

# RE-VERBER-RAY HEATER SUBMITTAL SHEET

## DSRF SERIES TUBE HEATERS

### TWO STAGE, LOW INTENSITY, GAS-FIRED INFRARED VENTED PATIO HEATERS & ACCESSORIES

PROJECT ID: _____	ADDRESS: _____
PROJECT NAME: _____	_____
DATE: _____	CITY: _____ STATE: _____ ZIP: _____
Submitted By: _____ Address: _____	
Company: _____	_____
Phone: _____	City: _____
Email: _____	State: _____ Zip: _____
.....	
Engineer: _____	Contractor: _____
Phone/Email: _____	Phone/Email: _____
Address: _____	Address: _____
City: _____	City: _____
State: _____ Zip: _____	State: _____ Zip: _____

QTY.	MODEL #	TAG	INDICATE GAS TYPE	BTU/h High Fire	BTU/h Low Fire	STRAIGHT LENGTH	STANDARD WEIGHT	TYP. OR RCMD. MOUNTING HEIGHTS <sup>1</sup>	COVERAGE AREA (LxW)
	<b>DSRF-30-65</b>		Nat. or Prop.	65,000	50,000	16'-4"	170	9' to 16'	26' x 12'
	<b>DSRF-30-80</b>		Nat. or Prop.	80,000	52,000	16'-4"	170	9' to 16'	26' x 12'
	<b>DSRF-35-65</b>		Nat. or Prop.	65,000	50,000	21'-10"	200	9' to 16'	26' x 12'
	<b>DSRF-35-80</b>		Nat. or Prop.	80,000	52,000	21'-10"	200	9' to 16'	26' x 12'
	<b>DSRF-35-100</b>		Nat. or Prop.	100,000	65,000	21'-10"	200	9' to 16'	26' x 12'

<sup>1</sup>Typical or recommended mounting heights are provided as a guideline. Actual conditions may dictate variations from this data.



**DETROIT RADIANT  
PRODUCTS COMPANY**

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www.reverberray.com

LSDSRF-01/24 (DRPC)

## DSRF SERIES FEATURED SPECIFICATIONS

### APPROVALS

- CSA Design Certified
- Commercial/Industrial Indoor or Outdoor, Residential Outdoor Only

### BURNER CONTROL BOX

- Sight glass for burner inspection
- Totally enclosed components
- Silicone sealed, black enameled steel control housing
- Operational indicator lights

### GAS CONNECTION

- 7/8 in. flare-M FPT connection to 1/2 in. x 24 in. (304) SS flex connector provided.

### GAS SUPPLY (Inches W.C.)

- Manifold pressure: Nat 3.5; Prop 10.0
- Min. inlet pressure: Nat 5.0; Prop 11.0
- Max. inlet pressure: Nat 14.0; Prop 14.0

### POWER SUPPLY

- 120 VAC, 60 Hz GRD, 1 Ph., 3-wire
- 60 in. grounded power cord
- Ignition current: 4.8 amps
- Running current: 1.1 amps

### CONTROLS

- 24 VAC thermostatic control
- Two stage gas valve
- Silicon carbide hot surface ignitor
- Safety pressure switch
- Pre- and post-purge controls
- Flame rod sensing
- Self-diagnostic - LED "soft lockout"

### REFLECTOR

- 0.040 polished aluminum

### COMBUSTION & RADIANT TUBES

- 16 ga. 4" O.D. aluminized coated steel combustion chamber and radiant emitter tubes
- All tubes coated with high temperature, corrosion resistant black coating, 0.95 emissivity
- Slip-fit swaged tube connection

### LIMITED WARRANTY

- 3 years-Burner box components
- 5 years-Combustion and radiant tubes
- 10 years-Burner

## OPTIONAL ACCESSORIES

- ☐ **DS-BKT** Mounting bracket assembly. Set of 3 mounting brackets with SMB. Expands from 20.6" to 45.6".
- ☐ **4000-01V** 40 VA transformer. 120-24 VAC primary and secondary (only required when common controlled). Mounted on 4x4 base plate.
- ☐ **ERK** External relay kit. One ERK is required per heater when controlling multiple heaters with a single control device.
- ☐ **TH-DSTS1** Single zone controller. Single zone, two stage, low voltage controller with control knob.
- ☐ **TH-DSTS2** Dual zone controller. Two zone, two stage, low voltage controller with control knob.
- ☐ **RTVP-4** 4" rooftop vent package. Used to single vent vertically through the roof.
- ☐ **4-DSK** 4" sidewall vent kit. Required for all single sidewall vents.
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_
- ☐ \_\_\_\_\_



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# RE-VERBER-RAY SAFETY SUBMITTAL SHEET

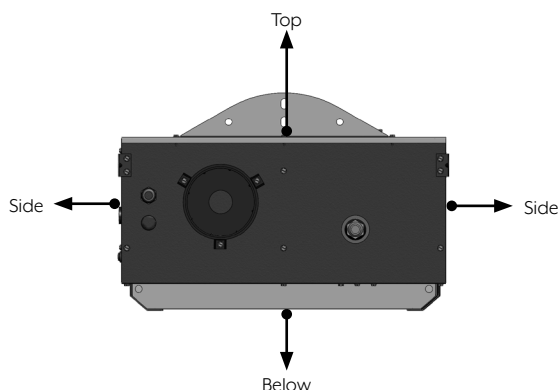
## DSRF SERIES CLEARANCES TO COMBUSTIBLES

All listed clearances to combustibles are in inches.

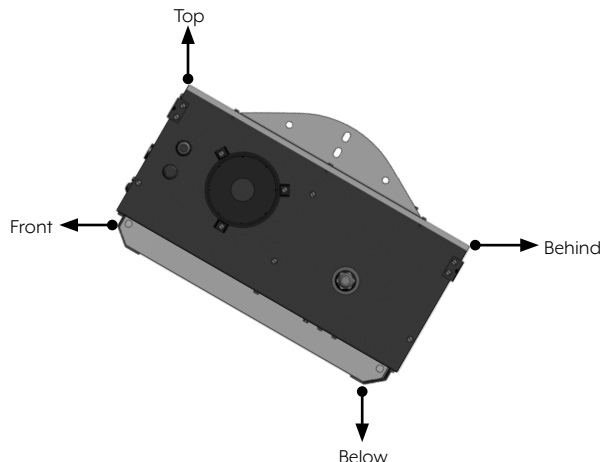
MODEL NO.	MOUNTING ANGLE <sup>1</sup>	SIDES		TOP	BELOW	END
		FRONT	BEHIND			
DSRF-(30, 35)-65[N, P]	0°	25	25	6	60	12
	30°	36	10	9	47	12
DSRF-(30, 35)-80[N, P]	0°	25	25	6	60	12
	30°	36	10	9	47	12
DSRF-35-100[N, P]	0°	25	25	6	77	12
	30°	45	10	9	64	12

<sup>1</sup> Heaters mounted on an angle between 0° and 30° must maintain clearances posted for 0° or 30°, whichever is greater.

END VIEW - 0° Mounting Angle



END VIEW - 30° Mounting Angle



SIDE VIEW



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.



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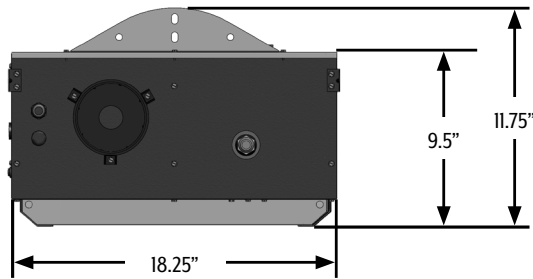
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# RE-VERBER-RAY DIMENSIONAL SUBMITTAL SHEET

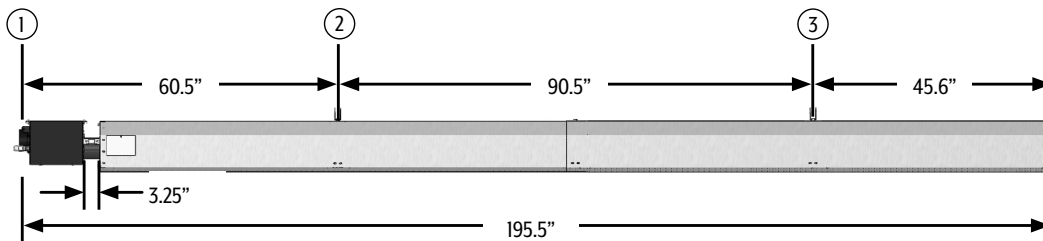
## DSRF SERIES DIMENSIONS

END VIEW

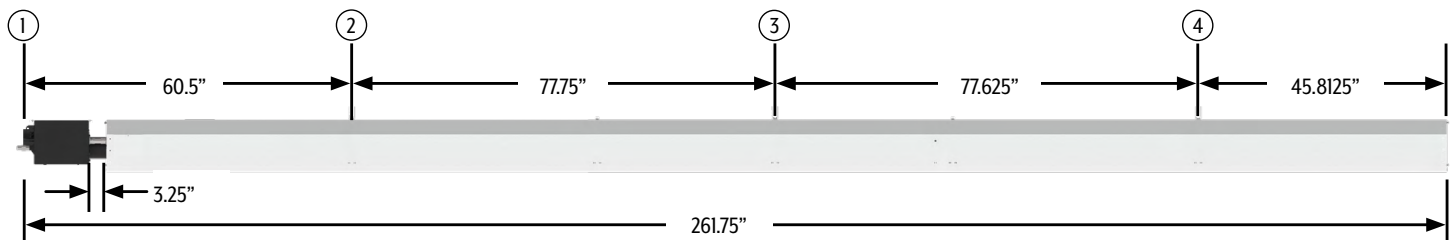


- ① Hanging Point 1
- ② Hanging Point 2
- ③ Hanging Point 3
- ④ Hanging Point 4

SIDE VIEW - DSRF-30 MODELS



SIDE VIEW - DSRF-35 MODELS



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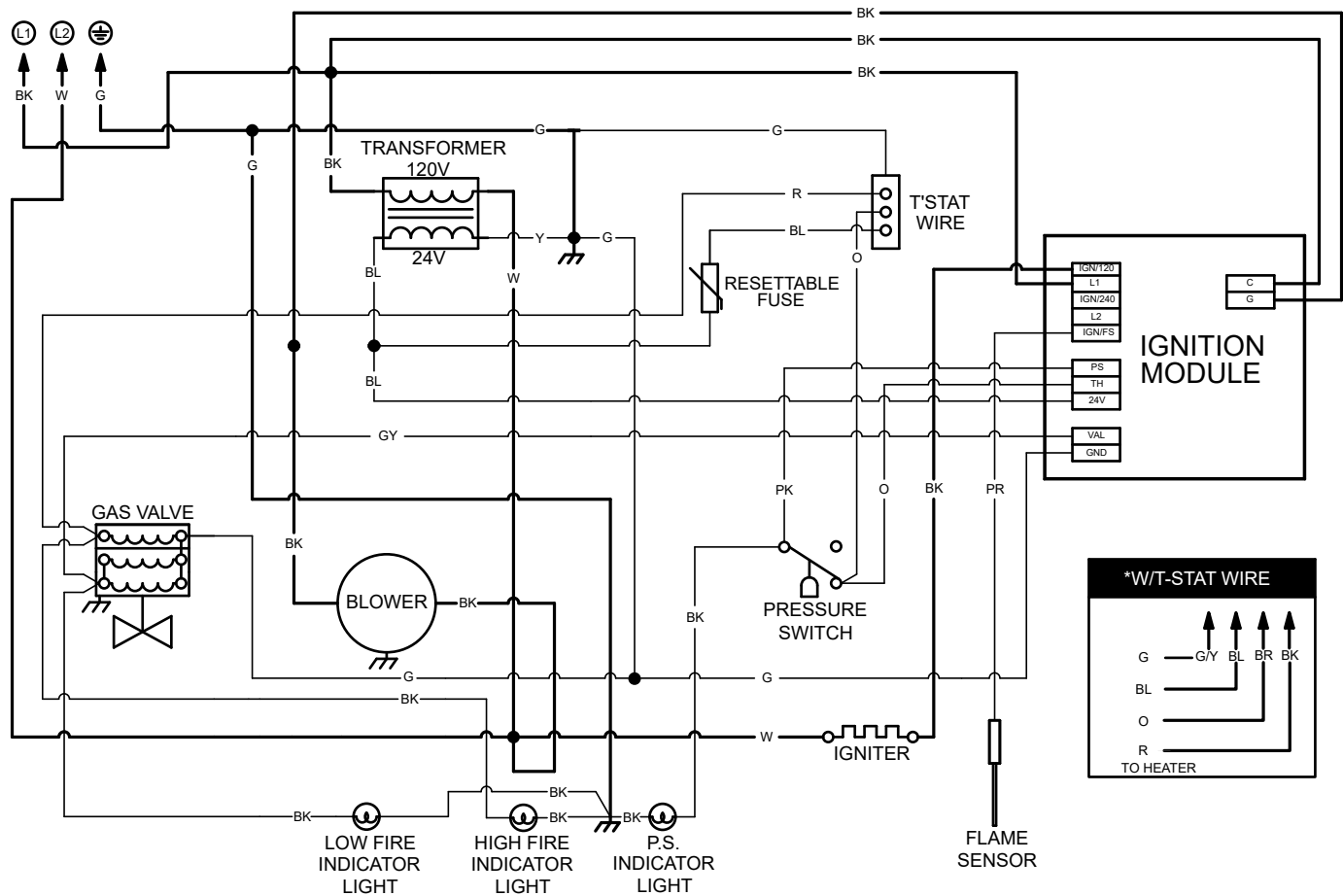
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# RE-VERBER-RAY WIRING SUBMITTAL SHEET

## DSRF SERIES WIRING DIAGRAMS

## Internal Wiring



WIRING INFORMATION:

LINE VOLTAGE:

FACTORY STANDARD \_\_\_\_\_  
FACTORY OPTION \_\_\_\_\_  
FIELD INSTALLED \_\_\_\_\_

LOW VOLTAGE:

FACTORY STANDARD \_\_\_\_\_  
FACTORY OPTION \_\_\_\_\_  
FIELD INSTALLED \_\_\_\_\_



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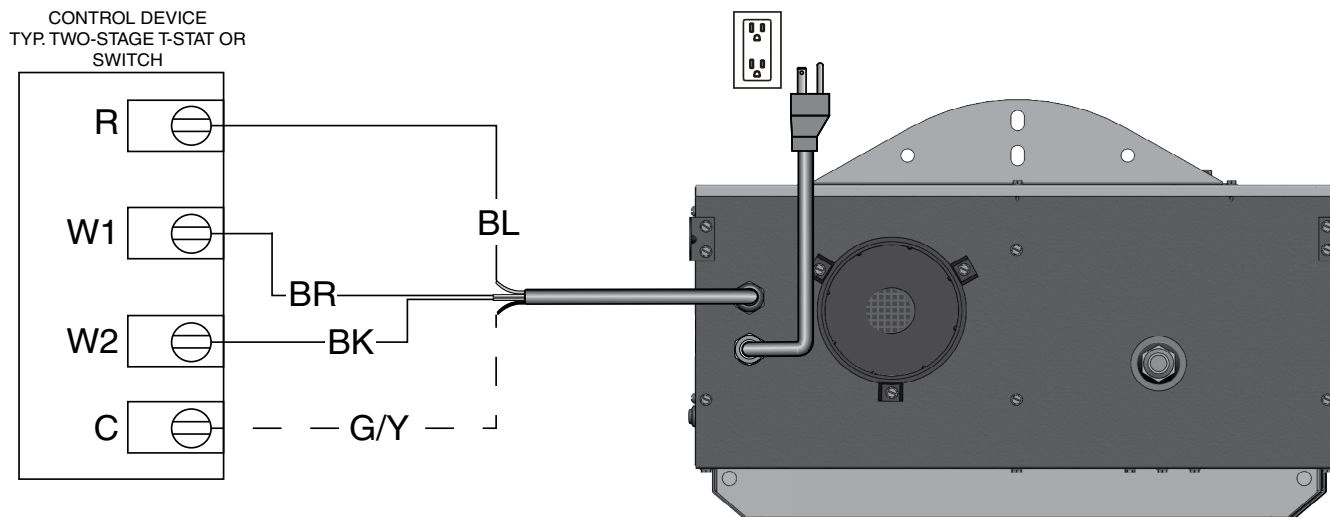
# RE-VERBER-RAY WIRING SUBMITTAL SHEET

## DSRF SERIES WIRING DIAGRAMS (cont.)

### Field Wiring—Single Heater (Single Thermostat)

**Starting Amp Draw:** 4.8 Amps

**Running Amp Draw:** 1.1 Amps

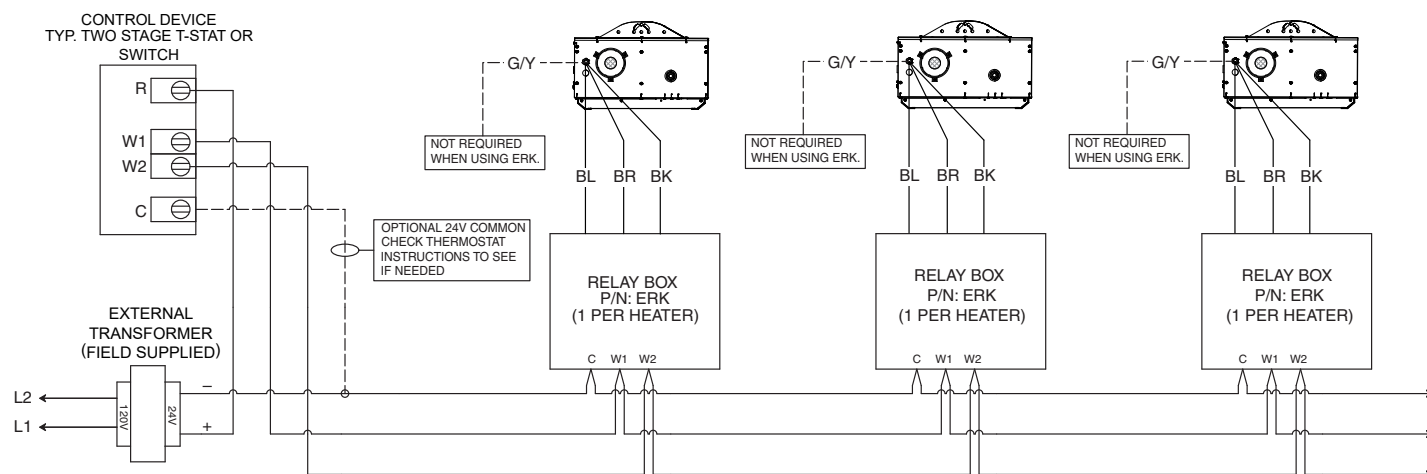


### Field Wiring—Multiple Heaters with a Single Control Device

**NOTE:** For External Relay Kit (ERK) wiring, consult the installation instructions provided with ERK.

**Starting Amp Draw:** 4.8 Amps

**Running Amp Draw:** 1.1 Amps



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## TWO STAGE, LOW INTENSITY, GAS-FIRED INFRARED VENTED PATIO HEATERS &amp; ACCESSORIES

## TUBULAR INFRARED PATIO HEATERS

- A. Basis-of-design product: Subject to compliance with requirements, provide Detroit Radiant Products Company; Re-Verber-Ray® DSRF Series.
- 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 23% 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. Heater shall contain a minimum of 25' of radiant pipe for DSRF-30 models and 35' of radiant pipe for DSRF-35 models with cast "U" for maximum radiant output.
- E. Heater must be certified to ANSI Z83.20/CSA 2.34 and ANSI Z83.26/CSA 2.37.
- F. Combustion chamber: Shall be 16 ga. aluminized steel, finished with a high emissivity rated, corrosion-resistant, black coating with an emissivity level documented at .92 or higher.
- G. Radiant emitter tube: Shall be 16 ga. aluminized steel finished with a high emissivity rated, corrosion-resistant, black coating with an emissivity level documented at .92 or higher.
- H. Heater U configuration uses one cast "U" bend.
- I. 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 shall not be allowed.
- J. 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.
- K. Burner: Stainless steel venturi burner. The 16" starter tube is made of aluminized steel.
- L. Tube connections: The heater's combustion chamber and radiant emitter tube shall incorporate a slip-fit, interlocking connection in which the upstream tube slides into the next tube and is held by a screw. A butted tube connection system shall not be permitted.
- M. 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.
- N. Reflectors: Shall be minimum 0.040 brushed aluminum with a multi-faceted design which includes reflector end caps. Reflector shall have a minimum of 7 sheet metal bends in its fabrication to optimize downward radiation. The heater's reflector hanging system shall be designed to permit expansion while minimizing noise and/or rattles.
- O. Control box: Heater's exterior control chassis shall be constructed of corrosion resistant enameled steel.
  - 1. The heater's control compartment shall be easily serviceable by removing one (1) panel.
- P. 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.
- Q. Heater shall be supplied with a stainless steel flexible gas connector.
- R. 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 with an LED indicator light, and that shall re-cycle 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 unit's 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 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.
- S. Control: Devices and wiring are specified in Division 23 Section "Instrumentation and Control for HVAC."
  - 1. Custom designed low voltage controllers with illuminated switches to be utilized.
  - 2. Control Transformer: Internally mounted.
- T. 1/2" x 1/2" x 1/2" mill finish modular aluminum egg crate with decorative end caps to be housed by decorative shell.
- U. Venting: Shall be per manufacturer approval and specifications.


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