SPACE-RAY®
INFRARED GAS HEATERS

PTS/PTU SERIES

Push Through Tube Heater
Positive Pressure

Solutions For Commercial & Industrial Heating

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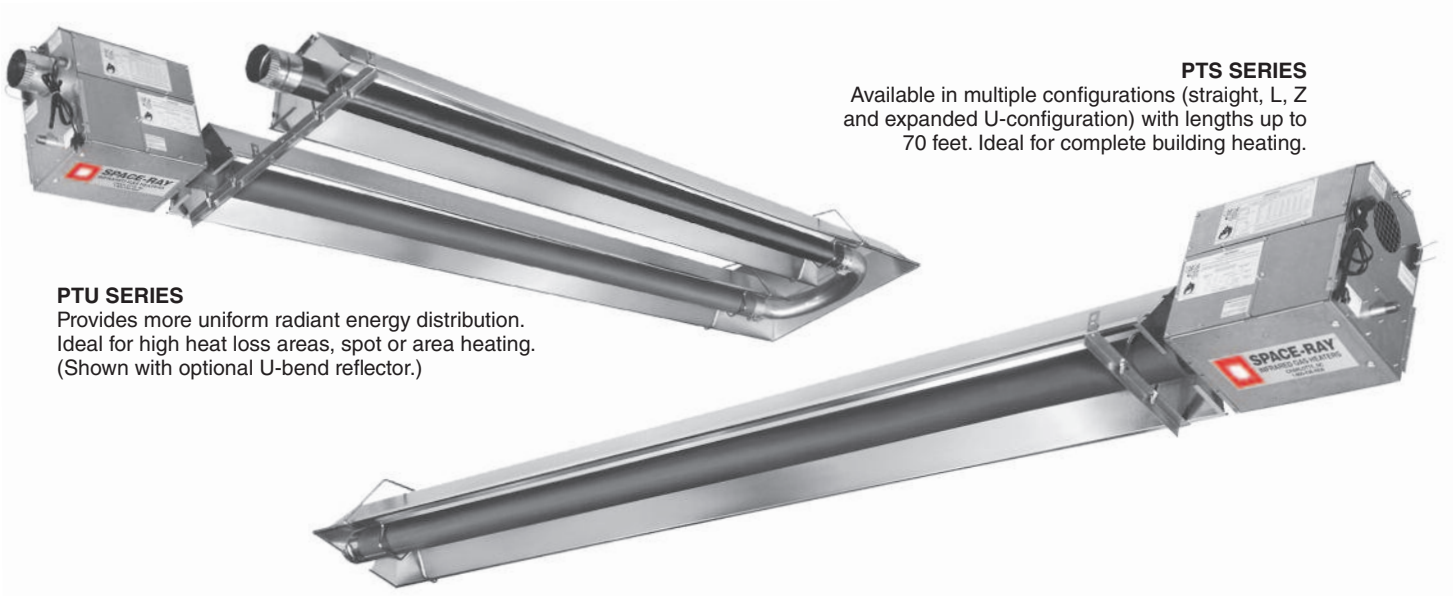
PTS/PTU Series Tube Infrared Heaters

Solutions For Commercial & Industrial Heating Since 1949



PTS SERIES
Available in multiple configurations (straight, L, Z and expanded U-configuration) with lengths up to 70 feet. Ideal for complete building heating.

PTU SERIES
Provides more uniform radiant energy distribution. Ideal for high heat loss areas, spot or area heating. (Shown with optional U-bend reflector.)

Push Through System (Positive Pressure)

- Products of combustion are pushed through the combustion chamber
- Tube Integrity Safety System (TISS™)
- No draft hoods, totally enclosed combustion chamber
- Blower motor totally enclosed in the burner box. Ideal for applications where minimal noise (less than 50dB) is desired
- Heavy duty permanently lubricated, ball bearing blower motor for maintenance-free operation

Burner System

- Heavy-duty cast iron burner
- 10-year limited warranty on burner
- Inside or outside air for combustion
- Up to 40 ft. outside combustion air duct capability
- Standard 4" combustion air collar
- Reliable direct spark ignition system and 100% gas shut-off safety control
- Pre-purge and post-purge function
- State-of-the-art step opening redundant combination gas valve for quiet ignition and added safety
- Diaphragm air switch for proof of venting
- Diagnostic monitoring light system & burner inspection sight glass
- 36" stainless steel, flexible gas connector included with burner
- Line voltage or external 24V thermostat connection

Radiant Emitter Tube System

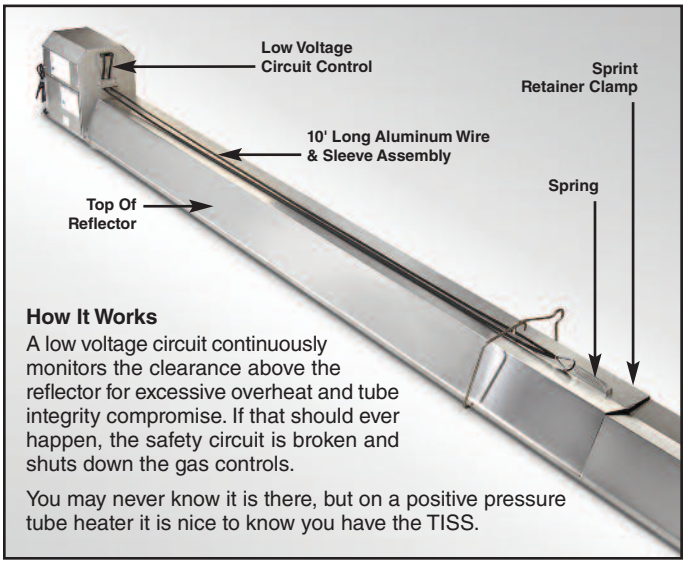
- 4" O.D. heavy-duty calorized aluminized steel or alumitherm steel combustion chamber (10 feet) and heavy duty hot-rolled steel radiant emitter tubes
- Optional calorized aluminized steel (ALC) radiant emitter tubes
- 5-year limited warranty on the emitter tubes
- Suitable for horizontal or angle mounting up to 45°
- Optional 90° elbows
- Up to 40 feet sidewall vent capability
- Vented or indirect vented operation

Reflector System

- Highly efficient aluminum reflectors with reflectivity rating of 97.5%
- Standard end reflectors
- Optional corner, side and U-bend reflectors
- Optional decorative grille
- Individual reflectors can be rotated up to 45° to direct heat where needed
- Easy-to-use mounting brackets and wire hangers

TISS™
Tube Integrity Safety System

In the unlikely event of a tube failure, TISS™ has been designed to automatically shut-off the heater, providing greater safety and piece of mind.



How It Works
A low voltage circuit continuously monitors the clearance above the reflector for excessive overheat and tube integrity compromise. If that should ever happen, the safety circuit is broken and shuts down the gas controls.

You may never know it is there, but on a positive pressure tube heater it is nice to know you have the TISS.

U.S. Patent# 8000075

MODELS	SINGLE STAGE BTU/HR INPUT	TWO STAGE BTU/HR HIGH INPUT	TWO STAGE BTU/HR LOW INPUT	TOTAL EMITTER TUBE LENGTH* 10 FT**	20 FT	30 FT	40 FT	50 FT
PTS/U 40	40,000	40,000	25,000	●	●			
PTS/U 50	50,000	50,000	30,000		●	●	●	
PTS/U 75	75,000	75,000	50,000		●	●	●	
PTS/U 100	100,000	100,000	65,000			●	●	●

MODELS	SINGLE STAGE BTU/HR INPUT	TWO STAGE BTU/HR HIGH INPUT	TWO STAGE BTU/HR LOW INPUT	TOTAL EMITTER TUBE LENGTH* 30 FT	40 FT	50 FT	60 FT	70 FT
PTS/U 125	125,000	125,000	80,000	●	●	●	●	
PTS/U 150	150,000	150,000	100,000		●	●	●	
PTS/U 175	175,000	175,000	110,000			●	●	●
PTS/U 200	200,000	200,000	125,000			●	●	●

*Indicate model number based on Btu/hr input (e.g., 100,000 Btu/hr), total emitter length, (e.g., 40 feet) and gas type (e.g., natural gas single stage input). The unit selection for a straight tube would be PTS100-40-N5 and for a U-tube would be PTU100-40-N5. **Available only on PTS models.

CONTROL SUFFIX	TYPE OF GAS	DESCRIPTION
N5 / L5	NATURAL / PROPANE	SINGLE STAGE GAS VALVE - SINGLE STAGE INPUT
N7 / L7	NATURAL / PROPANE	TWO STAGE GAS VALVE - MODULATING INPUT - HIGH/LOW FIRE

ALC Option: All calorized aluminized steel (ALC) radiant emitter tubes for ALC option the model number would be PTS100-40-ALC-N5. Note: for carwashes, dairy barns, greenhouses, swimming pools, waste water treatment plants, and other high humidity/corrosive environments, the ALC option with all calorized aluminized tubes is recommended.

GAS TYPE	BURNER PRESSURE	SUPPLY PRESSURE MIN	SUPPLY PRESSURE MAX	VOLTAGE	AMPS	IGNITION TYPE	FLUE CONNECTION	OUTSIDE COMBUSTION AIR CONNECTION
NATURAL	3.5" W.C.	5" W.C.*	14" W.C.	120 VAC 60 HZ	1.8	DIRECT SPARK	4" ROUND	4" ROUND
PROPANE	10" W.C.	11" W.C.	14" W.C.					

Note: For installations higher than 2000 ft above sea level, please consult the factory regarding recommended derating of heaters. *7" W.C. for PTS/U 150-200

Checkout area of national grocery chain

Car wash application with ALC Option

PTS/PTU Mounting Height, Clearances & Dimensions

Minimum Recommended Mounting Heights

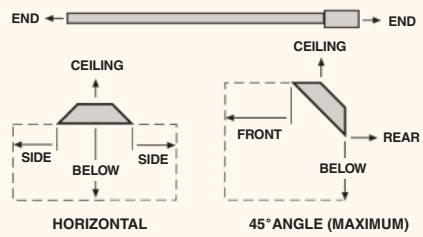
MODEL	HEIGHT AT HORIZONTAL	HEIGHT AT 45° ANGLE
PTS/U 40	10 FEET	9 FEET
PTS/U 50	11 FEET	10 FEET
PTS/U 75	13 FEET	12 FEET
PTS/U 100	14 FEET	13 FEET

MODEL	HEIGHT AT HORIZONTAL	HEIGHT AT 45° ANGLE
PTS/U 125	14 FEET	13 FEET
PTS/U 150	15 FEET	14 FEET
PTS/U 175	16 FEET	15 FEET
PTS/U 200	18 FEET	17 FEET

This chart is intended as a guide only, as heaters may be mounted at various heights and angles. Since straight tube heaters are always hotter at the burner end than at the exhaust end, always observe the minimum recommended mounting heights shown above and mount heaters as high as possible. Use PTU series for spot heating. Please consult your local Space-Ray Representative for a detailed analysis of your particular infrared heating requirements.

Minimum Clearances To Combustibles

MINIMUM CLEARANCES TO COMBUSTIBLES

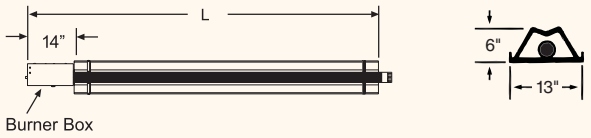


MODEL NO.	SIDE	CEILING*	BELOW**	END	45° FRONT	45° REAR
PTS/U 40	22"	6"	52"	15"	40"	12"
PTS/U 50	22"	6"	56"	15"	48"	12"
PTS/U 75	22"	6"	60"	15"	52"	12"
PTS/U 100	28"	6"	70"	15"	58"	12"
PTS/U 125	28"	6"	76"	20"	66"	12"
PTS/U 150	34"	6"	81"	20"	70"	12"
PTS/U 175	38"	6"	86"	20"	75"	12"
PTS/U 200	42"	6"	93"	20"	80"	12"

*When used indirect vented, clearances to ceiling must be: 12" for PTS/U (50-75), and 18" on PTS/U (100-200). If optional corner or U-bend reflectors are not used, the clearance must be 18". **Maximum clearance below reduces by 50% once you are 25 ft.' downstream from the burner box. Note: Consult factory if reduced clearances are required.

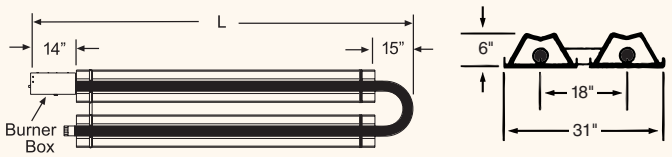
Dimensions

PTS – BOTTOM VIEW **END VIEW**



MODEL	TOTAL TUBE LENGTH (FT)	OVERALL DIMENSION "L" (FT)
PTS 40	10'	11'' 2"
PTS (40, 50, 75)	20'	21' 2"
PTS (50, 75, 100, 125)	30'	31' 2"
PTS (50, 75, 100, 125, 150)	40'	41' 2"
PTS (100, 125, 150, 175, 200)	50'	51' 2"
PTS (125, 150, 175, 200)	60'	61' 2"
PTS (175, 200)	70'	71' 2"

PTU – BOTTOM VIEW **END VIEW**



MODEL	TOTAL TUBE LENGTH (FT)	OVERALL DIMENSION "L" (FT)
PTU (40, 50, 75)	20'	12' 5"
PTU (50, 75, 100, 125)	30'	17' 5"
PTU (50, 75, 100, 125, 150)	40'	22' 5"
PTU (100, 125, 150, 175, 200)	50'	27' 5"
PTU (125, 150, 175, 200)	60'	32' 5"
PTU (175, 200)	70'	37' 5"

Combustion Air And Ventilation

Combustion air and venting requirements for all gas-fired heating equipment must be provided per the National Fuel Gas Code NFPA54 or the authority having jurisdiction over the installation. In contaminated atmospheres or high humidity areas, optional outside air for combustion can be supplied. Heaters can be common vented, vented, or indirect vented. Refer to the Installation and Operation Instructions for further information. A vented installation must be vented to the outside of the building with a flue pipe. An Indirect vented installation requires a minimum ventilation flow of 4 CFM per 1000 Btu/hr of total installed heater capacity on natural gas by either gravity or power ventilation (4.18 CFM per 1000 Btu/hr for propane). For indirect vented applications, building exhaust openings must be located above the level of the heaters and inlet air openings must be located below the level of the heaters.

For Your Safety

OPERATE SPACE-RAY GAS INFRARED HEATERS WITH PROPER CARE AND OBSERVE ALL SAFETY PRECAUTIONS. Installation and service must be performed by a licensed contractor. The installation must conform to Manufacturer's Installation and Operating Instructions or local codes. In the absence of local codes, the installation must conform to the National Fuel Gas Code ANSI Z223.1 (latest edition, also known as NPFA54) or CAN / CSA-B149 installation codes (latest edition).

SPACE-RAY®
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