CI/SfB 56.83 X

AMBIRAD

ENERGY EFFICIENT HEATING SYSTEMS

Centurion

Gas & oil fired
cabinet heaters

An Ambi-Rad Group company

Qualified for Energy Technology List
www.eca.gov.uk

Introduction

The Ambi-Rad free standing range of cabinet warm air heaters combine innovative design techniques and proven heat exchanger technology, to produce units that are cost effective, efficient and aesthetically pleasing.

A range of model sizes cover heat outputs from 30kW to 270kW.

Centurion benefits

- Increased airflows reduce stratification in the roof space (high efficiency models).
- Proven reliability – heat exchanger tubes are expanded into collection boxes, eliminating the possibility of weld failure.
- Comfortable temperatures can be maintained in larger areas – all models have effective air throws thereby enabling improved distribution of heat.
- Simple installation units are supplied with an electronic time and temperature control.
- High efficiency models are eligible for Enhanced Capital Allowances.

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This symbol verifies that the product was independently assessed and qualifies for the ECA scheme, an upfront tax relief enabling businesses that invest in energy-saving equipment to claim 100% first-year capital allowances against their taxable profits.

Features

- Natural gas, propane or oil fired.
- Four pass heat transfer for improved thermal efficiency.
- Combustion chamber/heat exchanger assembly is flexibly mounted to allow for thermal expansion.
- Double skin pentapost construction incorporating air cooled heat shield.
- Freeblowing or ducted air distribution.
- Choice of free standing vertical or horizontal units.

Options

- Inlet duct connections.
- Combustion air adaptors.
- Stainless steel heat exchangers.
- Increased fan duty.
- V bank filters.
- Flat on air filters.

Specification and technical data

Heat exchanger construction

The combustion chamber, manufactured from high quality heat resisting stainless steel, has a large surface area and volume to avoid localised hot spots ensuring long life. A tubular cross flow heat exchanger provides excellent fuel economy and the heat exchanger tubes are expanded into the collection boxes thereby eliminating the possibility of weld failure.

The complete assembly is mounted to allow for expansion counteracting the effect of thermal stress.

Air handling

Double inlet high efficiency centrifugal fans circulate air across all the heated surfaces to give low surface temperatures and maximise efficiency. Fans on models 100 to 300 (standard efficiency) and 30 to 75 (high efficiency) are direct driven using a single phase motor. All other models are driven by a heavy duty three phase motor and v-belt system. Air discharge is via nozzle outlets or a four way louvred head. Alternatively units may be installed with a fully ducted distribution system.

Cabinets

The cabinets are constructed using a full pentapost frame and panels with an inner galvanised steel skin. All panels are easily removed for servicing.

Units are finished in a durable two tone powder paint. Four mounting feet are incorporated into the cabinet, to ease on site handling. After location these feet may be removed or left in position to raise the air inlet away from the floor to minimise ingress of dust. Horizontal cabinets are supplied with six mounting feet for plant room applications.

Fuel

Heaters are available to operate on either natural gas (G20), propane (G31), 28 or 35 sec oil. See technical data table for availability.

Gas fired units are fitted with a fully automatic forced draught burner complete with full safety controls. The heaters are tested and approved to the relevant CE standards.

Oil fired models are supplied complete with a fully automatic forced draught pressure jet oil burner complete with safety controls and matched to each heater for optimum flame shape and efficiency.

Controls

A combined fan and limit thermostat is fitted on all heaters which delays fan start until the heat exchanger has reached operating temperature and continues to run until after the burner switches off and the remaining heat is dissipated. In the event of overheating the unit would automatically be shut down by the limit thermostat.

On vertical models an electronic time and temperature controller may be either pre-wired to the heater or supplied as a remote panel. Horizontal models are supplied with remote panels.

Standard efficiency cabinet heaters

Model VCH/HCH*		100	150	200	300	400	500	600	700	800	1000
Nominal output	kW	31	44	62	87	119	149	178	205	233	270
Gas rate											
Natural gas G20	m^3/h	3.63	5.45	7.34	10.87	14.52	18.15	21.78	25.41	29.16	33.76
Propane G31	kg/h	2.7	n/a	5.4	8.2	10.9	n/a	16.3	n/a		
Minimum inlet pressure											
Natural gas G20	mbar	17.5									
Propane G31	mbar	25.0	n/a	25.0			n/a	25.0	n/a		
Gas connection size[1]	Rc	1/2		3/4					1 1/4		
Oil consumption											
35s Oil	l/h	3.5	5.2	6.9	10.4	13.9	17.4	20.9	24.5	27.9	32.0
28s Kerosene	l/h	3.8	5.7	7.6	11.3	n/a					
Oil connection size	Rc	3/8									
Airflow @ 15°C	m^3/h	2500	2500	5180	5180	7140	8750	10500	12800	14100	17330
Temperature rise	°K	36	52	34	50	49	50	50	47	49	49
Approximate throw	m	18	18	21	21	20	25	25	30	25	30
Number of nozzles		2		3		4					
Available static pressure[2]	Pa	95	95	130	130	125	150	200	250	160	250
Electrical supply		230/240 volt ~ 1N 50Hz				400/415 volt 3N ~ 50Hz					
Main fan motor	kW	0.55	0.55	0.74	0.74	1.5	2.2	3.0	4.0	4.0	5.5
Burner motor	W	70				90			250		
Running current	amps	3.4	3.4	6.6	6.6	2.3	3.7	5.5	8.3	7.0	12.0
Noise level @ 5 metres[3]	dB(A)	52	52	53	53	59	61	61	65	63	67
Approximate weight[4]	kg	206	206	245	245	306	318	328	369	409	429
Flue diameter	mm	125		150		178			223		
Minimum flue height	m	2									
Maximum recommended mounting height											
(horizontal units)[5]	m	3		4		5					

* VCH for vertical cabinet heaters. HCH for horizontal cabinet heaters. Add suffix 'N' for natural gas, 'O' for oil fired, 'P' for propane and 'ND', 'PD' or 'OD' for ducted outlet.

High efficiency cabinet heaters

Model VCHE/HCHE*		30	40	50	60	75	90	120	140	180	215	250
Nominal output	kW	30	40	52	63	75	89	119	140	178	217	248
Efficiency on net CV	%	92.1	91	92	91.4	91.4	91.3	91.1	91.6	91.8	91.7	92.3
Gas rate												
Natural gas G20	m^3/h	3.49	4.98	5.94	6.95	8.69	10.36	13.86	16.19	20.55	25	28.51
Propane G31	kg/h	2.61	3.73	4.44	5.21	6.51	7.76	10.38	12.12	15.39	18.71	21.34
Minimum inlet pressure natural gas	mbar	17.5										
Gas connection size[1]	Rc	1/2			3/4						1 1/4	
Oil consumption												
35s Oil	l/h	3.4	4.8	5.7	7	8.4	10	13.4	15.7	19.9	24.2	27.6
Oil connection size	Rc	3/8										
Airflow @ 15°C	m^3/h	2500	2500	5180	5180	5180	7140	8750	10500	12800	14100	17330
Temperature rise	°K	36	50	29	36	42	37	40	39	41	45	42
Approximate throw	m	18	18	21	21	21	21	25	25	30	26	31
Number of nozzles		2		3			4					
Available outlet press ducted	Pa	95	95	130	130	130	125	150	200	250	160	250
Electrical supply		230/240 volt ~ 1N 50Hz					400/415 volt 3N ~ 50Hz					
Main fan motor	kW	0.55	0.55	0.74	0.74	0.74	1.5	2.2	3	4	4	5.5
Burner motor	W	70					90				250	
Running current	amps	3.4	3.4	6.6	6.6	6.6	2.3	3.7	5.5	8.3	7	12
Noise level @ 5 metres[3]	dB(A)	52	52	53	53	53	59	61	61	65	63	67
High air flow option*	m^3/h	n/a					8750	n/a	12800	n/a	17330	n/a
Static pressure with high airflow	Pa	n/a					150	n/a	95	n/a	250	n/a
Temperature rise with high airflow	°K	n/a					30	n/a	32	n/a	37	n/a
Airflow	m^3/h	n/a					7140	n/a	10500	n/a	14100	n/a
Increased static pressure*	Pa	n/a					205	n/a	350	n/a	330	n/a
Temperature rise with												
increased static pressure	°K	n/a					37	n/a	39	n/a	45	n/a
Approximate weight[4]	kg	190	190	225	225	225	280	292	300	320	360	380
Flue diameter	mm	125	125	150	178	178	178	178	178	223	223	223
Minimum flue height	m	2										
Maximum recommended mounting height												
(horizontal units)[5]	m	3		5			6					

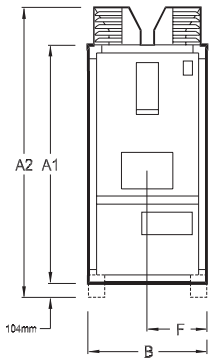
* Increased static pressure is **not** available for high airflow option. VCHE for vertical high efficiency cabinet heaters. HCHE for horizontal cabinet heaters. Add suffix 'N' for natural gas, 'O' for oil fired and 'ND' or 'OD' for ducted outlet.

[1] Not supply line size. [2] For alternative airflows or static pressure consult Ambi-Rad. [3] Typical factory application.

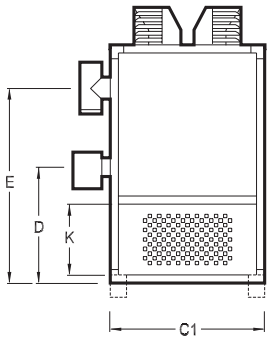
[4] Includes unit and nozzles. [5] Consult Ambi-Rad for higher mounting applications.

Dimensions

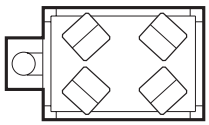
VCH

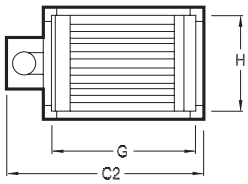


FRONT VIEW



SIDE VIEW


TOP VIEW - NOZZLE OUTLET



TOP VIEW - DUCT OUTLET

Models
100/150, 30/40
c/w 2 nozzles

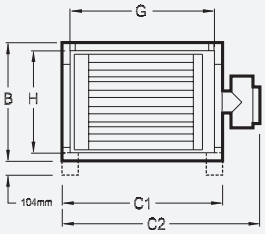
Models
200/300, 50/60/75
c/w 3 nozzles

Models
400–1000, 90–250
c/w 4 nozzles

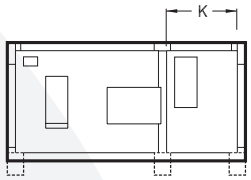
Model	100/150 30/40	200/300 50/60/75	400/500 90/120	600/700 140/180	800/1000 215/250
A1 Cabinet height	1804	1804	2012	2073	2012
A2 Overall height	2088	2168	2376	2477	2466
B Overall width	865	865	795	1186	1186
C1 Cabinet depth	613	859	1158	1305	1504
C2 Overall depth	908	1207	1547	1915	2114
D Bottom to burner centre	1007	1019	1041	1184	1112
E Bottom to flue centre	1441	1465	1637	1750	1678
F Side to burner centre	433	433	398	593	593
G Duct outlet depth/side duct inlet depth	513	759	1058	1205	1404
H Duct outlet width/rear duct inlet width	765	765	695	1086	1086
K Duct inlet height	445	516	600	711	600

All dimensions are in millimetres.

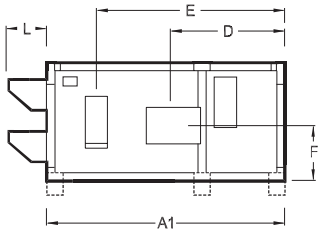
HCH



DUCT OUTLET VIEW
HORIZONTAL UNIT



SIDE VIEW - DUCT OUTLET



SIDE VIEW - NOZZLE OUTLET

Model	100/150 30/40	200/300 50/60/75	400/500 90/120	600/700 140/180	800/1000 215/250
A1 Cabinet width	1804	1804	2012	2073	2012
B Overall height	865	865	795	1186	1186
C1 Cabinet depth	613	859	1158	1305	1504
C2 Overall depth	908	1207	1547	1915	2114
D Side to burner centre	1007	1019	1041	1184	1112
E Side to flue centre	1441	1465	1637	1750	1678
F Bottom to burner centre	433	433	398	593	593
G Duct outlet depth/top duct inlet depth	513	759	1058	1205	1404
H Duct outlet height/rear duct inlet height	765	765	695	1086	1086
K Top duct inlet width	445	516	600	711	600
L Horizontal nozzle outlet width	315	315	315	370	370

All dimensions are in millimetres.

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