

Listed Building & Full Planning Application
Proposed Club Quarters™ Hotel
61-62 Lincoln's Inn Fields & 36-42 Kingsway, London WC2A

PLANT AND EQUIPMENT SPECIFICATIONS FOR ACOUSTIC REPORT

Enclosed in the following pages are the mechanical and electrical services plant details for the proposed development at 61-62 Lincoln's Inn Fields (Incorporating 36-38 Kingsway and 40-42 Kingsway) London, WC2A 3PX.

The enclosed specifications state existing plant to be reused and the proposed plant to be installed.

This information has been enclosed to assist in providing a noise assessment for the property and should be read in conjunction with the acoustic report.

2 Specifications


2-1 Nominal Capacity and Nominal Input				ERQ125A7W1B	ERQ200A7W1B	ERQ250A7W1B
Nominal Capacity	Cooling capacity	Standard	kW	14.0	22.4	28.0
	Heating capacity	Standard	kW	16.0	25.0	31.5
Nominal Input	Cooling	Standard	kW	3.52	5.22	7.42
	Heating	Standard	kW	4.00	5.56	7.70
For combination indoor units + outdoor units	EER	Nominal		3.98	4.29	3.77
	COP	Nominal		4.00	4.50	4.09

2-2 Technical Specifications				ERQ125A7W1B		ERQ200A7W1B		ERQ250A7W1B	
Capacity range			HP	5		8		10	
PED category				2					
Casing	Colour			Daikin White					
	Material			Painted galvanized steel plate					
Dimensions	Unit	Height	mm	1,680					
		Width	mm	635		930			
		Depth	mm	765					
	Packing	Height	mm	1,855					
		Width	mm	796		1,055			
		Depth	mm	860					
Weight	Unit		kg	159		187		240	
	Packed Unit		kg	181.65		217.35		273	
Packing	Material			Carton					
	Weight		kg	3.8		4.02			
	Material			Wood					
	Weight		kg	19.15		20.85			
	Material			Plastic					
	Weight		kg	0.215		0.265			
Heat Exchanger	Dimensions	Length	mm	1,483		1,778			
		Nr of Rows		54					
		Fin Pitch	mm	2					
		Nr of Passes		8		18			
		Face Area	m²	1.762		2.112			
		Nr of Stages		2					
	Tube type			Hi-XSS(8)					
	Fin	Type		Non-symmetric waffle louvre					
		Treatment		Hydrophilic and corrosion resistant					
Fan	Type			Propeller					
	Discharge direction			Vertical					
	Quantity			1					
	Air Flow Rate (nominal at 230V)	Cooling	m³/min	95		171		185	
		Heating	m³/min	95		171		185	
	Max		Pa	78 Pa in high static pressure					
	Motor	Quantity		1					
		Model		Brushless DC					
Output		W	350		750				
Compressor	Quantity			1				2	
	Motor	Model		Inverter					
		Type		Hermetically sealed scroll compressor					
		Speed	rpm	6,300		7,980		6,300	
		Motor Output	W	2.8		3.8		1.2	
		Crankcase Heater	W	33					
		Model						ON-OFF	
		Type						Hermetically sealed scroll compressor	
		Speed	rpm					2,900	
		Motor Output	W					4.5	
		Crankcase Heater	W					33	

2 Specifications

2-2 Technical Specifications				ERQ125A7W1B		ERQ200A7W1B		ERQ250A7W1B	
Operation Range	Cooling	Min	°CDB		-5				
		Max	°CDB		43				
	Heating	Min	°CWB		-20				
		Max	°CWB		15				
Sound Level (nominal)	Sound power		dBA		72		78		
	Sound pressure		dBA		54		57		58
Refrigerant	Type			R-410A					
	Charge		kg	6.2		7.7		8.4	
	Control			Expansion valve (electronic type)					
	Nr of Circuits			1					
Refrigerant Oil	Type			Synthetic (ether) oil					
	Charged Volume		l	1.7		2.1		4.3	
Piping connections	Liquid (OD)	Type		Braze connection					
		Diameter (OD)	mm	9.52					
	Gas	Type		Braze connection					
		Diameter (OD)	mm	15.9		19.1		22,2	
	Piping Length		Maximum	m		55			
	Heat Insulation			Both liquid and gas pipes					
Defrost Method				Reversed cycle					
Defrost Control				Sensor for outdoor heat exchanger temperature					
Capacity Control Method				Inverter controlled					
Capacity control	Cooling	Maximum		100%					
Safety Devices				High pressure switch					
				Fan motor driver overload protector					
				Overcurrent relay					
				Inverter overload protector					
				PC board fuse					
Standard Accessories	Item			Installation manual					
	Quantity			1					
	Item			Operation manual					
	Quantity			1					
	Item			Connection pipes					
	Quantity			4					
Notes				Sound power level is an absolute value that a sound generates.					
				Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings					
				Sound values are measured in a semi-anechoic room.					
				Nominal cooling capacities are based on: indoor temperature: 27°CDB/19°CWB, outdoor temperature: 35°CDB, equivalent refrigerant piping: 7.5m, level difference: 0m					
				Nominal heating capacities are based on: indoor temperature: 20°CDB, outdoor temperature: 7°CDB/ 6°CWB, equivalent refrigerant piping: 7.5m, level difference: 0m					

2-3 Electrical Specifications				ERQ125A7W1B	ERQ200A7W1B	ERQ250A7W1B
Power Supply	Name			W1		
	Phase			3N~		
	Frequency		Hz	50		
	Voltage		V	400		
	Voltage range	Minimum	V	-10%		
		Maximum	V	+10%		
Current	Nominal running current (RLA)	Cooling	A	5.1	7.5	11.3
		Heating	A	5.8	8.2	11.1
	Starting current (cooling/heating)		A			74
	Minimum Ssc value		kVa		889	842
	Minimum circuit amps (MCA)		A	11.9	18.5	21.6
	Maximum fuse amps (MFA)		A	16	25	
	Total overcurrent amps (TOCA)		A	15.6	16.5	31.5
	Full load amps (FLA)		A	0.4	0.7	0.9

<div></div> <div>Air Handling Unit Schedule No 5698-ES/01</div>																Rev	Date	Revision											
																-	13-Nov-09	For information											
AHU REF	Plant Description	DX COOLING AND HEATING COILS														Prepared by RH													
		Frost Coil				Pre Filter			Secondary Filter			Supply Fan																	
		Air 'ON'	Air 'OFF'	Rating	LTHW Flow	Type	Rating	No OFF	Type	Rating	No OFF	Max Air Flow	Div Air Flow	External Resis	Type	Speed	Motor Type	Motor Rating	Abs Power	Speed	SC	FLC							
		° C	° C	kW	kg/sec		EU	No		EU	No	M3/sec	M3/sec	Pa		rpm		kW	kW	rpm	Amps	Amps							
		-1.00	5.00	23.391	0.507	Panel	EU 4	1	Bag	EU 7	1	3.185	3.185	300	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc							
AHU 2 - 5.5Lx2.5Wx1.5H	Basement Supply and Restaurant	-1.00	5.00	18.213	0.395	Panel	EU 4	1	Bag	EU 7	1	2.480	2.480	300	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc							
AHU 3 - 6.4Lx3.2Wx1H	Bedroom AHU	-1.00	5.00	24.235	0.526	Panel	EU 4	1	Bag	EU 7	1	3.300	3.300	400	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc							
SF01 - 4Lx1.35Wx1H	Basement Large Function Supply Fan	-1.00	3.00	7.344	0.159	Panel	EU 4	1	Bag	EU 7	1	1.500	1.500	300	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc							
Possible SF02	Plantroom Supply	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc							
Apartment AHUs 1 to 6	Lutchens Building Apartments	N/a	N/a	N/a	N/a	Panel	EU 4	1	N/a	N/a	N/a	0.085	0.085	250	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc							
Apartment Fans By Nuaire	MRXBOX90																												
AHU REF	Recouperator					Heating Coil				DX Cooling Coil				Extract Fan															
	Winter		Summer		Efficy	Air 'ON'	Air 'OFF'	Rating	LTHW Flow	Air 'ON'	Air 'OFF'	Rating	CHW Flow	Max Air Flow	Div Air Flow	External Resis	Type	Speed	Motor Type	Motor Rating	Abs Power	Speed	SC	FLC					
	On Coil	Off Coil	On Coil	Off Coil		°Cdb/°Cwb	°Cdb/°Cwb	°Cdb/°Cwb	°Cdb/°Cwb	%	°C	°C	kW	kg/sec	°C	°C	kW	kg/sec	M3/sec	M3/sec	Pa		rpm		kW	kW	rpm	Amps	Amps
	°Cdb/°Cwb	°Cdb/°Cwb	°Cdb/°Cwb	°Cdb/°Cwb		%	°C	°C	kW	kg/sec	°C	°C	kW	kg/sec	M3/sec	M3/sec	Pa		rpm		kW	kW	rpm	Amps	Amps				
	AHU 1	5.00	12.00	tbc	tbc	N/a	12	25	50.68	1.100	29	16	80.00	N/a	2.950	N/a	300	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	
AHU 2	5.00	12.00	tbc	tbc	N/a	12	25	39.46	0.856	29	16	63.00	N/a	2.280	N/a	300	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc		
AHU 3	5.00	12.00	tbc	tbc	N/a	12	25	52.51	1.139	N/a	N/a	N/a	N/a	3.300	N/a	400	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc		
SF01	N/a	N/a	N/a	N/a	N/a	3	18	27.54	0.598	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a		
Possible SF02	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a	N/a		
Apartment AHUs 1 to 6	-1.00	8.00	tbc	tbc	tbc	8	18	1.04	Elec	N/A	N/A	N/A	N/a	0.085	N/a	250	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc	tbc		

AHU's selection by Steve Jenks of AIRCRAFT TLD

Note: Specification to be reference for all selections and complied with



Fans Schedule No 5698-ES02

Fans Schedule No 5698-ES02					Rev	Date	Revision
					-	13 November 2009	For Information
REF	DESCRIPTION / LOCATION	MANUFACTURER	MODEL	Air Volume m3/s	Ext Pressure Pa	Spigot size mm	COMMENTS
DEF/01	SUB BASEMENT LOCKERS	TBC	TBC	0.060	200		INLINE AXIAL FANS, WITH BOTH SYSTEM SIDE AND EXTRACT SIDE ATTENUATION - To be on time clock operation from BMS with operational overrides
DEF/02	SUB BASEMENT AND BASEMENT REFUSE EXTRACT	TBC	TBC	0.175	200		TWIN FAN - Speed controller to be provided with fan
DEF/03	BASEMENT TOILETS	TBC	TBC	0.200	200		TWIN FAN - To be on time clock operation from BMS - Speed controller to be provided with fan
EF/01	PLANTROOM EXHAUST	TBC	TBC	TBC	TBC		TBC
KE01	BASEMENT KITCHEN EXTRACT FAN	TBC	TBC	3.000	700		Biofocated fan, both system and atmosphere attenuation - Within Acoustic Box

Note: Specification to be reference for all selections and complied with

M&E BUILDING SERVICES PLANT AREAs

PROJECT REF: 5698/20

PROJECT NAME: CC Kingsway

PREPARED BY: RH

PREPARED FOR: N/a

LOCATION: Hersham

Note: Indicative indications only at this stage

Transformer	5 x 4.5 x 3m high (unless existing)	24/7 access
Electrical Intake	4 x 2 x 2.5m high	24/7 access
Gas & Water Rm	2 x 1 x 2.5m high	Vent
PBX Comms Room	3.5x2.5x2.5m high	Cooling req
Sub-main dis-boards	1 x 0.5m deep. One per floor	
Comms cupboard	One per floor	
Generator	Client to confirm requirement.	Flue/Vent
Boiler Room & CHP	8 x 5 x 2.5m high including booster set.	Flue/Vent
Water tank	3 x 2.5 x 2m tank size; 4 x 4.5 x 3.5m high room	
Condenser units	750 x 750 x 1600mm high units. 16No. estimated.	free air flow
	Kitchen & Cellar cooling will be in addition to the condenser units here. Possibly locate at high level in delivery and service bay.	
Kitchen vent	Axial on riser (acoustics to be carefully considered). Larger AHU required	600 x 600 duct to roof.
Reception Zone	Local ventilation	
Restaurant	Some Extract via transfer into kitchen. The rest via an AHU that supply's and exhausts via lightwells/architectural louvres at the rear of the building.	
Meeting/Conference	As restaurant	
Club Room	Natural ventilation with local VRF cooling	
Bedrooms	Supply and extract AHUs at roof level.	
A1 / A3 units	Ground unit to be dealt with, within unit. Basement levels to be supplied by AHU's above ceiling back of house (above kitchen etc.)	
Lifts	Machineroom-less lifts.	

Other:

Numerous 'dirty' extracts will be required to serve toilets and refuse areas. It is suggested at present that this goes up the other 600x600 allowed via the green column in the lightwell.

Apartment vent by whole house AHU's located at roof level in the Lutchens building. To supply and exhaust via the lightwells.

RESIDENTIAL HEAT RECOVERY

Fan Type	Fan Location	Max Performance	Page No.
MRXBOX90	Extract/HR	125l/s	1.1
MRXBOX70	Extract/HR	68l/s	1.7
LPXBOXDC-2	Extract/HR	75l/s	1.11
COOKERXBOX	Wholehouse	54l/s	1.15
ECOHEATEX	Loft in line		1.21
AIRPODXBOX	Supply/extract/HR		1.23



▶ MRXBOX90 - WHOLE HOUSE HEAT RECOVERY UNIT



95% efficient, SAP Appendix Q
compliant heat recovery unit.

BENEFITS

- **High efficiency**
95% efficient, with DC motors using 50% less energy than traditional fans.
- **Meets regulations**
SAP Appendix Q Compliant. (Unit listed).
- **Extremely low noise levels**
Acoustic insulation ensures the ideal solution for loft or cupboard installations.
- **Guaranteed constant airflow**
2 self adjusting fans provide constant fresh air.
- **Healthy environment**
Removes up to 95% of the dust from the atmosphere.
- **Low and easy maintenance**
Unit is fitted with filter indication display. Easy access to filters via "tool free" hinged door.
- **Simple to set up**
Units have a display for easy installation.
- **Automatic summer bypass as standard**
Models L and M have summer bypass as standard. Unit continuously monitors the temperature inside and outside and will bypass the heat exchanger when appropriate.
- **Advice and installation service**
Please contact Nuaire on 02920 858 200 (or email drawings@nuaire.co.uk) for advice on ventilation solutions and installation service.
- **Multi option controls and sensors**
Inbuilt controls that automatically adjust the fan speed to suit the individual systems pressure drop. Wide choice of controls including 3 speed trickle/boost and purge and optional wireless remote control.
- **G4 Filter as standard**
G4 filter shown below.
- **5 year warranty**
For peace of mind.



Removable filters.



Facia mounted control panel.



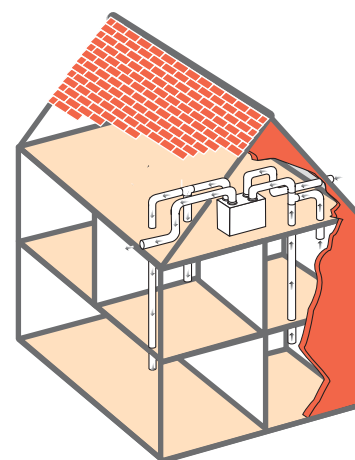
Speed selector switch (included).



Optional receiver.



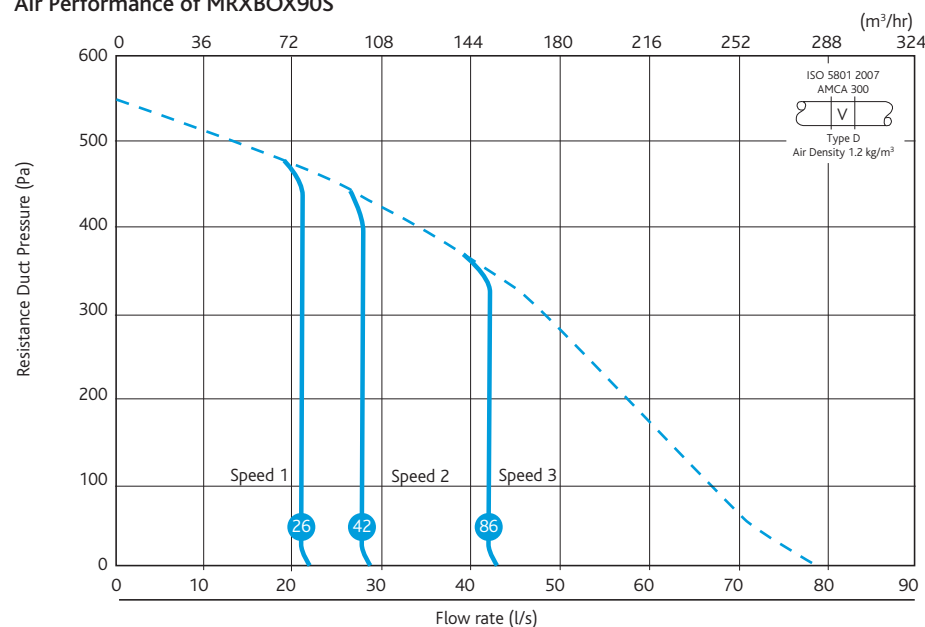
Optional wireless remote control.



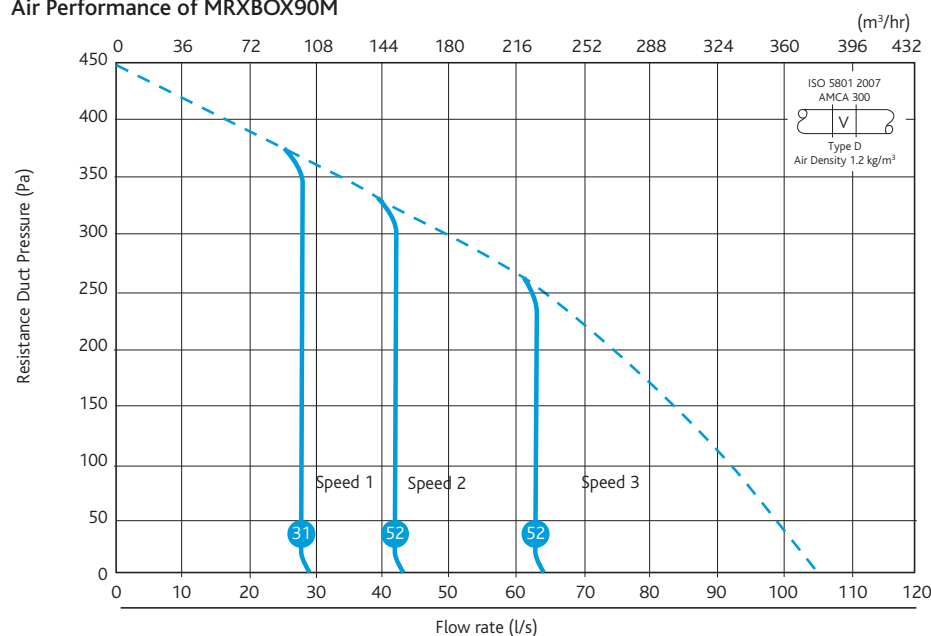
Typical installation with unit mounted in loft.

Performance - MRXBOX90 range

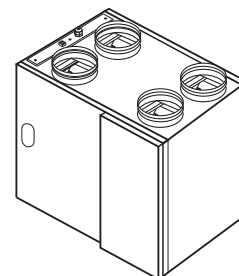
Air Performance of MRXBOX90S



Air Performance of MRXBOX90M



Casing



Code descriptions

MR - XBOX - 90 - L

1 2 3 4

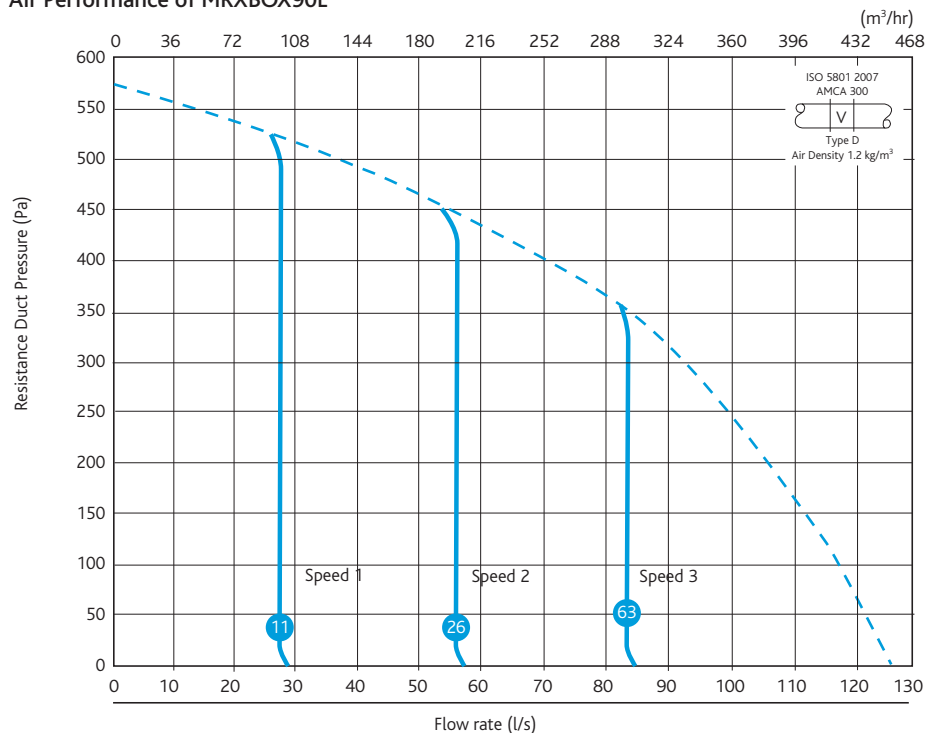
1. Multi-room Supply and extract heat recovery
2. Range
3. Efficiency
4. Size: S: small, M: medium and L: large

Note: Speeds 1, 2 and 3 are factory default settings and can be adjusted to suit individual requirements.

No. = Power consumption.

Performance - MRXBOX90 range cont.

Air Performance of MRXBOX90L



MRXBOX90

ELECTRICAL, SOUND & WEIGHT

Speed	Code	Phase	Total motor power kW	Full load current amps		Induct Sound Power Levels dB re 1pW								Breakout dBA @3m	Weight Kg
						63	125	250	500	1K	2K	4K	8K		
1	mrXbox90S	1	26	0.18	Breakout	42	37	31	27	22	14	7	7	29	28
					Supply	41	41	40	42	42	33	23	17		
					Extract	41	34	31	29	20	13	7	8		
2	mrXbox90S	1	42	0.28	Breakout	43	43	38	32	28	21	16	10	35	
					Supply	47	48	47	50	50	41	33	26		
					Extract	44	39	35	34	26	19	12	9		
3	mrXbox90S	1	86	0.57	Breakout	51	57	43	43	39	34	30	25	45	
					Supply	55	61	57	60	60	53	46	41		
					Extract	52	49	45	44	36	30	24	11		
1	mrXbox90M	1	31	0.22	Breakout	41	30	26	24	17	10	3	10	25	35
					Supply	44	39	39	39	39	29	21	15		
					Extract	39	30	20	21	13	4	6	13		
2	mrXbox90M	1	52	0.36	Breakout	46	38	35	32	27	21	13	13	33	
					Supply	48	48	46	49	49	40	35	27		
					Extract	44	44	37	36	31	22	19	15		
3	mrXbox90M	1	112	0.74	Breakout	50	43	43	38	34	29	23	22	40	
					Supply	55	57	56	60	58	52	47	41		
					Extract	49	47	39	38	33	25	21	15		
1	mrXbox90L	1	23	0.17	Breakout	45	38	36	32	26	18	7	9	33	40
					Supply	50	51	48	48	49	40	34	23		
					Extract	36	33	21	23	15	7	8	15		
2	mrXbox90L	1	67	0.45	Breakout	50	47	43	38	37	31	25	22	42	
					Supply	59	63	59	58	57	52	48	41		
					Extract	46	47	35	33	30	22	16	16		
3	mrXbox90L	1	175	1.16	Breakout	60	57	53	47	44	43	37	37	51	
					Supply	65	68	68	66	64	61	57	52		
					Extract	52	57	46	42	38	34	29	20		

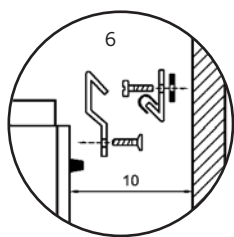
Note: Speeds 1, 2 and 3 are factory default settings and can be adjusted to suit individual requirements.

Download specification from www.nuairegroup.com/specifications

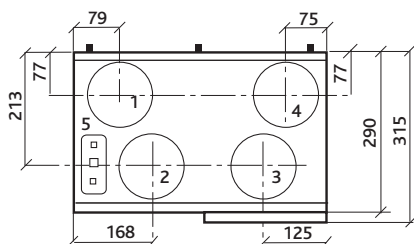
Dimensions (mm) MRXBOX90 range

Dimensional references:

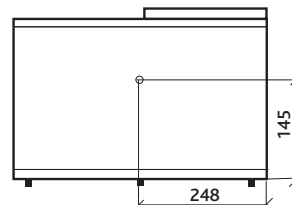
- 1 = spigot to dwelling.
Supply (warmed fresh air).
- 2 = spigot to outside.
Exhaust (cool stale air).
- 3 = spigot from dwelling.
Extract (warm stale air).
- 4 = spigot from outside.
Intake (cool fresh air).
- 5 = electric connections
- 6 = detail wall mounting (make sure to correctly place the rubber strip, washers and caps).



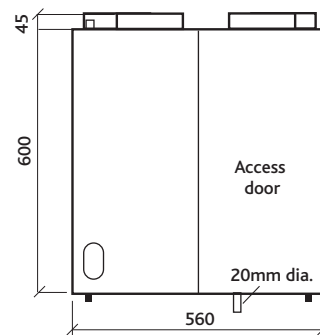
MRXBOX90S
4 x 125dia spigots View from top



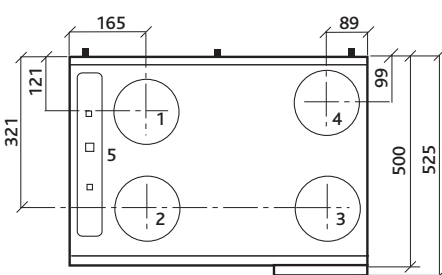
Bottom view



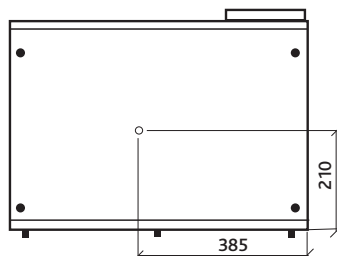
View from front



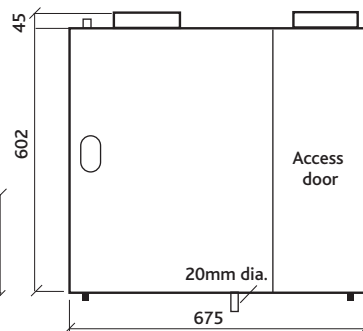
MRXBOX90M
4 x 160dia spigots View from top



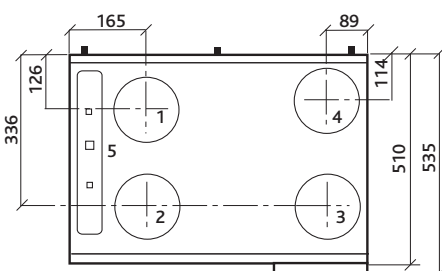
Bottom view



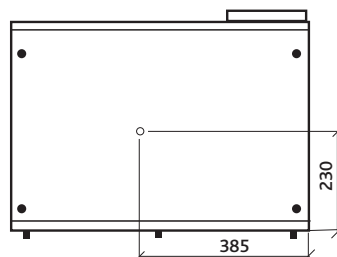
View from front



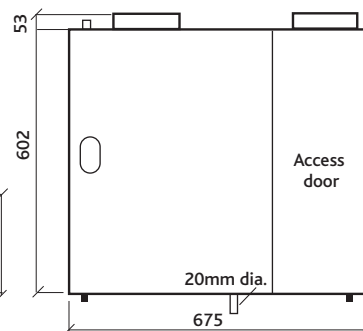
MRXBOX90L
4 x 180dia spigots View from top



Bottom view



View from front



For wiring please log onto www.nuairegroup.com

MRXBOX90

Consultants Specification

Operation

The supply and extract ventilation unit shall be positioned as indicated on the drawings and shall be in accordance with the particular fan schedule in the specification.

The combined supply and extract with heat recovery unit, shall supply filtered fresh air to each of the habitable rooms and vitiated air shall be extracted from the wet areas e.g. bathroom, en-suite, w.c, kitchen, utility rooms, etc. The supply air shall be pre-heated by the warm extract air via the integrated counter-flow heat exchanger element. The extracted air shall also be filtered before it reaches the heat exchanger block.

The ventilation unit shall vary its speed and therefore the ventilation rate, as it receives signals from one of the following:

- Manual activation from 3 position switch.
 - Optional remote RF boost switch humidity sensor.
 - Optional externally interconnected sensors.
- Via optional PCB.

When signals are received, the fan shall alter its speed to selectable, pre-set normal and boost rates.

The unit shall have the facility to commission the supply and extract fans via inbuilt minimum and maximum speed adjustment; the fans shall have infinitely variable speed control. Once the duty of the fans is set on the fascia mounted controller the unit shall automatically adjust its speed to maintain the air volume flow rate selected on a constant volume principle.

A summer bypass shall be included (excludes 90S) that shall allow fresh air to bypass the heat exchanger, when the incoming air temperature is at or above the designated "set point".

MRXBOX90 - unit specification

The unit shall be fully insulated providing excellent thermal and acoustic characteristics and shall be complete with a multi plate counter flow high efficiency heat exchanger block, with a thermal efficiency of up to 95%. The heat exchanger shall be protected by G4 grade filters on fresh air inlet and system extract. The heat exchanger and filters shall be accessible via fascia access panels, enabling quick and easy maintenance.

The unit shall have low energy, high efficiency d.c. fan/motor assemblies with sealed for life bearings, the impellers shall be forward curved centrifugal type. The motors shall be suitable of an ambient temperature of 40°C.

The unit shall have integral temperature sensors that shall monitor the incoming and extracted air temperatures to provide frost protection as well as controlling the summer bypass.

A fascia mounted control unit with microprocessor controls with LCD display enabling infinitely variable adjustment of the air volume.

The unit shall be supplied complete with an insulated condensate drip tray and 20mm drain connection.

The breakout noise level and power requirements shall be as detailed by the unit manufacturer and in accordance with the ventilation equipment schedule.

MRXBOX90 - control options

All versions shall have a pre-wired and factory fitted, fascia mounted multi function control panel with LCD display providing the following:

- Integral speed control on supply and extract – 3 speeds available: -
 1. Low speed background ventilation control/set point.
 2. Medium speed ventilation control/set point, for day to day boost.
 3. High speed ventilation control/set point for summer boost.
- Constant volume facility to adjust for system pressure.
- Filter dirty & maintenance indication on fascia control.

The standard warranty for MRXBOX90 series shall be for 5 years.

▶ MRXBOX70 - VERTICALLY ARRANGED WHOLE HOUSE HEAT RECOVERY



70% efficient, SAP Appendix Q
compliant heat recovery unit
with multiple spigots.

BENEFITS

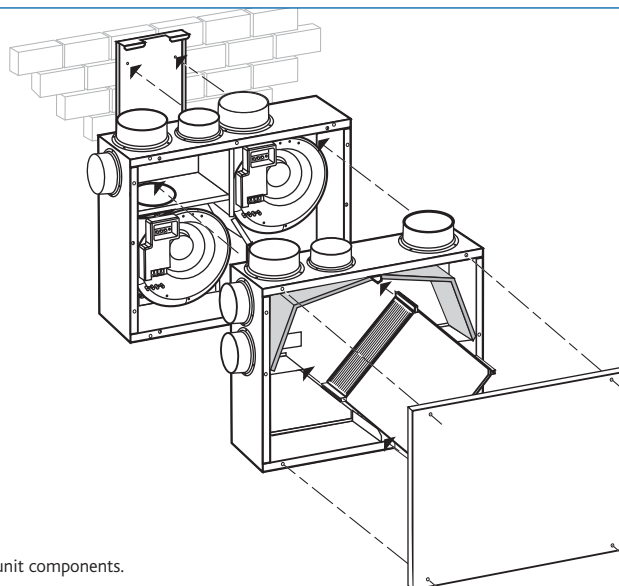
- High efficiency**
 Heat exchanger is up to 70% effectiveness with low energy DC motors and components help to minimise electrical energy consumed.
- Meets regulations**
 SAP Appendix Q compliant www.bre.co.uk. (Refer to code NU-MVHR70).
- Extremely low noise levels**
 Acoustic insulation ensures the ideal solution for loft or cupboard installations.
- Guaranteed airflow**
 Airflows can be 'fine tuned' with integral variable fan/motor speed controls.
- Healthy environment**
 Removes up to 95% of the dust from the atmosphere.
- Wide choice**
 Range of ducting and grilles available, please refer to the Controls, Ducting and Ancillaries section.
- Flexible solution**
 Multi spigot features 4 x 125mm dia. and 5 x 100mm dia.
- Advice and installation service**
 Please contact Nuaire on 02920 858 200 (or email drawings@nuaire.co.uk) for advice on ventilation solutions and installation service.
- 5 year warranty**
 For peace of mind.



Easy access to filters.

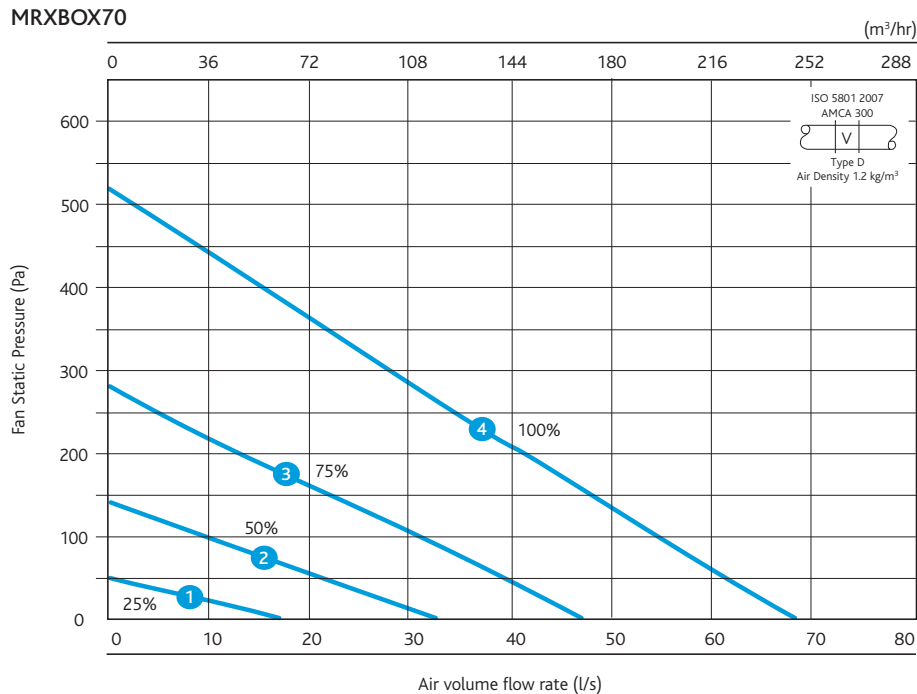


Knockout spigots.

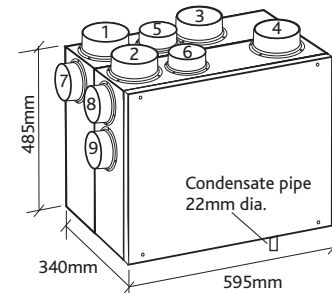


Main unit components.

Performance - MRXBOX70



Dimensions (mm) MRXBOX70



Knockout Spigots

1 - 4 = 125mm dia. 5 - 9 = 100mm dia.

Spigot location and airflow:

Supply air to house - spigots 1, 5, and 7

Extract air to outside - spigot 3

Fresh air from outside - spigot 4

Extract from kitchen/bathroom etc -
spigots 2, 6, 8 and 9

Code descriptions

MR - XBOX - 70

1 2 3

1. Multi-room type
2. Range
3. Efficiency

MRXBOX70

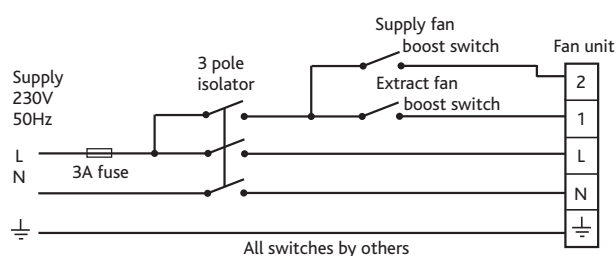
ELECTRICAL, SOUND & WEIGHT

Curve	Ref	Phase	Motor power kW	Full load current amps		Induct Sound Power Levels dB re 1pW								Breakout dBA @3m	Weight Kg
						63	125	250	500	1K	2K	4K	8K		
1 (25%)	Supply fan	1	25	0.3	Inlet	-	12	22	20	12	3	-	-	-	25
	Extract fan				Outlet	-	12	25	23	16	6	3	-	-	
2 (50%)	Supply fan		46	0.4	Inlet	-	27	37	35	27	18	14	11	24	24
	Extract fan				Outlet	-	30	40	38	30	21	18	14	24	
3 (75%)	Supply fan		66	0.45	Inlet	-	36	46	44	36	27	23	20	32	32
	Extract fan				Outlet	-	39	49	47	39	30	27	23	32	
4 (100%)	Supply fan		100	0.7	Inlet	-	44	54	52	44	35	31	28	40	40
	Extract fan				Outlet	-	47	57	55	47	38	35	31	40	

Units are supplied c/w with 2 No.G2 filters as standard. Motor power and current loads are the total for both fans running together.

Unit has a soft start function therefore the starting current is identical to the full load.

Wiring - MRXBOX70



Download full wiring details from www.nuairegroup.com/specifications

MRXBOX70

Consultants Specification

Operation

The supply and extract ventilation unit shall be as indicated on the drawings and shall be in accordance with the particular fan schedule in the specification. Supply air to the room shall be pre-heated by the extract air via the integrated heat exchanger block. The ventilation unit shall automatically vary the ventilation rate, as it receives signals from one of the optional interconnected sensors. When signals are received, the fan shall either vary its speed proportionally or on a trickle and boost principle. The unit shall have the facility to commission the supply and extract fans individually via inbuilt minimum and maximum speed adjustment, the fans themselves shall have infinitely variable speed control.

MRXBOX70 - Unit specification

The fans shall be acoustically lined with high density class "O" flame retardant insulation, giving extremely low noise levels. The unit shall have a heat exchanger block manufactured from aluminium with a thermal efficiency of approximately 70% which shall be protected by G2 grade filters on supply and extract. It shall come complete with a condensate drip tray and drain connection, integral minimum and maximum speed controls, run on timer and fascia mounted failure indication. The breakout noise level and power requirements shall be as detailed by the unit manufacturer and as detailed in the ventilation equipment schedule.

The unit shall have low energy, high efficiency d.c. fan/motor assemblies with sealed for life bearings. The depth of the unit shall not be greater than 340mm and shall incorporate a single point mounting bracket, with a pre-stressed synthetic anti vibration strip. The unit shall be constructed with one removable panels allowing full maintenance access to all components. To facilitate the interconnection of branch ducts the unit shall have multiple spigot connections with integrated balancing dampers. Spigot connections provided.

MRXBOX70 - Control Options

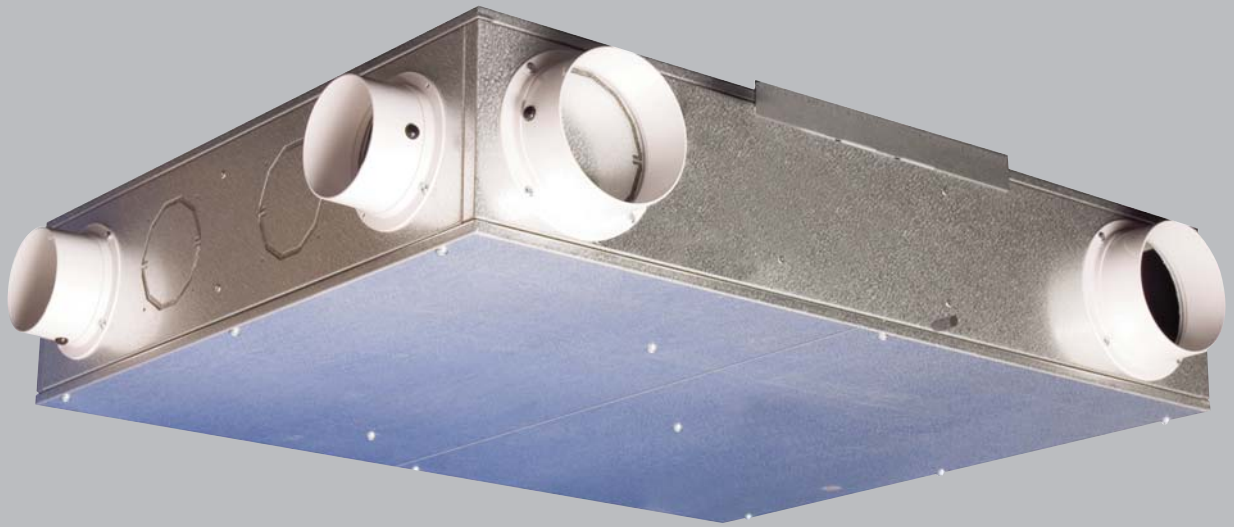
All versions shall have the following functions integrally mounted within the fan unit on a purpose made PCB, all such components pre-wired and factory fitted by the manufacturer: -

- Integral speed control on supply and extract.
- Integral background ventilation control/set point.
- Integral boost ventilation control/set point.
- Integral run on timer.
- Volt free failure indication (direct from individual fan).
- Integral S/L terminal for boost from remote switch, e.g. light switch.

Units shall be the mrXbox70 as manufactured by Nuaire.

The standard warranty for mrXbox70 series shall be for 5 years.

▶ LPXBOXDC-2 LOW PROFILE HEAT RECOVERY FOR APARTMENTS

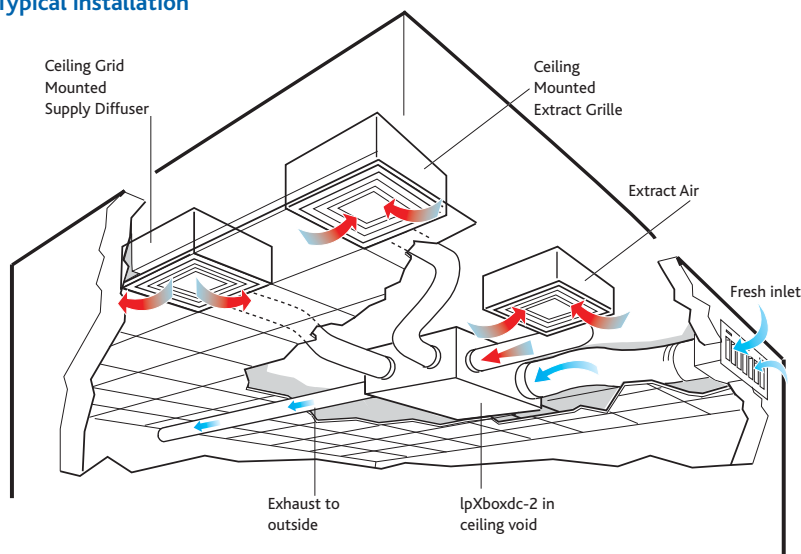


Very low depth heat recovery unit
with multiple spigots.

BENEFITS

- **Very low depth - within ceiling fitting**
185mm, ideal for applications where space is at a premium.
- **Low noise levels**
Acoustic lining ensures unit is ideal for applications where noise is an issue.
- **High efficiency**
Heat exchanger is up to 70% effectiveness with low energy DC motors and components help to minimise electrical energy consumed.
- **Simple commissioning**
'Dial a duty' allows exact duty to be selected.
- **Low maintenance costs**
Aluminium heat exchanger block and drip tray are easily accessible for quick and easy access.
- **Quick installation**
Single point bracket ideal for quick 1st and 2nd fix.
- **Healthy environment**
Removes up to 95% of the dust from the atmosphere.
- **Advice and installation service**
Please contact Nuaire on 02920 858 200 (or email drawings@nuaire.co.uk) for advice on ventilation solutions and installation service.
- **Multiple spigot options**
Easy installation position.
- **Flexible condensate**
Condensate drain option, either left or right hand side.
- **5 year warranty**
For peace of mind.

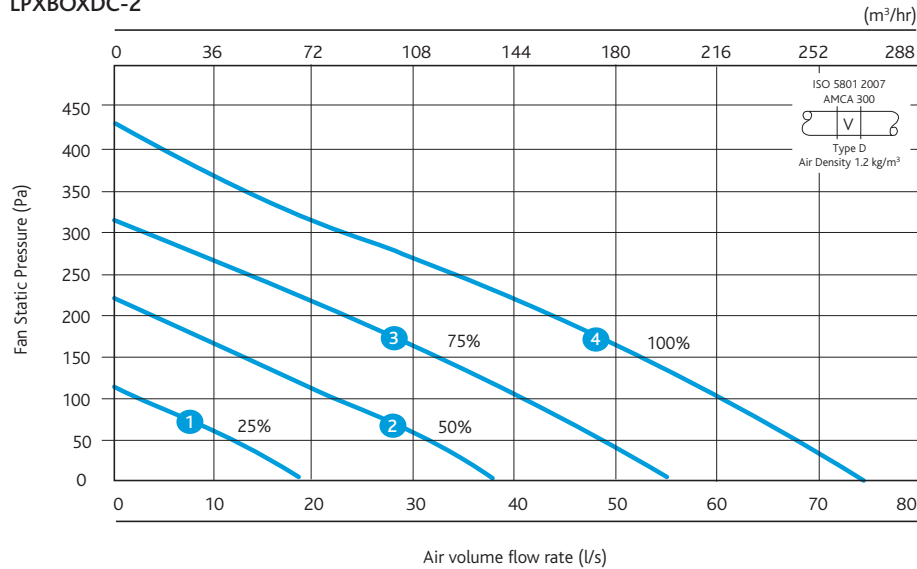
Typical installation



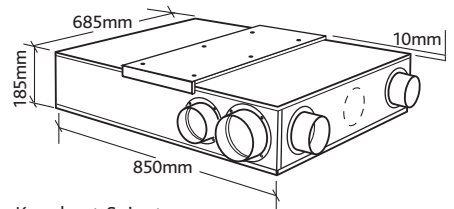
Knockout spigots.

Performance LPXBOXDC-2

LPXBOXDC-2



Dimensions (mm) LPXBOXDC



Knockout Spigots
4 x 125mm dia. 6 x 100mm dia.

Code descriptions

LP - XBOX - DC-2

1. Low profile
2. Range
3. Direct current

LPXBOXDC-2

ELECTRICAL, SOUND & WEIGHT

Curve	Ref	**W	FLC amps		Sound figures Induct sound power level re 1pW							Breakout dBA @3m	Weight Kg
					125	250	500	1K	2K	4K	8K		
1 (25%)	Supply fan	5	0.05	Inlet	29	31	28	15	16	7	2	15	25
				Outlet	19	26	23	14	8	4	4		
	Extract fan	5	0.05	Inlet	18	26	17	7	4	5	5	15	
				Outlet	35	39	43	34	34	26	16		
2 (50%)	Supply fan	17	0.1	Inlet	45	47	44	31	32	23	15	29	
				Outlet	35	42	39	30	24	12	9		
	Extract fan	17	0.1	Inlet	34	42	33	23	19	9	9		
				Outlet	51	55	59	50	50	42	32		
3 (75%)	Supply fan	51	0.3	Inlet	55	57	54	41	42	33	25	38	
				Outlet	45	52	49	40	34	22	19		
	Extract fan	51	0.3	Inlet	44	52	43	33	29	19	19		
				Outlet	61	65	69	60	60	52	42		
4 (100%)	Supply fan	120	0.7	Inlet	62	64	61	48	49	40	32	44	
				Outlet	52	59	56	47	41	29	26		
	Extract fan	120	0.7	Inlet	51	59	50	40	36	26	26		
				Outlet	68	72	76	67	67	59	49		

*Fans are programmed with a soft start, therefore starting current is the same as the FLC. Please note step curves shown are for information purposes only and are not individual units. The units actual duty range is infinitely variable. **W = Watts are total power consumption.

Wiring - LPXBOXDC-2

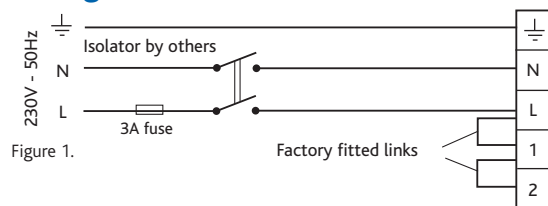


Figure 1. Basic wiring. Both supply and extract will run at constant speed. The fan duty is controlled via the 'Boost' setting.

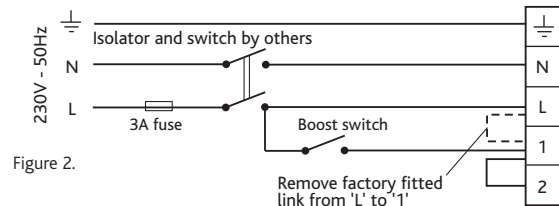


Figure 2.

Figure 2. Trickle and Boost operation. Both supply and extract will run at trickle and boost speed together. Closing the boost switch will cause both fan to run at boost setting.

Figure 3. Wiring for independent boost. The supply and extract fan will trickle and boost independently.

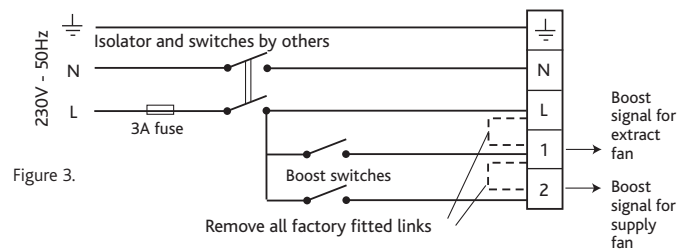


Figure 3.

Download full wiring details from www.nuairegroup.com/specifications

LPXBOXDC-2

Consultants Specification

Operation

The supply and extract ventilation unit shall be as indicated on the drawings and shall be in accordance with the particular fan schedule in the specification. The ventilation unit shall automatically vary the ventilation rate, as it receives signals from one of the optional interconnected sensors. When signals are received, the fan shall either vary its speed proportionally or on a trickle and boost principle.

The unit shall have the facility to commission the supply and extract fans individually via inbuilt minimum and maximum speed adjustment, the fans themselves shall have infinitely variable speed control.

LPXBOXDC-2 unit specification

The fans shall be acoustically lined with high density class "O" flame retardant insulation, giving extremely low noise levels. The unit shall have a heat exchanger block manufactured from aluminium with a thermal efficiency of approximately 70% which shall be protected by G2 grade filters on supply and extract. It shall come complete with a condensate drip tray and 22mm drain connection, integral minimum and maximum speed controls, run on timer and fascia mounted failure indication. The breakout noise level and power requirements shall be as detailed by the unit manufacturer and as detailed in the ventilation equipment schedule. The unit shall have low energy, high efficiency d.c. fan/motor assemblies with sealed for life bearings. The depth of the low profile unit shall not be greater than 185mm and shall incorporate a low profile single point mounting bracket, (allow 10mm for bracket). The unit shall be constructed with one removable panel allowing full maintenance access to all components. To facilitate the interconnection of branch ducts the unit shall have multiple spigot connections with integrated balancing dampers. Spigot connections provided.

LPXBOXDC-2 control options

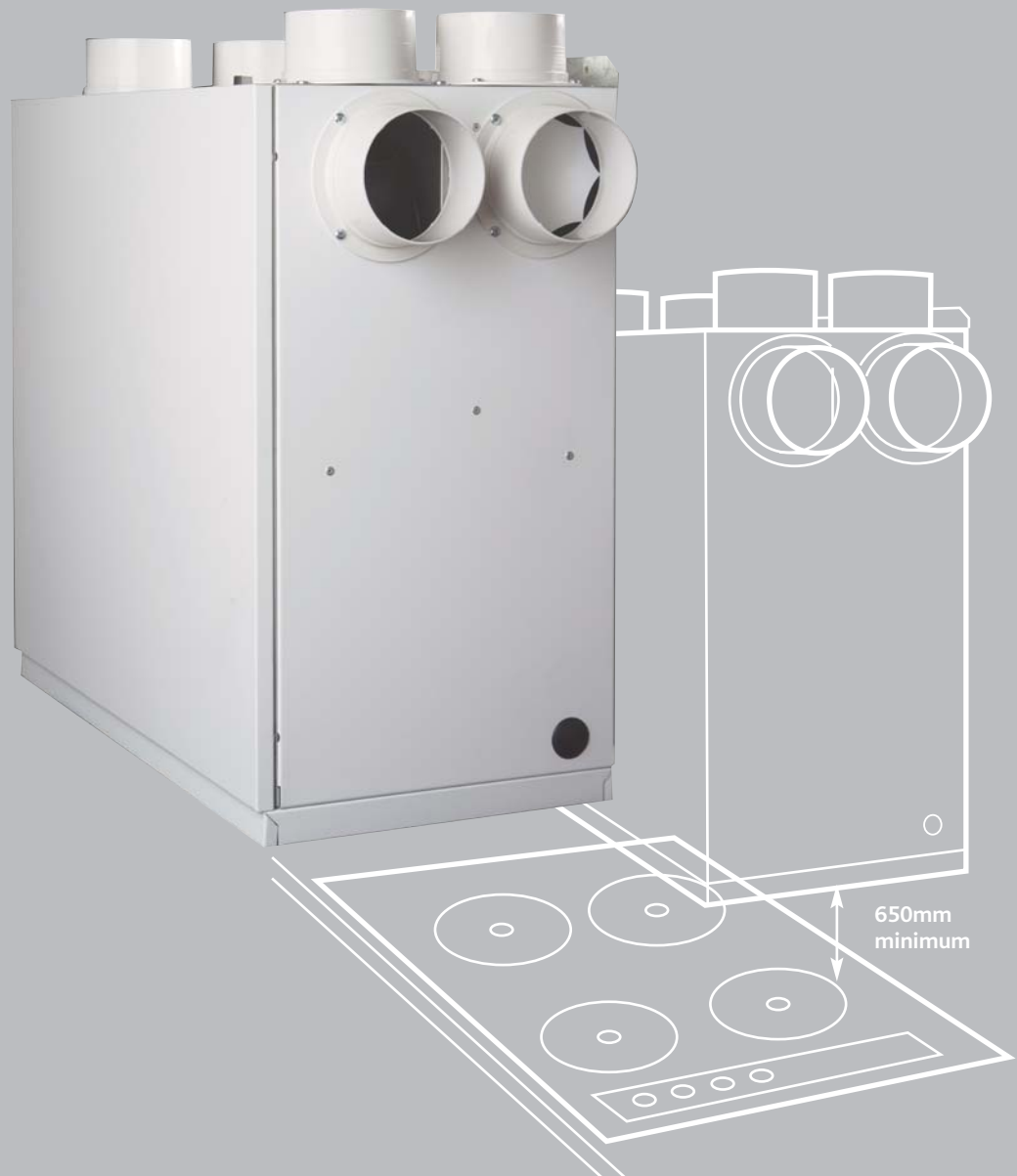
All versions shall have the following functions integrally mounted within the fan unit on a purpose made PCB, all such components pre-wired and factory fitted by the manufacturer: -

- Integral speed control on supply and extract.
- Integral background ventilation control/set point.
- Integral boost ventilation control/set point.
- Integral run on timer.
- Volt free failure indication (direct from individual fan).
- Integral S/L terminal for boost from remote switch, e.g. light switch.

Units shall be the lpXboxdc-2 as manufactured by Nuaire.

The standard warranty for lpXboxdc series shall be for 5 years.

▶ COOKERXBOX - KITCHEN CANOPY HEAT RECOVERY SYSTEM

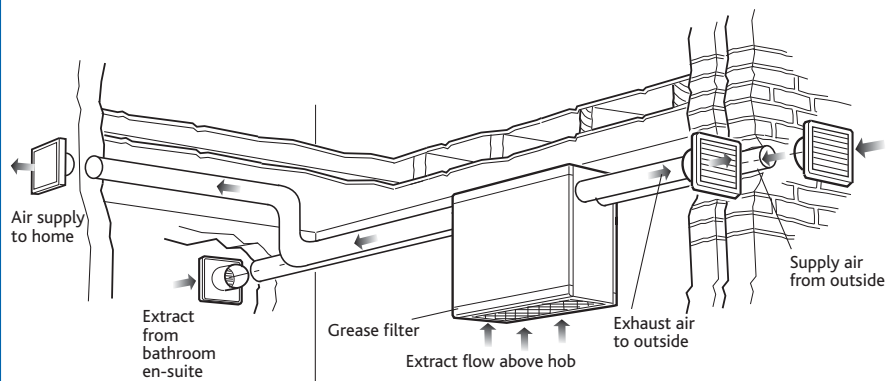


Space saving above cooker
heat recovery unit with integral
automatic boost.

BENEFITS

- Slim line profile**
 Designed to sit behind cupboard door.
- Heat recovery**
 From 66% effective. Recovers heat when cooking, supplying warm air into dwelling avoiding condensation.
- Meets regulations**
 New build 'best practice' rating in GPG 268.
- Flexible speed control**
 4 speed settings with automatic boost facility (thermostat senses air temp and boosts when required).
- Flexible installation**
 Connections are either from the sides or top. Side connections are used to enable the ducting to run across the top of kitchen wall units.
- Quick & easy maintenance**
 Front and underneath panels allows for quick access to condensate drain and electrical supply, with washable grease filters.
- Finish**
 White pre-coated steel finish with white ABS spigot connections.
- Advice and installation service**
 Please contact Nuaire on 02920 858 200 (or email drawings@nuaire.co.uk) for advice on ventilation solutions and installation service.
- 5 year warranty**
 For peace of mind.

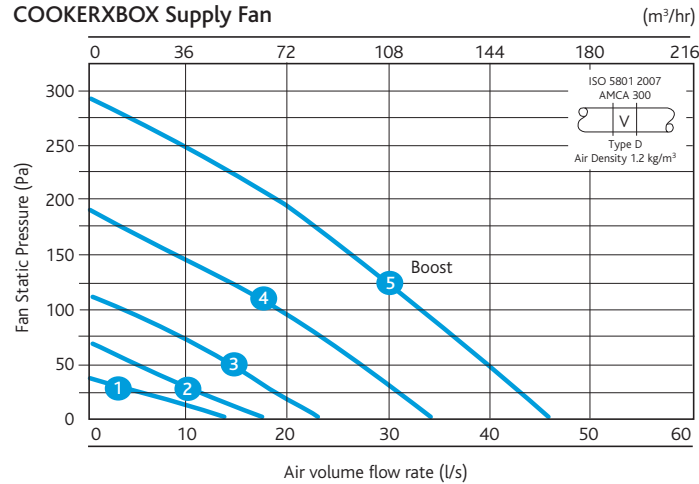
Typical installation



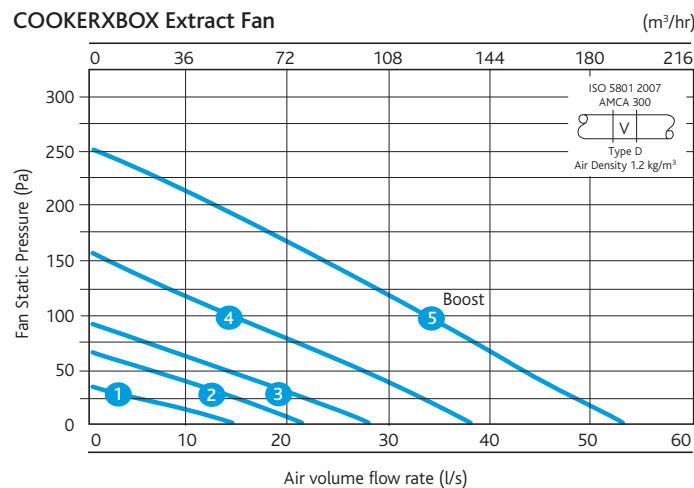
Designed to sit behind the cupboard door.

Performance - COOKERXBOX

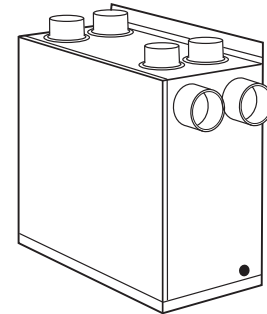
COOKERXBOX Supply Fan



COOKERXBOX Extract Fan



Casing



Code descriptions

CKR XBOX

1 2

1. Cooker type - left hand (supply air to house)
2. Range
For right hand use code CKRXBOX - RH

Access panels

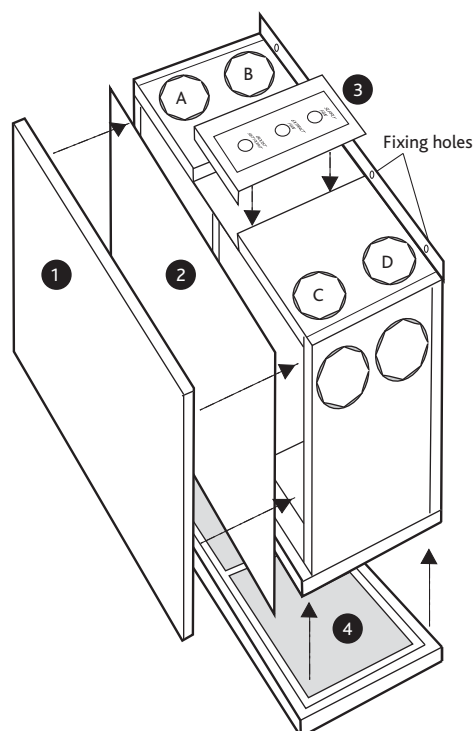
In order to make connections for the condensate drain and electrical supply the access panels shown should be removed, starting with No.1. All panels should be stored safely to avoid damage.

A = Supply air to house.

B = Extract air from bathroom/ensuite.

C = Exhaust air to outside.

D = Supply air from outside.



COOKERXBOX

ELECTRICAL, SOUND & WEIGHT

Extract Fan Curve	Code	Phase	Motor power kW	Full load* current amps		Induct Sound Power Levels dB re 1pW								Breakout dBA @3m	Weight Kg
						63	125	250	500	1K	2K	4K	8K		
5	ckrXbox	1	60	0.260	Boost open inlet	58	60	62	53	47	45	40	30	39	20
4			34	0.140	Speed 4 open inlet	52	54	55	46	40	38	29	26	31	
3			24	0.105	Speed 3 open inlet	49	51	43	40	34	30	24	25	24	
2			18	0.080	Speed 2 open inlet	48	51	39	35	30	25	22	20	21	
1			12	0.060	Speed 1 open inlet	44	45	37	32	27	23	22	20	18	

Supply Fan

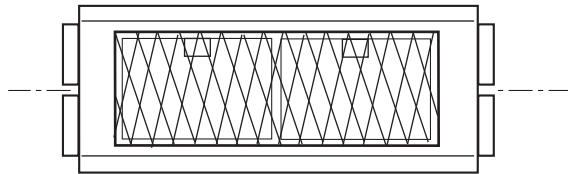
5	ckrXbox	1	60	0.260	Boost open outlet	51	63	71	66	65	61	54	44	52	
4			37	0.140	Speed 4 open outlet	48	52	64	61	59	54	45	36	46	
3			24	0.105	Speed 3 open outlet	44	50	53	54	53	47	35	28	39	
2			18	0.080	Speed 2 open outlet	38	39	41	41	39	27	22	20	25	
1			12	0.060	Speed 1 open outlet	38	39	37	32	27	23	22	20	17	

Note: Part L1 compliance: Specific Fan Power (SFP) will be less than 2.0 for typical system resistances (estimated at 75Pa for boost condition), at default speeds (1 and 3). Minimum heat exchanger efficiency at all settings is 66%.

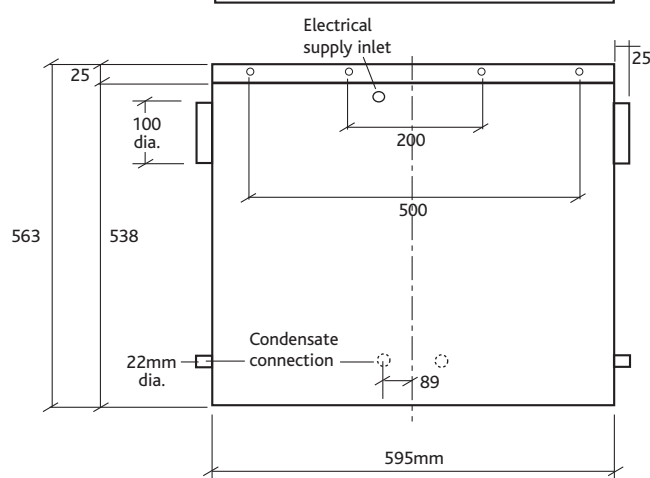
*Unit has a soft start function therefore the starting current is same as flc.

Dimensions (mm) COOKERXBOX

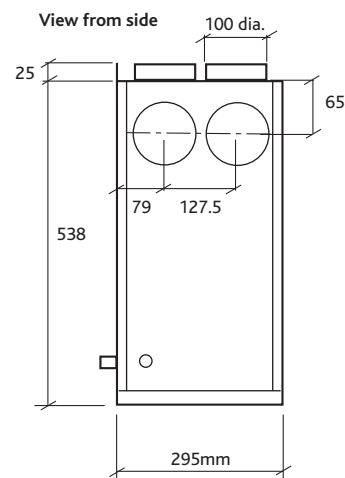
View from bottom



View from front



View from side



Ducting connections

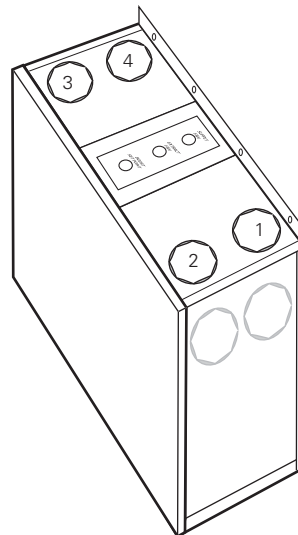
There are four ducting connections to be made from the sides of the unit. The four ducting positions on the top of the unit can be employed for other installation options.

- 1) Fresh air input to unit (100mm dia).
- 2) Exhaust air to outside (100mm dia).
- 3) Fresh air supply to dwelling (100mm dia).
This duct should terminate via a discharge diffuser located centrally within the dwelling.
- 4) Extract air from bathroom/en-suite (100mm dia).

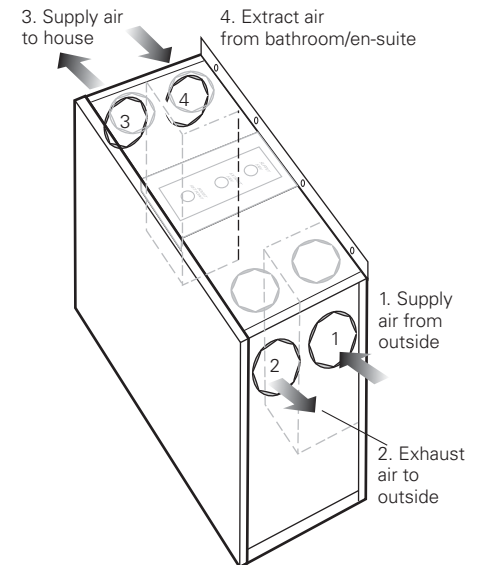
Note: the distance between the underside of the unit and the supporting surface for the cooking vessel must be at least 650mm.

Top spigot functions

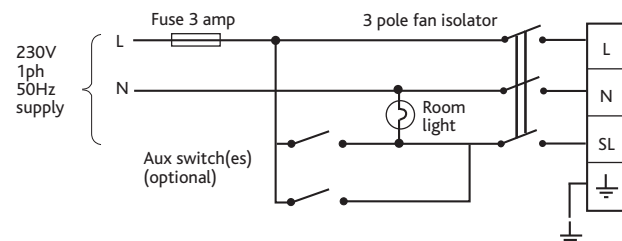
For optional installation choice. The numbered spigots perform the same function as the equivalent numbered side spigots.



Side spigot functions



Wiring - COOKERXBOX



Operation

The unit is designed to continuously supply and extract air. The unit contains a thermostat to sense the extract air temperature. When the temperature exceeds the boost set point the extract fan boosts to full speed. Boost speed may also be activated by remote switch/es. Ensure that supply/extract motor wires are swapped over if opposite hand is required.

Boost Fan/s Selection

By default only the extract fan boosts to full speed. To change this to boost the supply fan as well as the extract fan, move link to position B.



Fan Speeds

Unless onsite conditions dictate otherwise both supply and extract fans should be set on the lowest setting.

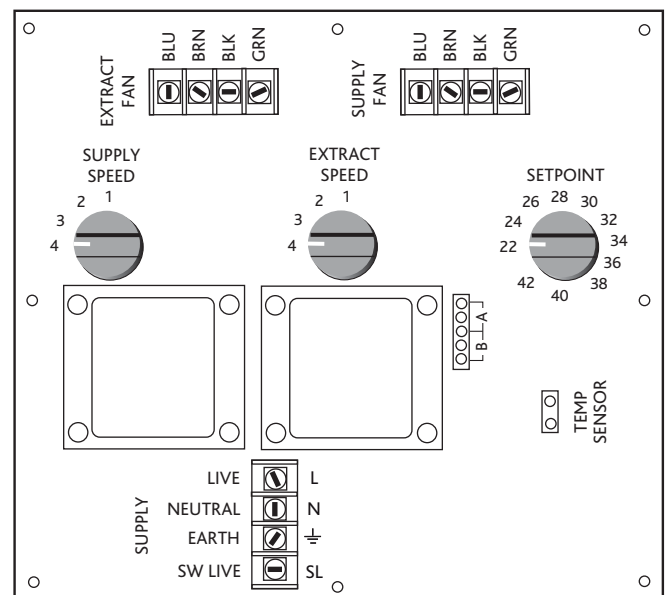
Boost Set Point

Boost should be triggered whilst cooking. It is suggested the set point should be set to 32°C although this may need changing depending on the user lifestyle.

Connecting Auxilliary Switches

It is possible to provide additional control of the unit by means of up to two auxilliary switches connected to the switched live. These switches may be operated manually or by additional Thermostats, Humidistats and PIR Detectors.

Circuit board connections.



Download full wiring details from www.nuairegroup.com/specifications

COOKERXBOX

Consultants Specification

Operation

Whole home ventilation unit with heat recovery for homes without a loft.

COOKERXBOX - unit specification

The casing shall be manufactured from easy to clean pre-coated galvanised steel.

A washable flame retardant supply air filter of G3 grade shall be fitted which may be accessed behind the grease filters. The unit shall incorporate two backward curved centrifugal impeller fans for continuous central input and demand activated multiple extract from 'wet' areas.

The fans shall be driven directly by high efficiency AC motors with a maximum power consumption of 60 watts each.

The unit shall incorporate an easily removable, washable plate heat exchanger manufactured in flame retardant aluminium. The heat exchanger shall be arranged to remove heat from the extract airflow and to transfer it to the input airflow whilst permitting no mixing.

Up to 66% of the available heat may be recovered.

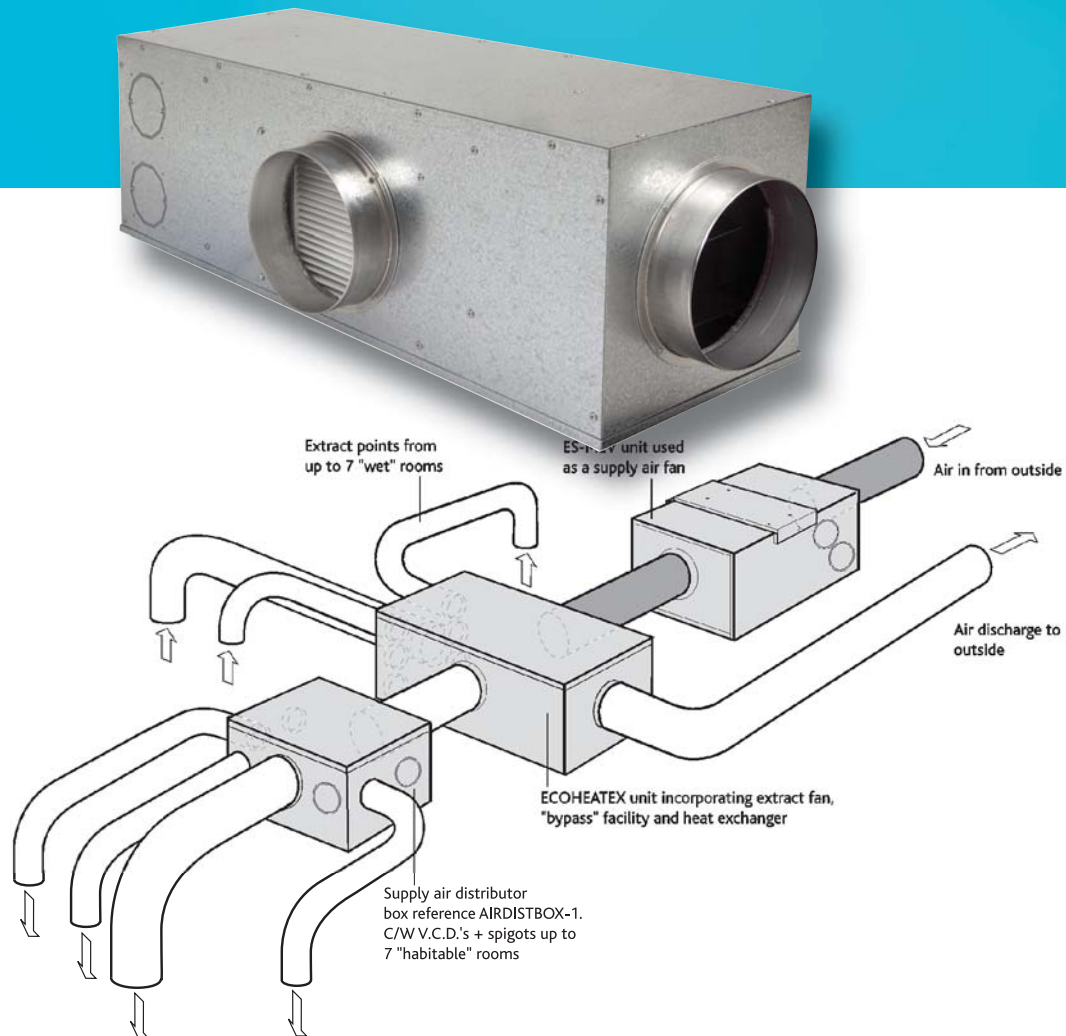
The unit shall incorporate an integral grille with washable grease filters and may be configured for general kitchen extract or for above hob application.

The unit input fan volume control setting shall be adjustable via an integral 4 position switch and shall typically provide 14-33 l/s continuously with the facility to boost, if required to 47 l/s with the extract boost.

The unit extract fan shall operate continuously at a low background rate, typically 15-37 l/s, set via an integral 4 position switch, boosting to high duty extract of approximately 47 l/s when integral sensor detects available heat in the extract air stream. Alternatively, high duty extract may be via a separate switch (not supplied).

The standard warranty for cookerXbox shall be for 5 years.

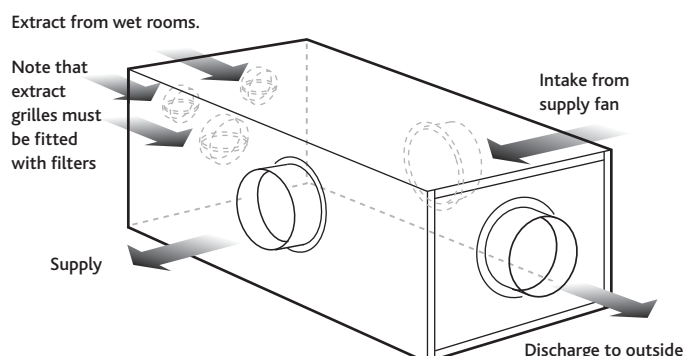
ECOHEATEX Heat Exchange Unit- the flexible heat recovery unit ideal for refurb due to its modular format.



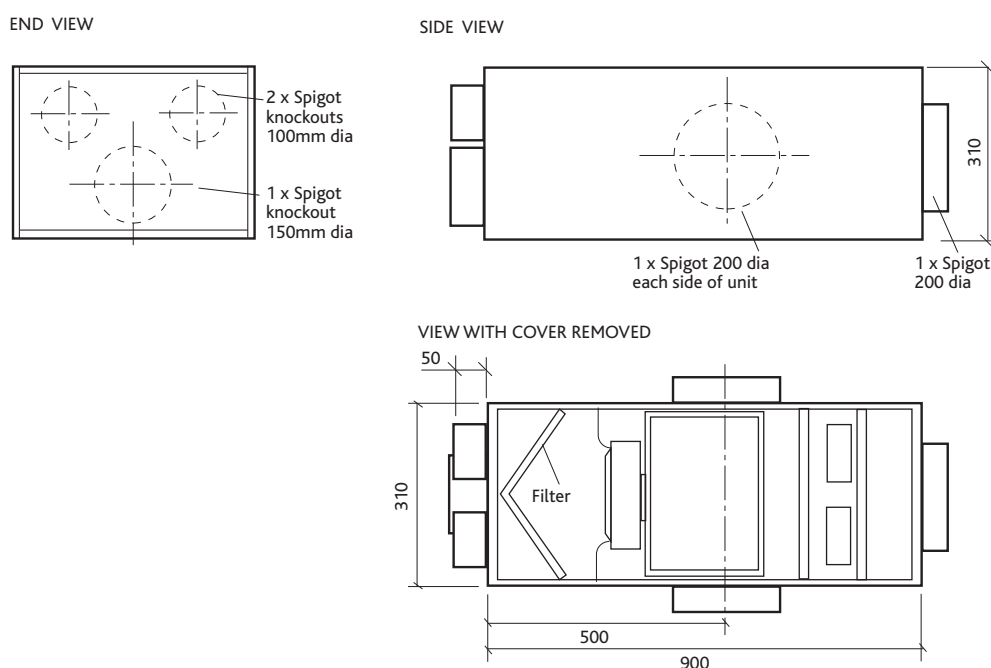
The Nuaire ECOHEATEX Heat Exchange unit consists of an extract fan, a cross-flow heat-exchange unit, a by-pass damper and an intelligent control system.

It is designed to be used in conjunction with a PIV unit to form a supply and extract system with heat exchange (Please refer to Positive Input Ventilation Section for further details - the PIV unit may be a Drimaster, Drimaster 2000 or Dri-Ecosmart 1 or 2).

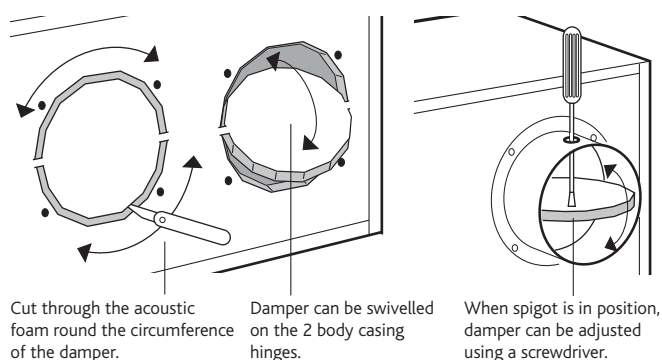
The unit may also be used with a Nuaire Sunwarm system, where it would connect in place of the PIV unit. For further details on Sunwarm systems please refer to the Renewables section.



Ecoheatex Dimensions (mm)



Various damper/inlet spigot positions can be utilised with ECOHEATEX. All inlet dampers are 'closed' as knockouts when delivered but can be opened using a sharp knife. After the spigot has been fixed adjust the damper with a screwdriver.



The spigot locations

- Two x 100mm extract air end spigots.
- One x 150mm extract air end spigot.
- One x 200mm discharge spigot for taking air to outside.
- One x 200mm intake spigot for taking air from PIV unit.
- One x 200mm supply spigot for taking air to PIV supply air diffuser.

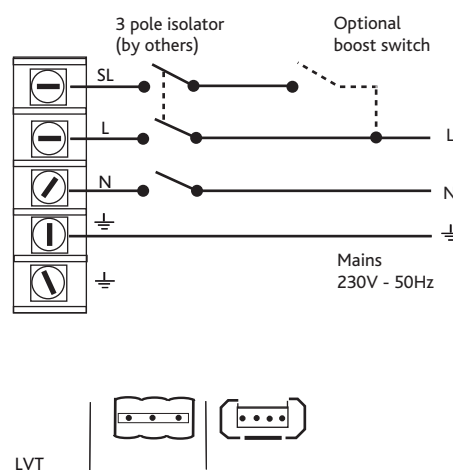
Any, or all, of the extract spigots can be utilised and connected to ducting as required.

Electrical connection

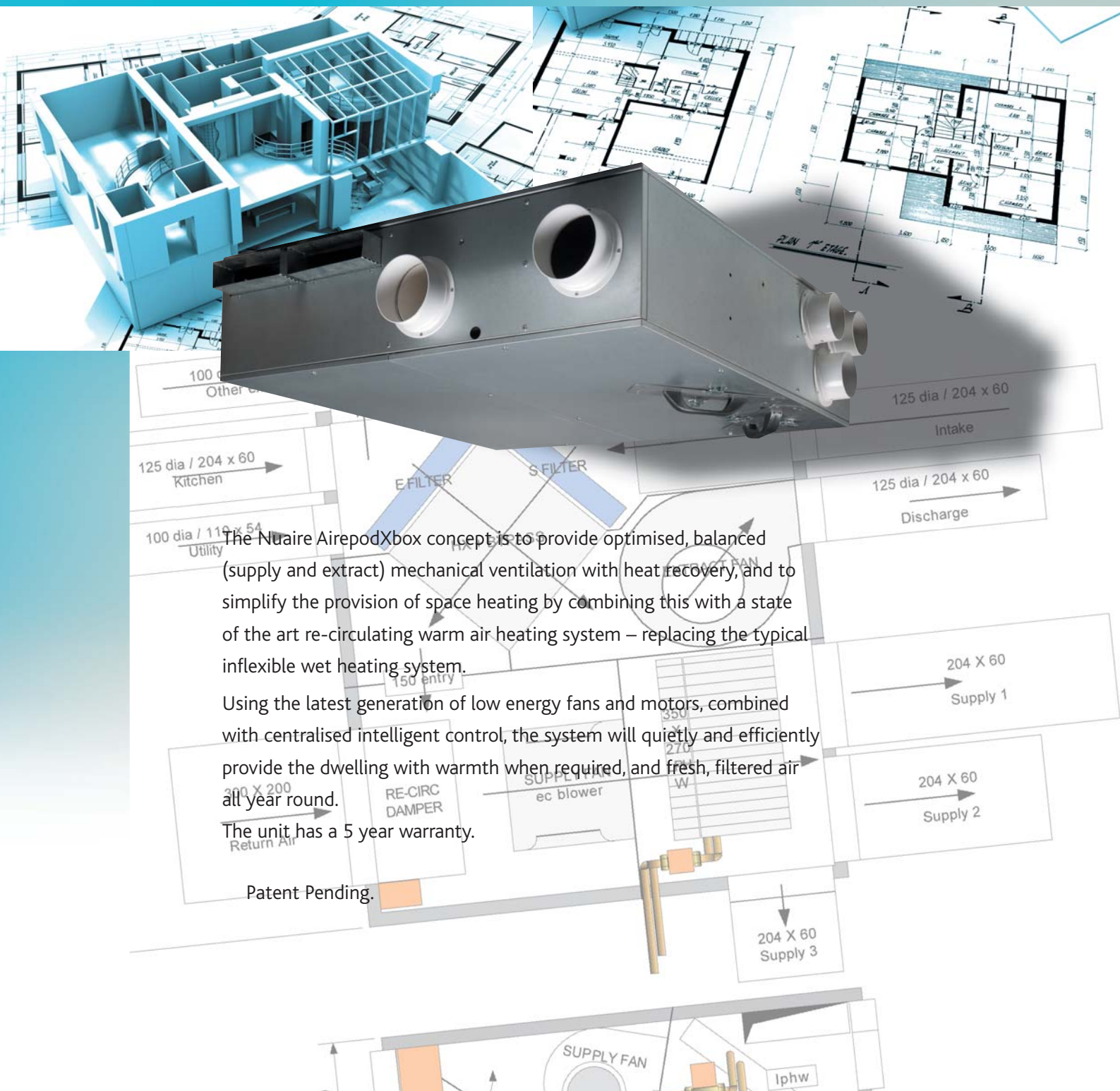
Connect a 230V 50Hz single-phase power supply to the circuit as shown in the illustration below.

To set the extract fan to run at maximum speed, connect a 230V single-phase signal into the terminal SL.

Connect data cable to the user control or the supply fan via the connector labelled 'Net'.



AirepodXbox range - all in one heat recovery solution for ventilation, space heating and summer free cooling.



The Nuaire AirepodXbox concept is to provide optimised, balanced (supply and extract) mechanical ventilation with heat recovery, and to simplify the provision of space heating by combining this with a state of the art re-circulating warm air heating system – replacing the typical inflexible wet heating system.

Using the latest generation of low energy fans and motors, combined with centralised intelligent control, the system will quietly and efficiently provide the dwelling with warmth when required, and fresh, filtered air all year round.

The unit has a 5 year warranty.

Patent Pending.