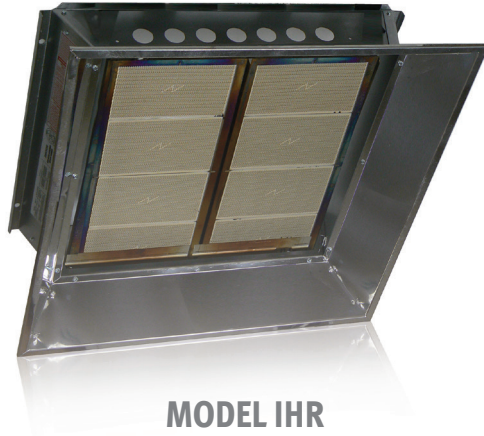




GAS-FIRED HIGH AND LOW INTENSITY INFRARED HEATERS



MODEL IHR



MODEL OHP



MODEL IPT

Figure 4.1 - Construction Features - Model IHR



Features	Benefits
1. High temperature cordierite-based grooved ceramic tiles with perforations along both the top and bottom of the grooves	1. Increased temperature and surface area to provide maximum heat transfer while maintaining lower gas input ratings.
2. Polished aluminum reflectors	2. Efficiently direct radiant heat to the desired area, for increased comfort over wider areas.
3. 16 gauge aluminized steel frame	3. Provides support for simple chain mounting.
4. No air mover is utilized	4. Eliminates fan noise, drafts, maintenance and reduces electrical energy costs.
5. Input ranges from 30,000 Btu/hr through 160,000 Btu/hr in Natural or Propane gas	5. Wide input range to accommodate a variety of heating requirements
6. Direct spark or self-energizing standing pilot ignition	6. Maximize application flexibility.
7. 115V, 25V, or millivolt controls	7. Accommodate a wide range of electrical inputs.
8. Externally-mounted controls	8. Allow convenient access to gas valve, control system, transformer, and gas orifices, increasing ease of installation and service.
9. Burners are replaced by removing one fastener	9. Eliminates the removal of the unit from its mounted position for service.
10. CSA design certification for indoor, unvented operation in commercial and industrial installations	10. Assures that the unit conforms to national safety standards.

Table 7.1 - Performance and Dimensional Data

Model	Gas Controls ③ ④	Input Rating (Btu/hr)		Recommended Mounting Height (ft.) ①		Dimensions (in) ②		Ship Wt. (lbs)	Radiating Area (sq. in.)
				Standard Reflector	Parabolic Reflector	A	B		
		Natural	Propane	30° Angle	30° Angle				
IRH 30	Single Stage or Millivolt	30,000		12 - 14	12 - 15	12 3/4	14 1/4	44	85
IRH 60	Single Stage or Millivolt	60,000		14 - 16	18 - 21	19 1/8	15 1/4	60	170
IHR 90	Single Stage or Millivolt	90,000		16 - 18	21 - 25	26 5/8	15 1/4	81	255
IHR 130	Single Stage or Millivolt	130,000		21 - 24	26 - 32	32	15 1/4	55	340
IHR 160	Single Stage or Millivolt	160,000		24 - 28	29 - 35	38 1/2	15 1/4	65	425

① See Table 8.1 for allowable mounting angles.

② See Figure 7.1.

③ Single stage controls are direct spark ignition with 100% safety shutoff and are

available as either 115V or 24V

④ Millivolt thermostat and 35 feet of wire.

Figure 7.1 - Unit Dimensional Drawing

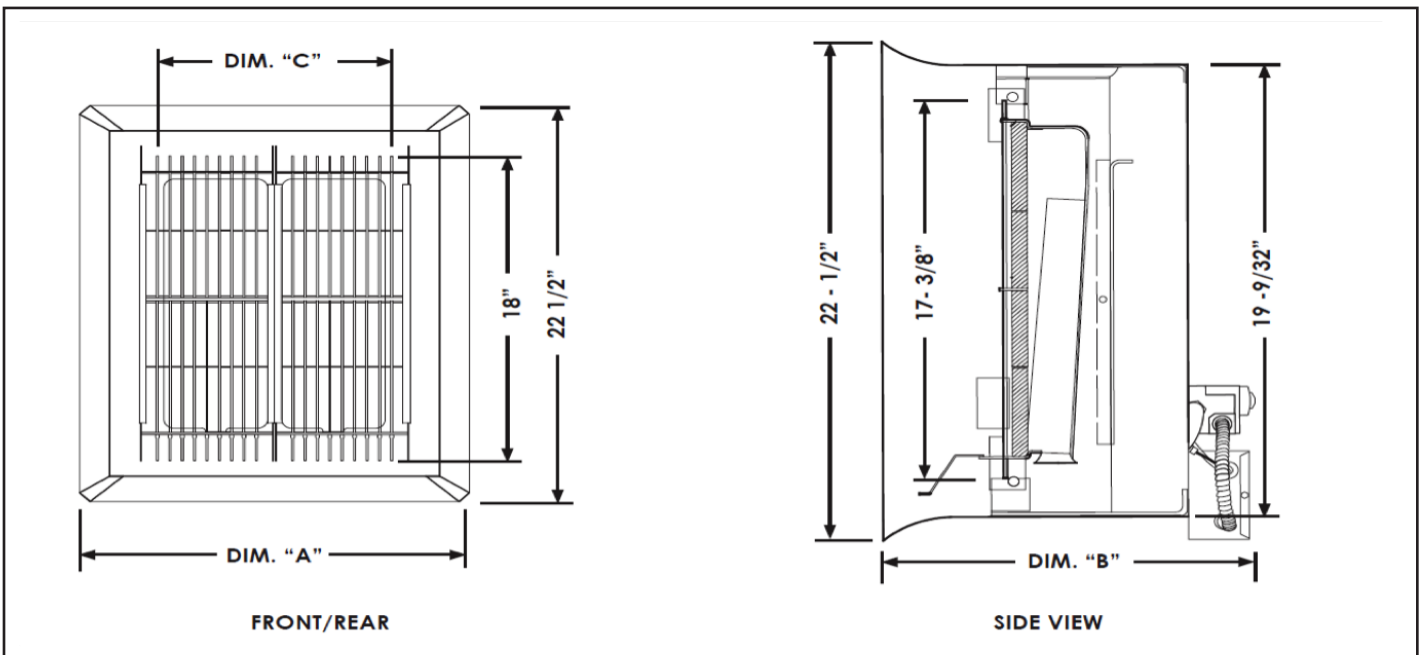


Table 8.1 - Allowable Mounting Angle Range

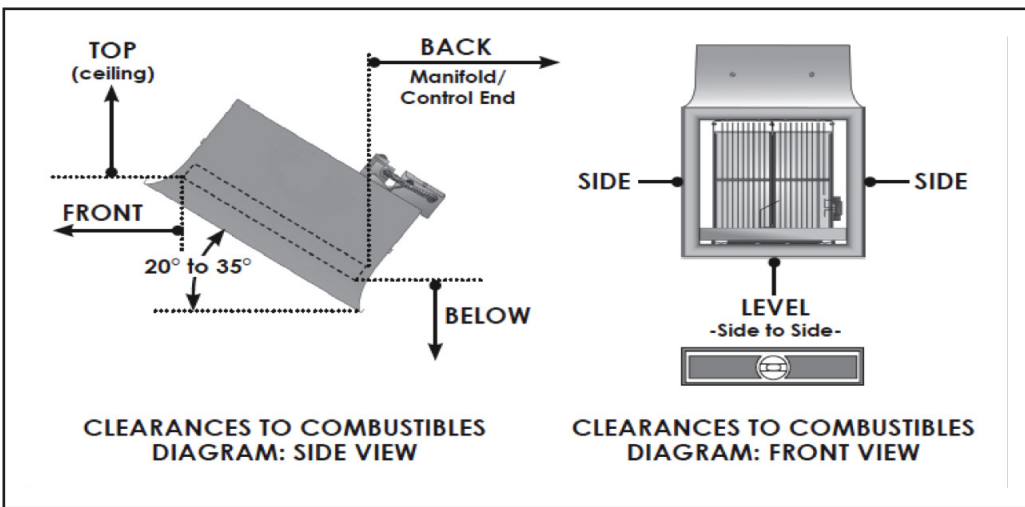
Model Size	Allowable Mounting Angle Range
30 – 60	0° – 30°

Table 8.2 - Clearances to Combustible Materials (See Figure 5.1)

Model Sizes	30	60	90	130	160
Side of Heater	30	32	48	48	50
Back of Heater	18	18	30	30	32
Top of Heater	28	40	42	52	60
Below Front	72	72 ^①	98	120	132

① Clearance is 80 in. when heater is fitted with a parabolic reflector.

Figure 8.1 - Clearances to Combustibles (See Table 7.2)





General

The heater reflector housing shall be constructed of one-side bright polished aluminum. The emitter shall be composed of a perforated ceramic tile on which combustion takes place on the surface. The burner plenum shall be constructed of aluminized steel of one-piece drawn construction. The heater shall be of a modular design employing multiple burners to achieve the specified input.

- The venturi is constructed of stainless or aluminized steel.
- The secondary re-radiating rods shall be constructed of high temperature stainless steel alloy placed in close proximity of the ceramic burner face.
- Parabolic reflectors shall be used when units are installed in high mounting applications or when focusing of the infrared heating pattern is desirable.
- Protective screens shall be used in facilities where debris may damage the heater.

Burner

The ceramic burner face shall operate at a temperature range of 1660 degrees F to 1810 degrees F and shall incorporate a secondary re-radiating surface of stainless steel rods to obtain optimum operating temperature and radiant output.

Reflectors

The heater reflector housing shall be constructed of one-side bright polished aluminum. The emitter shall be composed of a perforated ceramic tile on which combustion takes place on the surface. The burner plenum shall be constructed of aluminized steel of one-piece drawn construction. The heater shall be of a modular design employing multiple burners to achieve the specified input.

- The venturi is constructed of stainless or aluminized steel.
- The secondary re-radiating rods shall be constructed of high temperature stainless steel alloy placed in close proximity of the ceramic burner face.
- Parabolic reflectors shall be used when units are installed in high mounting applications or when focusing of the infrared heating pattern is desirable.
- Protective screens shall be used in facilities where debris may damage the heater.

Controls

Heater(s) shall be equipped with (check one):

- Heaters shall be equipped with one of the following control systems:

Standing Manual Pilot System with 100% safety shut-off of pilot and main burner in case of pilot outage, operating with no external electrical connection but on milli-voltage generated by the pilot flame (NMV-2 or PMV-2).

Direct Spark Ignition System with direct spark ignition of the main burner through a solid state ignition module operating a spark electrode. Loss of power causes

100% safety shut-off of main burner(s). System operates on 120 or 24 volts (NFS-2 or PFS-2). 24V/60Hz/1 ph with 6VA maximum power consumption.

Controls shall be exterior mounted for easy accessibility.

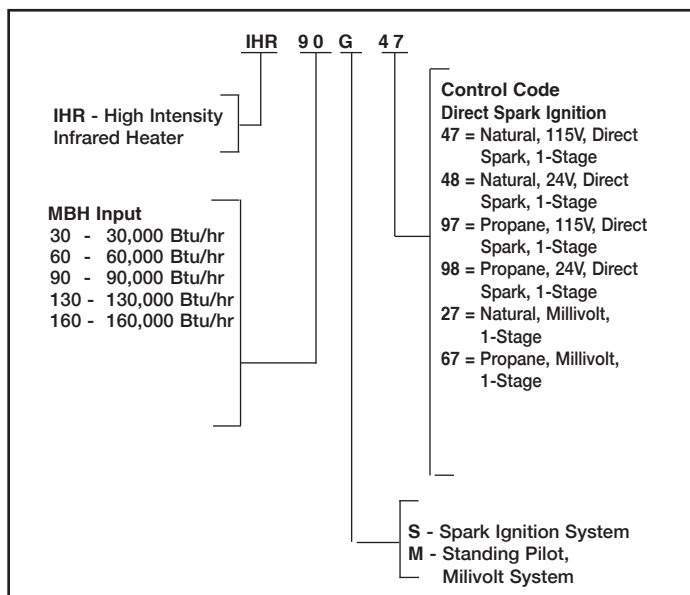
All controls shall be rated for a maximum inlet pressure of 1/2 PSI gas pressure. Controls shall be designed for Natural gas having a specific gravity of 0.60, a Btu content of 1050 Btu/ft³ (Alternate: Propane gas having a specific gravity of 1.53, a Btu content of 2500 Btu/ft³) at 0-2000 feet elevation.

Accessories

The following field installed accessories shall be included (check those that apply):

- Chain mounting set - 5' chain set with 4 "S" hooks. Preset mounting angle of 30°.
- Horizontal parabolic reflector - Directs rays directly downward. Can be used for matching horizontal mounting specifications.
- Full parabolic reflector - Directs rays in a more focused pattern. Typically used in high mounting applications.
- Full parabolic reflector with screen - Directs rays in a more focused pattern. Outer screen protects ceramic grids from objects striking the heater.
- DR heater screen - Screen slips on the outside of the reflectors and protects the ceramic grids.
- Warning plaque - Hung below heater, restates the clearance to combustible warning.

Figure 12.1 - Model Number Designations



Products from Modine are designed to provide indoor air-comfort and ventilation solutions for residential, commercial, institutional and industrial applications. Whatever your heating, ventilating and air conditioning requirements, Modine has the product to satisfy your needs, including:

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- Make-up Air Systems
- Unit Ventilators

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- Water-to-Air
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Specific catalogs are available for each product. Catalogs 75-136 and 75-137 provide details on all Modine HVAC equipment.



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