DX3 SERIES TUBE HEATERS

SUBMITTAL DATA – SINGLE-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 #	TAG	GAS TYPE (Circle One)	BTU/H INPUT	STRAIGHT LENGTH	U-TUBE LENGTH	STANDARD WEIGHT	STAINLESS STEEL WEIGHT	RCMD. MOUNTING HEIGHTS**	FIELD USE ONLY "TYPE" TUBE PKG #1^	FIELD USE ONLY "TYPE" TUBE PKG #2^
	DX3-20-50		N or LP	50,000	21'- 9"	13'- 1"	120 lbs.	N/A	9' to 14'	20-4 ALUM	N/A
	DX3-20-60		N or LP	60,000	21'- 9"	13'- 1"	120 lbs.	N/A	10' to 15'	20-4 ALUM	N/A
	DX3-20-75†		N or LP	75,000	21'- 9"	13'- 1"	120 lbs.	145 lbs.	11' to 18'	20-4 ALUM	N/A
	DX3-30-50		N or LP	50,000	31'- 5"	*17'- 9"	160 lbs.	N/A	10' to 15'	30-4 ALUM	N/A
	DX3-30-60		N or LP	60,000	31'- 5"	*17'- 9"	160 lbs.	N/A	11' to 18'	30-4 ALUM	N/A
	DX3-30-75†		N or LP	75,000	31'- 5"	*17'- 9"	160 lbs.	195 lbs.	12' to 20'	30-4 ALUM	N/A
	DX3-30-100†		N or LP	100,000	31'- 5"	*17'- 9"	160 lbs.	195 lbs.	13' to 23'	30-4 ALUM	N/A
	DX3-30-125†		N or LP	125,000	31'- 5"	*17'- 9"	160 lbs.	195 lbs.	14' to 25'	30-4 ALUM	N/A
	DX3-40-50		N or LP	50,000	41'- 1"	22'- 9"	190 lbs.	N/A	11' to 18'	40-4 ALUM	N/A
	DX3-40-60		N or LP	60,000	41'- 1"	22'- 9"	190 lbs.	N/A	11' to 18'	40-4 ALUM	N/A
	DX3-40-75†		N or LP	75,000	41'- 1"	22'- 9"	190 lbs.	235 lbs.	12' to 20'	40-4 ALUM	N/A
	DX3-40-100†		N or LP	100,000	41'- 1"	22'- 9"	190 lbs.	235 lbs.	13' to 23'	40-4 ALUM	N/A
	DX3-40-125†		N or LP	125,000	41'- 1"	22'- 9"	190 lbs.	235 lbs.	14' to 25'	40-4 ALUM	N/A
	DX3-40-150†		N or LP	150,000	41'- 1"	22'- 9"	190 lbs.	235 lbs.	15' to 27'	40-4 TITAN	N/A
	DX3-40-175		N or LP	175,000	41'- 1"	22'- 9"	190 lbs.	235 lbs.	16' to 30'	40-4 TITAN	N/A
	DX3-50-100†		N or LP	100,000	50'- 9"	*27'- 5"	235 lbs.	290 lbs.	15' to 27'	40-4 ALUM	10-4 ALUM
	DX3-50-125†		N or LP	125,000	50'- 9"	*27'- 5"	235 lbs.	290 lbs.	15' to 27'	40-4 ALUM	10-4 ALUM
	DX3-50-150†		N or LP	150,000	50'- 9"	*27'- 5"	235 lbs.	290 lbs.	16' to 30'	40-4 TITAN	10-4 ALUM
	DX3-50-175		N or LP	175,000	50'- 9"	*27'- 5"	235 lbs.	N/A	17' to 35'	40-4 TITAN	10-4 ALUM
	DX3-50-200		N or LP	200,000	50'- 9"	*27'- 5"	235 lbs.	N/A	18' to 40'	40-4 TITAN	10-4 ALUM
	DX3-60-125		N or LP	125,000	60'- 5"	32'- 5"	265 lbs.	330 lbs.	16' to 30'	40-4 ALUM	20-4 ALUM
	DX3-60-150†		N or LP	150,000	60'- 5"	32'- 5"	265 lbs.	330 lbs.	17' to 35'	40-4 TITAN	20-4 ALUM
	DX3-60-175		N or LP	175,000	60'- 5"	32'- 5"	265 lbs.	N/A	17' to 35'	40-4 TITAN	20-4 ALUM
	DX3-60-200		N or LP	200,000	60'- 5"	32'- 5"	265 lbs.	N/A	18' to 40'	40-4 TITAN	20-4 ALUM
	DX3-70-175		N or LP	175,000	70'- 1"	*37'- 3"	300 lbs.	N/A	19' to 42'	40-4 TITAN	30-4 ALUM
	DX3-70-200		N or LP	200,000	70'- 1"	*37'- 3"	300 lbs.	N/A	19' to 42'	40-4 TITAN	30-4 ALUM
	DX3-80-200		N or LP	200,000	79'- 9"	42'- 1"	330 lbs.	N/A	20' to 45'	40-4 TITAN	40-4 ALUM

* 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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DX3 SPECIFICATIONS

APPROVALS
- CSA Design Certified.
- 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

GAS SUPPLY (Inches W.C.)
- Manifold pressure Nat 3.5; LP 10.0
- Min. Inlet pressure Nat 5.0; LP 11.0
- Max. Inlet pressure Nat 14.0; LP 14.0

POWER SUPPLY
- 120 VAC, 60 Hz GRD, 1 Ph., 3-wire.
- 36 in. three-prong power cord.
- Ignition current - 4.8 amps.
- Running current - 1.1 amps.

CONTROLS
- Air proving safety switch.
- Silicon carbide hot surface ignition.
- Pre-purge controls.
- Flame rod sensing.
- 120V thermostatic control.
- Moisture and corrosion resistant ignition module.

REFLECTOR
- Highly polished aluminum.
- Continuous overlap design.
- Anti-rattle tension springs.
- One center support per reflector.

COMBUSTION & RADIANT 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 tube connection.
- Turbulator baffle.

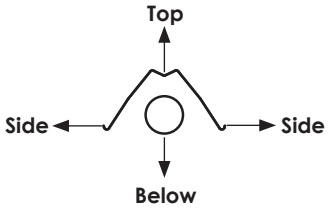
COMBUSTION AIR INLET & VENTING
- Preset 4 in. combustion air inlet collar.
- Sidewall or roof venting.

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

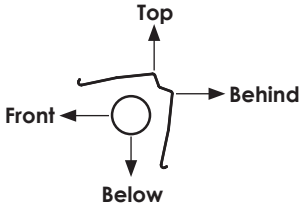
DX3 CLEARANCES TO COMBUSTIBLES (IN INCHES)

MODEL NO.	MOUNTING ANGLE*	SIDE FRONT	SIDE BEHIND	TOP	BELOW
DX3 (20, 30, 40) - 50, 60 [N,P]	0°	9	9	6	47
	45°	39	8	10	47
w/1 side shield	0°	29	8	6	47
w/2 side shields	0°	9	9	6	47
20 ft. from burner	0°	7	7	6	30
DX3 (20, 30, 40) - 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
DX3 (30, 40, 50) - 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
DX3 (30,40, 50, 60) - 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
DX3 (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
DX3 (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
DX3 (50, 60, 70, 80) - 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

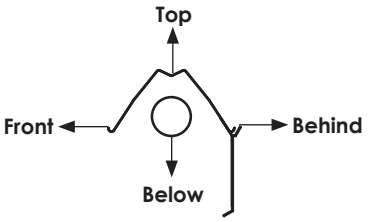
0° Mounting Angle



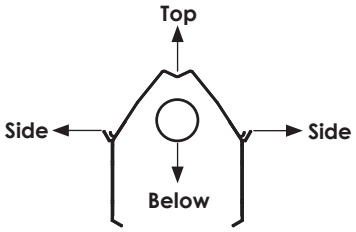
45° Mounting Angle



0° w/ 1 Side Shield



0° w/ 2 Side Shields



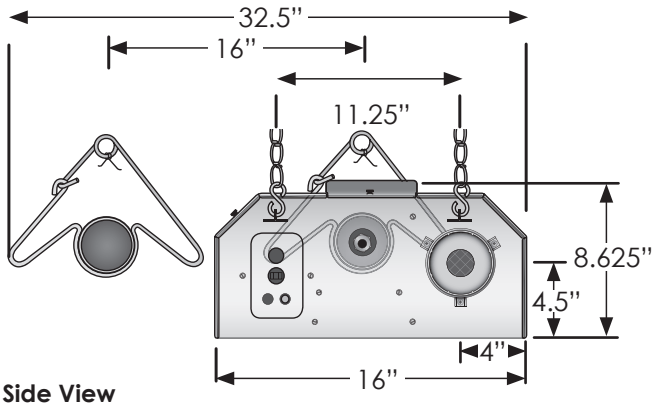
* Heaters mounted on an angle between 0° and 45° must maintain clearances posted for 0° or 45°; whichever is greater.

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

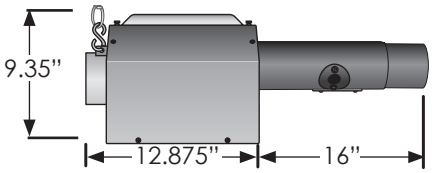
In locations used for the storage of combustible materials, signs must be posted adjacent to the heater's thermostat specifying stacking heights.

DX3 SERIES FIELD DATA

Burner Control Box with U-Bend . End View

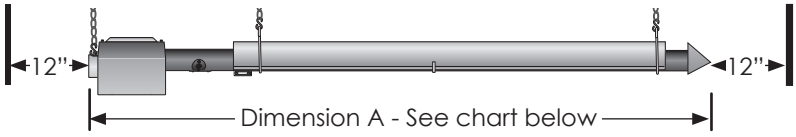


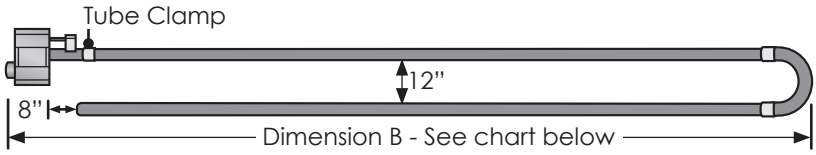
Side View



MODEL NUMBER	DIMENSION A STRAIGHT	DIMENSION B U-TUBE
DX3-20	21' – 9"	13' – 1"
DX3-30	31' – 5"	*17' – 9"
DX3-40	41' – 1"	22' – 9"
DX3-50	50' – 9"	*27' – 5"
DX3-60	60' – 5"	32' – 5"
DX3-70	70' – 1"	*37' – 3"
DX3-80	79' – 9"	42' – 1"

*with 5EA-SUB





DX3 SERIES OPTIONAL ACCESSORIES AND UPGRADES

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.
	PLQ	Warning Plaque	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. Maximim 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.
- ☐ **24VAO** Internally mounted 24V controlled relay with power cord and terminal plug. Allows for separate circuit operation.
- ☐ **OD-KIT** For use when applying heaters outdoors.

STAINLESS STEEL UPGRADES

- ☐ **SSRAO** 10 ft. Reflector Section.
- ☐ **SSTAO** 10 ft. Tube Section (75-150 MBH only).
- ☐ **SSTRAO** Tubes & Reflectors (75-150 MBH only), (not available on 30-125 models).
- ☐ **SSB-##** Mounting Brackets (## = heater length).
- ☐ **SSC-##** Tube Clamps (## = heater length).

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

DX3 WRITTEN SPECIFICATIONS

PRODUCTS

1. TUBULAR INFRARED HEATERS
   A. Basis-of-design product: Subject to compliance with requirements, provide Brant Radiant Heaters Limited; Re-Verber-Ray HL3 Series [HL2-SS Series (if environment calls for Stainless Steel)].
   B. Fuel type: Burner shall be designed for [natural] [propane] gas having characteristics same as those of gas available at project site.
   C. Gas control: 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 and nominal rated input modes.
      1. 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.
   D. Combustion chamber: Shall be 4 inch O.D. 16ga. Titanium stabilized aluminized steel (150-200MBH to allow for the operating temperature to exceed the 1030°F as set forth in the ANSI Z83.20 Standard/CSA 2.34) or aluminized steel (below 150 MBH), finished with a high emissivity rated, corrosion resistant, black coating with an emissivity level documented at .92 or higher. (A 304 grade stainless steel chamber shall be used when specified for harsher environments).
   E. Emitter tube: Shall be 4 inch O.D. 16ga. aluminized steel finished with a high emissivity rated, corrosion resistant, black coating with an emissivity level documented at .92 or higher. (A 304 grade stainless steel emitter tube shall be used when specified for harsher environments).
   F. Burner type: Unit shall be a positive pressure power burner with a combustion fan upstream of the burner and exhaust gases for component longevity, maximum combustion efficiency, and energy transfer. Negative pressure (pull through) type appliances will not be allowed.
   G. Fan enclosure: Combustion fan shall be totally housed inside burner control box and not exposed. Appliances with exposed combustion/exhauster fans shall not be permitted.
   H. Burner: Stainless-steel venturi burner. The flame anchoring screen shall have a minimum temperature rating equivalent to 304 grade stainless steel. Non stainless steel burners shall not be permitted.
   I. Tube connections: The heater's combustion chamber and radiant emitter tube shall incorporate a 4 inch slip-fit, interlocking connection in which the upstream tube slides into the next tube and is held by a bolted clamp. A butted tube connection system shall not be permitted.
   J. Ignition system : Hot surface silicon carbide capable of temperatures achieving 2400°F. Igniter shall be readily accessible and serviceable without the use of tools. Spark ignition systems shall not be permitted.
   K. Reflectors: Shall be .025 polished aluminum with a multi-faceted design which includes reflector end caps. Reflector shall have a polished bright finish with clear visual reflection ability. (A sample will be required at time of submittal). Reflector shall have a minimum of 7 sheet metal bends in its fabrication to optimize downward radiation. 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. (A 304 grade stainless steel reflector material shall be used when specified for harsher environments).
   L. Control box: Heater's exterior control chassis shall be constructed of corrosion resistant enameled steel. (A 304 grade stainless steel housing shall be used when specified for harsher environments).
      1. The heater's top cover shall be constructed of ABS plastic material.
      2. Air intake: An air intake collar shall be supplied as part of the burner control assembly to accept a 4 inch O.D. supply duct.
      3. The heater's control compartment shall be accessible without the use of tools and serviceable while heater is operating.
      4. Outdoor modifications are required for any application that will be placed in space defined as outdoors. The rating label shall bear the outdoor certification approval.
   M. Heaters shall be equipped with a sight glass allowing a visual inspection of igniter and burner operation from the floor. Sight glass visible only at appliance level shall not be permitted.
   N. The heaters shall utilize a downstream turbulator baffle for maximum heat transfer.
   O. Heater shall be supplied with a Type 1 rubber gas connector.
   P. Burner Safety Controls:
      1. Heater controls shall include a safety differential pressure switch to monitor combustion air flow, as to provide complete burner shutdown due to insufficient combustion air or flue blockage.
      2. The heater shall incorporate a self-diagnostic ignition module, and recycle the heater after an inadvertent shutdown.
      3. 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.
      4. The heater's blower motor shall be thermally protected and the motor's impeller shall be balanced.
      5. Heater control assembly shall include three indicator lights that define the units operating input ranges. One indicator shall validate air flow. Two indicator lights shall indicate low and high firing stages.
      6. 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.
      7. No condensation shall form as a result of combustion in the combustion chamber or radiant tubes while at operating temperatures.
      8. Thermostat control shall be two-stage operating on 24 volts.
   Q. Venting: Shall be per manufacturer approval and specifications.
   R. Thermostat: Devices and wiring are specified in Division 23 Section "Instrumentation and Control for HVAC."
      1. Thermostat: 2-stage, digital programmable wall-mounting type with 50 to 90 deg F (10 to 32 deg C) operating range.
      2. Control Transformer: Integrally mounted.