

LENNOX

GS4-120 SINGLE PACKAGE OUTDOOR HEATING & VENTILATING UNIT

Horizontal and Down-flow Gas-fired heating output 95 kW

UK Edition

HEATING

Outdoor

April 1988

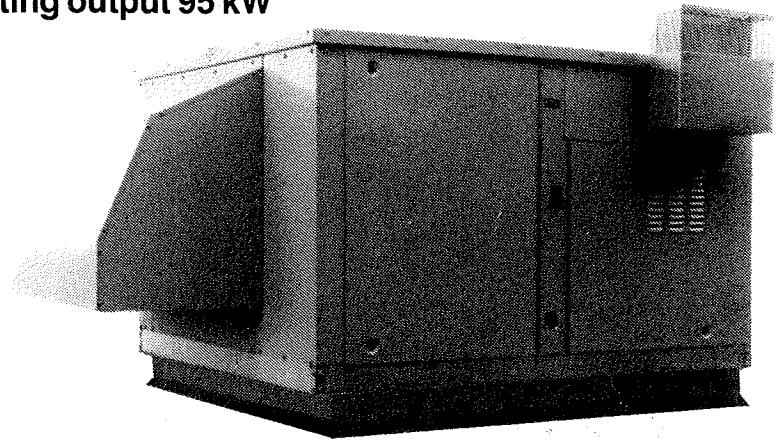
Optional equipment

Roof mounting frame.
Combination ceiling supply and return step-down diffuser.
Combination ceiling supply and return flush diffuser.
Supply and return transitions for diffusers.
Time switches.
Night set-back control.
Low pressure hot water coil.
Lp gas conversion kit.

Single package outdoor unit and mounting frame saves installation costs and floor space

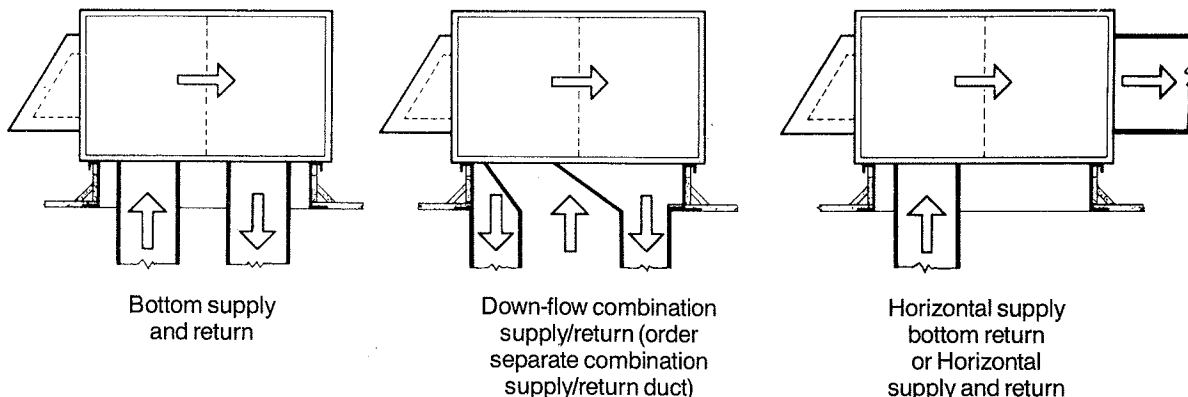
A highly efficient tubular heat exchanger, powerful belt drive blowers, air filters and Fresh Air Damper Kit are all housed in a double-skin insulated weatherproof cabinet. The Fresh Air Damper is factory fitted with all its internal controls wired, and can be set to utilized up to 100% outside air for ventilation.

An optional roof mounting frame mates to the unit base and when flashed into the roof, permits weatherproof duct connection and entry into the area to be heated and ventilated. No additional roof curbing or flashing is required — the RMF frame does the entire job. For retrofit installations for GS3-150 units, use same RMF.



The unit is designed for rooftop installation utilising underside duct connections, slab installation utilising end openings, or inside installation with the appropriate flue system. Three air distribution patterns are possible with the same unit, down-flow (dual duct or combination supply/return), horizontal supply and return, bottom supply/horizontal return or horizontal supply/bottom return.

An externally mounted fully modulating fresh air intake is standard. For units with horizontal return the fresh air intake is site installed in return duct.

Supply and return air patterns**SPECIFICATIONS**

Unit number	GS4-120	WS4-120
Heating capacity (input) kW	1st stage 70.0 2nd stage 117.0	N/A
Heating capacity (output) kW	1st stage 57.0 2nd stage 95.0	Minimum 71.8 Maximum 167.0
Blower wheels (number) — diameter x width	(2) 381mm x 279mm	
Blower motor drives (see drive selection table on page 3)	1.1 kW, 2.2 kW or 3.0 kW	
Filters (number) size	(6) 560 x 560 x 25mm	
Entering gas pressure (high fire) LPG Pilot	6.0 mbar (2.4 in wc) 26.75 mbar (10.7 in wc) 10.0 mbar (4.0 in wc)	N/A
Pipe connection size (in)	Natural gas 1 1/4	1 1/2
LPG conversion kit reference	LB-48737 CA	N/A
Net basic weight of unit (kg)	696	670
Roof mounting frame (weight kg)		RMF4-120 (52)
Supply and return air transitions for use with RTD & FD diffusers (kg)		SRT4-185 (32) SRT4-275 (36)
Step-down combined ceiling supply and return diffuser 1.88-3.48m ³ /s (kg)		RTD11-185 (54.5)
Step-down combined ceiling supply and return diffuser 3.57-4.23m ³ /s (kg)		RTD11-275 (72.3)
Flush combined ceiling supply and return diffuser 1.88-3.48m ³ /s (kg)		FD11-185 (54.5)
Flush combined ceiling supply and return diffuser 3.57-4.23m ³ /s (kg)		FD11-275 (72.3)

Note — Specifications, ratings and dimensions subject to change without notice.

FEATURES

Rugged DURATUBE heat exchanger

Aluminized steel cylindrical tube and drum heat exchanger construction permits normal expansion and contraction without metal fatigue. Design results in high input to heat surface ratio, low resistance to air travel reducing blower power requirements and ease of cleaning. All heat exchanger surfaces, inside and out, are of aluminized steel for superior resistance to corrosion and oxidation. Round surfaces create minimum air resistance. Air wipes all surfaces for excellent heat transfer. Removable rear breeching provides complete service access. Laboratory life cycle testing of heat exchanger ensures long service.

Forced combustion air permits the flue terminal to be almost flush with the cabinet. First and second stage firing are controlled by valves feeding gas to the burners on demand from a two stage heating thermostat.

LP conversion kits are available.

Fresh air damper

A factory fitted fresh air damper provides required ventilation by means of mechanically linked outdoor air and recirculated air dampers. An internal modulating control gives variable mixtures of fresh and recirculated air.

A fresh air intake hood is provided for "on site" installation. The fresh air intake is for applications where return air enters the base of the unit.

Note: If fresh air is used when the unit is in the heating mode the fresh air dampers must be preset so that the "air on" temperature does not drop below 8°C.

Control of ventilating and heating

A two stage heat thermostat is available as an optional extra.

Complete service access

Large hinged panels give complete service access to fan and burner. Complete access to heating element is through the removable rear breeching. Remove vent cap for access to flue. Burner assembly is easily removed for servicing.

A viewing port is fitted in the unit to permit observation of the flame.

Standard controls

Limit controls and electronic flame proving controls protect heating system from abnormal operating conditions. Blower motor is protected with overloads (manual reset). A manual isolator switch circuit breaker is also fitted as standard.

Optional controls

Special controls to suit particular environmental requirements can be supplied, including time switches and night set-back controls. For details contact Lennox.

Powerful blowers

Two statically and dynamically balanced blowers operate in a single shaft with double belt drive. All moving parts of blower assembly float on anti-vibration mounts only the blower scroll is stationary. Rugged blower motor support allows quick belt adjustment and motor changeover. Large air volume range make these units suitable for all applications. See "Blower Data" table opposite for drive selection.

Cleanable air filter

Washable or vacuum cleanable metal mesh filter media is supplied as standard. Twenty five millimetre thick media is standard, however filter rack will receive media up to 50mm thick.

The filter allows for two return air patterns without re-arrangement. No extra filter racks need be specified when fresh air ventilating is to be used. Filters are easily accessible for cleaning or replacement.

Sturdy cabinet

Built for extreme durability under all weather conditions with attractive beige coloured baked on outdoor enamel finish on galvanised heavy gauge steel. All exterior bolts are zinc plated or stainless steel for extra weather protection. Double skin construction of cabinet gives rigidity and complete moisture protection. Key opened hinged compartment doors give easy service access.

Thick interior insulation

Double skin construction with 50mm fibre glass insulation compressed to 40mm results in quiet and efficient operation.

Optional roof mounting frame

Lennox have developed a roof mounting frame, factory made to exact dimensions to suit these Modular units. A single hole in the roof structure is required and the Lennox RMF4-120 (330mm high) is built into the roof structure at an early stage in roof construction to be flashed and counter-flashed making it integral with the roof before the unit is in place.

Supply and return air ducts are contained within the confines of the roof mounting frame and, once the Lennox rooftop unit is in position a weathertight seal is formed, protecting the ducts and maintaining the integrity of the roof. See "Specifications" for ordering data.

Optional RTD11 combination ceiling supply and return diffuser assembly

Step down mount diffuser extends slightly below ceiling level and discharges conditioned air out through grilles on all four sides. Aluminium grilles are fitted with double deflection louvers for precise directional control of air flow. Return air enters through the large centre grille. Assembly also includes insulated diffuser box with flanges for ease of duct connection, hanging rings for suspending and interior transition to insure low static and even air flow on all four sides. Transition is sealed internally to prevent recirculation. Diffuser assembly is completely factory assembled. Diffuser readily adapts to T-bar ceiling grids and plaster ceilings.

Optional FD11 combination ceiling supply and return diffuser assembly

Flush mount diffuser installs almost flush with the ceiling level and discharges conditioned air out through fixed blade louvers on all four sides. Fixed blade louvers insure that air flow will be evenly distributed. Return air enters through large centre grille. Assembly also includes insulation diffuser box with flanges for ease of duct connections, support hanger eyelets at the top corners for secure installation and interior transition to insure low static and even air flow on all four sides. Transition is sealed internally to prevent recirculation. Diffuser assembly is completely factory assembled. Diffuser readily adapts to T-bar ceiling grids and plaster ceilings.

Optional supply and return transitions

Transitions field install in the roof mounting frame and provide segregated and simple duct connections to supply and return diffuser. Completely insulated galvanised steel transitions have flanges for ease of duct connection. Duct from the transitions to the diffuser is not finished and must be provided by installer. Transitions are completely factory assembled and easily field installed in the roof mounting frame with minimum costs and labour requirements.

Optional hot water coil

An optional low pressure hot water coil can be factory fitted as an alternative to gas-fired heating. Output 167 kW. For performance curves, please apply to Applications Department, Basingstoke. Model number WS4-120.

ACCESSORY AIR RESISTANCE (PA)

Unit ref.	Air volume		RTD combination ceiling supply and return			FD ceiling supply and return	
	cfm	m ³ /s	2 sides open	3 sides open	4 sides open		
RTD11-185 & FD11-185	4000	1.88	54	48	36	14	
	4500	2.12	102	75	62	46	
	5000	2.35	121	103	86	59	
	5800	2.73	175	147	127	97	
	6000	2.82	190	157	137	105	
	6200	2.92	199	169	147	114	
	6400	3.01	214	179	157	124	
	6600	3.10	229	192	167	134	
	6800	3.20	246	207	179	144	
	7000	3.29	259	216	189	154	
	7200	3.39	271	229	199	164	
	7400	3.48	286	242	209	174	
	RTD11-275 & FD11-275	7600	3.57	127	104	92	107
		7800	3.67	137	114	100	117
8000		3.76	147	122	107	124	
8200		3.86	157	132	114	132	
8400		3.95	167	139	122	139	
8600		4.05	177	149	129	147	
8800		4.14	189	157	137	157	
9000		4.23	197	167	144	164	

DRIVE SELECTION

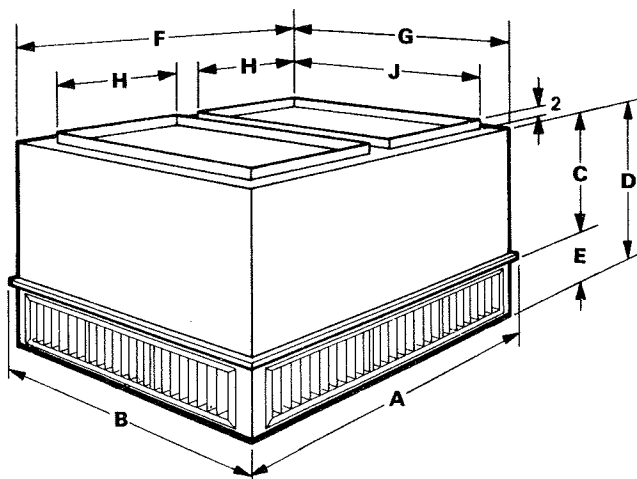
Model no.	Nominal motor kW	Rpm range of available drive setups
GS4-120	.75	370-700
	1.1	490-700
WS4-120	1.5	560-775
	2.2	660-870

BLOWER DATA

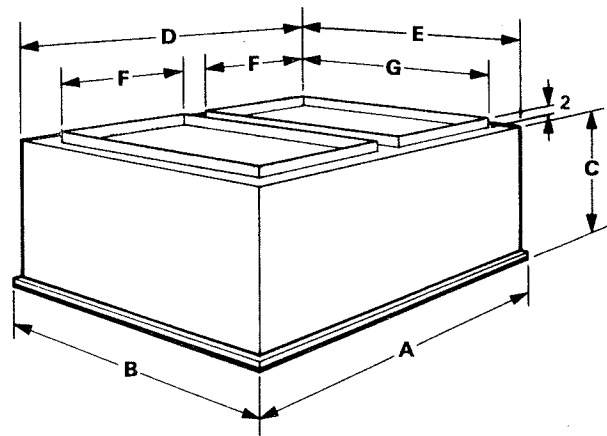
External static pressure Pa (in wg)																					
Air volume		75 (0.3)		100 (0.4)		125 (0.5)		150 (0.6)		175 (0.7)		200 (0.8)		225 (0.9)		250 (1.0)		275 (1.1)		300 (1.2)	
m ³ /s	cfm	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW	rpm	kW
1.88	4000	425	.432	470	.507	520	.581	565	.671	600	.730	635	.835	—	—	715	1.17	—	—	—	—
2.12	4500	440	.507	485	.581	535	.686	575	.775	610	.850	645	.969	670	1.04	725	1.34	755	1.43	785	1.53
2.35	5000	475	.641	515	.715	550	.805	585	.894	620	.984	660	1.11	690	1.20	725	1.34	755	1.43	785	1.53
2.59	5500	500	.760	530	.850	570	.954	605	1.04	645	1.16	670	1.26	705	1.37	735	1.49	765	1.61	795	1.74
2.83	6000	520	.924	555	1.01	620	1.19	660	1.34	690	1.44	690	1.44	720	1.56	745	1.68	775	1.80	810	1.95
3.06	6500	550	1.09	580	1.19	610	1.28	645	1.41	675	1.50	710	1.64	740	1.80	765	1.89	790	2.05	820	2.16
3.29	7000	580	1.29	610	1.40	635	1.50	665	1.59	700	1.74	725	1.98	755	2.01	780	2.13	810	2.28	—	—
3.53	7500	605	1.52	630	1.62	660	1.71	685	1.80	720	1.99	745	2.13	770	2.38	800	2.43	—	—	—	—
3.77	8000	635	1.77	655	1.84	690	2.01	715	2.13	745	2.11	765	2.46	—	—	—	—	—	—	—	—
4.50	8500	660	2.04	695	2.19	720	2.32	740	2.44	—	—	—	—	—	—	—	—	—	—	—	—
4.24	9000	690	2.38	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

DIMENSIONS — MM

RTD11-185 AND RTD11-275
STEP-DOWN CEILING DIFFUSER



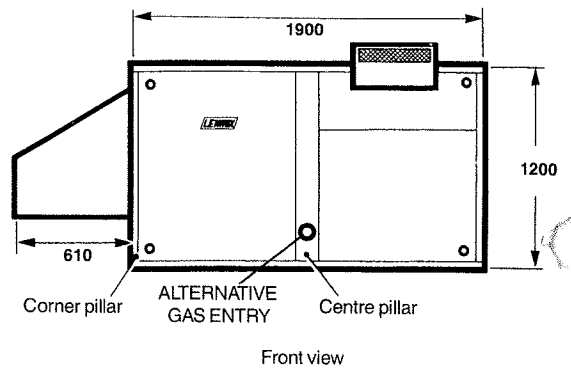
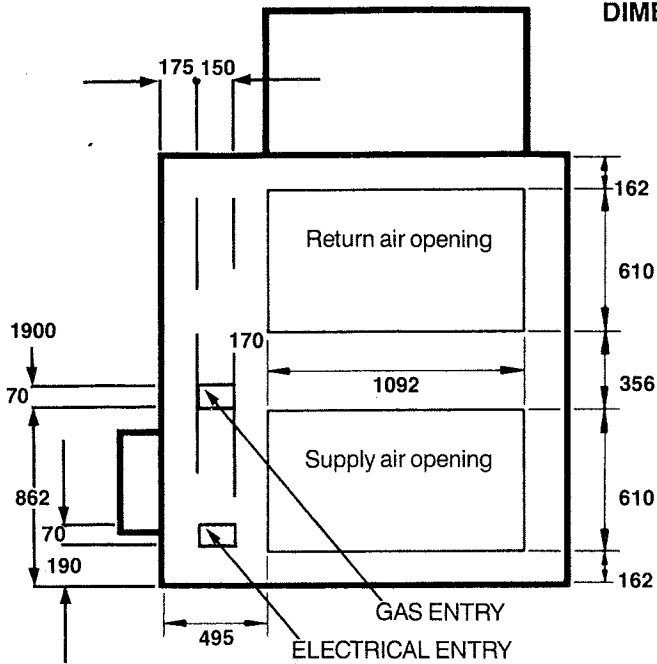
FD11-185 AND FD11-275
FLUSH CEILING DIFFUSER



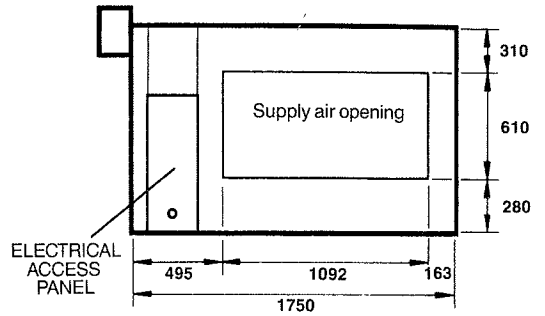
Model no.	A	B	C	D	E	F	G	H	J
RTD11-185	1210	1210	606	864	257	1159	1159	457	914
RTD11-275	1285	1285	733	1016	283	1464	1464	610	1219

Model no.	A	B	C	D	E	F	G
FD11-185	1210	1210	765	1159	1159	457	914
FD11-275	1285	1285	918	1464	1464	610	1219

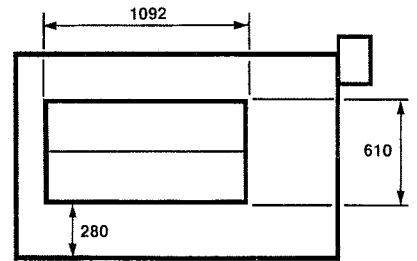
DIMENSIONS — MM



Front view



Side view (R.H.)

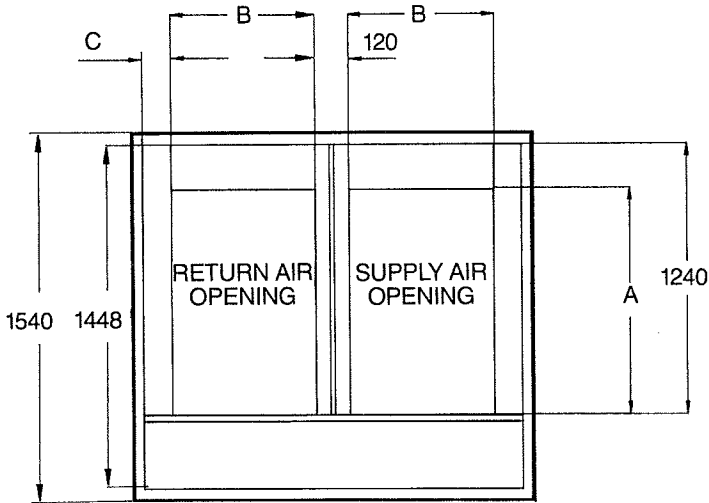


Side view (LH)

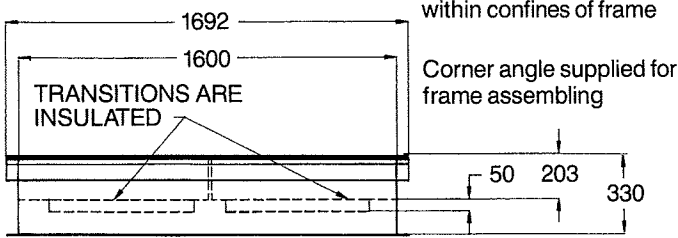
The two panels supplied fit either end or bottom openings to give choice of end or bottom air handling.

ROOF MOUNTING FRAME

RMF4-120 mounting frame with double duct openings

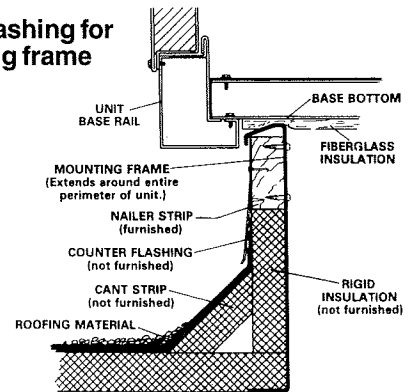


NOTE: Roof deck may be omitted within confines of frame



Corner angle supplied for frame assembling

Recommended flashing for RMF roof mounting frame



ELECTRICAL DATA

Model no.	A	B	C
SRT11-185	914	457	285
SRT11-275	1219	610	125

Line voltage (v) 3-phase 50Hz		380/440		
Blower motor	Output kW (hp)	1.1 (1.5)	2.2 (3.0)	3.0 (5.5)
	Full load amps (A)	2.7	5.0	8.8
	Locked rotor amps (A)	17.0	28.0	61.6

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