

**SPACE-RAY®**

The Defender™ SERIES

STAINLESS STEEL RADIANT GAS TUBE HEATERS



Our Angle Is On Performance And Quality

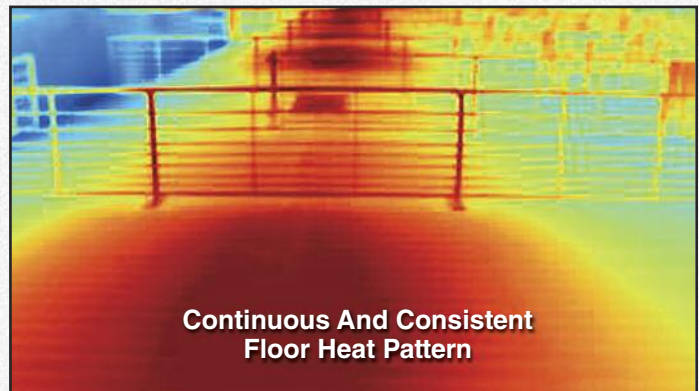
When it comes to product reliability and fuel efficient operation, Space-Ray equipment has withstood the test of time. Space-Ray's new Defender™ series water resistant, push-through tube heaters with its patented Tube Integrity Safety System, TISS™, provides you real options to meet the needs of your specific application.

- ▶ **The new Defender's™ stainless steel control box is water resistant and approved for high pressure wash down up to 3500 PSI.**
- ▶ Water resistant feature means easier maintenance and reduced man hours.
- ▶ An energy efficient radiant heating system that saves fuel, reduces maintenance, and permits higher mounting.
- ▶ Calorized aluminized steel emitter tubes for corrosion resistance and greater radiant output.
- ▶ Can be used in a vented or indirect (unvented) mode. Available in either natural or propane gas models.
- ▶ Tube lengths from 20 ft. to 60 ft. & BTU input ratings from 75,000 To 150,000 BTU/Hr.
- ▶ Optional Cold Air Stopper™ stops cold or hot air from entering the poultry house when the heaters are not in operation and helps to reduce sweating problems.¹

Powerful And Fuel Efficient Radiant Heat

Space-Ray Radiant Gas Tube Heaters operate using the same principle as the sun. Before heating the air, radiant warmth is delivered directly to the birds and litter area where it's needed most. This warmth at floor level helps to dry out the litter area keeping ammonia levels lower. It also creates a thermal reservoir in the litter area, trapping and recycling the heat to save fuel.

¹Not available on the 150,000 BTU/Hr. model



Continuous And Consistent
Floor Heat Pattern

Infrared Photo

Patented TISS™ Tube Integrity Safety Shut-Off System

Space-Ray's patented innovative safety feature for positive pressure radiant tube heaters is called the "Tube Integrity Safety System" (TISS™).

In the unlikely event of a tube failure, TISS™ has been designed to automatically shut off the heater. The revolutionary TISS™ uses a simple principle to place an electrically insulated aluminum wire in tension above the reflector. Low voltage is then continuously passed along the wire in line with the gas control circuit. If heat levels increase due to heat exchanger failure, the wire melts and the safety circuit is broken, breaking the 24 volt circuit and shutting down the heater. See photo on reverse.

You may never know it is there, but it provides peace of mind.



DEFENDER™ STAINLESS STEEL SERIES TECHNICAL DATA

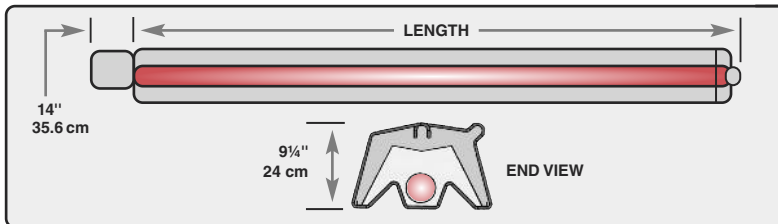
MODELS	SINGLE STAGE BTU/HR (Kw) INPUT	TWO STAGE		TOTAL EMITTER TUBE LENGTH				
		BTU/HR (Kw) HIGH INPUT	BTU/HR (Kw) LOW INPUT	20 FT	30 FT	40 FT	50 FT	60 FT
PCA-SS-75	75,000 (22.0 Kw)	75,000 (22.0 Kw)	50,000 (14.7 Kw)	●	●			
PCA-SS-100	100,000 (29.3 Kw)	100,000 (29.3 Kw)	65,000 (19.1 Kw)		●	●		
PCA-SS-125	125,000 (36.6 Kw)	125,000 (36.6 Kw)	80,000 (23.4 Kw)		●	●	●	
PCA-SS-150	150,000 (44.0 Kw)	150,000 (44.0 Kw)	100,000 (29.3 Kw)			●	●	●

GAS TYPE	CONTROL OPTION		BURNER PRESSURE	SUPPLY PRESSURE		VOLTAGE*	AMPS	IGNITION TYPE
	SINGLE STAGE	TWO STAGE		MIN	MAX			
NATURAL	N5	N7	3.5" W.C. 8.7 mbar	5" W.C. 12.5 mbar	14" W.C. 34.9 mbar	120 VAC 60 HZ	1.8	DIRECT SPARK
PROPANE	L5	L7	10" W.C. 24.9 mbar	11" W.C. 27.4 mbar	14" W.C. 34.9 mbar	230 VAC 50 HZ		

Note: For all installations higher than 2000 ft. above sea level, consult the factory for recommended derating of heaters.

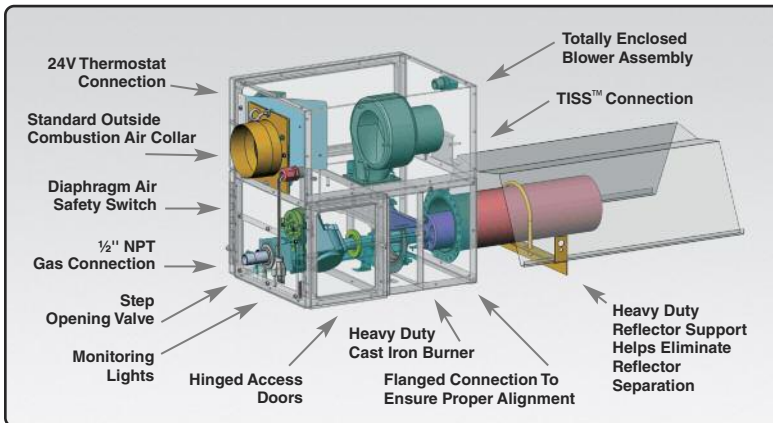
*220 VAC/50 Hz models available.

TUBE HEATER DIMENSIONS

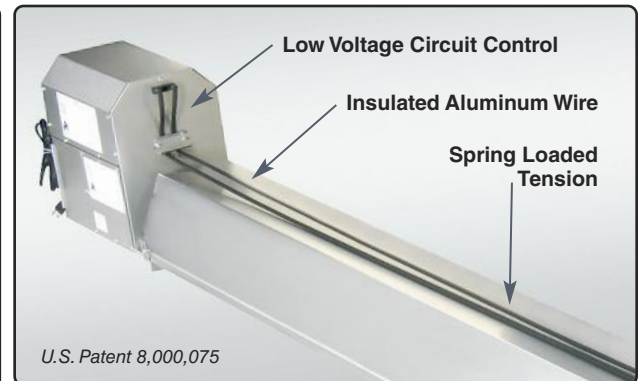


MODEL	TUBE LENGTH	TOTAL LENGTH
PCA-SS-75	20' / 6.1m	21'2" / 6.5m
PCA-SS-75/100/125	30' / 9.1m	31'2" / 9.5m
PCA-SS-100/125/150	40' / 12.2m	41'2" / 12.5m
PCA-SS-125/150	50' / 15.2m	51'2" / 15.6m
PCA-SS-150	60' / 18.3m	61'2" / 18.6m

STAINLESS STEEL, SEALED CONTROL BOX

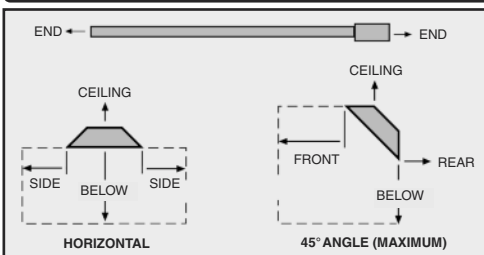


TUBE INTEGRITY SAFETY SHUT-OFF SYSTEM (TISS)



TISS™ has been designed to automatically shut off the heater if heat levels increase due to heat exchanger failure

MINIMUM CLEARANCE TO COMBUSTIBLES

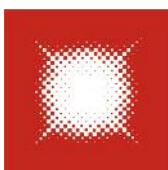


MODEL NO.	SIDE	CEILING*	BELOW	END	45° FRONT	45° REAR
PCA-SS-75	27" / 68.6 cm	12" / 30.5 cm	60" / 152.4 cm	30" / 76.2 cm	48" / 121.9 cm	12" / 30.5 cm
PCA-SS-100	66" / 167.6 cm	12" / 30.5 cm	88" / 223.5 cm	40" / 101.6 cm	66" / 167.6 cm	20" / 50.8 cm
PCA-SS-125	66" / 167.6 cm	12" / 30.5 cm	101" / 256.5 cm	40" / 101.6 cm	66" / 167.6 cm	20" / 50.8 cm
PCA-SS-150	84" / 213.4 cm	18" / 45.7 cm	108" / 274.3 cm	48" / 121.9 cm	84" / 213.4 cm	12" / 30.5 cm

*When used in a vented mode, clearance to the ceiling from top of the reflector may be reduced to 6" (15 cm) on all models. If optional corner or U-Bend reflectors are not used, clearance must be 18" (46.7 cm) to center. Note: Consult factory if reduced clearances are required.

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 NFPA54) or CAN / CSA-B149 installation codes (latest edition).



SPACE-RAY®

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