

Model IFG Typical Specifications

General

Provide KEES Model IFG Indirect Fired Heater designed for (indoor) (outdoor) installation with (down) (end) (top) discharge. Performance shall be as scheduled on the plans.

Heater

The indirect fired gas heater shall be AGA and CGA certified to conform with the latest ANSI standards for efficient and safe performance and shall be compliant with FM (IRI) (Illinois School Code) requirements. It shall be 80% efficient and equipped for use with (natural) (propane) gas.

Each heater (Single on units 100-400 MBH, Dual on units 500-800 MBH and Triple on units 900-1,200 MBH) will contain its own heat exchanger, flue collector, venting, burners, safety and ignition controls.

Burners will be die formed, individually removable for servicing and constructed of (aluminized steel) (409 stainless steel).

Heat exchanger will consist of (409 stainless steel) (321 stainless steel) (aluminized steel) tubes and headers.

(Gravity venting) (Power venting) shall provide outside air for combustion and removal of the products of combustion.

Main gas pressure regulator, main gas valve, intermittent spark pilot (with timed lock-out), and high limit switch shall be included.

Temperature Control

The heater output shall be controlled by:

- Two stage gas valve per heater with (discharge ductstat) (room thermostat).
- Mechanical modulating gas valve with discharge ductstat.
- Electronic modulating gas valve with (discharge ductstat) (discharge ductstat and room override thermostat) (space temperature controller) (DDC compatible controller).

Housing

The housing shall be fabricated from heavy-gauged G90 galvanized steel with all joints caulked for weather-protection. Base rail to run the entire length and width of the unit excluding the intake hood and will form a curb cap. Gasketed panels will provide access to all of the components. Exterior of unit to be painted if specified.

Insulation

The unit shall be lined with 1" thick matte faced fiberglass insulation that is in accordance with NFPA 90A and UL 181. Foil faced insulation or double wall construction shall be provided if specified.

Blower, Motor and Drives

The entire blower and motor assembly shall be mounted on a common base with vibration isolators to prevent noise transmission.

The unit shall be provided with a forward curved, DWDI centrifugal blower that has been statically and dynamically tested. The fan shaft shall be ground and polished steel designed for a maximum operating speed not to exceed 75% of its first critical speed. Bearings are heavy duty and pre-lubricated.

V-belt drives are to be cast iron, sized for 150% of driven horsepower and are adjustable up to 10 HP.

(Single speed) (Two speed) motor in (ODP) (TEFC) enclosure shall be energy efficient, EPACT compliant, matched to the fan load and furnished at the specified voltage and phase. Motors shall be inverter duty rated and have class B insulation.

Electrical

All electrical components shall be UL listed, recognized or classified. (NEMA1 indoor) (NEMA3R outdoor) disconnect switch shall be mounted and wired to the motor if specified.

When specified, a motor control center shall include a main fusible disconnect switch, motor starter, fused control transformer with all necessary wiring completed in accordance with NEC and pre-wired for single point power and control connection to numbered terminal blocks.

Filters

Filters shall be provided in a (V-bank section) (flat filter rack in the intake hood) and shall be easily accessible. Velocities across the filters shall not exceed 500 FPM. (1" thick) (2" thick) (fiberglass throw-away) (aluminum cleanable) (30% efficient pleated) filters shall be provided. High efficiency filters with a pre-filter mounted in a flat bank in the filter section shall be provided if specified.

Intake Hood (Optional)

Intake hood shall be fully assembled and provided with (birdscreen) (moisture eliminators) (filters) at the intake. Extended intake with filters shall be provided when NFPA 96 requirements must be met.

Mounting (Optional)

The unit will be mounted on a factory supplied (roof curb and support rail) (full perimeter roof curb) (modular roof curb and support rail) (set of support rails).

The unit will be (ceiling hung) (mounted on a slab).

Outside Air Damper (Optional)

The unit shall be provided with a low leakage damper and a two position spring return actuator mounted directly to it. The damper shall be (factory mounted at the intake) (sent loose for field mounting at the discharge of the unit).

Return Air (Optional)

Return air section shall be provided with a damper and:

- Manual locking quadrants.
- Two position control (100%OA or 100%RA)
- Modulating control in response to DDC system.
- Modulating control with pressure controller.
- Modulating control with remote potentiometer.
- Modulating control with mixed air economizer.
- Modulating control with mixed air enthalpy control.

Variable Air Volume (Optional)

The unit shall be provided with a:

- Two speed, two-winding motor for 1/3 speed reduction.
- Two speed, one-winding motor for 1/2 speed reduction.
- Variable frequency drive (with controls by others) (with pressure controller) (with remote potentiometer).

Cooling Coil (Optional)

Chilled water or direct expansion cooling coil shall be built, tested and rated according to ARI 400. Sloped stainless steel drain pan with drain fitting shall extend 12 inches downstream of the coil. Construction shall consist of copper tubes and aluminum fins spaced from 8 to 12 FPI. Direct expansion coils shall have distributors and nozzles selected for the exact application.

Evaporative Cooling (Optional)

Evaporative cooling section shall contain 12" deep Munters CELdek (GLASdek) media for 90% efficiency. Self-cleaning corrosion resistant design with water distribution plumbing, recirculating pump, bleed off and float assembly. Freeze protection and automatic drain and fill kit shall be provided if specified.

Accessories

The unit shall be provided with the following accessories:

- Remote control panel
- Occupied/Unoccupied mode
- Low temperature limit (freezestat)
- Mild weather thermostat (inlet air sensor)
- Clogged Filter Switch with indicator light
- Convenience outlet
- Time delay relay
- Time clock (7-day)
- Smoke detector
- (3-way) (4-way) discharge head
- Floor rubber in shear isolators
- Floor spring isolators
- Hanger spring isolators
- High/low gas pressure switch
- High gas pressure regulator