

⚠ WARNING: This heater must be installed and serviced by trained gas installation and service personnel only! Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. Protect yourself and others by observing all safety information. Retain instructions for future reference.

Dayton[®] Tube Heaters

ENGINEERING SUBMITTAL DATA - LOW INTENSITY GAS FIRED INFRA-RED TUBE HEATERS & ACCESSORIES.

JOB NAME: _____	DATE: _____	
LOCATION: _____		
CITY: _____	STATE: _____	ZIP : _____
CONTRACTOR: _____		SUBMITTED BY: _____
NOTES: _____		

GAS TUBE HEATER BURNER & REFL. COMBINATIONS

QTY	COMB#	LENGTH	BTU'S	GAS TYPE	BURNER BOX#	TUBE REFL. PKG.	MODEL#
	7D837A	20	50,000	NAT	5VD67A	5VD88	TYPE 20-4" ALUM
	7D838A	20	50,000	LP	5VD68A	5VD88	TYPE 20-4" ALUM
	7D839A	20	75,000	NAT	5VD69A	5VD88	TYPE 20-4" ALUM
	7D840A	20	75,000	LP	5VD70A	5VD88	TYPE 20-4" ALUM
	7D841A	30	100,000	NAT	5VD71A	5VD89	TYPE 30-4" ALUM
	7D842A	30	100,000	LP	5VD72A	5VD89	TYPE 30-4" ALUM
	7D843A	40	100,000	NAT	5VD73A	5VD91	TYPE 40-4" ALUM
	7D844A	40	100,000	LP	5VD74A	5VD91	TYPE 40-4" ALUM
	7D845A	40	125,000	NAT	5VD75A	5VD91	TYPE 40-4" ALUM
	7D846A	40	125,000	LP	5VD76A	5VD91	TYPE 40-4" ALUM
	7D847A	40	150,000	NAT	5VD77A	5VD90	TYPE 40-4" TITAN
	7D848A	40	150,000	LP	5VD78A	5VD90	TYPE 40-4" TITAN
	7D849A	60	150,000	NAT	5VD79A	5VD90 & 5VD88	TYPE 40-4"-TITAN & TYPE 20-4"-ALUM
	7D851A	60	150,000	LP	5VD80A	5VD90 & 5VD88	TYPE 40-4"-TITAN & TYPE 20-4"-ALUM

Models 7D837A thru 7D851A Specifications & Clearances

SPECIFICATIONS

APPROVALS

- IAS, CSA.
- INDOOR APPROVAL. OPTIONAL OUTDOOR.
- COMMERCIAL APPROVAL.

BURNER SIGHT GLASS

- FOR BURNER INSPECTION.

COMBUSTION AIR INLET & VENT

- 4" MALE DUCT.

CONTROLS

- 100% SAFETY SHUT OFF.
- SAFETY PRESSURE SWITCHES.
- SILICON CARBIDE HOT SURFACE IGNITOR. FLAME ROD SENSING.
- PRE -PURGE CONTROLS.

EMITTER & COMBUSTION TUBES

- 16 ga. 4" O.D. ALUMINIZED STEEL. ALL TUBES COATED WITH HIGH TEMPERATURE, CORROSION RESISTANT BLACK COATING.
- TITANIUM COMBUSTION CHAMBER (150 MBTU/H MODELS).

ENAMELED CONTROL BOX

- OUTSIDE AIR COLLAR (4") ATTACHED.
- TOTALLY ENCLOSED COMPONENTS.

GAS CONNECTON

- 7/8" FLARE-2' S.S FLEX INCLUDED.
- 1/2" GAS COCK INCLUDED.

GAS SUPPLY-W.C.P.

	NAT	LP
• MANIFOLD PRESSURE	3.5"	10.0"
• MIN. INLET PRESSURE	5.0"	12.0"
• MAX. INLET PRESSURE	14.0"	14.0"

MOUNTING ANGLE

- 0 to 45 DEGREES FROM HORIZONTAL.

*MOUNTING HEIGHTS

	MIN.	MAX.
• 50,000 BTU	10'	16'
• 75,000 BTU	13'	20'
• 100,000 BTU	15'	23'
• 125,000 BTU	15'	25'
• 150,000 BTU	16'	30'

* Factory Recommended.

OPERATIONAL LIGHTS

- LIGHT #1-INDICATES SWITCH(S) OPERATION.
- LIGHT #2-INDICATES GAS VALVE POWER.

POWER SUPPLY

- 120 V.A.C., 60 Hz GRD, 3-WIRE.
- IGNITION CURRENT-4.8 AMPS.
- RUNNING CURRENT-1.1 AMPS.

RADIANT SURFACE AREA (SQ. FT.)

- 20' MODELS - 21.6
- 30' MODELS - 35.1
- 40' MODELS - 41.9
- 50' MODELS - 52.0
- 60' MODELS - 62.2

WARRANTY

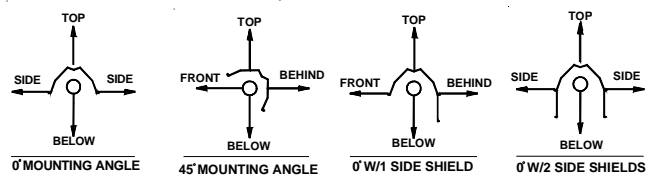
- 1 YEAR-BURNER BOX COMPONENTS.
- 5 YEARS-COMBUSTION & RADIANT TUBES.

OTHER

- MOUNTING CHAIN SETS INCLUDED.
- ONE REFLECTOR CENTER SUPPORT PER REFLECTOR.

CLEARANCES TO COMBUSTIBLES (IN.)					
MODEL NO.	MOUNT ANGLE	SIDE		TOP	BELOW
		FRONT	BEHIND		
DAYTON - 5VD67, 5VD68 (20' Min. - 40' Max.)					
50,000 BTU [N,P]	0°	9	9	6	47
7D - 837, 838	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
DAYTON - 5VD69, 5VD70 (20' Min. - 40' Max.)					
75,000 BTU [N,P]	0°	9	9	6	60
7D - 839, 840	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
DAYTON - 5VD71, 5VD72, 5VD73, 5VD74 (30' Min. - 40' Max.)					
100,000 BTU [N,P]	0°	14	14	6	66
7D - 841, 842, 843, 844	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
DAYTON - 5VD75, 5VD76 (40' Min. - 60' Max.)					
125,000 BTU [N,P]	0°	20	20	6	76
7D - 845, 846	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
DAYTON - 5VD77, 5VD78, 5VD79, 5VD80 (40' Min. - 60' Max.)					
150,000 BTU [N,P]	0°	24	24	6	81
7D - 847, 848, 849, 851	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

WARNING. In locations used for the storage of combustible materials, signs must be posted to specify the maximum permissible stacking height to maintain the required clearances from the heater to the combustibles. Signs must either be posted adjacent to the heater thermostats or in the absence of such thermostats in a conspicuous location.



Models 7D837A thru 7D851A Accessories & Written Specifications

HEATER PARAMETERS/SPECIFICATIONS

- Gas fired radiant tube heaters shall be furnished and installed in accordance with governing codes and as shown per drawing(s) provided. Radiant tube heaters shall be DAYTON TUBE SERIES of the model numbers and inputs(s) in BTU/H as manufactured by Dayton Manufacturing Company, Niles, IL 60714.
- Radiant tube heaters shall be Design Certified by the American Gas Association (AGA) and comply with current Occupational Safety and Health Act (OSHA) Requirements. The supplier shall provide the AGA Certification Number and the heaters shall bear the AGA Seal of Certification.
- 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 forms, showing physical dimensions, installation detail, recommendations, control wiring diagrams, and spare parts list.
- Radiant tube heaters shall be designed to satisfactorily operate at a minimum inlet pressure of _____ inches W.C.P. to a maximum inlet pressure of _____ inches W.C.P.
- 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.

RADIANT TUBE HEATER BURNER CONTROLS

- Heaters shall be equipped with a direct silicon carbide ignition system with a one-(1) 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 main burner shall be constructed of stainless steel.
- The control assembly shall be Design Certified by AGA, shall provide main burner regulation, and shall be of the redundant type.
- Heater controls shall include safety differential pressure switches to monitor exhaust back pressure and to monitor combustion air flow, so as to provide complete burner shutdown due to insufficient combustion air or flue blockage.
- The heater's control system shall be designed to shutoff the gas flow to the main burner in the event either a gas supply or power supply interruption occurs.
- The heater's air flow control system shall provide a 45 second pre-purge prior to initiating burner operation.
- No condensation shall form as a result of combustion in the combustion chamber or radiant tubes while at operating temperatures.
- Total heater shutdown shall occur in the event of circuit control lockout. An interruption of power (reset thermostat) will restart the firing sequence.

QTY.	SKU #	DESCRIPTION	NOTES
	3F837	4" Combustion Air Intake - Sidewall Cap	Used to duct fresh (cold) air 0-20 ft. to a heater. Sidewall only.
	3F839	4" Unvented Exhaust Termination Cap	Required on all units when operating unvented.
	2C448	4" Sidewall Vent Kit	Required for all single sidewall vents. No roof venting.
	2F211	6" Sidewall Vent Kit	Required for all common sidewall vents. No roof venting.
	3F817	4"x4"x6" Common Y Union	Used for joining two heaters on one vent. Same T-stat required.
	3TZ71	90 Degree, 4" Radiant Elbow	Used for making a "L" tube shaped heater. Max. two per unit.
	5VD83	Reflector Elbow Shield	Reflector and accessories used to cover 3TZ71.
	3F835	180 Degree, 4" Radiant "U" Bend	Used for making a "U" tube shaped heater. Max. one per unit.
	5VD85	Single Mount Bracket	Provides units with 3F835 uniform mounting points. 1 per 10'.
	5VD84	Reflector "U" Shield	Reflector and accessories used to cover 3F835.
	5VD87	5' x 4" Tube & Reflector Extension	Optional 5' extension package. Max. one per unit.
	3VH27	10' x 4" Tube & Reflector Extension	Optional 10' extension package. Max. one per unit.
	5VD86	Side Shield Extension	Reflector side guard used to lower side clearances. 5' in length.
	5VD81	Protective Guard	Protects heat exchanger from contact or objects. 5' in length.
	5VD82	Warning Plaque	Restates the Clearance to Combustible Warning.
	5VD54	Angle Mounting Bracket 15-30-45 Deg.	Rotates unit onto preset mounting angles. See Redbook for qty's.

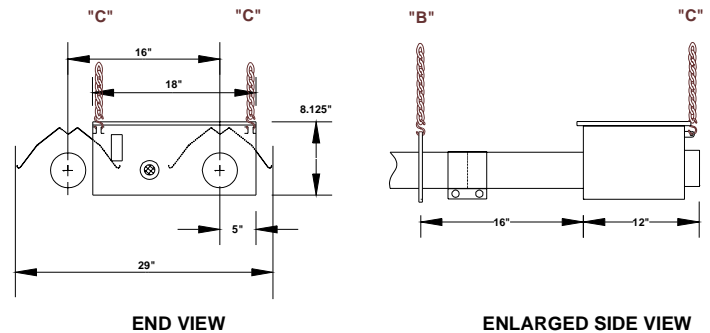
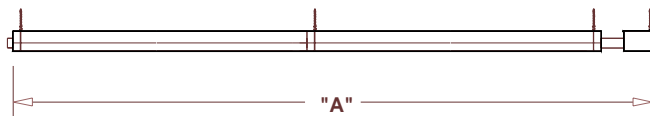
Models 7D837A thru 7D851A

Written Specifications & Field Data

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.
- Heater's combustion chamber shall be 4" O.D. 16ga. titanium alloy (150M) or aluminized steel (50M-125M) 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 connection in which the upstream tube slides into the next tube and is held by a bolted clamp.
- Safety differential pressure switches shall incorporate atmospheric sensing termination fittings designed to eliminate blockage due to moisture or foreign matter.
- The silicon carbide ignitor 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 preventing noise and/or rattles. Reflectors shall be assembled to the heater without the use of tools.
- The heaters shall include a downstream turbulator baffle for maximum thermal efficiency, 2' stainless steel flex connector, hanging kit and 1/2" gas cock shut-off.
- Heaters shall be equipped with a sight glass allowing a visual inspection of ignitor and burner operation from the floor.
- The radiant tube heaters shall be designed such that, at the customers 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.

MODEL NUMBER	DIMENSION "A"	FEET	WEIGHT
MODEL 20	259"	21'7"	120#
MODEL 30	375"	31'3"	160#
MODEL 40	491"	40'11"	190#
MODEL 50	607"	50'7"	235#
MODEL 60	723"	60'3"	265#



Typical wiring for single or multiple line voltage heaters.

