temperzone

RR 225

Technical Data

Ducted Reverse Cycle Packaged Air Conditioner

Including Higher Static Fan

Nominal Cooling Capacity

kW

6.4

DECEMBER 2000

RR 225 'ATTIC' DUCTED REVERSE CYCLE PACKAGED AIR CONDITIONER

GENERAL

The RR 225 'Attic' single phase packaged air conditioner provides indoor climate control and indoor comfort all year round.

APPLICATION

The RR 225 'Attic' unit has been specifically designed for the air conditioning of the home and small office. Utilisation of the heat pump system enables this unit to provide economical heating as well as cooling. Due to this unit's compactness, it can be installed within an attic space, through the end wall of a house (above the ceiling level), or in a basement.

FEATURES

Reverse Cycle. The RR 225's reverse cycle heat pump system supplies filtered air, warm or cool as required, to each room via concealed ducting.

Efficient. The efficiency of the reverse cycle heat pump system is universally accepted - the system having the ability to generate up to 3 kW of heating energy for every 1 kW of electrical energy consumed (up to 300% more efficient than the 1 kW for 1 kW performance of standard resistance coil electric heating). The energy savings realised during the heating cycles provide unmatched year round, season to season efficiency.

Multi-Zone. Where rooms do not require continuous air conditioning, the RR 225 can be 'multi-zoned' to air condition each area selectively by way of a damper (optional) on the supply side of the unit. The damper directs air to the zone with priority demand (e.g. alternating between day and night use areas).

Multi-Speed. The supply air fan motor speed can be selected to match the static pressure of the installation.

High Static Fan. The new high static centrifugal supply air fan can now be matched to longer length ducting or smaller diameter ducting configurations. Low static duct configurations can enable exceptionally quiet fan speed operation as low speed can then be selected.

Quiet. The unit has been designed to keep noise levels to a minimum so that normal day and night living conditions are not disturbed.

Quality. It is the manufacturer's policy and a proven economy to incorporate components and equipment of the highest quality to assure on-going client satisfaction and on-going low maintenance performance.

STANDARD EQUIPMENT

1. Compressor
2. Outdoor air coil
3. Indoor air coil
4. Fan motor - multi-speed
5. Propeller outdoor air fan - direct drive
6. Centrifugal indoor air fan - direct drive
7. Enclosed compressor compartment
8. Compressor crankcase heater
9. Reversing valve
10. Time/temperature electronic de-ice control
11. Control fuse and compressor contactor
12. Anti-rapid cycle timer
13. High pressure switch
14. Cabinet - galvanised steel
15. Drain tray - built-in, with stub
16. Spigots - supply and return

OPTIONAL EQUIPMENT

1. Low ambient 2 kW electric booster heater
2. Remote room thermostat

CABINET

Constructed from the highest grade galvanised steel. The built-in drain tray is polyester powder coated for protection against corrosion. The internal surfaces are lined with an acoustic insulating material.

A drip tray under the unit is recommended and a 19 mm I.D. drain is required also from this tray.

REFRIGERATION SYSTEM

The refrigeration system includes an indoor air coil, outdoor air coil and accurator expansion device. The system includes an outdoor electronic de-ice control for protection during the heating cycle.

Units are factory charged with 1.4 kg HCFC-22 (R22) refrigerant.

Outdoor Air Coil

Four row coil with 10 mm inner grooved copper tubes mechanically expanded into aluminium fins, 560 fins per metre.
Total Face Area 0.280 m^2.

Indoor Air Coil

Three row coil with 13 mm inner grooved copper tubes mechanically expanded into aluminium fins, 480 fins per metre.
Total Face Area 0.220 m^2.

Compressor

The compressor is of the fully hermetic type, suction gas cooled and two cylinder 2900 rpm direct drive. Its up to date design includes internal muffler and an internal overload protector built into the motor windings for accurate sensing of motor temperature.

The compressor internal overload protector provides full protection of the compressor motor.

The compressor is internally spring mounted and externally supported on spring/rubber mounts.

FANS

Fan Types

Outdoor - one propeller fan.
Indoor - one forward curve centrifugal fan.

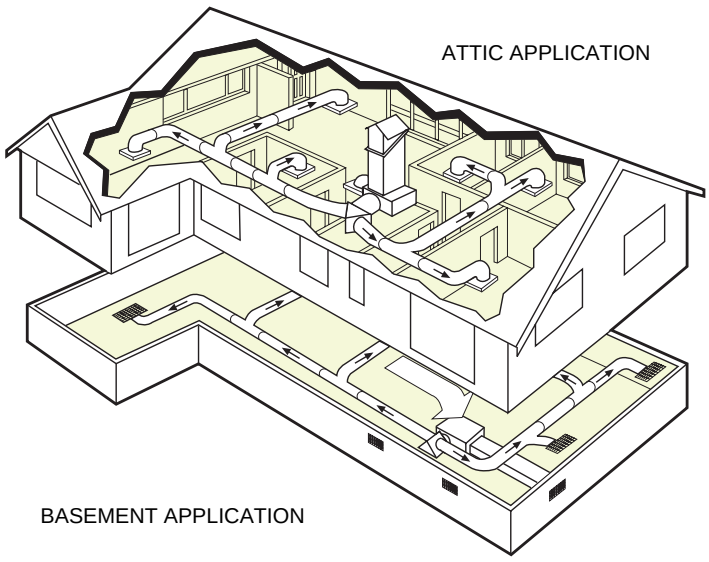
Fan Motor

The fan motor (common for both fans) is a multi-speed direct drive, single phase P.S.C. and is factory wired to medium speed.

WIRING

The control panel is wired ready to accept the mains. The standard electric supply required (including voltage fluctuation limits) is: 1 phase 200-252 V a.c. 50 Hz, with neutral and earth. Recommended fuse size is 25 amps H.R.C.

The manufacturer operates a quality management system that conforms to international standard ISO 9002.



PERFORMANCE DATA

COOLING CAPACITY

T = Total Capacity in kW, S = Sensible Capacity in kW
NOTE: Capacities are GROSS and do not include allowance for fan motor heat loss. Nominal capacity is circled.

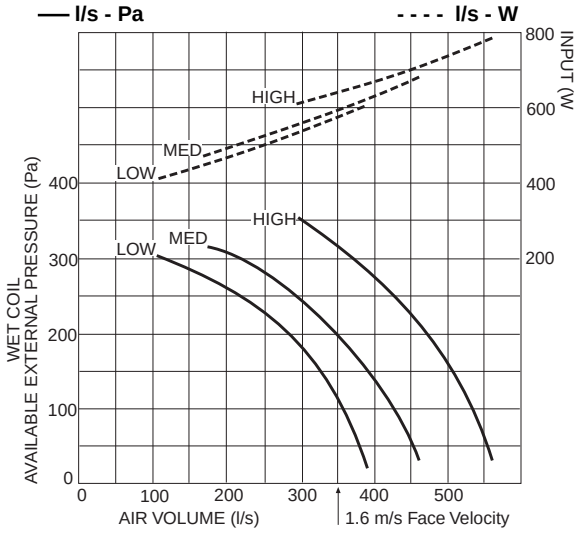
RR 225

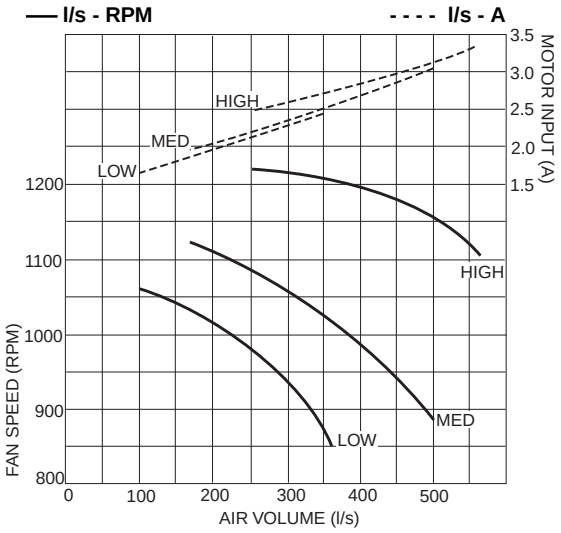
INDOOR COIL E.A.T.		OUTDOOR COIL ENTERING AIR TEMPERATURE (E.A.T.) °C D.B.																									
		24								27								30									
	W.B.°C	15		17		19		22		15		17		19		22		15		17		19		22			
AIR l/s	D.B. °C	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S		
250	21	5.7	4.1	6.1	3.5	6.4	2.9	—	—	5.6	4.1	5.9	3.5	6.3	2.8	—	—	5.5	4.0	5.8	3.4	6.2	2.8	—	—		
250	23	5.7	4.7	6.1	4.1	6.4	3.5	7.0	2.5	5.6	4.6	5.9	4.0	6.3	3.4	6.8	2.5	5.5	4.6	5.8	4.0	6.2	3.4	6.7	2.4		
250	25	5.7	5.3	6.1	4.7	6.4	4.0	7.0	3.1	5.6	5.2	5.9	4.6	6.3	4.0	6.8	3.0	5.5	5.2	5.8	4.5	6.2	3.9	6.7	3.0		
250	27	5.8	5.8	6.1	5.2	6.4	4.6	7.0	3.7	5.7	5.7	5.9	5.2	6.3	4.6	6.8	3.6	5.6	5.6	5.8	5.1	6.2	4.5	6.7	3.6		
250	29	6.0	6.0	6.1	5.8	6.4	5.2	7.0	4.2	5.9	5.9	5.9	5.7	6.3	5.1	6.8	4.2	5.8	5.8	5.8	5.7	6.2	5.1	6.7	4.1		
350	21	6.0	4.8	6.4	3.9	6.7	3.1	—	—	5.9	4.7	6.2	3.9	6.6	3.1	—	—	5.8	4.7	6.1	3.8	6.5	3.0	—	—		
350	23	6.0	5.6	6.4	4.7	6.7	3.9	7.3	2.6	5.9	5.5	6.2	4.7	6.6	3.8	7.2	2.6	5.8	5.4	6.1	4.6	6.5	3.8	7.0	2.5		
350	25	6.1	6.1	6.4	5.5	6.7	4.7	7.3	3.4	6.0	6.0	6.2	5.5	6.6	4.6	7.2	3.4	5.9	5.9	6.1	5.4	6.5	4.6	7.0	3.3		
350	27	6.3	6.3	6.4	6.3	6.7	5.5	7.3	4.2	6.2	6.2	6.2	6.2	6.6	5.4	7.2	4.1	6.1	6.1	6.1	6.1	6.5	5.4	7.0	4.1		
350	29	6.5	6.5	6.5	6.5	6.7	6.2	7.3	5.0	6.4	6.4	6.4	6.4	6.6	6.2	7.2	4.9	6.3	6.3	6.3	6.3	6.5	6.1	7.0	4.9		
450	21	6.2	5.4	6.6	4.4	7.0	3.3	—	—	6.1	5.3	6.4	4.3	6.8	3.3	—	—	6.0	5.3	6.3	4.3	6.7	3.2	—	—		
450	23	6.2	6.2	6.6	5.3	7.0	4.3	7.6	2.8	6.1	6.1	6.4	5.3	6.8	4.3	7.4	2.7	6.0	6.0	6.3	5.2	6.7	4.2	7.3	2.7		
450	25	6.4	6.4	6.6	6.3	7.0	5.3	7.6	3.7	6.3	6.3	6.4	6.3	6.8	5.2	7.4	3.7	6.2	6.2	6.3	6.2	6.7	5.2	7.3	3.6		
450	27	6.7	6.7	6.7	6.7	7.0	6.3	7.6	4.7	6.6	6.6	6.6	6.6	6.8	6.2	7.4	4.7	6.5	6.5	6.5	6.5	6.7	6.2	7.3	4.6		
450	29	6.9	6.9	6.9	6.9	6.9	6.9	7.6	5.7	6.8	6.8	6.8	6.8	6.8	6.8	7.4	5.6	6.7	6.7	6.7	6.7	6.7	6.7	7.3	5.6		

INDOOR COIL E.A.T.		OUTDOOR COIL ENTERING AIR TEMPERATURE (E.A.T.) °C D.B.																									
		35								40																	
	W.B.°C	15		17		19		22		15		17		19		22											
AIR l/s	D.B. °C	T	S	T	S	T	S	T	S	T	S	T	S	T	S	T	S										
250	21	5.3	3.9	5.6	3.3	5.9	2.7	—	—	5.1	3.8	5.4	3.2	5.7	2.6	—	—										
250	23	5.3	4.5	5.6	3.9	5.9	3.3	6.5	2.3	5.1	4.4	5.4	3.8	5.7	3.2	6.2	2.2										
250	25	5.3	5.1	5.6	4.5	5.9	3.8	6.5	2.9	5.1	5.0	5.4	4.4	5.7	3.8	6.2	2.8										
250	27	5.4	5.4	5.6	5.0	5.9	4.4	6.5	3.5	5.3	5.3	5.4	4.9	5.7	4.3	6.2	3.4										
250	29	5.6	5.6	5.6	5.6	5.9	5.0	6.5	4.0	5.5	5.5	5.5	5.5	5.7	4.9	6.2	4.0										
350	21	5.6	4.6	5.9	3.8	6.2	2.9	—	—	5.3	4.5	5.7	3.7	6.0	2.8	—	—										
350	23	5.6	5.4	5.9	4.5	6.2	3.7	6.8	2.5	5.3	5.3	5.7	4.4	6.0	3.6	6.5	2.4										
350	25	5.7	5.7	5.9	5.3	6.2	4.5	6.8	3.2	5.5	5.5	5.7	5.2	6.0	4.4	6.5	3.1										
350	27	5.9	5.9	5.9	5.9	6.2	5.3	6.8	4.0	5.7	5.7	5.7	5.7	6.0	5.2	6.5	3.9										
350	29	6.1	6.1	6.1	6.1	6.2	6.0	6.8	4.8	5.9	5.9	6.0	6.0	6.0	6.0	6.5	4.7										
450	21	5.7	5.2	6.1	4.2	6.4	3.1	—	—	5.5	5.1	5.8	4.1	6.2	3.1	—	—										
450	23	5.8	5.8	6.1	5.1	6.4	4.1	7.0	2.6	5.6	5.6	5.8	5.1	6.2	4.0	6.7	2.5										
450	25	6.0	6.0	6.0	6.0	6.4	5.1	7.0	3.6	5.8	5.8	5.8	5.8	6.2	5.0	6.7	3.5										
450	27	6.3	6.3	6.3	6.3	6.4	6.1	7.0	4.5	6.1	6.1	6.1	6.1	6.2	6.0	6.7	4.4										
450	29	6.5	6.5	6.5	6.5	6.5	6.5	7.0	5.5	6.3	6.3	6.3	6.3	6.3	6.3	6.7	5.4										

AIR HANDLING PERFORMANCE

Note: In a free blow or low resistance application, beware of exceeding fan motor's full load amp limit, i.e. 5.7 A.





HEATING CAPACITY

G = Gross Heating Capacity kW, based on 350 l/s air flow.
N = Net Heating Capacity kW allowing for average defrost.

RR 225

INDOOR COIL E.A.T. D.B. °C	OUTDOOR COIL E.A.T. D.B. °C																				
	-4		-2		0		2		4		6		8		10						
	G	N	G	N	G	N	G	N	G	N	G	N	G	N	G	N					
15	4.5	3.6	4.8	3.7	5.2	3.7	5.5	3.7	5.8	3.7	6.2	4.1	6.6	6.2	6.8	6.8					
20	4.4	3.5	4.7	3.6	5.0	3.6	5.4	3.6	5.7	3.6	6.1	4.0	6.5	6.0	6.7	6.7					
25	4.3	3.4	4.6	3.5	4.9	3.5	5.2	3.5	5.5	3.4	5.9	3.9	6.2	5.8	6.5	6.5					

VARIATIONS IN HEATING CAPACITY WITH INDOOR AIR FLOW

RR 225 based on 350 l/s	% Rated Air Flow	80 %	90 %	100 %
	Capacity Multiplier	0.986	0.993	1.000

SOUND LEVELS

Sound Power Levels (SWL)

Test Conditions: BS 848 PT2 1985. Installation Type A (free inlet and outlet). Direct method of measurement (reverberant room).

Measured, at **Supply Air Outlet**, in decibels re 1 picowatt.

FAN SPEED	AIR FLOW l/s	STATIC PRESSURE Pa	SWL dB(A)	OCTAVE BAND FREQ. Hz					
				125	250	500	1 k	2 k	4 k
				SOUND POWER LEVELS db					
HIGH	550	50	74	77	76	69	69	65	63
MED	450	50	67	70	68	65	62	59	56
LOW	370	50	62	67	64	60	56	53	49

Measured, at **Return Air Inlet**, in decibels re 1 picowatt.

FAN SPEED	AIR FLOW l/s	STATIC PRESSURE Pa	SWL dB(A)	OCTAVE BAND FREQ. Hz					
				125	250	500	1 k	2 k	4 k
				SOUND POWER LEVELS db					
HIGH	550	50	67	73	69	61	61	60	56
MED	450	50	63	68	64	57	56	56	50
LOW	370	50	57	63	59	54	51	49	43

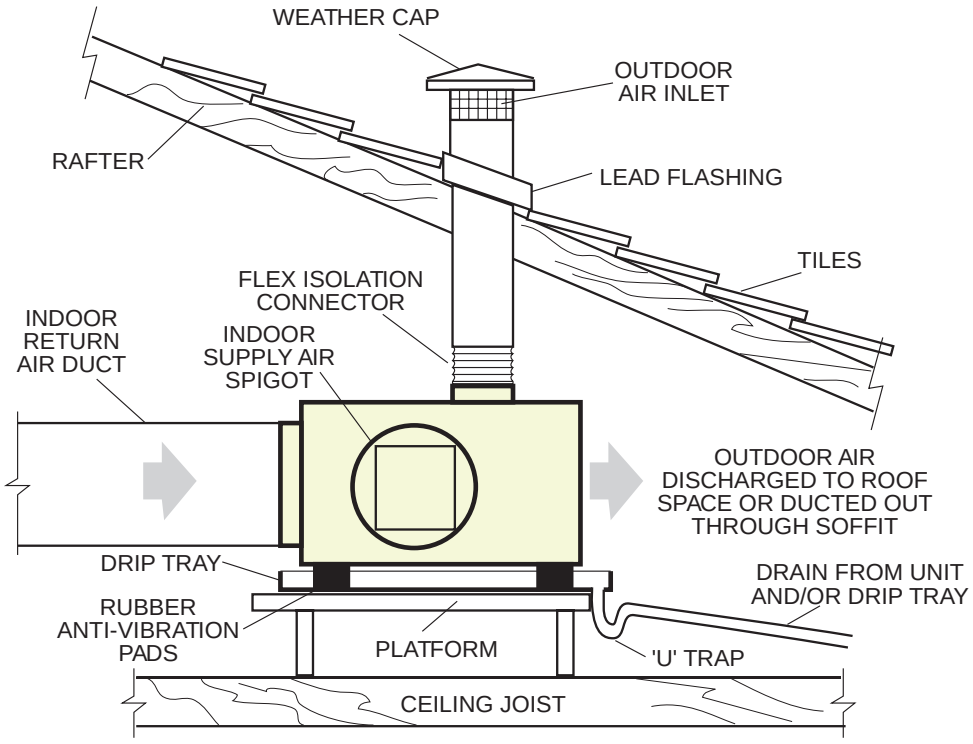
Case Breakout, measured in decibels re 1 picowatt.

FAN SPEED	AIR FLOW l/s	STATIC PRESSURE Pa	SWL dB(A)	OCTAVE BAND FREQ. Hz					
				125	250	500	1 k	2 k	4 k
				SOUND POWER LEVELS db					
HIGH	550	50	70	74	71	68	65	60	55
MED	450	50	63	68	64	62	57	55	49
LOW	370	50	59	65	61	57	52	52	46

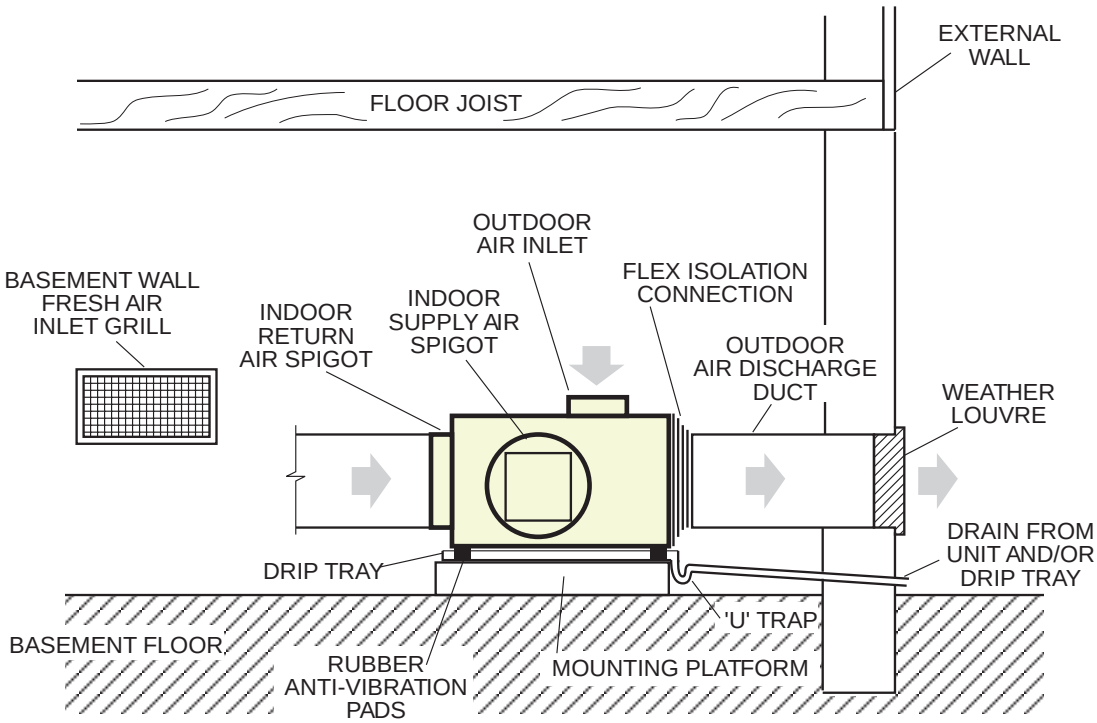
Sound Pressure Level (SPL)

At 1 metre from unducted fan outlet, Sound Pressure Level (SPL) will be SWL (from tables above) +2 db(A) for hard conditions and -4 db(A) for softer furnished conditions.

Attic Application



Basement Application

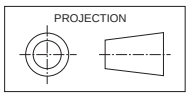


DIMENSIONS (mm)

RR 225

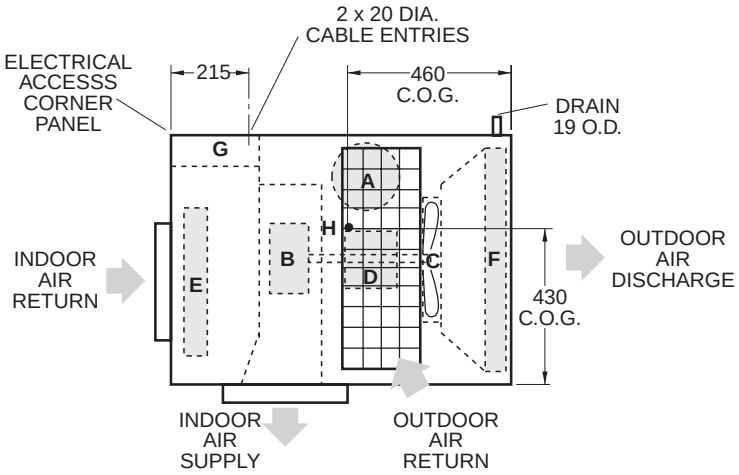
Key :

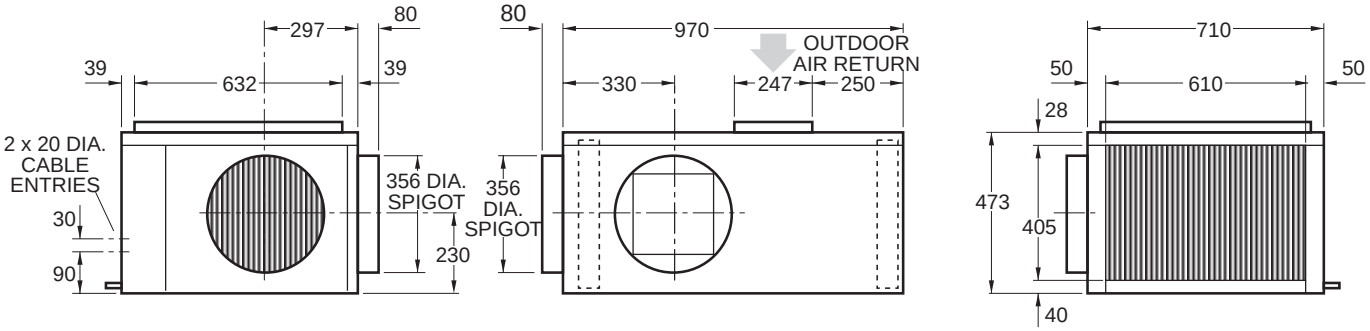
A Compressor
B Indoor centrifugal fan
C Outdoor propeller fan
D Fan motor for **B** and **C**
E Indoor air coil
F Outdoor air coil
G Electrical terminals
H Centre of gravity (C.O.G.)



Not to Scale

RR 225 Net Weight 99 kg
Shipping Weight 115 kg





NOTE
The manufacturer reserves the right to change specifications at any time without notice or obligation. Certified dimensions available on request.

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