

# DORNBACH



## GAS INFRA-RED HEATERS

## DK-SERIES SPECIFICATIONS

### HEATER

- CSA International (A.G.A. /CGA) Design Certified.
- Accepted by I.R.I. and F.M.
- Natural or LP gas.
- Minimum inlet pressure:  
Natural gas - 7" WC / LP gas - 11" WC
- Maximum inlet pressure:  
Natural or LP gas - 14" WC
- Manifold pressure:  
Natural gas - 6" WC / LP gas - 10" WC
- Flexible inputs from 30,000 to 200,000 BTUH.
- Horizontal to 30° angle mounting.
- Compact and durable, modular design.
- Less maintenance - no moving parts.
- "Instant ON" - "Instant OFF."
- Requires no direct venting.
- Simple chain mounting.
- Factory prewired, prepiped and tested.

### CERAMIC COMBUSTION SURFACE

- Cordierite-based, grooved ceramic tile.
- Permeable design with alternating rows of precision perforations terminating in slots.
- Minimum 0.045" diameter perforations.
- Minimum 190 perforations per sq. inch.
- Up to 1850°F surface temperature.
- Capable of reaching full intensity temperature in less than 30 seconds.
- Stable flame - shorter and closer to ceramic.

### PLENUM CHAMBER

- 20 ga. (.035) corrosion-free aluminized steel.
- One-piece fabrication.
- Seamless no-weld construction.
- Single screw removal for quick service.
- Stainless steel tile retainer clips.

### VENTURI MIXER

- Smooth, seamless spun metal construction.
- Precision metering of proper air/gas mixture.
- Matched with ceramic port area.
- Inspirates 110-120% primary air.

### MAIN FRAME

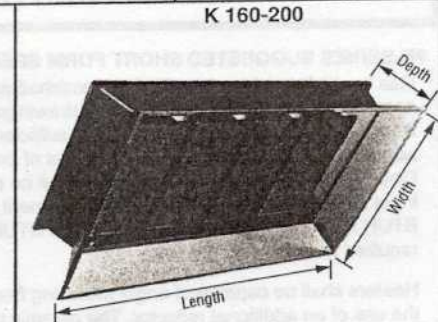
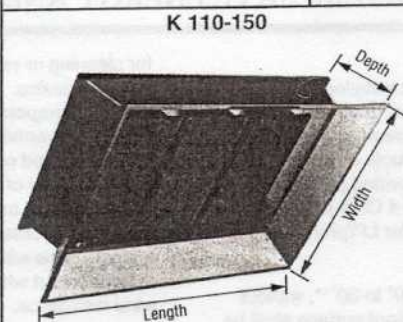
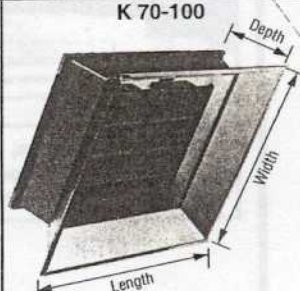
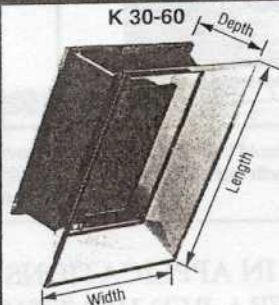
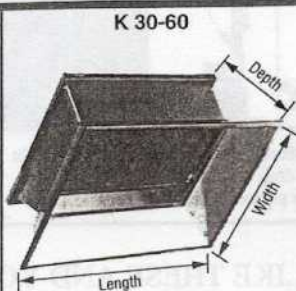
- 16 ga. (0.65) corrosion-free aluminized steel.
- Stainless steel baffle.
- No weld construction.
- Double turned upper edge for rigidity.

### REFLECTOR

- 0.032" highly polished aluminum.
- Double turned lower edge for rigidity.

### CONTROLS

- 6 control options.
- 100% safety shut-off available.
- Millivolt.
- Direct spark - 25V or 120V.
- Field adjustable pilot gas regulator.
- Concealed pilot is protected from drafts.
- ½" FPT gas inlet.



### MODELS & BTUH RATINGS

| Model Number | BTUH 000'S |     |
|--------------|------------|-----|
|              | Nat        | LP  |
| DK-30        | 30         |     |
| DK-35        | 35         |     |
| DK-40        | 40         |     |
| DK-45        | 45         |     |
| DK-50        | 50         | 50  |
| DK-55        | 55         |     |
| DK-60        | 60         |     |
| DK-70        | 70         | 70  |
| DK-75        | 75         | 75  |
| DK-80        | 80         | 80  |
| DK-85        | 85         | 85  |
| DK-90        | 90         | 90  |
| DK-95        | 95         |     |
| DK-100       | 100        |     |
| DK-110       | 110        |     |
| DK-120       | 120        | 120 |
| DK-125       | 125        |     |
| DK-130       | 130        |     |
| DK-135       | 135        |     |
| DK-150       | 150        |     |
| DK-160       | 160        | 160 |
| DK-175       | 175        |     |
| DK-200       | 200        |     |

### ACCESSORIES:

- Protective screens.
- Secondary Re-Radiating Wire grid.
- Parabolic reflector extensions.
- Heat shield available K-30 thru K-100 for decreased clearances to combustibles.

### SPECIFICATIONS

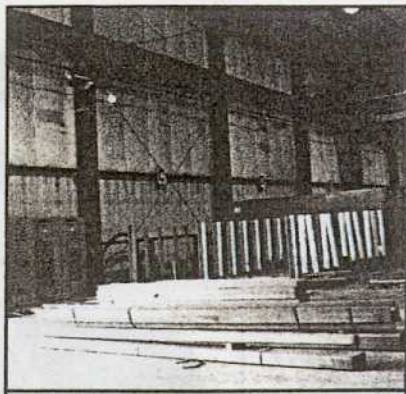
| BTUH Rating                            | K 30-60 MBTUH | K 70-100 MBTUH | K 110-150 MBTUH | K 160-200 MBTUH |
|--|---------------|----------------|-----------------|-----------------|
| <b>Clearances to Combustibles:</b>     |               |                |                 |                 |
| Side of Heater                         | 30"           | 36"            | 46"             | 48"             |
| Back of Heater                         | 30"           | 30"            | 33"             | 33"             |
| Top of Heater:                         |               |                |                 |                 |
| Mounted 0°-29° <sup>1</sup>            | 60"           | 62"            | 64"             | 66"             |
| Mounted 30° Only                       | 48"           | 50"            | 58"             | 68"             |
| W/Heat Shield 0°-29° <sup>1</sup>      | 34"           | 38"            | x               | x               |
| W/Heat Shield 30° Only                 | 34"           | 38"            | x               | x               |
| Below Heater: <sup>2</sup>             |               |                |                 |                 |
| Standard Reflector                     | 80"           | 105"           | 125"            | 140"            |
| Parabolic Reflector                    | 110"          | 135"           | 165"            | 180"            |
| <b>Overall Dimensions:<sup>3</sup></b> |               |                |                 |                 |
| Length                                 | 23½"          | 25¼"           | 33¾"            | 42½"            |
| Width                                  | 16¾"          | 23¾"           | 23¾"            | 23¾"            |
| Depth                                  | 8¾"           | 8¾"            | 8¾"             | 8¾"             |
| <b>Mounting Hole Dimensions:</b>       |               |                |                 |                 |
| Size - Diameter                        | ¾"            | ¾"             | ¾"              | ¾"              |
| Radiating Surface:                     | 173 sq."      | 346 sq."       | 519 sq."        | 692 sq."        |
| Shipping Weights Lbs.                  | 30            | 36             | 49              | 62              |

### CONTROL OPTIONS

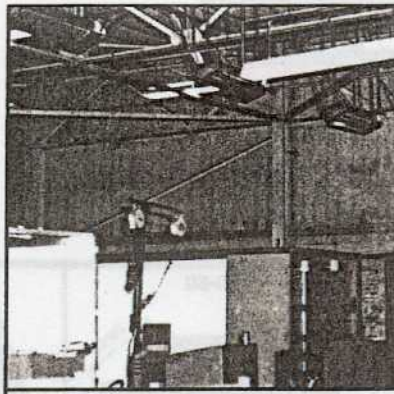
| Control Suffix Letters | Gas     | Shut-Off | Voltage   | Maximum Power Consumption | Ignition     | Pilot    |
|------------------------|---------|----------|-----------|---------------------------|--------------|----------|
|                        |         |          |           |                           |              |          |
| TAN                    | Natural | 100%     | Millivolt | None                      | Manual       | Constant |
| TAL                    | LP      | 100%     | Millivolt | None                      | Manual       | Constant |
| DSAN                   | Natural | 100%     | 115V      | 6 VA                      | Direct spark | None     |
| DSAL                   | LP      | 100%     | 115V      | 6 VA                      | Direct spark | None     |
| QSAN                   | Natural | 100%     | 25V       | 5 VA                      | Direct spark | None     |
| QSAL                   | LP      | 100%     | 25V       | 5 VA                      | Direct spark | None     |

### FOOTNOTES FOR TABLES:

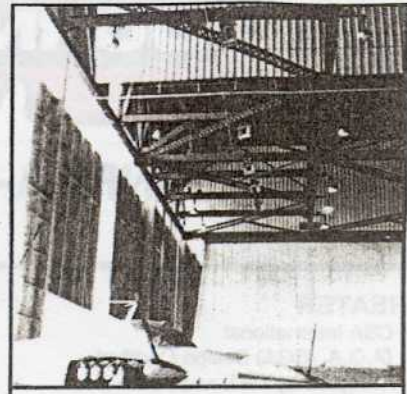
- 1 Models K-70 through K-100 and K-160 mounted to 30° only.
- 2 All control options may be actuated by either a thermostat or ON/OFF switch.
- 3 NOTE: Controls extend beyond reflector. For models # K-30-60 add 5.00" to the overall length. For all other models add 5.00" to overall width.



Fuel savings of up to 50% should be realized by large industrial buildings with high bays such as this 35' installation.



Conventional unit heaters replaced on this loading dock and in six other areas had a payback period of less than two years.



Equal or better comfort at 5 to 10 degree lower thermostat settings keep them flying in hangars and repair facilities.

## IN APPLICATIONS LIKE THESE AND YOURS, **DORNBACH** INFRA-RED HEATERS SAVE ENERGY AND IMPROVE COMFORT

### DK-SERIES SUGGESTED SHORT FORM SPEC

Gas fired infra-red heaters shall be furnished and installed in accordance with local codes, building drawings and manufacturer's recommendations. Heaters shall have sufficient fresh air to provide adequate combustion air and the removal of products of combustion. One square inch of net free inlet area shall be provided per 1,000 BTUH input for combustion. Positive air displacement of 4 CFM per 1,000 BTUH for natural gas or 5 CFM per 1,000 BTUH for LP/propane is required for venting in the US\*.

Heaters shall be capable of angle mounting from 0° to 30°\*\*, without the use of an additional reflector. The ceramic radiant surface shall be horizontal when heater is installed at 0°. Heaters shall be certified by CSA International (formerly the American and Canadian Gas Associations). Design certified to American National Standard Institute ANSI Z83.6 including compliance with section 2.9, Radiant Coefficient, without the use of a secondary re-radiating surface of either rods or screen.

### HEATER CONTROLS

Burner shall be; fully tested and ready to hang, pipe and wire for operation; bear either the AGA or CGA serial plate, operate on Natural or Propane gas (NAT./LP.); equipped with one of the following controls: (DSAN/DSAL) direct spark ignition 100% safety shut off with flame monitoring, 115 VAC - 6VA Max power consumption, (QSAN/QSAL) direct spark ignition 100% safety shut off with flame monitoring, 25 VAC-5VA Max power consumption, (TANTAL) Millivolt ignition - no electrical power to operate, 100% safety shut off with a constant pilot and is supplied w/35' of 18-2 wire and a millivolt thermostat. Controls utilizing a pilot shall have a field adjustable gas regulator and the pilot flame is concealed so as to protect it from drafts. Each burner is fitted with an orifice(s) for proper air to gas mixture for sea level. Burner(s) can be ordered or converted for use at high altitudes, or with either LP or Natural gas all with a 1/2" FPT gas inlet.

### BURNER HEAD/COMBUSTION SURFACE

The burner(s) shall include the ceramic combustion surface, a plenum chamber, a venturi mixer and shall be removable with a single screw

for cleaning or replacement without disconnecting any gas, electrical or hanging device. The ceramic combustion surface shall be capable of reaching temperatures up to 1850°F (an incandescent appearance) and withstand thermal shock when water quenched. It shall be a cordierite-based grooved ceramic of an exclusive permeable design whereby alternate rows of 230 perforations per square inch, terminate at the bottom of slots making one half of the flame below the top surface of the ceramic and creating a more intimate contact between flame and surface. This will increase the ceramic surface temperature and the radiant output while maintaining a lower gas input and achieving greater wind resistance.

The Plenum chamber shall be of 20 ga. (.035") corrosion-free aluminized steel, one-piece fabrication and seamless no-weld construction. The plenum chamber shall utilize a one-piece stainless steel retainer to hold the ceramic surface in place around its entire perimeter, a 14 ga. (.083") aluminized steel, back bracket for holding it in place to achieve proper alignment of the surface, venturi and orifice.

### MAIN FRAME

The main frame shall be 16 ga. (.065") corrosion-free aluminized steel and of no-weld construction. The main frame shall have a double turned upper edge. The side frames shall have four (4) 3/8" holes for easy mounting of an "S" hook and chain.

### REFLECTORS

Reflectors shall be of 21 ga. (0.032") Mirror Brite Aluminum Finish (highly polished). Reflector design (shape) shall be of standard design and be mounted to the heater at the factory. An optional certified parabolic reflector extension is used for concentrating infra-red energy, usually for spot heating or higher mounting height applications.

Optional certified accessories: protective screens, secondary re-radiating wire grids, and heat shields available for K-30 thru K-100 for decreased clearances to combustibles above the heater. Heaters shall carry a manufacturer's limited warranty covering the combustion surface and burner components for a period of one (1) year.

\* In Canada: 3 CFM per 1,000 BTUH for natural gas or 4 CFM per 1,000 BTUH for LP/propane.

\*\*Heaters of 70 to 100 MBTUH and 160 MBTUH shall be mounted 5° to 30° only.