	HL2-40-150 [†]	N or LP	150,000	100,000	41' - 1"	22' - 9"	190 lbs.	235 lbs.	14' to 25'	3AP(C)	1TP,4R(E)	N/A
	HL2-40-175	N or LP	175,000	125,000	41' - 1"	22' - 9"	190 lbs.	235 lbs.	15' to 27'	3AP(C)	1TP,4R(E)	N/A
	HL2-50-100	N or LP	100,000	65,000	50' - 9"	*27' - 5"	235 lbs.	N/A	15' to 27'	3AP(C)	2AP,5R(G)	N/A
	HL2-50-125 [†]	N or LP	125,000	95,000	50' - 9"	*27' - 5"	235 lbs.	290 lbs.	15' to 27'	3AP(C)	2AP,5R(G)	N/A
	HL2-50-150 [†]	N or LP	150,000	100,000	50' - 9"	*27' - 5"	235 lbs.	290 lbs.	15' to 27'	3AP(C)	1TP,1AP,5R(I)	N/A
	HL2-50-175	N or LP	175,000	125,000	50' - 9"	*27' - 5"	235 lbs.	N/A	16' to 30'	3AP(C)	1TP,1AP,5R(I)	N/A
	HL2-50-200	N or LP	200,000	145,000	50' - 9"	*27' - 5"	235 lbs.	N/A	17' to 35'	3AP(C)	1TP,1AP,5R(I)	N/A
	HL2-60-150 [†]	N or LP	150,000	100,000	60' - 5"	32' - 5"	265 lbs.	330 lbs.	16' to 30'	3AP(C)	1TP, 2AP(L)	6R(K)
	HL2-60-175	N or LP	175,000	125,000	60' - 5"	32' - 5"	265 lbs.	N/A	16' to 30'	3AP(C)	1TP, 2AP(L)	6R(K)
	HL2-60-200	N or LP	200,000	145,000	60' - 5"	32' - 5"	265 lbs.	N/A	17' to 35'	3AP(C)	1TP,2AP(L)	6R(K)
	HL2-70-175	N or LP	175,000	125,000	70' - 1"	*37' - 3"	300 lbs.	N/A	19' to 42'	3AP(C)	1TP,2AP(L)	1AP,7R (N)
	HL2-70-200	N or LP	200,000	145,000	70' - 1"	*37' - 3"	300 lbs.	N/A	19' to 42'	3AP(C)	1TP,2AP(L)	1AP,7R (N)

* Model requires 5EA-SUB accessory package when installing heater in a U-shaped configuration.

** Recommended mounting heights are provided as a guideline. Actual conditions may dictate variations from this data.

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

† Stainless steel upgrades available.



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HL2 SPECIFICATIONS

APPROVALS

- CSA Design Certified.
- Indoor/Outdoor Approval (with OD-Kit).
- Commercial/Industrial Approval.

BURNER CONTROL BOX

- Sight glass for burner inspection.
- Totally enclosed components.
- Serviceable while in operation.
- Coated enameled steel.
- Operational indicator lights.

GAS CONNECTION

- ½ or ¾ Type 1 Rubber Hose

COMBUSTION AIR INLET & VENTING

- Preset 4" combustion air inlet collar.
- Sidewall or roof venting.

GAS SUPPLY – W.C.P.

	<u>NAT</u>	<u>LP</u>
• Manifold pressure	3.5"	10.0"
• Min. Inlet pressure	5.0"	11.0"
• Max. Inlet pressure	14.0"	14.0"

POWER SUPPLY

- 120 V.A.C., 60 Hz GRD, 1 Ph., 3-wire.
- 24V thermostat connection.
- Ignition current - 4.8 amps.
- Running current - 1.1 amps.

CONTROLS

- Two-stage gas valve (at 100% and 65%).
- Air proving safety switch.
- Silicon carbide hot surface igniter.
- Pre and post purge controls.
- Flame rod sensing.
- 24V thermostatic control voltage.
- Self-diagnostic LED.

EMITTER & COMBUSTION TUBES

- 16ga. 4" O.D. aluminized coated steel radiant emitter tubes.
- Titanium coated combustion chamber (150-200 MBH models).
- All tubes coated with high temperature, corrosion resistant black coating, .95 emissivity. Slip-fit swaged connection.
- Turbulator baffle.

REFLECTOR

- Highly polished aluminum.
- Two end caps included.
- Reflector tension springs.
- Continuous overlap design.
- One reflector center support per reflector.

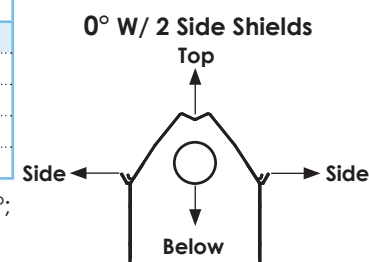
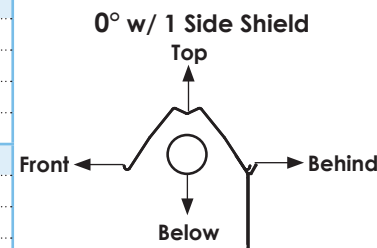
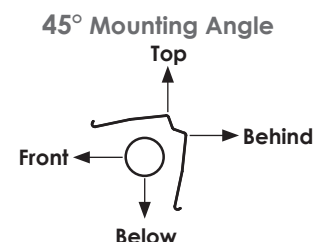
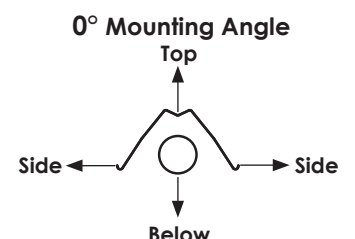
LIMITED WARRANTY

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

CLEARANCES TO COMBUSTIBLES (IN INCHES)

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
W/1 side shield	0°	29	8	6	60
W/2 side shields	0°	9	9	6	60
20 ft. from burner	0°	7	7	6	30
HL2 (20, 30, 40, 50) - 80, 100 [N,P]	0°	14	14	6	66
	45°	39	8	10	66
W/1 side shield	0°	29	8	6	66
W/2 side shields	0°	16	16	6	66
20 ft. from burner	0°	7	7	6	30
HL2 (30, 40, 50) - 125 [N,P]	0°	20	20	6	76
	45°	58	8	10	76
W/1 side shield	0°	42	8	6	76
W/2 side shields	0°	20	20	6	76
20 ft. from burner	0°	7	7	6	30
HL2 (40, 50, 60) - 150 [N,P]	0°	24	24	6	81
	45°	58	8	10	81
W/1 side shield	0°	42	8	6	81
W/2 side shields	0°	23	23	6	81
20 ft. from burner	0°	11	11	6	44
HL2 (40, 50, 60, 70) - 175 [N,P]	0°	34	34	6	92
	45°	63	8	10	92
W/1 side shield	0°	50	8	6	92
W/2 side shields	0°	30	30	6	92
20 ft. from burner	0°	11	11	6	44
HL2 (50, 60, 70) - 200 [N,P]	0°	41	41	6	94
	45°	63	8	10	94
W/1 side shield	0°	54	8	6	94
W/2 side shields	0°	30	30	6	94
20 ft. from burner	0°	11	11	6	44

* Heaters mounted on an angle between 0° and 45° must maintain clearances posted for 0° or 45°; whichever is greater.

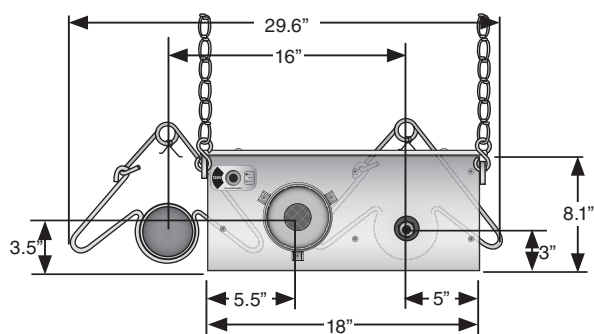


Read and understand the installation, operation and maintenance manual prior to installing or servicing this unit.

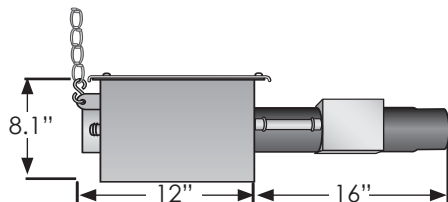
In locations used for the storage of combustible materials, signs must be posted adjacent to the heater's thermostat specifying stacking heights.

HL2 SERIES FIELD DATA

Burner Control Box with U-Bend . End View

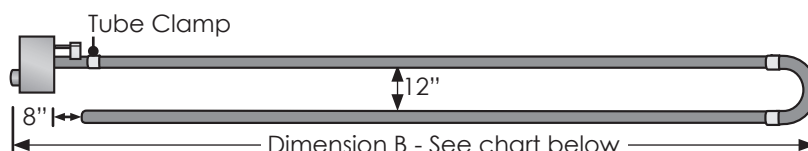
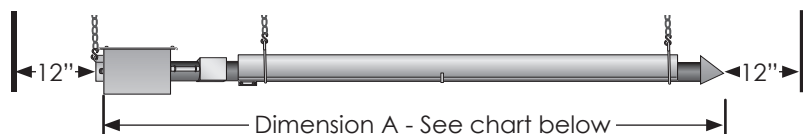


Side View



MODEL NUMBER	DIMENSION A STRAIGHT	DIMENSION B U-TUBE
HL2-20	21' - 9"	13' - 1"
HL2-30	31' - 5"	*17' - 9"
HL2-40	41' - 1"	22' - 9"
HL2-50	50' - 9"	*27' - 5"
HL2-60	60' - 5"	32' - 5"
HL2-70	70' - 1"	*37' - 3"

*with 5EA-SUB



OPTIONAL ACCESSORIES

QTY.	PART #	DESCRIPTION	NOTES
	10EA	10'X4" Tube & Reflector Extension	Optional 10 ft. extension package. Maximum of one per unit.
	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.
	BK	Angle Mounting Bracket 15-30-45 Deg.	Rotates reflector to preset mounting angles.
	E6	90 Degree, 4" Radiant Elbow	Used for making a L-shaped heater. Maximum of two per unit.
	PG	Protective Guard	Protects heat exchanger from contact or objects. Each 5 ft. in length.
	BR-SIGN	Clearance Safety Limit Sign	Hung below heater, restates the clearance to combustible warning.
	REP	Reflector & Elbow Package	Reflector and accessories used to configure heater in a 'L' shape.
	RTVP-4	4" Rooftop Vent Package	Used to single vent vertically through the roof.
	RTVP-6	6" Rooftop Vent Package	Used to common vent vertically through the roof.
	RUP	Reflector & 'U' Bend Package	Reflector and accessories used to configure heater in a 'U' shape.
	SMB	Single Mount Bracket	Provides units with 'U' bend uniform mounting points. One per 10 ft.
	SSE	Side Shield Extension	Reflector side guard used to lower side clearances. Each 5 ft. in length.
	TF1B	180 Degree, 4" Radiant 'U' Bend	Used for making a U-shaped heater. Maximum of one per unit.
	THCS	Tube Heater Chain Set	5 ft. chain set with two S-hooks used for hanging heater.
	TR60	5'x4" Tube & Reflector Extension	Optional 5 ft. extension package. Maximum of two per unit.
	WIV-4	4" Combustion Air Intake - Sidewall Cap	Used to duct fresh (cold) air 0-30 ft. to a heater. Sidewall only.
	WVE-GALV	4" Unvented Exhaust Termination Cap	Required on all units when operating unvented.
	Y	4"x6"x4" Aluminized Common Vent Fitting	Used for joining two heaters on one vent. Same thermostat required.
	YSM	4"x6"x4" Galvanized Common Vent Fitting	Used for joining two heaters on one vent. Same thermostat required.

OPTIONAL UPGRADES

- ☐ **SILSEAL** Protects internal burner box components against contaminants.
- ☐ **5EA-SUB** Substitute one 10 ft. radiant tube and reflector for two 5 ft. pieces. This is ideal for making U-shaped heaters from 30 ft. and 50 ft. models. Maximum of one per heater.
- ☐ **HLRP** Relay pickers, required on heaters sharing a common thermostat or a single vent.
- ☐ **OD-KIT** For use when applying heaters outdoors.

STAINLESS STEEL UPGRADES

- ☐ **SSCBAO** - Control Box
- ☐ **SSRAO** - Reflectors
- ☐ **SSTAO** - Tubes (75-150 MBH only)
- ☐ **SSTRAO** - Tubes & Reflectors (75-150 MBH only)
- ☐ **SSB-##** - Mounting Brackets (## = heater length)

NOTE: Refer to the Tube Heater Accessory List for detailed specifications and limitations on any of the above options.

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 input(s) in BTU/H as manufactured by Brant Radiant Heaters Limited, Paris, ON N3L 3R1.
- 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 form, 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.

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.
- 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 blower motor shall be thermally protected and the motor's impeller shall be balanced.
- 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

- 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, interlocking connection in which the upstream tube slides into the next tube and is held by a bolted clamp.
- The silicon carbide igniter 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 igniter 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.