



# BENSON

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## Variante

Gas Fired Unit Heaters

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**AMBIRAD**  
HEATING AND VENTILATION SOLUTIONS





VRA horizontal discharge unit

# Variante

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## Gas Fired Unit Heaters

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The compact highly efficient Variante heaters provide cost effective heating for most commercial and industrial buildings, such as showrooms, factories, workshops, warehouses and greenhouses.

Using wall or roof mountings, the heaters are available for either room sealed or conventional power flue applications.

### Model Range

There are four Variante ranges:

- > VRA axial fan
- > VRBD bi-directional
- > VRC centrifugal fan
- > VRE downflow axial fan

The Variante gas fired units are available with ten heat outputs ranging from 12kW-144kW for use on natural gas (G20), or propane (G31).

### Options

- > Top mounted spigots (VRA)
- > High/Low gas value
- > 0 - 10v burner modulation
- > Downflow heads
- > Mixing box c/w dampers
- > Wall brackets
- > Stainless steel heat exchanger
- > Air rotation thermostat

## Specification

### Cabinet

Low profile in design and robotically punched and formed from electro-zinc plated steel the heater cabinet presents a functional yet pleasing appearance. Access to the burner and controls compartment is via a full width side hinged door. The unit is stove hardened epoxy powder coated with a durable Pebble Grey paint finish.

### Heat Exchanger

Formed from aluminised steel tube into a compact, highly efficient four pass 'S' shaped assembly the Variante heat exchanger is capable of delivering efficiencies in excess of 91% nett.

Stainless steel heat exchanger tubes are available as an option.

### Burner

Variante heaters are fitted with a quiet multi-flame, in-shot burner complete with automatic electronic spark ignition and ionisation flame proving. On/off control is standard, optional high/low or modulation can be specified for greater energy efficiency and close environmental control.

## Air Distribution

VRA heaters are fitted with high efficiency axial fans and discharge warm air through an outlet grille complete with adjustable horizontal louvres.

VRBD heaters discharge warm air in two opposing directions potentially enhancing distribution whilst reducing capital and installation costs for certain applications.

VRE heaters are downward discharging units that can provide both heating and de-stratification.

VRC heaters are designed for ducted applications and are fitted with a centrifugal fan(s) and have a duct spigot outlet. Louvres and downflow can be supplied as an option.



VRC complete with centrifugal fan and duct spigot outlet for use with ductwork



VRE downflow discharge unit



VRBD bi-directional unit

## Electric Motors

All electric motors comply with EC motor directive 2005/32/EC

## Efficiency

Each heater within the range has been designed and developed with fuel efficiency in mind and efficiencies exceed the mandatory requirements of CE legislation.

## Fuel

Heaters can be specified to operate on either natural gas (G20) or LPG (Propane G31).

## Sealed Combustion Circuit

Variante heaters are factory fitted with a power flue venter that enables the heater to be operated in either room sealed or fan assisted flue mode. The flue fan is safety interlocked with the burner control system via a pressure differential sensor.

## Air Distribution

The VRA, VRE and VRBD models are fitted with a dynamically balanced aerofoil type axial fan(s) which discharges warmth directly into the space via adjustable horizontal louvres. Heaters for ducted applications, type VRC, are supplied with a centrifugal fan and outlet duct connection spigot.



## Additional Control at the Touch of a Button

To complement the high efficiency Variante units a versatile range of SmartCom control panels are available.

- > Self adapting optimum start and stop
- > Simple user friendly programming
- > Individual seven day programming
- > Day, night and frost (5°C) temperature settings
- > Three on/off periods per day
- > Remote burner reset facility
- > Password protection to prevent unauthorised adjustment
- > Hours run and service data logging
- > Battery back up in the event of mains failure
- > High Low or modulating burner control (SmartCom Multi-Zone required)

## SmartCom Multi-Zone

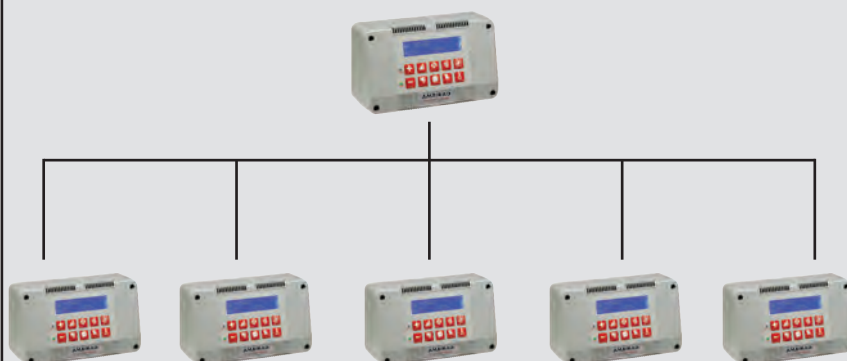
SmartCom Multi-Zone controls allow up to 16 units to be centrally controlled. Functions controlled by the master unit include:

- > Clocking updating
- > Updating temperature functions and programme settings
- > Viewing the room and set temperature settings of all units
- > Setting holiday, overtime and vent only functions for the entire network
- > Centralised burner lock out reset



## Multi-Zone System

### Zone 1 Master Control



Up to 15 additional zone controls

Technical Data		Model Ref									
		12	20	30	42	50	60	72	95	120	145
Nominal heat output	kW	12	20	29	39	49	59	72	96	120	144
Airflow	m <sup>3</sup> /h	1116	1980	2844	3456	4356	5544	6840	8136	11088	13608
Temperature rise	K	32	30	31	34	33	31	32	34	32	32
Static pressure (VRC)	Pa	100	125	100	150	150	180	150	180	200	200
<b>Throw</b>											
VRA	m	8	15	18	20	23	27	31	32	38	39
VRE (Downflow)	m	4.5	5.5	6.0	7.0	8.0	12.0	8.0	10.0	12.0	12.0
VRBD (Total)	m	n/a	n/a	n/a	n/a	n/a	n/a	62	64	76	78
<b>Gas Consumption</b>											
Natural gas G20	m <sup>3</sup> /h	1.37	2.23	3.38	4.50	5.63	6.76	8.33	11.12	13.87	16.63
Propane G31	m <sup>3</sup> /h	0.52	0.86	1.30	1.73	2.16	2.59	3.21	4.28	5.34	6.41
Gas connection	Rc	½"	½"	½"	½"	½"	½"	¾"	¾"	¾"	¾"
<b>Electrics</b>											
Supply											
VRA / VRE / VRBD	V/ph/hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
VRC	V/ph/hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	415/3/50	415/3/50
FLC											
VRA / VRE / VRBD	amps	0.4	0.7	0.8	1.2	1.6	2.7	2.8	4.2	4.8	5.8
VRC (standard motor)	amps	2.0	2.0	2.0	6.0	8.0	8.0	9.0	12.0	6.0	6.0
<b>Mounting height(s)</b>											
VRA / VRC	m	1.8 - 2.5	1.8 - 2.5	2.0 - 3.2	2.0 - 3.2	2.4 - 4.0	2.4 - 4.0	2.4 - 5.0	2.4 - 5.0	2.4 - 5.0	2.4 - 5.0
VRE (Downflow)	m	3.5 - 4.5	4.0 - 5.5	4.0 - 6.0	4.0 - 7.0	5.0 - 8.0	5.0 - 12.0	5.0 - 8.0	6.0 - 10.0	6.0 - 12.0	6.0 - 12.0
VRBD	m	n/a	n/a	n/a	n/a	n/a	n/a	2.4 - 5.0	2.4 - 5.0	2.4 - 5.0	2.4 - 5.0
Flue diameter nom	mmø	80	80	100	100	100	100	130	130	130	130
Combustion air diameter nom	mmø	80	80	100	100	100	100	130	130	130	130
Maximum horizontal run	m	3.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	8.0	8.0
Maximum vertical run	m	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
<b>Noise level (approx @ 3m)</b>											
VRA / VRC	dB(A)	53	55	57	58	61	65	61	63	66	66
VRE / VRBD	dB(A)	57	59	61	62	65	68	66	69	74	78
<b>Net weight</b>											
VRA	kg	71	76	90	104	120	138	181	203	242	279
VRC	kg	82	87	108	126	142	160	216	238	281	323
VRBD / VRE	kg	73	79	93	107	124	142	189	211	250	287

Throw figures provide the distance to the point where average air velocity is 0.25 m/s.

Throw figures for VRE heaters are based upon the effective maximum mounting height.

Throw figures for VRBD heaters are taken as the 'combined' bi-directional throw to the point where the average air velocity is 0.25 m/s.

Fuel consumption and output figures based upon gross calorific values as -

Natural gas (G20) @ 37.78 MJ/m<sup>3</sup>

Lpg propane (G31) @ 95.65 MJ/m<sup>3</sup>

Flue and combustion air maximum runs for guidance purposes only. Please refer to installation instructions for detailed information.

Consideration should be given to use of downflow heads for heaters installed at maximum height.

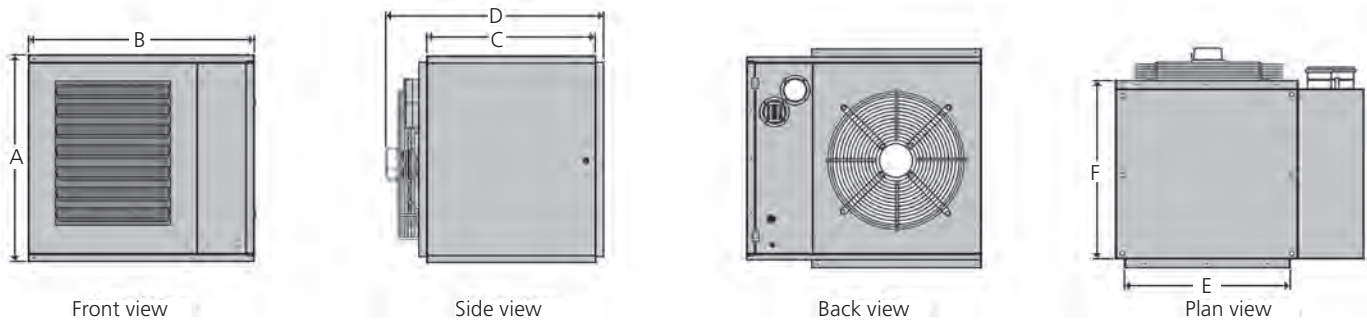
Maximum mounting heights may exceed the figure recommended where de-stratification fans are used (see Benson DS range)

Noise levels at 5m available upon request.

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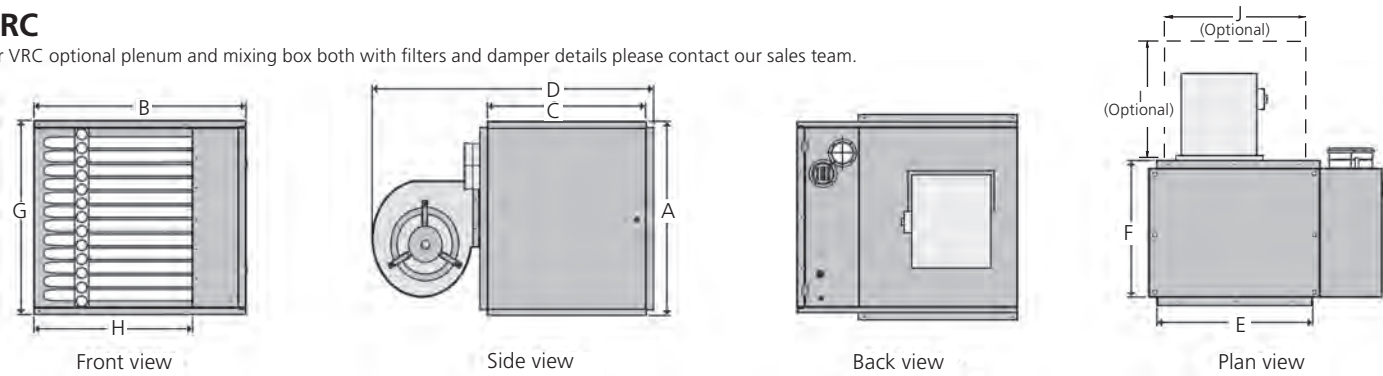
## Gas fired unit heaters

### VRA

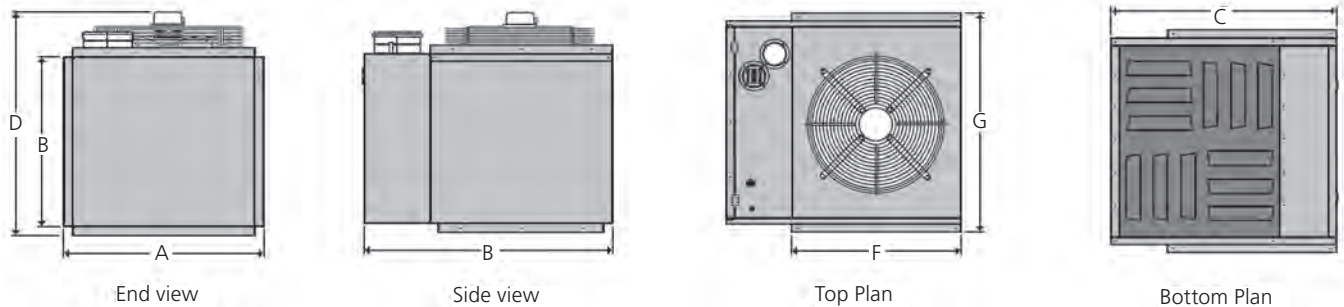


### VRC

For VRC optional plenum and mixing box both with filters and damper details please contact our sales team.



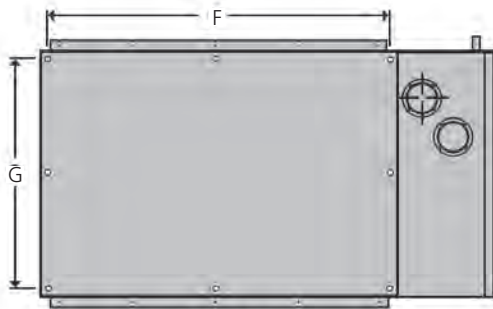
### VRE



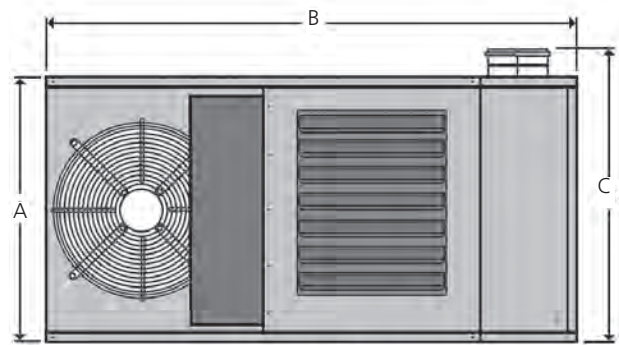
### Variante VRA / VRC / VRE Dimensions

		Model Ref									
		12	20	30	42	50	60	72	95	120	145
All models	A	440	440	545	650	910	910	650	800	980	1150
All models	B	1050	1050	1050	1050	1050	1050	1750	1750	1750	1750
All models	C	680	680	680	680	680	680	810	810	810	810
VRA/VRE	D	841	881	893	893	893	893	1023	1023	1023	1023
VRC	D	1134	1175	1175	1175	1246	1246	1305	1376	1625	1625
Suspension points (all models)	E	755	755	755	755	755	755	1365	1365	1365	1365
Suspension points (VRA/VRC)	F	640	640	640	640	640	640	770	770	770	770
Suspension points (VRE)	F	500	500	605	710	840	970	710	860	1040	1210
VRC	G	390	390	495	600	730	860	600	750	930	1100
VRC	H	729	729	729	729	729	729	1339	1339	1339	1339
VRC plenum box (optional)	I	700	800	800	800	800	800	900	900	1100	1100
VRC plenum box (optional)	J	795	795	795	795	795	1405	1405	1405	1405	1405
Top clearance (VRA/VRC)		300	300	300	300	300	300	300	300	300	300
Top clearance (VRE)		1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rear clearance (VRA)		300	350	400	500	500	560	560	560	560	630
Rear clearance (VRC)		200	200	200	200	200	200	200	200	200	200
Rear clearance (VRE)		300	300	300	300	300	300	300	300	300	300
Bottom clearance (VRA/VRC)		300	300	300	300	300	300	300	300	300	300
Bottom clearance (VRE)		3500	4000	4000	4000	5000	5000	5000	6000	6000	6000
Left-hand side clearance (All)		250	250	250	250	250	250	250	250	250	250
Right-hand side clearance (All)		800	800	800	800	800	800	950	950	950	950

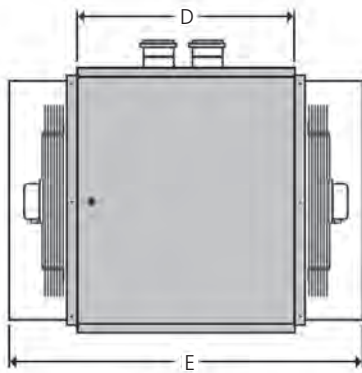
## VRBD



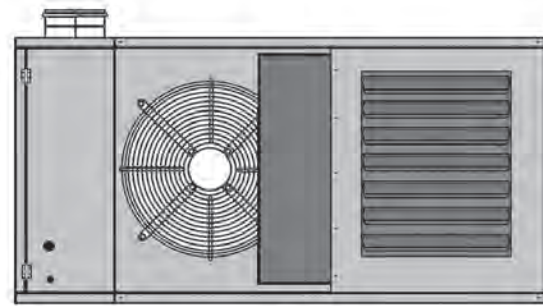
Plan view



Front view



Side view



Back view

### Variante VRBD Dimensions

		Model Ref			
		72	95	120	145
Unit height	A	650	800	980	1150
Unit length	B	1750	1750	1750	1750
Total height	C	750	900	1080	1250
Unit width	D	810	810	810	810
Total width	E	1321	1321	1321	1321
Suspension points	F	1365	1365	1365	1365
Suspension points	G	770	770	770	770
Flue and Combustion air collars	Ø	130	130	130	130
Top clearance		300	300	300	300
Bottom clearance		300	300	300	300
Left-hand side clearance		250	250	250	250
Right-hand side clearance		950	950	950	950

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