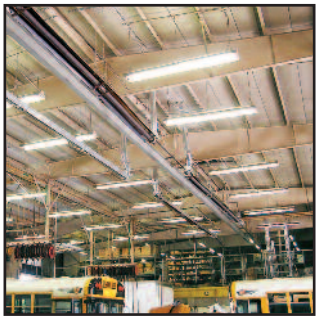
SPACE-RAY®
INFRARED GAS HEATERS

ETS/ETU SERIES

Pull Through Tube Heater
Negative Pressure

Solutions For Commercial & Industrial Heating



SPACE-RAY®
INFRARED GAS HEATERS

ETS/ETU Series Tube Infrared Heaters

Solutions For Commercial & Industrial Heating Since 1949

ETS SERIES
Available in multiple configurations (straight, L, Z and expanded U-configuration) with lengths up to 80 feet. Ideal for complete building heating.

ETU SERIES
Provides more uniform radiant energy distribution. Ideal for high heat loss areas, spot or area heating.

Pull-Through System (Negative Pressure Or Vacuum)

- Products of combustion are pulled through the combustion chamber for increased radiant efficiency and greater safety
- No draft hoods, totally enclosed combustion chamber
- Heavy duty draft inducer with permanently lubricated, totally enclosed, fan cooled and heavy duty ball bearing motor for maintenance-free operation
- Draft inducer can be rotated 45 or 90 degrees for sidewall venting
- Tubes & reflectors are bulk shipped for easy field assembly

Burner System

- 10 year limited warranty on heavy duty cast iron burner
- Inside or optional outside air for combustion
- Up to 50 ft. outside combustion air duct capability
- Standard 6" combustion air duct opening
- Reliable direct spark ignition system and 100% Gas Shut-Off Safety Control
- 30 second pre-purge prior to ignition
- State-of-the-art step opening redundant combination gas valve for quiet ignition and added safety
- Diaphragm air switch for proof of venting before gas flow and ignition
- Diagnostic Monitoring Light system
- Burner inspection sight glass
- 36" stainless steel flexible gas connector included with control box

Radiant Emitter Tube System

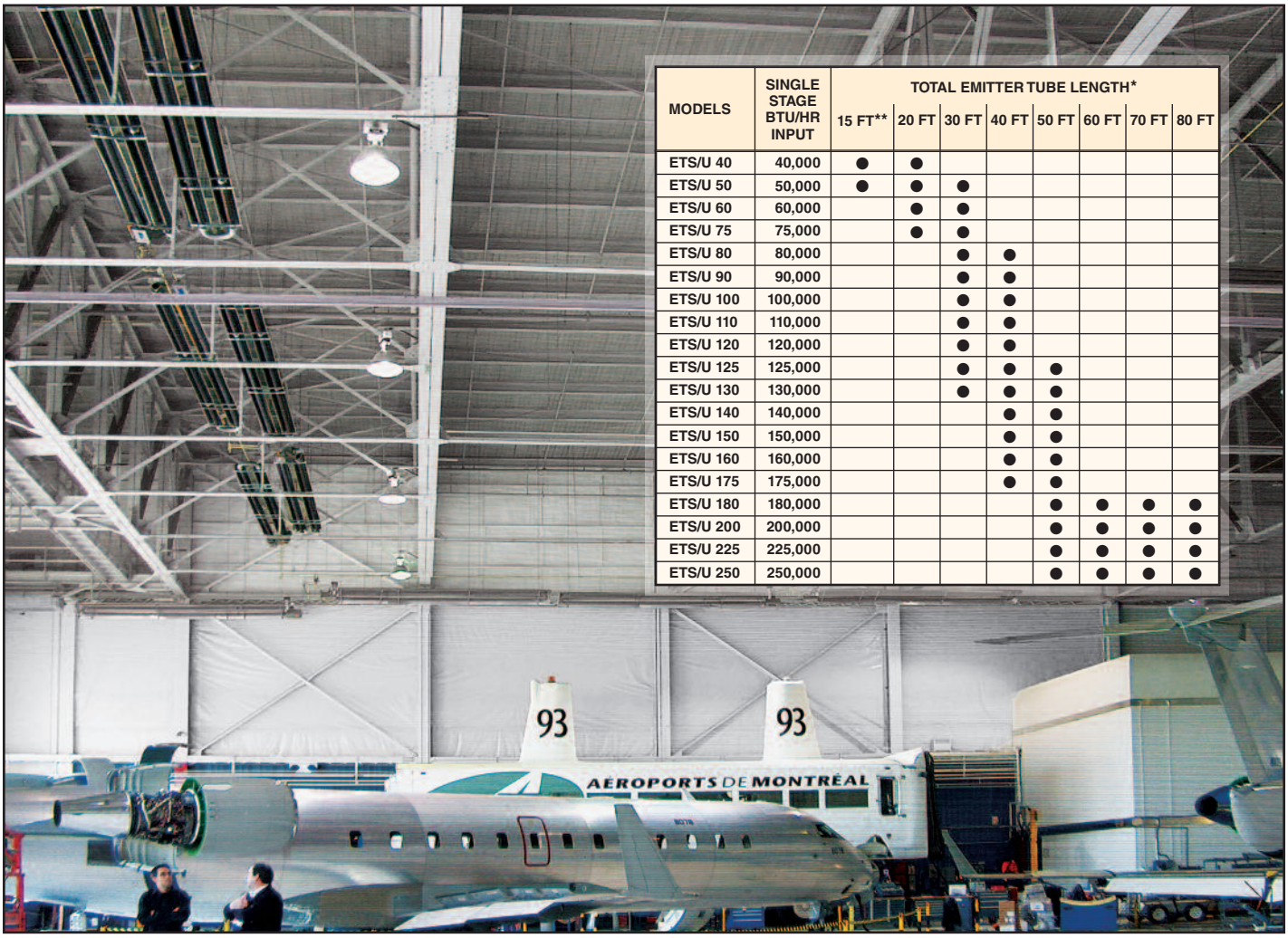
- 4" O.D. heavy duty calorized aluminized steel or titanium alloy Alumi-Therm combustion chamber (10 feet) and standard, heavy duty, hot-rolled steel emitter tubes
- ALC Option – Optional all calorized, aluminized steel (ALC) radiant emitter tubes for high humidity/corrosive environments.
- 5 year limited warranty on the emitter tubes
- Suitable for horizontal or angle mounting up to 45 degrees
- Optional 90° elbows
- Up to 75 feet sidewall vent capability
- 4" O.D. flue connection for ETS/U 40-175; 6" for ETS/U180-250
- Optional 5' or 10' body extension packages

Reflector System

- Highly efficient aluminum reflectors with reflectivity rating of 97.5%
- Optional end, 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 & wire hangers

Other

- CSA Certified according to ANSI Z83.20 and CSA 2.34. NOT Certified for Residential Use



MODELS	SINGLE STAGE BTU/HR INPUT	TOTAL EMITTER TUBE LENGTH*							
		15 FT**	20 FT	30 FT	40 FT	50 FT	60 FT	70 FT	80 FT
ETS/U 40	40,000	●	●						
ETS/U 50	50,000	●	●	●					
ETS/U 60	60,000		●	●					
ETS/U 75	75,000		●	●					
ETS/U 80	80,000			●	●				
ETS/U 90	90,000			●	●				
ETS/U 100	100,000			●	●				
ETS/U 110	110,000			●	●				
ETS/U 120	120,000			●	●				
ETS/U 125	125,000			●	●	●			
ETS/U 130	130,000			●	●	●			
ETS/U 140	140,000				●	●			
ETS/U 150	150,000				●	●			
ETS/U 160	160,000				●	●			
ETS/U 175	175,000				●	●			
ETS/U 180	180,000					●	●	●	●
ETS/U 200	200,000					●	●	●	●
ETS/U 225	225,000					●	●	●	●
ETS/U 250	250,000					●	●	●	●

*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 ETS100-40-N5 and for a U-tube would be ETU100-40-N5.

**Available only on ETS Models

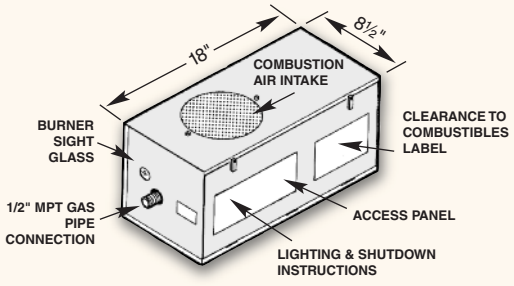
CONTROL SUFFIX	TYPE OF GAS	DESCRIPTION
N5 / L5	NATURAL / PROPANE	SINGLE STAGE GAS VALVE - SINGLE STAGE INPUT

ALC Option: All calorized aluminized steel (ALC) radiant emitter tubes for ALC option the model number would be ETS100-40-ALC-N5. Note: for dairy barns, greenhouses, waste water treatment plants and other high humidity/corrosive environments, the ALC option with all calorized aluminized tubes is recommended.

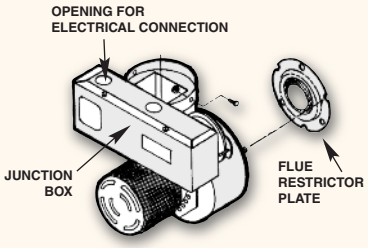
GAS TYPE	BURNER PRESSURE	SUPPLY PRESSURE MIN	SUPPLY PRESSURE MAX	GAS CONNECTION	VOLTAGE	AMPS	IGNITION TYPE	FLUE CONNECTION	OUTSIDE COMBUSTION AIR CONNECTION
NATURAL	3.5" W.C.	5" W.C.*	14" W.C.	1/2" MPT	120 VAC 60 HZ	2.6	DIRECT SPARK	4" ROUND : ETS/U (40 - 175) 6" ROUND : ETS/U (180 - 250)	6" ROUND
PROPANE	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 ETS/U 150-250

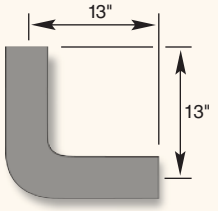
CONTROL BOX



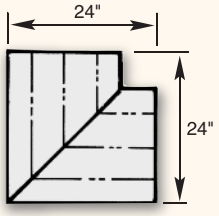
DRAFT INDUCER



90° ELBOW



CORNER REFLECTOR



ETS/ETU Mounting Height, Clearances & Dimensions

Minimum Recommended Mounting Heights

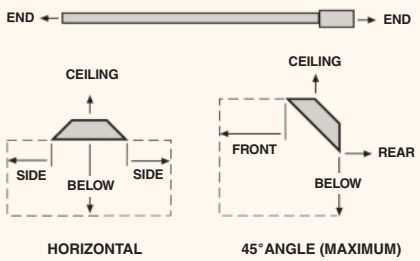
MODEL	HEIGHT AT HORIZONTAL	HEIGHT AT 45° ANGLE
ETS/U 40	10 FT	9 FT
ETS/U 50	11 FT	10 FT
ETS/U 60	12 FT	11 FT
ETS/U 75	13 FT	12 FT
ETS/U (80, 90)	13 FT	12 FT
ETS/U (100, 110)	14 FT	13 FT

MODEL	HEIGHT AT HORIZONTAL	HEIGHT AT 45° ANGLE
ETS/U (120, 125)	14 FT	13 FT
ETS/U (130, 140)	15 FT	14 FT
ETS/U 150	15 FT	14 FT
ETS/U (160, 175)	16 FT	15 FT
ETS/U (180, 200)	18 FT	17 FT
ETS/U (225, 250)	20 FT	19 FT

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 ETU 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

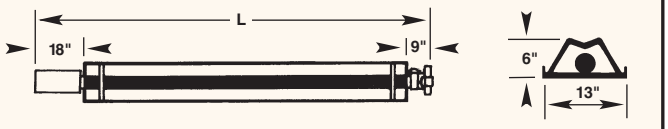


MODEL NO.	SIDE	CEILING*	BELOW**	END	45° FRONT	45° REAR
ETS/U (40, 50)	24"	6"	40"	15"	40"	12"
ETS/U (60, 75)	24"	6"	60"	15"	52"	12"
ETS/U (80, 90)	26"	6"	66"	15"	52"	12"
ETS/U (100)	28"	6"	76" **	15"	60"	12"
ETS/U (110, 120, 125, 130)	32"	6"	82" **	20"	66"	12"
ETS/U (140, 150)	36"	6"	87" **	20"	70"	12"
ETS/U (160, 175)	42"	6"	93" **	20"	77"	12"
ETS/U (180, 200)	44"	6"	106" **	20"	84"	12"
ETS/U (225, 250)	56"	18"	112" **	20"	90"	18"

*When used indirect vented, clearances to ceiling must be: 12" for ETS/U (40-75), and 18" on ETS/U (80-250). If optional corner or U-bend reflectors are not used, the clearance must be 18". **Minimum clearance below reduces by 50% once you are 25 ft. downstream from the burner box.
Note: Consult factory if reduced clearances are required.

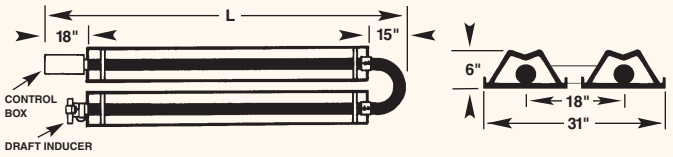
Dimensions

ETS – BOTTOM VIEW **END VIEW**



MODEL	TOTAL TUBE LENGTH (FT)	OVERALL DIMENSION "L" (FT)
ETS (40, 50)	15'	17' 3"
ETS (40, 50, 60, 75)	20'	22' 3"
ETS (50, 60, 75, 80, 90, 100, 110, 120, 130)	30'	32' 3"
ETS (80, 90, 100, 110, 120, 125, 130, 140, 150, 160,175)	40'	42' 3"
ETS (125, 130, 140, 150, 160, 175, 180, 200, 225)	50'	52' 3"
ETS (180, 200, 225, 250)	60'	62' 3"
ETS (180, 200, 225, 250)	70'	72' 3"
ETS (180, 200, 225, 250)	80'	82' 3"

ETU – BOTTOM VIEW **END VIEW**



MODEL	TOTAL TUBE LENGTH (FT)	OVERALL DIMENSION "L" (FT)
ETU (40, 50, 60, 75)	20'	12' 9"
ETU (50, 60, 75, 80, 90, 100, 110, 120, 130)	30'	17' 9"
ETU (80, 90, 100, 110, 120, 125, 130, 140, 150, 160, 175)	40'	22' 9"
ETU (125, 130, 140, 150, 160, 175, 180, 200, 225, 250)	50'	27' 9"
ETU (180, 200, 225, 250)	60'	32' 9"
ETU (180, 200, 225, 250)	70'	37' 9"
ETU (180, 200, 225, 250)	80'	42' 9"

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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