AMBI-RAD
radiant heating systems

Ambi-Rad Limited

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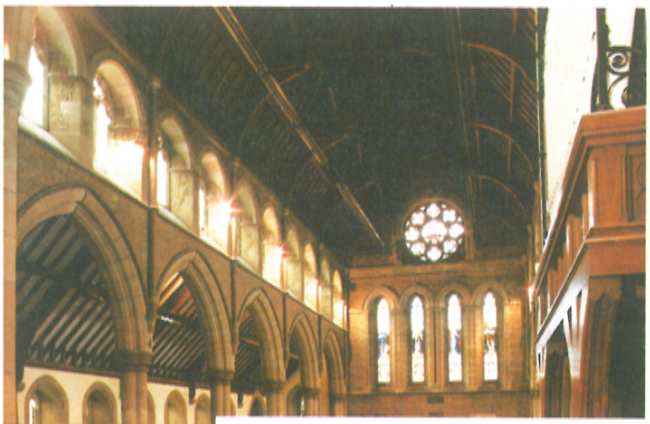
January 1987



GENERAL

Introduction Ambi-Rad manufacture a range of gas fired tubular radiant heaters for flued and unflued applications. The heaters are suitable for new and existing buildings such as factories, warehouses, garages, sports halls, supermarkets, shopping malls, churches etc where conservation of energy and improved comfort conditions are required. The heaters are generally installed overhead from 10 ft upwards but can also be suspended above false ceilings behind aluminium grille registers to match concealed lighting systems.

Authority All safety controls are tested and approved by British Gas plc.

Description Ambi-Rad heaters consist of single or twin parallel radiant emitter tubes positioned below a highly polished stainless steel reflector. A gas burner with fully automatic control fires into the mouth of the radiant tube and the hot gases are drawn through the tube by a vacuum fan. The vacuum fan incorporates thermal overload motor protection and is constantly monitored by the self checking vacuum proving circuit in the combustion chamber of the burner assembly. Each burner assembly incorporates full flame monitoring and safety interlocks to meet British Gas requirements.
The heater units may be hung from the roof or inclined and mounted on a wall.
The ER range of 'U' tube and linear heaters can be installed without flues or with individual flues. Where a collectively flued

system is required the HB model heaters are used. This 'Herringbone' heating system is specifically designed by Ambi-Rad to suit the buildings' design criteria.
The Ambi-Rad heating may be controlled by time switches, room thermostats and/or by manual control or alternatively by an Ambi-Rad control panel supplied either from the company's standard range or specially built.

The Ambi-Rad range consists of:

ER22 Mid-range Suitable for the heating of most industrial and commercial buildings. Each unit can cover a floor area of 70 to 100m² and units can be mounted as low as 3·6 m or as high as 18 m when required. Burner controls are totally enclosed ensuring that all components remain clean and dust free. Ignition is by electronic programme start up with spark ignition.

ER13 Compact Designed for modern well insulated factories with lower heat requirements, and for low roofed buildings where the units can be installed as low as 3 m above the ground. Burner arrangement and ignition as for ER22.

ER38 High-Bay This unit is intended for the higher industrial building and for areas of high heat loss. It has a stainless steel first pass emitter tube to cope with higher temperatures. The heater combines large heat output with compact dimensions and light weight for ease of installation and minimal roof loadings. Burner arrangement and ignition as for ER22.

HB22 Herringbone This system incorporates up to 10 linear heater units, each rated at 22 kW input and with its own burner and control. All units are linked together through a lightweight aluminium manifold into a single suction fan. This system is especially useful in buildings where flueing is essential, since only one flue is required for each set of 10 heater units.

AR22 (Low Noise) Heater Specially designed for use in applications where environmental requirements dictate a minimal noise level such as leisure centres, retail outlets, churches etc. The burner assembly is neat in appearance and has a hinged cover to give access to the enclosed burner controls. Ignition is by electronic programme start up with spark ignition. Heat input range: 13–38 kW

Control Panels The Ambi-Rad standard range of control panels is available in 20 models and designed to control heaters in one or 20 zones. Each zone thermostat controls up to 12 heaters. The control panels are manufactured from zinc plated steel sheet epoxy resin powder coated for durability and have a lockable hinged door. The door incorporates a tough transparent panel to give clear vision of all controls and indicator lamps; when locked such controls are protected from unauthorised adjustment.
Each panel incorporates Ambi-Rad black bulb thermostats, one per zone with sensor(s) supplied loose, one digital time switch, one mode switch, indicator lamps for mains on, time switch on, heaters on and an output fuse.
Panels for low voltage signalling to local relay units are also available. Their particular benefit is in the reduction in wiring costs, because long runs of mains voltage wiring is replaced by light guage low voltage signal wire. Purpose made control panels with zone temperature LED display, run-on timers, hour run meters etc can be supplied to specific heating design requirements.

Temperature Control The Ambi-Rad black bulb thermostat monitors the combined effects of air temperature, mean radiant temperature, and air velocity, thus controlling the system to provide the selected constant level of environmental warmth.

DIMENSIONS

Model				ER22	ER13	ER38	HB22
Gas	Pipe size (in BSP male)			¾	⅜	½	½
	Pressure (mbar)	Natural gas	Min	13	13	16·5	13
			Max	40	40	50	40
		Propane	Min	30	30	30	30
			Max	50	40	50	50
Total installed weight (kg)				92	56	101	–
Weight of heater unit (kg)				–	–	–	89
Weight of fan (kg)				–	–	–	10·5
Length including burner (m)				5·265	3·47	5·895	8·15 per unit
Mounting height	Horizontal, min (m)			3·6	3·0	4·25	3·6
	Inclined/wall mounted, min (m)			3·0	2·7	3·6	3·0
Exhaust flue diameter (mm)				125	100	125	150

PERFORMANCE

Model	ER22	ER13	ER38	HB22
Heat input per unit (kW)	22	13	38	22
Combustion efficiency (%)	80·84	80·84	80·84	84·90

SITEWORK

Each requires a natural or LP gas supply and an electrical power supply of 240 v single phase 50 Hz or 440 V 3 phase 50 Hz for the Herringbone system. Ventilation must be provided to meet Building Regulations section M9 and BS 5440 Pt 2 if flueless heaters are installed. For flued installations, proprietary twin wall metal flue to BS 815 is recommended with maximum length 9 m. Where a fresh air ducted inlet is required for combustion air, maximum length is 7 m.

MAINTENANCE

Under normal working conditions it is recommended that the Ambi-Rad heater is serviced once per year. A service maintenance contract is available from Ambi-Rad service department.

ECONOMICS

Operating costs are generally found to be 25–60 per cent lower than for a conventional boiler/warm air heating system. The higher savings are achieved with decentralisation of boiler plant. Installation costs are comparable with warm air ducted systems but much less than a central boiler plant.

SUPPLY

Available from Ambi-Rad or Thermaradiant Systems Ltd of Stockport or from heating contractors throughout the UK and approved agents overseas.

SERVICES

Technical Ambi-Rad offer preliminary project investigations to completion and a full design service where required. For further technical literature, transfer drawings or information please contact Mr M W Cheeseman at head office or Mr D Evans, London office.

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