

Acoustic Enclosures

MRXBOXAB-ECO4-AE

The MRXBOXAB-ECO4-AE is designed to provide optimised balanced (supply and extract) mechanical ventilation heat recovery, all whilst being encased within our Acoustic Enclosure.

This unit incorporates an acoustic surrounding to your MVHR unit and flexible duct connectors within an enclosure and supporting the internals on anti-vibration mounts significantly decreasing noise and vibration output.

Tempered air is delivered into 'living areas' whilst extracting moisture laden air from 'wet' areas, creating comfortable and well ventilated homes.

The unit has the facility to commission the supply and extract fans independently on both minimum and maximum speeds, and the heat exchange block can recover up to 95% of the normally wasted heat that has been extracted from the 'wet rooms'.

Please note both of these units are available in Opposite Handed format.

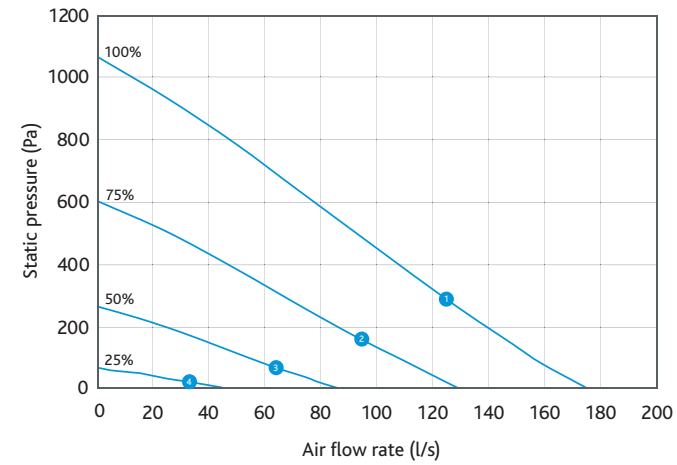


Typical Installation



- ◆ Limited ceiling voids in modern apartments and complex duct arrangements coupled with increased airflow demands placed on MVHR systems in an effort to reduce the risk of overheating lead to higher system resistances and running speeds.
- ◆ Restrictions on utility cupboard space, practical and financial limitations frequently prevent the construction of acoustic cupboards, whilst modern light-weight wall construction methods offer little mass to absorb unit noise and vibration. This can often result in the transfer of low frequency noise and vibration into adjacent living and sleeping areas.
- ◆ These factors leave designers at risk of exceeding the stringent noise requirements specified in Part F of the building regulations and further defined by CIBSE.
- ◆ By integrating the MVHR unit and flexible connections within an enclosure and supporting the internals on anti-vibration mounts, noise and vibration are isolated.

Performance — MRXBOXAB-ECO4-AE



MRXBOXAB-ECO4-AE (SW)

Wall mounted unit with 100% bypass and integral humidistat.

MRXBOXAB-ECO4-AE-OH (SW)

Opposite handed configuration wall mounted unit with 100% bypass and integral humidistat.

Summer/Winter (SW) Switch

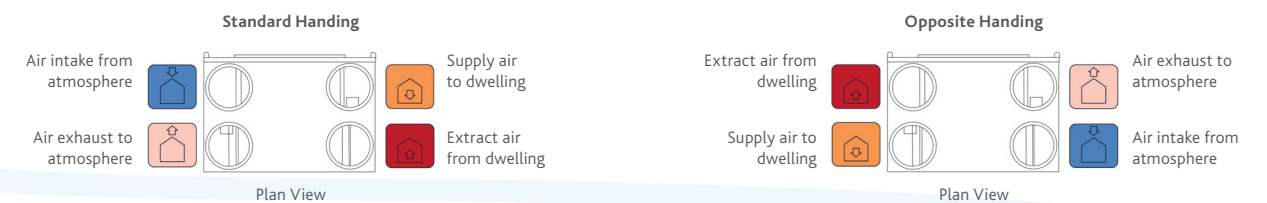
A two-position switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles.

Electrical & Sound

ECO4 AE Sound Data											
Curve	Maximum power consumption (Watts)		Sound Power Levels dB re 1pW (Frequency Hz)								dBA @3m
			63	125	250	500	1k	2k	4k	8k	
1	348	Open inlet	61	56	56	65	54	48	40	33	
		Open outlet	64	65	66	78	66	64	58	55	
		Breakout	64	58	54	48	29	18	<16	<16	32
2	148	Open inlet	51	54	55	56	48	43	33	25	
		Open outlet	59	64	64	70	60	58	52	47	
		Breakout	59	56	53	43	25	<16	<16	<16	29
3	45	Open inlet	44	47	44	42	36	31	18	<16	
		Open outlet	51	58	56	54	48	46	35	28	
		Breakout	47	50	45	27	<16	<16	<16	<16	20
4	10	Open inlet	41	43	32	33	28	19	<16	<16	
		Open outlet	47	54	42	45	38	33	19	<16	
		Breakout	41	45	33	18	<16	<16	<16	<16	<16

The maximum power consumption shown above (Watts) is consumed on units running continuously, not taking into account any heat recovery saving and based on SAP Product Characteristics Database (PCDB) testing. The breakout case-radiated dBA values are given for Hemispherical free field radiation at 3m – to obtain the Spherical radiated data, subtract 3 dBA.

Please note: Sound data is provided at a particular duty point for 25%, 50%, 75% and 100%. For accurate sound data at a specific speed duty, please use Nuair's fan selector or call the office on 029 2085 8500.



MRXBOXAB-ECO4-AE

SAP PCDB 2009 Test Results

Product Code	MRXBOXAB-ECO4-AE		
SAP Identifier	MRXBOXAB-ECO4		
Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.62	94%	Yes
Kitchen + 2 Wet Room	0.56	94%	Yes
Kitchen + 3 Wet Room	0.56	93%	Yes
Kitchen + 4 Wet Room	0.61	93%	Yes
Kitchen + 5 Wet Room	0.67	93%	Yes
Kitchen + 6 Wet Room	0.75	92%	Yes
Kitchen + 7 Wet Room	0.90	91%	Yes

SAP PCDB 2012 Test Results

Product Code	MRXBOXAB-ECO4-AE		
SAP Identifier	MRXBOXAB-ECO4		
Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.62	94%	Yes
Kitchen + 2 Wet Room	0.62	93%	Yes
Kitchen + 3 Wet Room	0.66	93%	Yes
Kitchen + 4 Wet Room	0.79	92%	Yes
Kitchen + 5 Wet Room	0.94	91%	Yes
Kitchen + 6 Wet Room	1.15	91%	Yes
Kitchen + 7 Wet Room	1.41	91%	Yes

General Arrangement

STANDARD UNIT SPIGOT LOCATION & DUCTING REFERENCES

Spigot 1. 200mm dia. = Extract air from dwelling
 Spigot 2. 200mm dia. = Exhaust air to outside
 Spigot 3. 200mm dia. = Intake air from outside
 Spigot 4. 200mm dia. = Supply air to property

OPPOSITE HANDED UNIT SPIGOT LOCATION & DUCTING REFERENCES

Spigot 1. 200mm dia. = Intake air from outside
 Spigot 2. 200mm dia. = Supply air to property
 Spigot 3. 200mm dia. = Extract air from dwelling
 Spigot 4. 200mm dia. = Exhaust air to outside

Detail of unit control on front panel.

Post commissioning remove adhesive backing and seal.

Tamper proof label following commissioning, includes system status indication.

Two removable ISO Coarse
 Filter Code MVHR-ECO4-FILTERKIT

Ancillaries

Distribution Box

The MRXBOX-DB4 is fitted on top of the MRXBOXAB-ECO4-AE before installation and offers a neat arrangement by directly distributing the initial ducting. It further benefits this MVHR system by reducing any in-line noise breakout, therefore improving this acoustic solution.

DIMENSIONS (mm)
Weight - 9kg

MRXBOX-DB4 Spigot size is 220 x 90

ACOUSTICALLY ENCLOSED MVHR UNIT

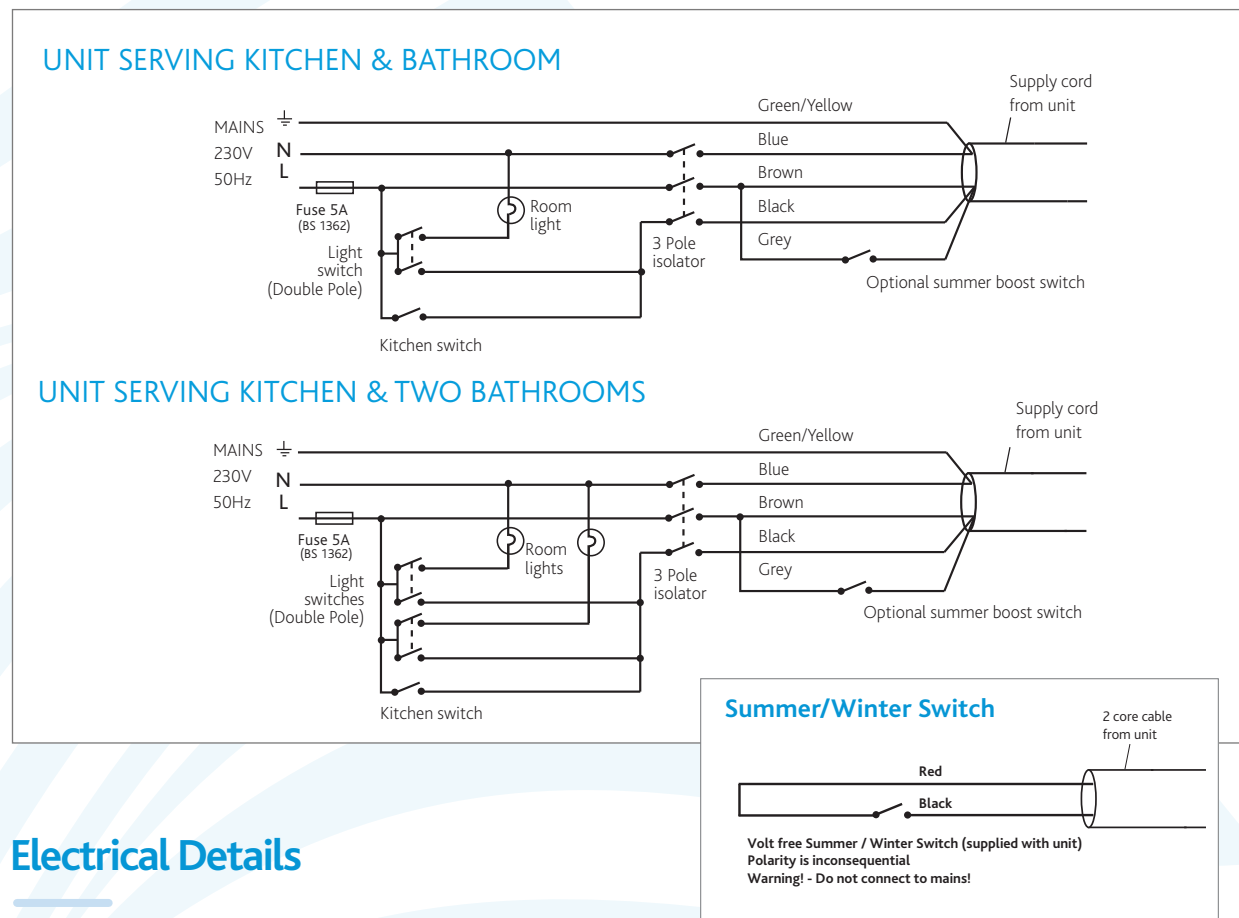
COVER PLATE
 LATCH PLATE
 TOGGLE LATCH

Technical – MRXBOXAB-ECO4-AE

DIMENSIONS (mm)
Weight - 56kg

Condensate drain position for standard hand configuration. For opposite hand configuration, position will be mirrored to other side.

MRXBOXAB-ECO4-AE



Electrical Details

ELECTRICAL DETAILS: MRXBOXAB-ECO4-AE	
Voltage:	230V 1ph 50Hz
Consumption:	1.3 Amp
Fuse rating:	5 Amp

Optional Sensors, Switches and Detectors

MRXBOX95-PIR (Passive Infrared)

A low voltage sensor, detects movement and activates system. Incorporates overrun timer and timer adjustments.

MRXBOX95-HUM (Relative Humidity)

A low voltage sensor, activates the system when the RH level is above set point. Incorporates overrun timer and RH setpoint level adjustment.

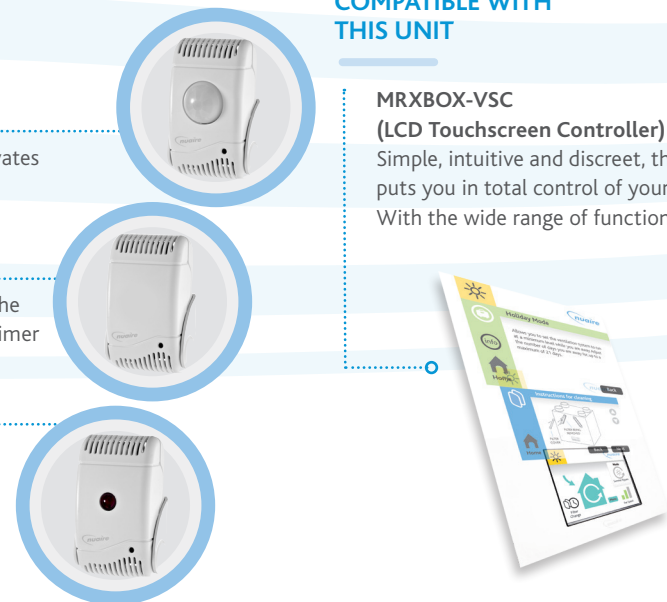
MRXBOX95-RFI (Remote Fail Indicator)

If fan failure occurs, the audio visual indicator will flash a warning.

MRXBOX-VSC CONTROL SCREEN COMPATIBLE WITH THIS UNIT

MRXBOX-VSC (LCD Touchscreen Controller)

Simple, intuitive and discreet, the LCD control puts you in total control of your MVHR system. With the wide range of functions and settings.



Technical Data

Fan Codes: MRXBOXAB-ECO4-AE / MRXBOXAB-ECO4-AE-OH
Acoustically Enclosed Wall Mounted Multi-room Heat Recovery 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 ISO Coarse (G3 Grade) filters on fresh air inlet and system extract. The heat exchanger and filters shall be accessible via the front access panel, enabling quick and easy maintenance.

The unit shall have low energy, high efficiency EC fan/motor assemblies with sealed for life bearings, the impellers shall be backward curved centrifugal type. The motors shall be suitable of an ambient temperature of 40°C. The unit shall be supplied complete with a condensate drip tray and 21.5mm drain connection.

The unit shall be suitable for 200mm diameter circular ducting. The breakout noise level and power requirements shall be as detailed by the unit manufacturer and in accordance with the ventilation equipment schedule. Units shall be one of MRXBOXAB-ECO4-AE and OH as manufactured by Nuair.

The unit shall be provided within a white pre-painted or coated steel acoustic enclosure lined with a minimum of 20mm class '0' acoustic foam insulation to reduce breakout noise. Flexible duct connections shall be within the enclosure, pre-fitted between the MVHR unit and the connection spigots on the top face of the enclosure. (Removing the need for flexible duct connectors outside of the unit which may cause breakout).

The MVHR unit shall be retained within the enclosure on a metal tray supported on turret type anti-vibration mounts of suitable deflection to ensure that vibration is not transmitted to the supporting structure.

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. This unit is also available in Opposite Hand formatting.

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 the switched live signal from light/ remote switches or any ancillary sensors. When signals are received, the fan shall alter its speed to adjustable, normal and boost rates.

The unit shall have the facility to commission the supply and extract fans independently on minimum speed (continuous background ventilation), and boost speed, via inbuilt minimum and maximum speed adjustment. The fans shall have infinitely variable speed control.

INTEGRAL AUTOMATIC SUMMER BYPASS

Including Automatic SUMMER BYPASS where intake and return air temperatures shall be measured so that supply air temperatures can be maximised during winter months and minimised as external ambient temperature rises. The Summer Bypass damper shall be opened by a wax actuator. Supply and Extract air shall be filtered irrespective of the bypass setting (open or closed).

INTEGRAL HUMIDITY SENSOR

The integral humidity sensor incorporated within the extract fan chamber will automatically boost both the extract and supply fan, to the commissioned boost speed, when the humidity level exceeds that set by the front panel mounted adjustment potentiometer.

SUMMER/WINTER (SW) SWITCH

The unit shall feature volt-free connections for a two-position Summer/Winter switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles. (Summer/Winter)

Summer setting shall target under 20 degrees C internal dwelling temperature. Winter setting shall ensure heat recovery at all times. Temperature control logic shall be factory pre-set and require no on-site programming. The unit shall feature 3 commissionable speeds for both supply and extract. It shall be possible to enable the unit to its 3rd speed by means of a switch or a programmable thermostat with occupant override (IAQ-STAT).

The 3rd speed (overheating) shall be inhibited when outside air temperature exceeds inside temperature and bypass closes so that extracted air cools incoming fresh air.

CONTROL OPTIONS

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

- ◆ Independent control of background supply and extract flow rates.
- ◆ Independent control of boost speed supply and extract flow rates.
- ◆ Integral fan failure indication.
- ◆ Integral S/L terminal for boost from remote switch, e.g. light switch, kitchen boost switch.
- ◆ Integral heat exchanger frost protection.
- ◆ Discreet daily run monitor.
- ◆ Integral humidistat.

OPTIONAL CONTROLS

MRXBOX95-RFI (Remote Fail Indicator)

MRXBOX95-PIR (Passive Infrared)
A low voltage sensor which detects movement and activates system.

MRXBOX95-HUM (Relative Humidity)

A low voltage sensor which activates the system when the relative humidity level is above a set point.

MRXBOX-VSC LCD Touchscreen Controller

Controller for MVHR system with a 3.2" touch screen display.

The unit shall be offered with a 5 year warranty which starts from the day of delivery, and includes parts and labour for the first year and parts only for the remaining 4 years.

All Round Acoustic Solutions

MRXBOXAB-ECO4-1Z

The MRXBOXAB-ECO4-1Z is designed to provide optimised balanced (supply and extract) mechanical ventilation heat recovery, whilst offering the best all-in-one acoustic solution on the market.

The 1Z is the all-in-one acoustic enclosure, allowing in the MVHR unit and attenuator to be entirely cased in an aesthetically pleasing model which encloses the attenuators and flexible duct connections that would otherwise be visible, all whilst making significant reduction in cased-radiated noise.

Tempered air is delivered into 'living areas' whilst extracting moisture laden air from 'wet areas', creating comfortable and well ventilated homes. The unit has the facility to commission the supply and extract fans independently on both minimum and maximum speeds, and the heat exchange block can recover up to 95% of normally wasted heat that has been extracted from 'wet rooms'.

Please note both of these units are available in Opposite Handed format.

Achieves
100%
duty in bypass mode

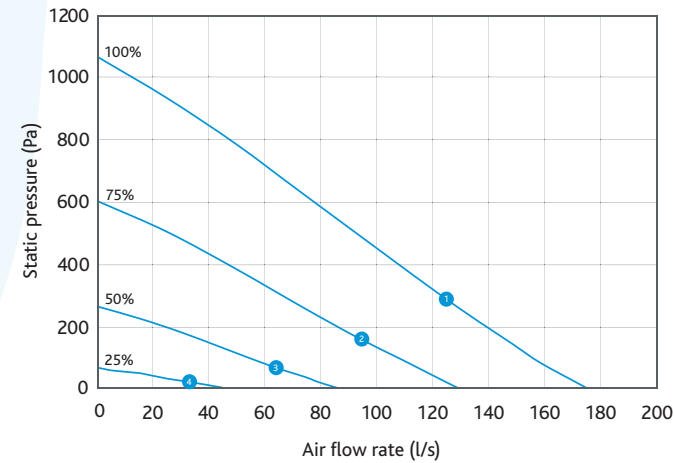


Typical Installation



- ◆ Limited ceiling voids in modern apartments and complex duct arrangements coupled with increased airflow demands placed on MVHR systems in an effort to reduce the risk of overheating lead to higher system resistances and running speeds.
- ◆ Restrictions on utility cupboard space, practical and financial limitations frequently prevent the construction of acoustic cupboards, whilst modern light-weight wall construction methods offer little mass to absorb unit noise and vibration. This can often result in the transfer of low frequency noise and vibration into adjacent living and sleeping areas.
- ◆ These factors leave designers at risk of exceeding the stringent noise requirements specified in Part F of the building regulations and further defined by CIBSE.
- ◆ By integrating the MVHR unit and flexible connections within an enclosure and supporting the internals on anti-vibration mounts, noise and vibration are isolated.

Performance — MRXBOXAB-ECO4-1Z



MRXBOXAB-ECO4-1Z (SW)

Wall mounted unit with 100% bypass and integral humidistat.

MRXBOXAB-ECO4-1Z-OH (SW)

Opposite handed configuration wall mounted unit with 100% bypass and integral humidistat.

Summer/Winter (SW) Switch

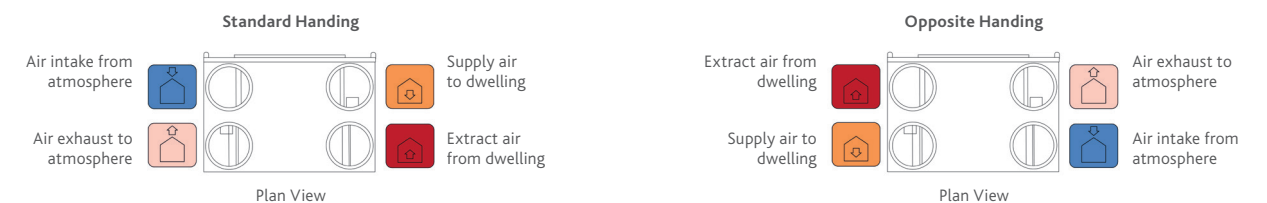
A two-position switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles.

Electrical & Sound

ECO4 Sound Data											
Curve	Maximum power consumption (Watts)		Sound Power Levels dB re 1pW (Frequency Hz)								dBA @3m
			63	125	250	500	1k	2k	4k	8k	
1	348	Open inlet	58	51	46	51	38	31	29	25	
		Open outlet	53	55	51	62	43	30	23	25	
		Breakout	65	57	53	49	29	17	<16	<16	31
2	148	Open inlet	48	48	46	41	31	26	22	<16	
		Open outlet	47	54	51	53	37	25	16	17	
		Breakout	58	56	53	42	24	<16	<16	<16	28
3	45	Open inlet	41	42	34	27	19	<16	<16	<16	
		Open outlet	39	48	42	37	25	<16	<16	<16	
		Breakout	46	49	44	26	<16	<16	<16	<16	20
4	10	Open inlet	38	38	22	19	<16	<16	<16	<16	
		Open outlet	35	44	28	29	<16	<16	<16	<16	
		Breakout	41	45	32	17	<16	<16	<16	<16	<16

The maximum power consumption shown above (Watts) is consumed on units running continuously, not taking into account any heat recovery saving and based on SAP Product Characteristics Database (PCDB) testing. The breakout case-radiated dBA values are given for Hemispherical free field radiation at 3m – to obtain the Spherical radiated data, subtract 3 dBA.

Please note: Sound data is provided at a particular duty point for 25%, 50%, 75% and 100%. For accurate sound data at a specific speed duty, please use Nuair's fan selector or call the office on 029 2085 8500.



MRXBOXAB-ECO4-1Z

SAP PCDB 2009 Test Results

Product Code	MRXBOXAB-ECO4-1Z		
SAP Identifier	MRXBOXAB-ECO4		
Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.62	94%	Yes
Kitchen + 2 Wet Room	0.56	94%	Yes
Kitchen + 3 Wet Room	0.56	93%	Yes
Kitchen + 4 Wet Room	0.61	93%	Yes
Kitchen + 5 Wet Room	0.67	93%	Yes
Kitchen + 6 Wet Room	0.75	92%	Yes
Kitchen + 7 Wet Room	0.90	91%	Yes

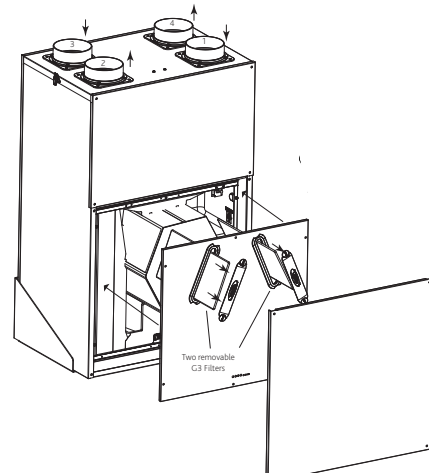
SAP PCDB 2012 Test Results

Product Code	MRXBOXAB-ECO4-1Z		
SAP Identifier	MRXBOXAB-ECO4		
Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.62	94%	Yes
Kitchen + 2 Wet Room	0.62	93%	Yes
Kitchen + 3 Wet Room	0.66	93%	Yes
Kitchen + 4 Wet Room	0.79	92%	Yes
Kitchen + 5 Wet Room	0.94	91%	Yes
Kitchen + 6 Wet Room	1.15	91%	Yes
Kitchen + 7 Wet Room	1.41	91%	Yes

General Arrangement

STANDARD UNIT SPIGOT LOCATION & DUCTING REFERENCES

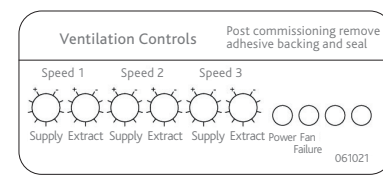
Spigot 1. 200mm dia. = Extract air from dwelling
 Spigot 2. 200mm dia. = Exhaust air to outside
 Spigot 3. 200mm dia. = Intake air from outside
 Spigot 4. 200mm dia. = Supply air to property



OPPOSITE HANDED UNIT SPIGOT LOCATION & DUCTING REFERENCES

Spigot 1. 200mm dia. = Intake air from outside
 Spigot 2. 200mm dia. = Supply air to property
 Spigot 3. 200mm dia. = Extract air from dwelling
 Spigot 4. 200mm dia. = Exhaust air to outside

Detail of unit control on front panel.



Tamper proof label following commissioning, includes system status indication.

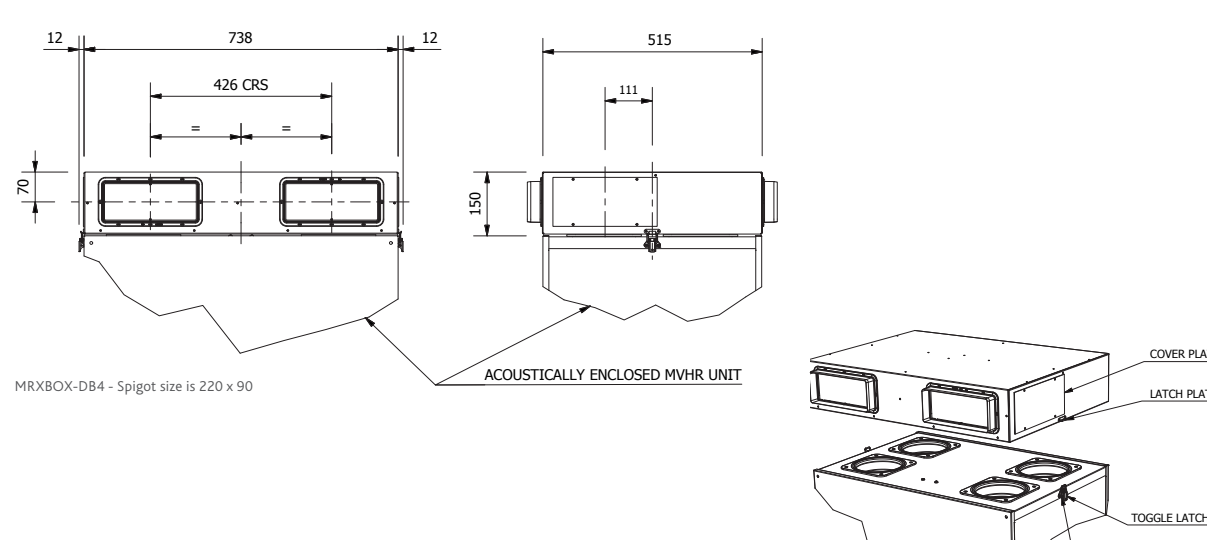
MVHR-ECO4-FILTERKIT

Ancillaries

Distribution Box

The MRXBOX-DB4 is fitted on top of the MRXBOXAB-ECO4-1Z before installation and offers a neat arrangement by directly distributing the initial ducting. It further benefits this MVHR system by reducing any in-line noise breakout, therefore improving this acoustic solution.

DIMENSIONS (mm)
Weight - 15kg



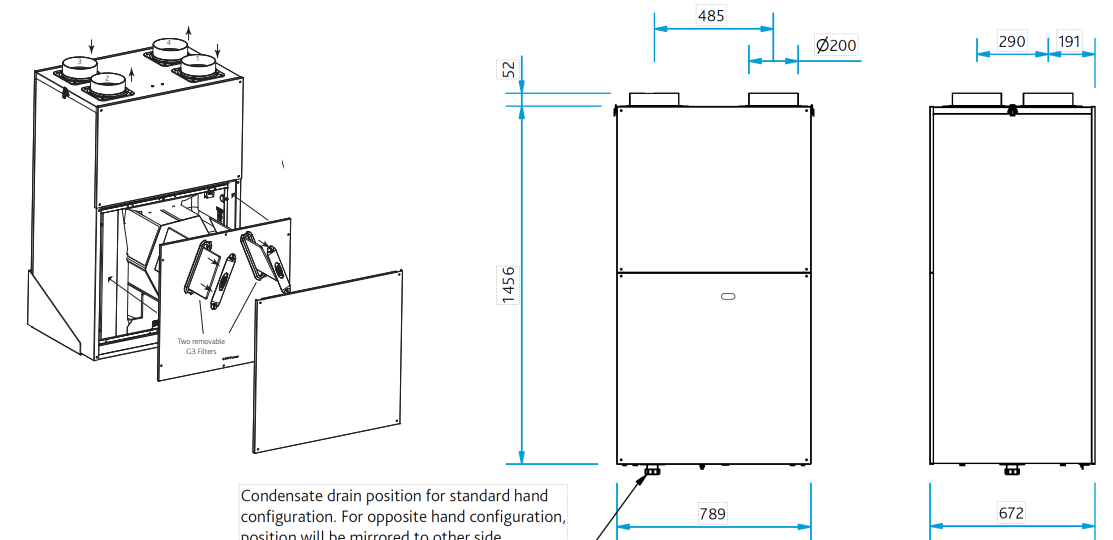
MRXBOX-DB4 - Spigot size is 220 x 90

ACOUSTICALLY ENCLOSED MVHR UNIT

COVER PLATE
LATCH PLATE
TOGGLE LATCH

Technical – MRXBOXAB-ECO4-1Z

DIMENSIONS (mm)
Weight - 115kg

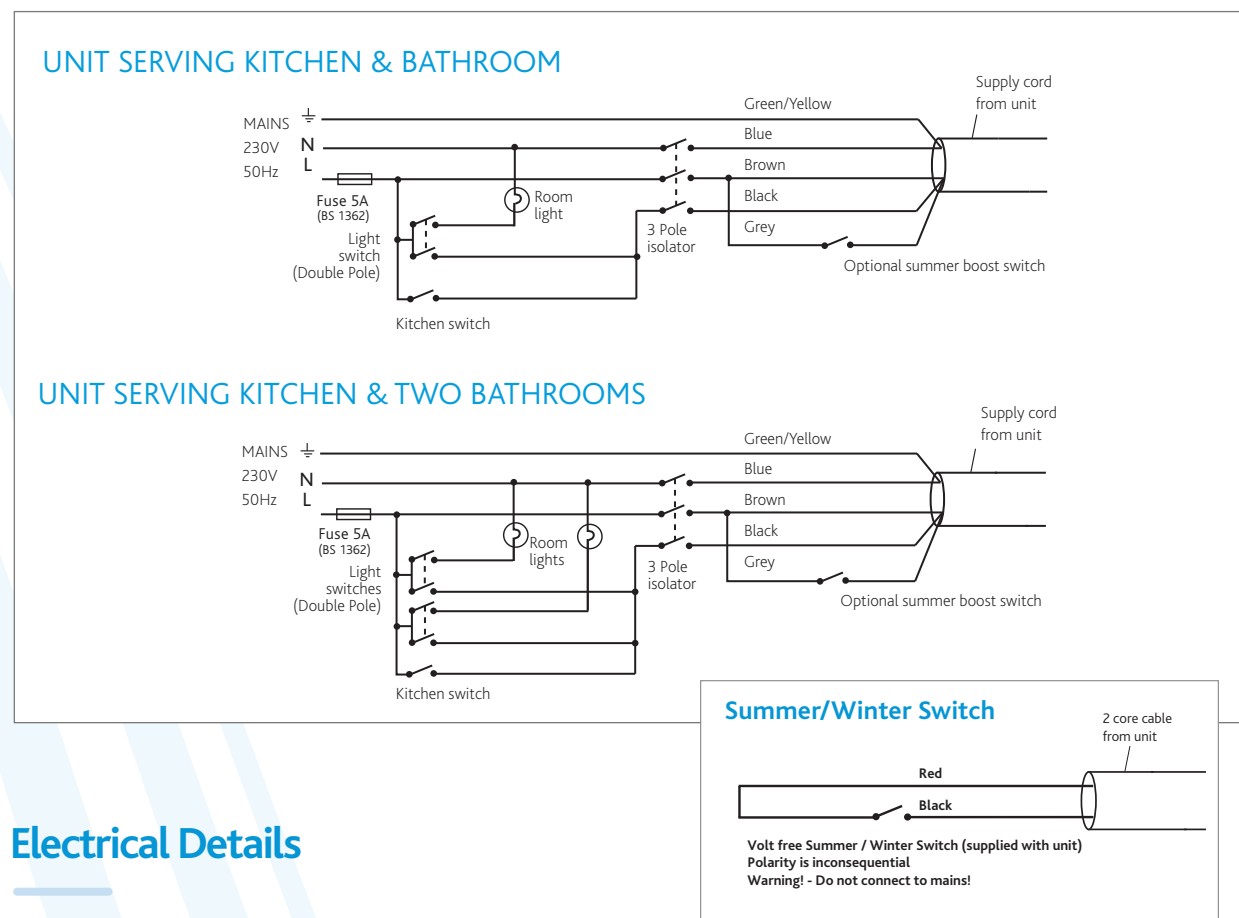


View from front with cover removed

Side view

Condensate drain position for standard hand configuration. For opposite hand configuration, position will be mirrored to other side.

MRXBOXAB-ECO4-1Z



Electrical Details

ELECTRICAL DETAILS: MRXBOXAB-ECO4-1Z

Voltage:	230V 1ph 50Hz
Consumption:	1.3 Amp
Fuse rating:	5 Amp

Optional Sensors, Switches and Detectors

MRXBOX95-PIR (Passive Infrared)

A low voltage sensor, detects movement and activates system. Incorporates overrun timer and timer adjustments.

MRXBOX95-HUM (Relative Humidity)

A low voltage sensor, activates the system when the RH level is above set point. Incorporates overrun timer and RH setpoint level adjustment.

MRXBOX95-RFI (Remote Fail Indicator)

If fan failure occurs, the audio visual indicator will flash a warning.



MRXBOX-VSC CONTROL SCREEN COMPATIBLE WITH THIS UNIT

MRXBOX-VSC (LCD Touchscreen Controller)

Simple, intuitive and discreet, the LCD control puts you in total control of your MVHR system. With the wide range of functions and settings.



Technical Data

MRXBOXAB-ECO4-1Z / MRXBOXAB-ECO4-1Z-OH
Acoustically Enclosed Wall Mounted Multi-room Heat Recovery 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 ISO Coarse (G3 Grade) filters on fresh air inlet and system extract. The heat exchanger and filters shall be accessible via the front access panel, enabling quick and easy maintenance.

The unit shall have low energy, high efficiency EC fan/motor assemblies with sealed for life bearings, the impellers shall be backward curved centrifugal type. The motors shall be suitable of an ambient temperature of 40°C. The unit shall be supplied complete with a condensate drip tray and 21.5mm drain connection.

The unit shall be suitable for 200mm diameter circular ducting. The breakout noise level and power requirements shall be as detailed by the unit manufacturer and in accordance with the ventilation equipment schedule. Units shall be one of MRXBOXAB-ECO4-1Z and MRXBOXAB-ECO4-1Z-OH as manufactured by Nuaire. The unit shall be provided within a white pre-painted or coated steel acoustic enclosure lined with a minimum of 20mm class '0' acoustic foam insulation to reduce breakout noise.

In-duct noise shall be attenuated on Intake/Exhaust/Supply/Extract by means of a 4-way attenuator mounted within the enclosure and close coupled directly to the unit. Flexible duct connections shall be within the enclosure, pre-fitted between the attenuator section and the connection spigots on the top face of the enclosure. (Removing the need for flexible duct connectors outside of the unit which may cause breakout).

The MVHR unit and attenuator assembly shall be retained within the enclosure on a metal tray supported on turret type anti-vibration mounts of suitable deflection to ensure that vibration is not transmitted to the supporting structure.

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. This unit is also available in Opposite Hand formatting.

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 the switched live signal from light/ remote switches or any ancillary sensors. When signals are received, the fan shall alter its speed to adjustable, normal and boost rates.

The unit shall have the facility to commission the supply and extract fans independently on minimum speed (continuous background ventilation), and boost speed, via inbuilt minimum and maximum speed adjustment. The fans shall have infinitely variable speed control.

INTEGRAL AUTOMATIC SUMMER BYPASS

Including Automatic SUMMER BYPASS where intake and return air temperatures shall be measured so that supply air temperatures can be maximised during winter months and minimised as external ambient temperature rises. The Summer Bypass damper shall be opened by a wax actuator. Supply and Extract air shall be filtered irrespective of the bypass setting (open or closed).

INTEGRAL HUMIDITY SENSOR

The integral humidity sensor incorporated within the extract fan chamber will automatically boost both the extract and supply fan, to the commissioned boost speed, when the humidity level exceeds that set by the front panel mounted adjustment potentiometer.

SUMMER/WINTER (SW) SWITCH

The unit shall feature volt-free connections for a two-position Summer/Winter switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles. (Summer/Winter)

Summer setting shall target under 20 degrees C internal dwelling temperature. Winter setting shall ensure heat recovery at all times. Temperature control logic shall be factory pre-set and require no on-site programming. The unit shall feature 3 commissionable speeds for both supply and extract. It shall be possible to enable the unit to its 3rd speed by means of a switch or a programmable thermostat with occupant override (IAQ-STAT).

The 3rd speed (overheating) shall be inhibited when outside air temperature exceeds inside temperature and bypass closes so that extracted air cools incoming fresh air.

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:

- ◆ Independent control of background supply and extract flow rates.
- ◆ Independent control of boost speed supply and extract flow rates.
- ◆ Integral fan failure indication.
- ◆ Integral S/L terminal for boost from remote switch, e.g. light switch, kitchen boost switch.
- ◆ Integral heat exchanger frost protection.
- ◆ Discreet daily run monitor.
- ◆ Integral humidistat.

OPTIONAL CONTROLS

MRXBOX95-RFI (Remote Fail Indicator)

A low voltage sensor which detects movement and activates system.

MRXBOX95-HUM (Relative Humidity)

A low voltage sensor which activates the system when the relative humidity level is above a set point.

MRXBOX-VSC LCD Touchscreen Controller

Controller for MVHR system with a 3.2" touch screen display.

The unit shall be offered with a 5 year warranty which starts from the day of delivery, and includes parts and labour for the first year and parts only for the remaining 4 years.

All Round MVHR Solutions

MRXBOXAB-ECO5

The MRXBOXAB-ECO5 has been designed with automatic 100% bypass as listed on the SAP Product Characteristics Database (PCDB).

Due to its intelligent and smart design, there will be no reduction in airflow when operating in bypass mode resulting in enhanced performance.

The MRXBOXAB-ECO5 is designed to provide optimised balanced (supply and extract) mechanical ventilation with heat recovery and is listed on the PCDB.

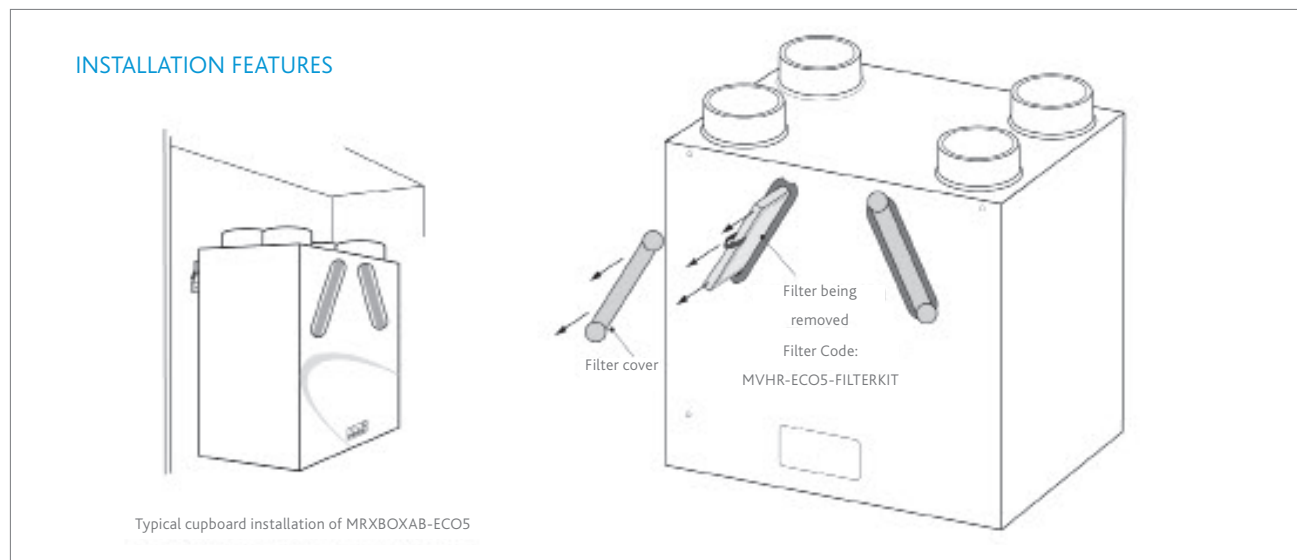
The units operate by continuously extracting moisture-laden air from 'wet' rooms within the property and at the same time drawing in fresh supply air from outside. The heat from the extracted stale air is recovered via a heat exchanger inside the heat recovery unit which becomes tempered and then filtered before supplying into the habitable rooms creating comfortable and well ventilated homes.

The heat exchanger block within these units can recover up to 95% of the normally wasted heat. The two independent fans have full speed control for background and boost ventilation rates.



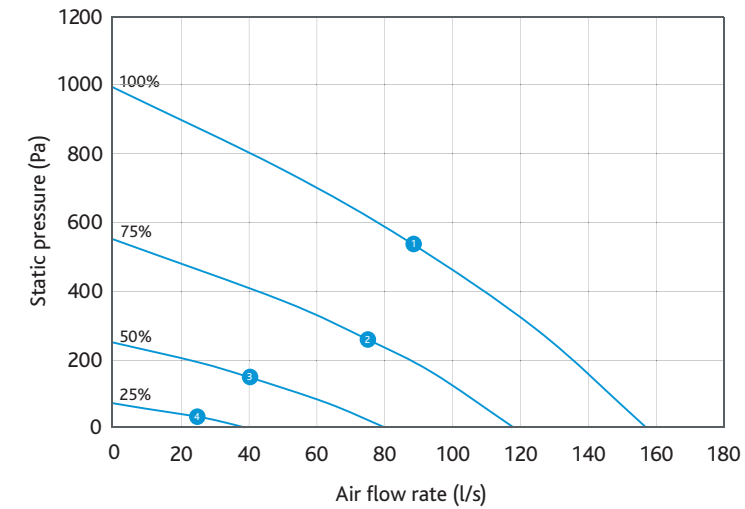
The MRXBOXAB-ECO5 has a summer bypass function. This feature activates automatically and attempts to maintain the home at a comfortable temperature. For example, if the outside temperature is warmer than the inside, the unit will continue to draw air through the heat exchanger. If the house is warmer than outside, the unit will bypass the heat exchanger and draw air in directly from outside.

Installation features



Typical cupboard installation of MRXBOXAB-ECO5

Performance - MRXBOXAB-ECO5



MRXBOXAB-ECO5 (S/W)

Wall mounted unit with 100% bypass and integral humidistat.

MRXBOXAB-ECO5 (S/W)

Opposite handed configuration wall mounted unit with 100% bypass and integral humidistat.

Summer/Winter (SW) Switch

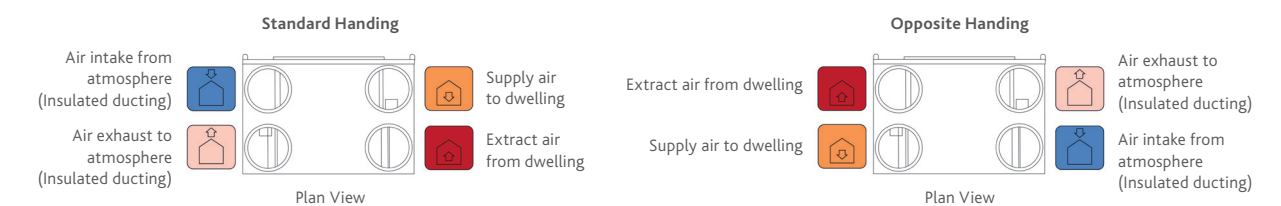
A two-position switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles.

Electrical & Sound

ECO05 Sound Data											
Curve	Maximum power consumption (Watts)		Sound Power Levels dB re 1pWn (Frequency Hz)								dBa @3m
			63	125	250	500	1k	2k	4k	8k	
1	323	Open inlet	61	61	62	60	53	45	35	32	
		Open outlet	69	69	69	74	67	63	55	49	
		Breakout	70	58	60	60	50	49	42	29	42
2	136	Open inlet	60	60	59	54	51	42	32	23	
		Open outlet	69	68	68	71	64	61	51	42	
		Breakout	70	58	59	57	48	46	36	20	36
3	41	Open inlet	50	49	45	38	35	27	17	<16	
		Open outlet	58	56	53	51	45	41	31	24	
		Breakout	56	49	49	41	34	28	21	<16	25
4	10	Open inlet	42	39	34	27	23	16	<16	<16	
		Open outlet	48	45	40	35	30	24	16	<16	
		Breakout	43	40	39	28	20	<16	<16	<16	<16

The maximum power consumption shown above (Watts) is consumed on units running continuously, not taking into account any heat recovery saving and based on SAP Product Characteristic Database (PCDB) testing. The breakout case-radiated dBA values are given for Hemispherical free field radiation at 3m - to obtain the Spherical radiated data, subtract 3 dBA.

Please note: Sound data is provided at a particular duty point for 25%, 50%, 75% and 100%. For accurate sound data at a specific speed duty, please use Nuair's fan selector or call the office on 029 2085 8500.



MRXBOXAB-ECO5

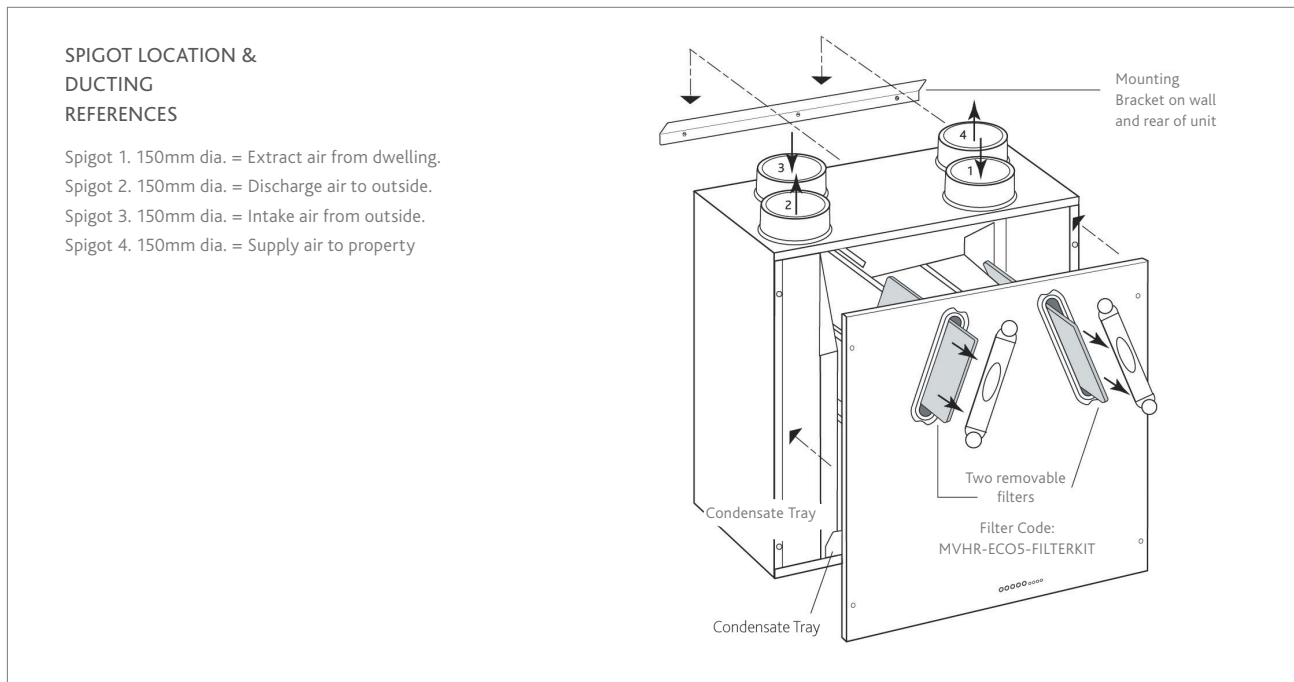
SAP PCDB 2009 Test Results

Product Code	MRXBOXAB-ECO5		
SAP Identifier	MRXBOXAB-ECO5		
Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.65	90%	Yes
Kitchen + 2 Wet Room	0.58	90%	Yes
Kitchen + 3 Wet Room	0.58	89%	Yes
Kitchen + 4 Wet Room	0.63	88%	Yes
Kitchen + 5 Wet Room	0.69	87%	Yes
Kitchen + 6 Wet Room	0.76	87%	Yes
Kitchen + 7 Wet Room	0.87	86%	Yes

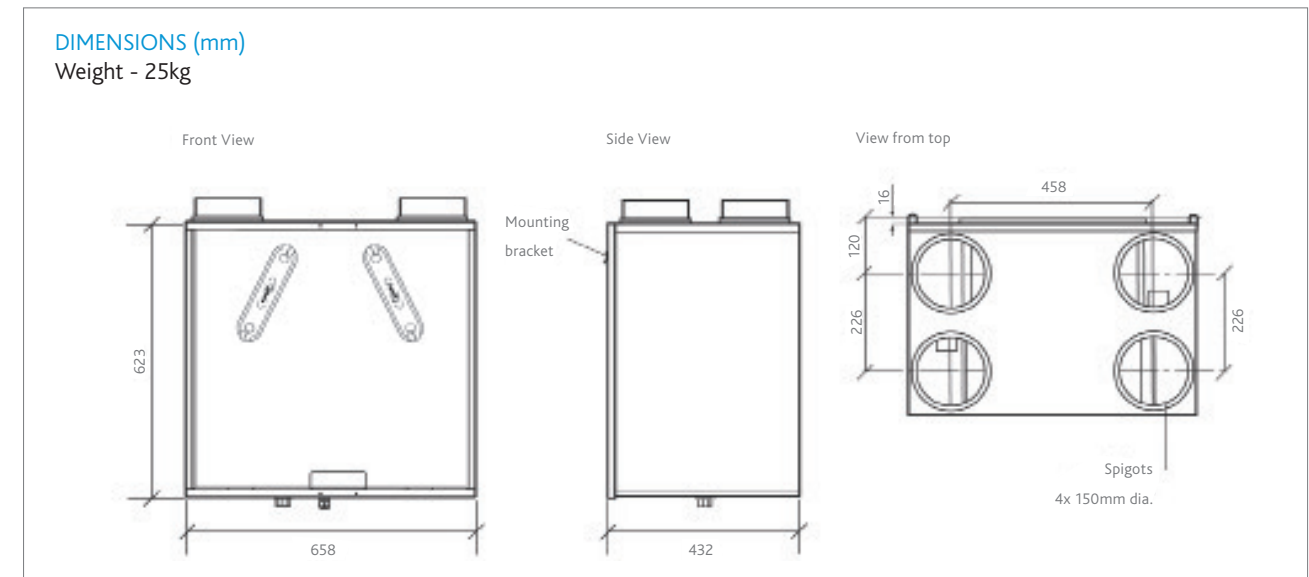
SAP PCDB 2012 Test Results

Product Code	MRXBOXAB-ECO5		
SAP Identifier	MRXBOXAB-ECO5		
Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.63	90%	Yes
Kitchen + 2 Wet Room	0.61	89%	Yes
Kitchen + 3 Wet Room	0.68	88%	Yes
Kitchen + 4 Wet Room	0.79	87%	Yes
Kitchen + 5 Wet Room	0.91	86%	Yes
Kitchen + 6 Wet Room	1.09	85%	Yes
Kitchen + 7 Wet Room	1.27	85%	Yes

General Arrangement



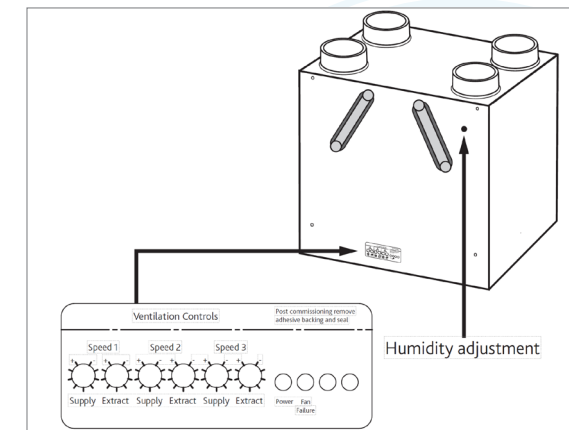
Technical - MRXBOXAB-ECO5



Electrical Details

Electrical Details: MRXBOXAB-ECO5	
Voltage:	230V 1ph 50Hz
Consumption:	2 Amp
Fuse rating:	5 Amp

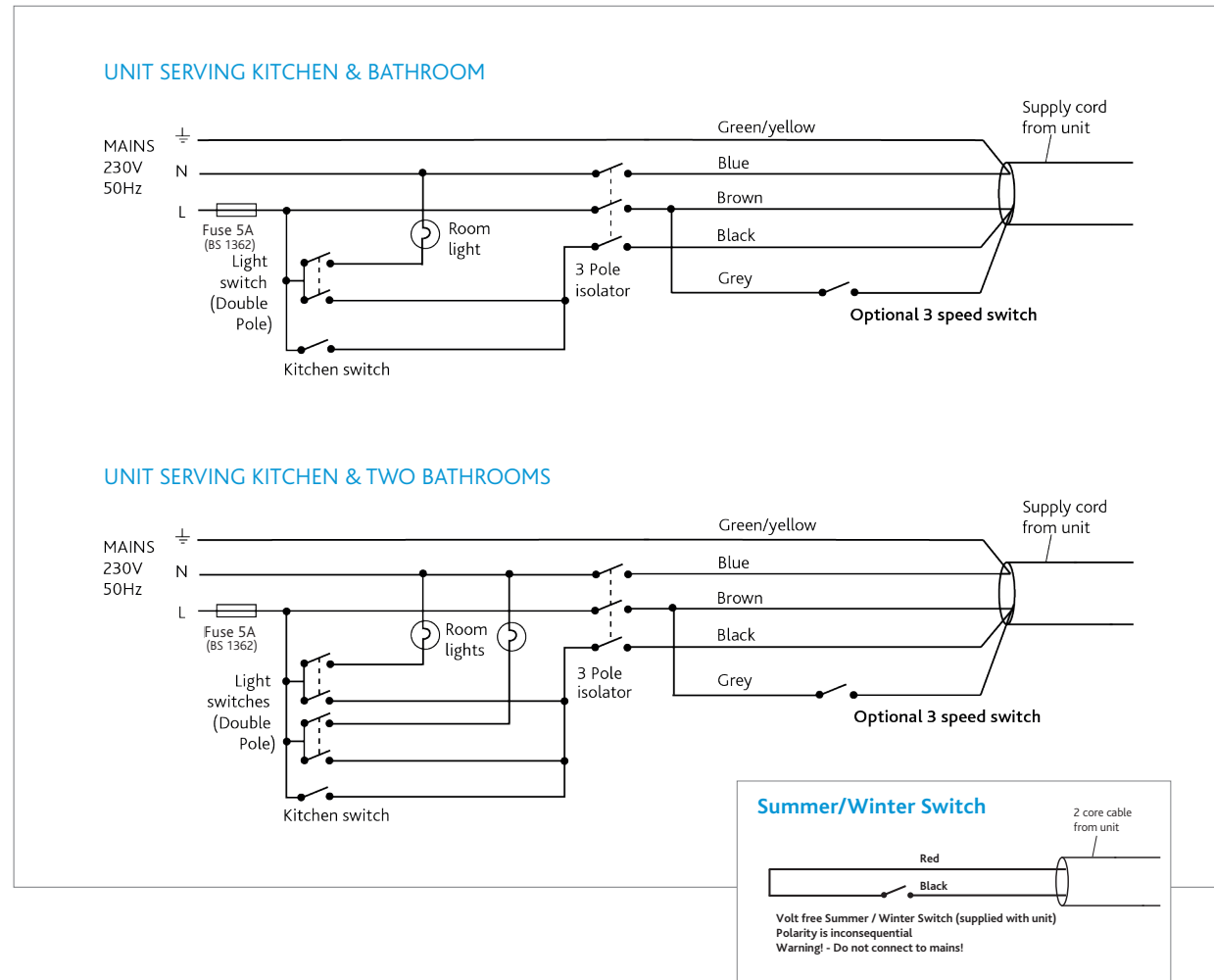
Detail of unit control on front panel.



Tamper proof label following commissioning, includes system status indication.

MRXBOXAB-EC05

Wiring - MRXBOXAB-EC05



Optional Sensors and Detectors

Customise MRXBOXAB-EC05 for enhanced performance. All supplied with pre-plugged 10m data cable and incorporates status LED.

MRXBOX95-PIR (Passive Infrared)

A low voltage sensor, detects movement and activates system. Incorporates overrun timer and timer adjustments.

MRXBOX95-HUM (Relative Humidity)

A low voltage sensor, activates the system when the RH level is above set point. Incorporates overrun timer and RH setpoint level adjustment.

MRXBOX95-RFI (Remote Fail Indicator)

If fan failure occurs, the audio visual indicator will flash a warning.



MRXBOX-VSC CONTROL SCREEN COMPATIBLE WITH THIS UNIT

MRXBOX-VSC (LCD Touchscreen Controller)

Simple, intuitive and discreet, the LCD control puts you in total control of your MVHR system. With the wide range of functions and settings.



Consultants Specification

MRXBOXAB-EC05

The unit shall be fully insulated providing excellent thermal and acoustic characteristics and shall be complete with a multiplate, counter-flow, high-efficiency heat exchanger block, with a thermal efficiency of up to 95%. The heat exchanger shall be protected by ISO Coarse (G3 grade) filters on fresh air inlet and system extract. The heat exchanger and filters shall be accessible via the front access panel, enabling quick and easy maintenance.

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

The unit shall be supplied complete with an insulated condensate drip tray and 21.5mm drain connection.

The unit shall be suitable for 150mm circular ducting.

Note: The unit is also available in opposite handed format, refer to spigot configuration for set up.

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

Units shall be MRXBOXAB-EC05 as manufactured by Nuair and shall be listed on the SAP PCDB.

MRXBOXAB-EC05-OH are opposite handed assemblies compliant as per standard handed versions listed in SAP PCDB.

OPERATION

The supply and extract system 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 moisture-laden air shall be extracted from all 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:

- ◆ Switched live signal from light/remote switches.

When signals are received, the fan shall alter its speed to adjustable, normal and boost rates.

The unit shall have 3 speeds and the facility to commission the supply and extract fans independently on minimum speed (continuous background ventilation) and boost speed via inbuilt minimum and maximum speed adjustment. The fans shall have infinitely variable speed control.

INTEGRAL AUTOMATIC HX BYPASS WITH NO REDUCTION IN AIRFLOW

The bypass damper shall open automatically via a wax actuator, allowing the air to bypass the heat exchanger to deliver fresh filtered air during the warmer months.

The automatic bypass diverts 100% airflow around the heat exchanger with no reduction in airflow as independently tested by the BRE.

INTEGRAL HUMIDITY SENSOR

The integral humidity sensor incorporated within the extract fan chamber will automatically boost both the extract and supply fan, to the commissioned boost speed, when the humidity level exceeds that set by the front panel mounted adjustment potentiometer.

SUMMER/WINTER (SW) SWITCH

The unit shall feature volt-free connections for a two-position Summer/Winter switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles. (Summer/Winter)

Summer setting shall target under 20 degrees C internal dwelling temperature. Winter setting shall ensure heat recovery at all times. Temperature control logic shall be factory pre-set and require no on-site programming.

The unit shall feature 3 commissionable speeds for both supply and extract.

It shall be possible to enable the unit to its 3rd speed by means of a switch or a programmable thermostat with occupant override (IAQ-STAT).

The 3rd speed (overheating) shall be inhibited when outside air temperature exceeds inside temperature and bypass closes so that extracted air cools incoming fresh air.

CONTROL OPTIONS

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

- ◆ Independent control of background supply and extract flow rates.
- ◆ Independent control of boost speed supply and extract flow rates.
- ◆ Integral heat exchanger frost protection.
- ◆ Fan failure indication.
- ◆ Integral S/L terminal for boost from remote switch, e.g. light switch.
- ◆ Additional S/L terminal for 100% boost speed from remote switch, e.g. plate switch.
- ◆ Discreet daily run monitor.
- ◆ Indication and controls – the unit shall have clear LED visual indication for maintenance, servicing and operation mode, i.e. HX bypass, frost protection.

MRXBOX-VSC (VISUAL SYSTEM CONTROLLER)

The MRXBOX-VSC is compatible with the Nuair MRXBOXAB-EC05 heat recovery units and can be purchased separately. The controller comes complete with commissioning and end user functions.

The display will be a 3.5" LCD display and will remain on standby until such time the screen is touched.

The initial display will show the MVHR system status as listed below:

- ◆ Current fan speed.
- ◆ Current indoor/outside temperature.
- ◆ Indicate when the Summer bypass is activated.
- ◆ Indicate when frost protection is activated.
- ◆ Indicate when the filters require cleaning/changing.

The unit shall come with a 5 year warranty which starts from the day of delivery, and includes parts and labour for the first year and parts only for the remaining 4 years.

Acoustic Enclosures

MRXBOXAB-ECO5-AE



The MRXBOXAB-ECO5-AE is designed to provide optimised balanced (supply and extract) mechanical ventilation heat recovery, all whilst being encased within our Acoustic Enclosure.

This unit incorporates an acoustic surrounding to your MVHR unit and flexible duct connectors within an enclosure and supporting the internals on anti-vibration mounts significantly decreasing noise and vibration output.

Tempered air is delivered into 'living areas' whilst extracting moisture laden air from 'wet' areas, creating comfortable and well ventilated homes.

The unit has the facility to commission the supply and extract fans independently on both minimum and maximum speeds, and the heat exchange block can recover up to 95% of the normally wasted heat that has been extracted from the 'wet rooms'.

Please note both of these units are available in Opposite Handed format.

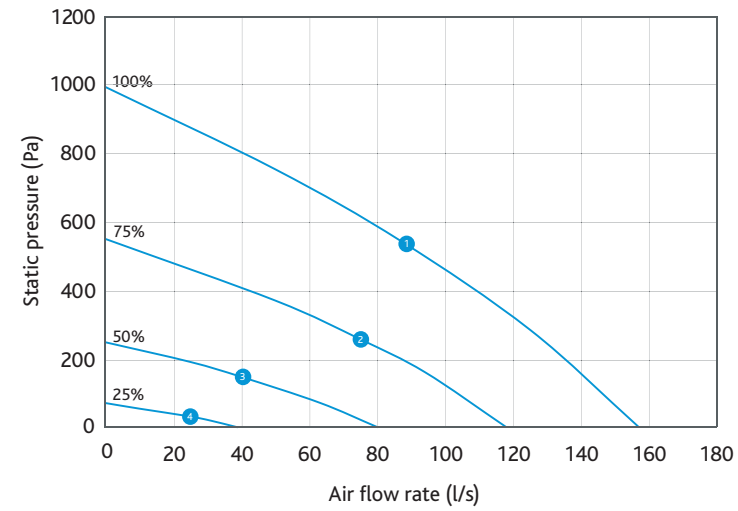


Typical Installation



- ◆ Limited ceiling voids in modern apartments and complex duct arrangements coupled with increased airflow demands placed on MVHR systems in an effort to reduce the risk of overheating lead to higher system resistances and running speeds.
- ◆ Restrictions on utility cupboard space, practical and financial limitations frequently prevent the construction of acoustic cupboards, whilst modern light-weight wall construction methods offer little mass to absorb unit noise and vibration. This can often result in the transfer of low frequency noise and vibration into adjacent living and sleeping areas.
- ◆ These factors leave designers at risk of exceeding the stringent noise requirements specified in Part F of the building regulations and further defined by CIBSE.
- ◆ By integrating the MVHR unit and flexible connections within an enclosure and supporting the internals on anti-vibration mounts, noise and vibration are isolated.

Performance — MRXBOXAB-ECO5-AE



MRXBOXAB-ECO5 (S/W)
Wall mounted unit with 100% bypass and integral humidistat.

MRXBOXAB-ECO5 (S/W)
Opposite handed configuration wall mounted unit with 100% bypass and integral humidistat.

Summer/Winter (SW) Switch
A two-position switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles.

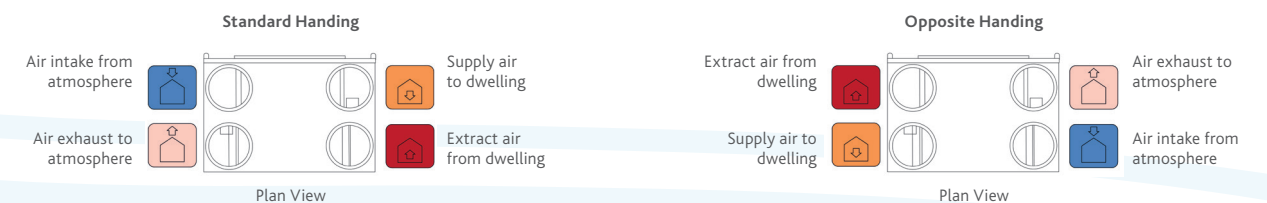
Electrical & Sound

ECO5 AE Sound Data

Curve	Maximum power consumption (Watts)		Sound Power Levels dB re 1pW (Frequency Hz)								dBA @3m
			63	125	250	500	1k	2k	4k	8k	
1	323	Open inlet	61	61	62	60	53	45	35	32	
		Open outlet	69	69	69	74	67	63	55	49	
		Breakout	69	57	56	48	33	36	31	33	33
2	136	Open inlet	60	60	59	54	51	42	32	23	
		Open outlet	69	68	68	71	64	61	51	42	
		Breakout	69	57	55	45	31	42	32	23	<16
3	41	Open inlet	50	49	45	38	35	27	17	<16	
		Open outlet	58	56	53	51	45	41	31	24	
		Breakout	55	48	45	29	17	<16	<16	<16	20
4	10	Open inlet	42	39	34	27	23	<16	<16	<16	
		Open outlet	48	45	40	35	30	24	16	<16	
		Breakout	42	39	35	16	<16	<16	<16	<16	<16

The maximum power consumption shown above (Watts) is consumed on units running continuously, not taking into account any heat recovery saving and based on SAP Product Characteristics Database (PCDB) testing. The breakout case-radiated dBA values are given for Hemispherical free field radiation at 3m – to obtain the Spherical radiated data, subtract 3 dBA.

Please note: Sound data is provided at a particular duty point for 25%, 50%, 75% and 100%. For accurate sound data at a specific speed duty, please use Nuair's fan selector or call the office on 029 2085 8500.



MRXBOXAB-ECO5-AE

SAP PCDB 2009 Test Results

Product Code	MRXBOXAB-ECO5-AE		
SAP Identifier	MRXBOXAB-ECO5		
Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.65	90%	Yes
Kitchen + 2 Wet Room	0.58	90%	Yes
Kitchen + 3 Wet Room	0.58	89%	Yes
Kitchen + 4 Wet Room	0.63	88%	Yes
Kitchen + 5 Wet Room	0.69	87%	Yes
Kitchen + 6 Wet Room	0.76	87%	Yes
Kitchen + 7 Wet Room	0.87	86%	Yes

SAP PCDB 2012 Test Results

Product Code	MRXBOXAB-ECO5-AE		
SAP Identifier	MRXBOXAB-ECO5		
Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.63	90%	Yes
Kitchen + 2 Wet Room	0.61	89%	Yes
Kitchen + 3 Wet Room	0.68	88%	Yes
Kitchen + 4 Wet Room	0.79	87%	Yes
Kitchen + 5 Wet Room	0.91	86%	Yes
Kitchen + 6 Wet Room	1.09	85%	Yes
Kitchen + 7 Wet Room	1.27	85%	Yes

General Arrangement

STANDARD UNIT SPIGOT LOCATION & DUCTING REFERENCES

Spigot 1. 150mm dia. = Extract air from dwelling
 Spigot 2. 150mm dia. = Exhaust air to outside
 Spigot 3. 150mm dia. = Intake air from outside
 Spigot 4. 150mm dia. = Supply air to property

OPPOSITE HANDED UNIT SPIGOT LOCATION & DUCTING REFERENCES

Spigot 1. 150mm dia. = Intake air from outside
 Spigot 2. 150mm dia. = Supply air to property
 Spigot 3. 150mm dia. = Extract air from dwelling
 Spigot 4. 150mm dia. = Exhaust air to outside

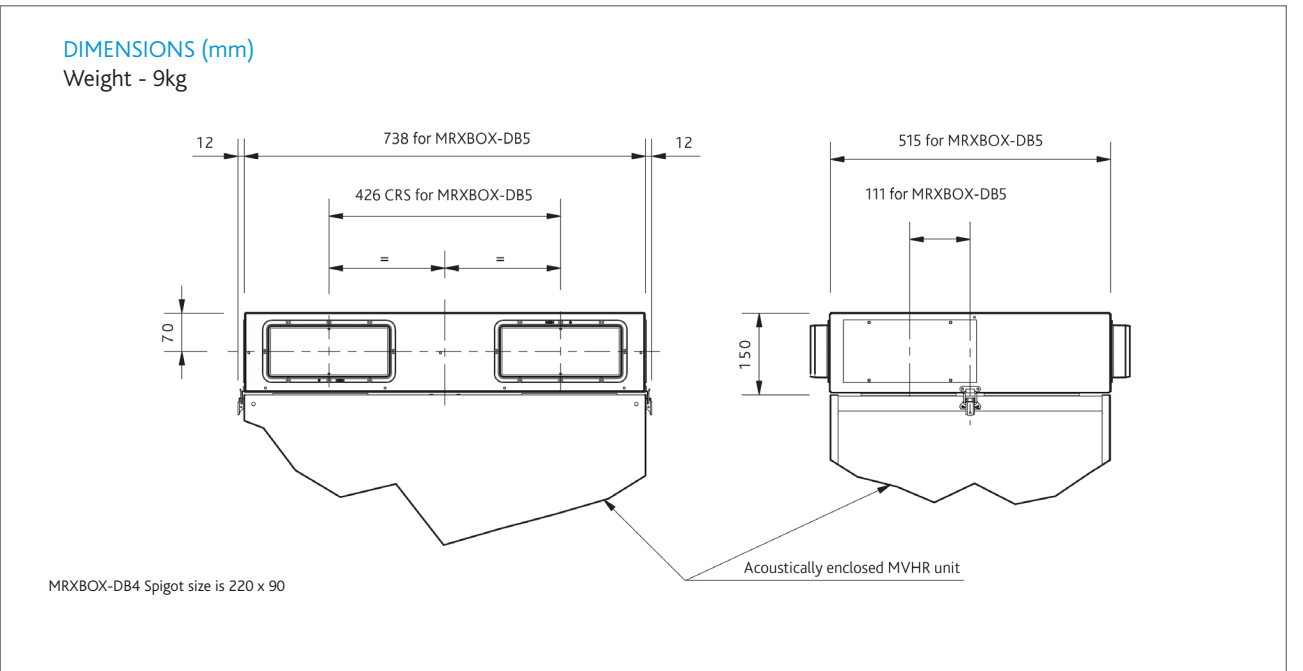
Detail of unit control on front panel.

Tamper proof label following commissioning, includes system status indication.

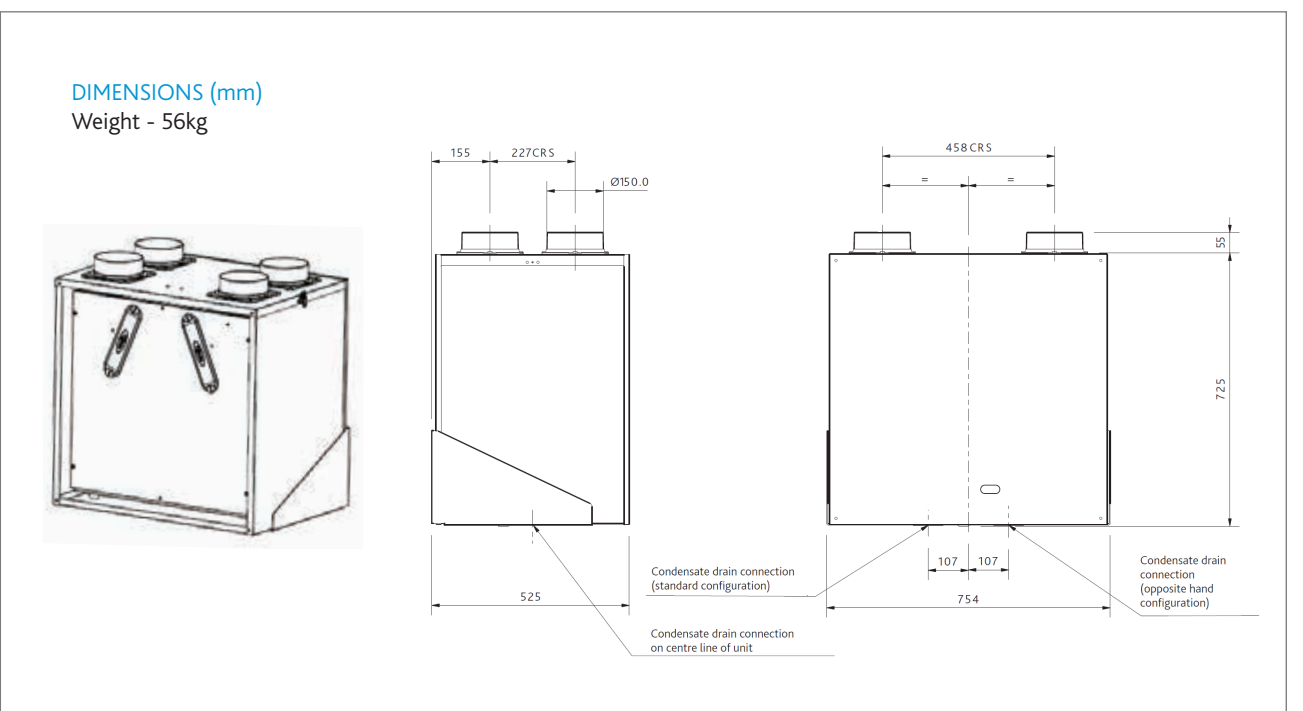
Ancillaries

Distribution Box

The MRXBOX-DB5 is fitted on top of the MRXBOXAB-ECO5-AE before installation and offers a neat arrangement by directly distributing the initial ducting. It further benefits this MVHR system by reducing any in-line noise breakout, therefore improving this acoustic solution.

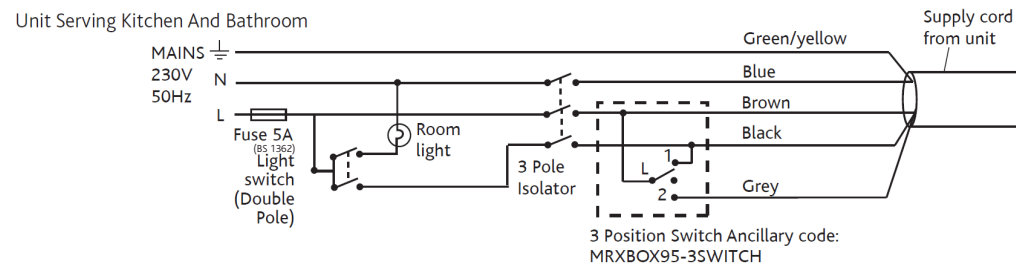


Technical – MRXBOXAB-ECO5-AE

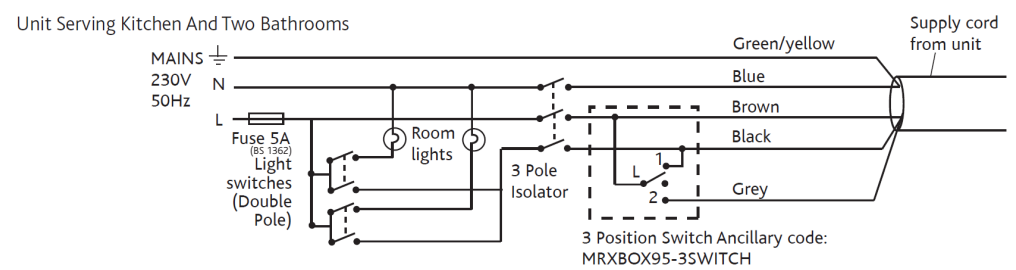


MRXBOXAB-ECO5-AE

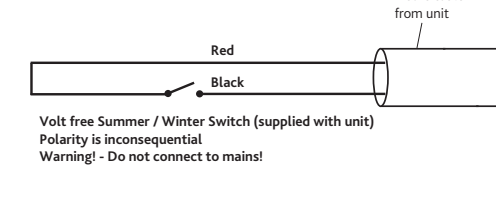
UNIT SERVING KITCHEN & BATHROOM



UNIT SERVING KITCHEN & TWO BATHROOMS



Summer/Winter Switch



Electrical Details

ELECTRICAL DETAILS: MRXBOXAB-ECO5-AE	
Voltage:	230V 1ph 50Hz
Consumption:	2 Amp
Fuse rating:	5 Amp

Optional Sensors, Switches and Detectors

MRXBOX95-PIR (Passive Infrared)

A low voltage sensor, detects movement and activates system. Incorporates overrun timer and timer adjustments.

MRXBOX95-HUM (Relative Humidity)

A low voltage sensor, activates the system when the RH level is above set point. Incorporates overrun timer and RH setpoint level adjustment.

MRXBOX95-RFI (Remote Fail Indicator)

If fan failure occurs, the audio visual indicator will flash a warning.



MRXBOX-VSC CONTROL SCREEN COMPATIBLE WITH THIS UNIT

MRXBOX-VSC (LCD Touchscreen Controller)

Simple, intuitive and discreet, the LCD control puts you in total control of your MVHR system. With the wide range of functions and settings.



Technical Data

Fan Codes: MRXBOXAB-ECO5-AE / MRXBOXAE-ECO5-AE-OH
Acoustically Enclosed Wall Mounted Multi-room Heat Recovery 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 ISO Coarse (G3 Grade) filters on fresh air inlet and system extract. The heat exchanger and filters shall be accessible via the front access panel, enabling quick and easy maintenance.

The unit shall have low energy, high efficiency EC fan/motor assemblies with sealed for life bearings, the impellers shall be backward curved centrifugal type. The motors shall be suitable of an ambient temperature of 40°C. The unit shall be supplied complete with a condensate drip tray and 21.5mm drain connection.

The unit shall be suitable for 150mm diameter circular ducting. The breakout noise level and power requirements shall be as detailed by the unit manufacturer and in accordance with the ventilation equipment schedule. Units shall be one of MRXBOXAB-ECO5-AE and OH as manufactured by Nuaire.

The unit shall be provided within a white pre-painted or coated steel acoustic enclosure lined with a minimum of 20mm class '0' acoustic foam insulation to reduce breakout noise. Flexible duct connections shall be within the enclosure, pre-fitted between the MVHR unit and the connection spigots on the top face of the enclosure. (Removing the need for flexible duct connectors outside of the unit which may cause breakout).

The MVHR unit shall be retained within the enclosure on a metal tray supported on turret type anti-vibration mounts of suitable deflection to ensure that vibration is not transmitted to the supporting structure.

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. This unit is also available in Opposite Hand formatting.

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 the switched live signal from light/ remote switches or any ancillary sensors. When signals are received, the fan shall alter its speed to adjustable, normal and boost rates.

The unit shall have the facility to commission the supply and extract fans independently on minimum speed (continuous background ventilation), and boost speed, via inbuilt minimum and maximum speed adjustment. The fans shall have infinitely variable speed control.

INTEGRAL AUTOMATIC SUMMER BYPASS

Including Automatic SUMMER BYPASS where intake and return air temperatures shall be measured so that supply air temperatures can be maximised during winter months and minimised as external ambient temperature rises. The Summer Bypass damper shall be opened by a wax actuator. Supply and Extract air shall be filtered irrespective of the bypass setting (open or closed).

INTEGRAL HUMIDITY SENSOR

The integral humidity sensor incorporated within the extract fan chamber will automatically boost both the extract and supply fan, to the commissioned boost speed, when the humidity level exceeds that set by the front panel mounted adjustment potentiometer.

SUMMER/WINTER (SW) SWITCH

The unit shall feature volt-free connections for a two-position Summer/Winter switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles. (Summer/Winter)

Summer setting shall target under 20 degrees C internal dwelling temperature. Winter setting shall ensure heat recovery at all times. Temperature control logic shall be factory pre-set and require no on-site programming. The unit shall feature 3 commissionable speeds for both supply and extract. It shall be possible to enable the unit to its 3rd speed by means of a switch or a programmable thermostat with occupant override (IAQ-STAT).

The 3rd speed (overheating) shall be inhibited when outside air temperature exceeds inside temperature and bypass closes so that extracted air cools incoming fresh air.

CONTROL OPTIONS

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

- ◆ Independent control of background supply and extract flow rates.
- ◆ Independent control of boost speed supply and extract flow rates.
- ◆ Integral fan failure indication.
- ◆ Integral S/L terminal for boost from remote switch, e.g. light switch, kitchen boost switch.
- ◆ Integral heat exchanger frost protection.
- ◆ Discreet daily run monitor.
- ◆ Integral humidistat.

OPTIONAL CONTROLS

MRXBOX95-RFI (Remote Fail Indicator)

MRXBOX95-PIR (Passive Infrared)
A low voltage sensor which detects movement and activates system.

MRXBOX95-HUM (Relative Humidity)

A low voltage sensor which activates the system when the relative humidity level is above a set point.

MRXBOX-VSC LCD Touchscreen Controller

Controller for MVHR system with a 3.2" touch screen display.

The unit shall be offered with a 5 year warranty which starts from the day of delivery, and includes parts and labour for the first year and parts only for the remaining 4 years.

All Round Acoustic Solutions

MRXBOXAB-ECO5-1Z

The MRXBOXAB-ECO5-1Z is designed to provide optimised balanced (supply and extract) mechanical ventilation heat recovery, whilst offering the best all-in-one acoustic solution on the market.

The 1Z is the all-in-one acoustic enclosure, allowing in the MVHR unit and attenuator to be entirely cased in an aesthetically pleasing model which encloses the attenuators and flexible duct connections that would otherwise be visible, all whilst making significant reduction in cased-radiated noise.

Tempered air is delivered into 'living areas' whilst extracting moisture laden air from 'wet areas', creating comfortable and well ventilated homes. The unit has the facility to commission the supply and extract fans independently on both minimum and maximum speeds, and the heat exchange block can recover up to 95% of normally wasted heat that has been extracted from 'wet rooms'.

Please note both of these units are available in Opposite Handed format.

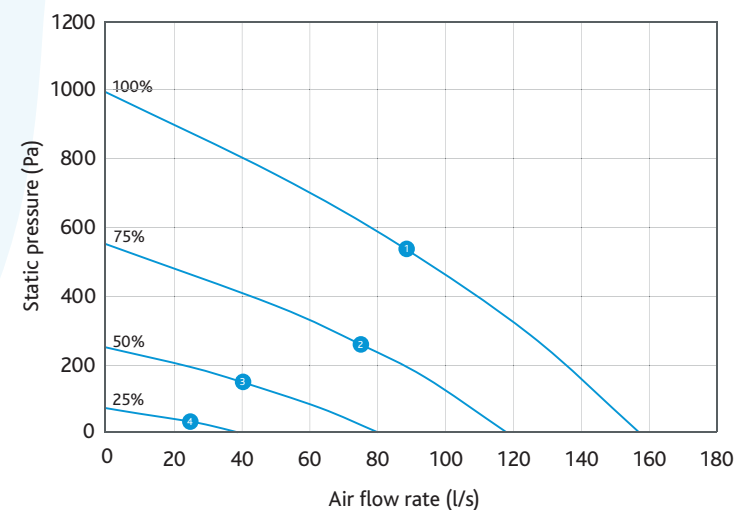


Typical Installation



- ◆ Limited ceiling voids in modern apartments and complex duct arrangements coupled with increased airflow demands placed on MVHR systems in an effort to reduce the risk of overheating lead to higher system resistances and running speeds.
- ◆ Restrictions on utility cupboard space, practical and financial limitations frequently prevent the construction of acoustic cupboards, whilst modern light-weight wall construction methods offer little mass to absorb unit noise and vibration. This can often result in the transfer of low frequency noise and vibration into adjacent living and sleeping areas.
- ◆ These factors leave designers at risk of exceeding the stringent noise requirements specified in Part F of the building regulations and further defined by CIBSE.
- ◆ By integrating the MVHR unit and flexible connections within an enclosure and supporting the internals on anti-vibration mounts, noise and vibration are isolated.

Performance — MRXBOXAB-ECO5-1Z



MRXBOXAB-ECO5 (S/W)

Wall mounted unit with 100% bypass and integral humidistat.

MRXBOXAB-ECO5 (S/W)

Opposite handed configuration wall mounted unit with 100% bypass and integral humidistat.

Summer/Winter (SW) Switch

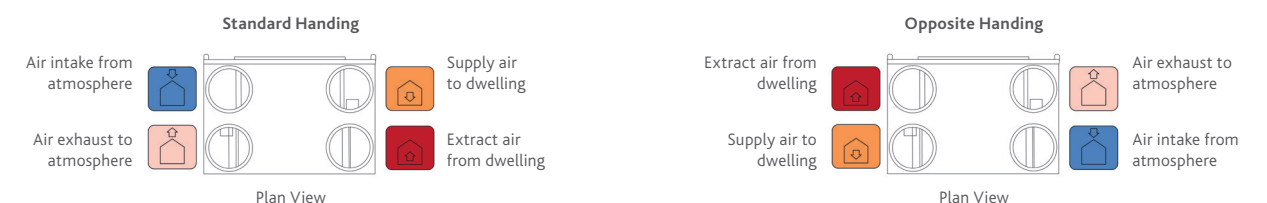
A two-position switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles.

Electrical & Sound

ECO4 Sound Data											
Curve	Maximum power consumption (Watts)		Sound Power Levels dB re 1pW (Frequency Hz)								dBa @3m
			63	125	250	500	1k	2k	4k	8k	
1	348	Open inlet	58	51	46	51	38	31	29	25	
		Open outlet	53	55	51	62	43	30	23	25	
		Breakout	65	57	53	49	29	17	<16	<16	31
2	148	Open inlet	48	48	46	41	31	26	22	<16	
		Open outlet	47	54	51	53	37	25	16	17	
		Breakout	58	56	53	42	24	<16	<16	<16	28
3	45	Open inlet	41	42	34	27	19	<16	<16	<16	
		Open outlet	39	48	42	37	25	<16	<16	<16	
		Breakout	46	49	44	26	<16	<16	<16	<16	20
4	10	Open inlet	38	38	22	19	<16	<16	<16	<16	
		Open outlet	35	44	28	29	<16	<16	<16	<16	
		Breakout	41	45	32	17	<16	<16	<16	<16	<16

The maximum power consumption shown above (Watts) is consumed on units running continuously, not taking into account any heat recovery saving and based on SAP Product Characteristics Database (PCDB) testing. The breakout case-radiated dBA values are given for Hemispherical free field radiation at 3m – to obtain the Spherical radiated data, subtract 3 dBA.

Please note: Sound data is provided at a particular duty point for 25%, 50%, 75% and 100%. For accurate sound data at a specific speed duty, please use Nuair's fan selector or call the office on 029 2085 8500.



MRXBOXAB-ECO5-1Z

SAP PCDB 2009 Test Results

Product Code	MRXBOXAB-ECO5-1Z		
SAP Identifier	MRXBOXAB-ECO5		
Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.65	90%	Yes
Kitchen + 2 Wet Room	0.58	90%	Yes
Kitchen + 3 Wet Room	0.58	89%	Yes
Kitchen + 4 Wet Room	0.63	88%	Yes
Kitchen + 5 Wet Room	0.69	87%	Yes
Kitchen + 6 Wet Room	0.76	87%	Yes
Kitchen + 7 Wet Room	0.87	86%	Yes

SAP PCDB 2012 Test Results

Product Code	MRXBOXAB-ECO5-1Z		
SAP Identifier	MRXBOXAB-ECO5		
Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.63	90%	Yes
Kitchen + 2 Wet Room	0.61	89%	Yes
Kitchen + 3 Wet Room	0.68	88%	Yes
Kitchen + 4 Wet Room	0.79	87%	Yes
Kitchen + 5 Wet Room	0.91	86%	Yes
Kitchen + 6 Wet Room	1.09	85%	Yes
Kitchen + 7 Wet Room	1.27	85%	Yes

General Arrangement

STANDARD UNIT SPIGOT LOCATION & DUCTING REFERENCES

Spigot 1. 200mm dia. = Extract air from dwelling
 Spigot 2. 200mm dia. = Exhaust air to outside
 Spigot 3. 200mm dia. = Intake air from outside
 Spigot 4. 200mm dia. = Supply air to property

OPPOSITE HANDED UNIT SPIGOT LOCATION & DUCTING REFERENCES

Spigot 1. 200mm dia. = Intake air from outside
 Spigot 2. 200mm dia. = Supply air to property
 Spigot 3. 200mm dia. = Extract air from dwelling
 Spigot 4. 200mm dia. = Exhaust air to outside

Detail of unit control on front panel.

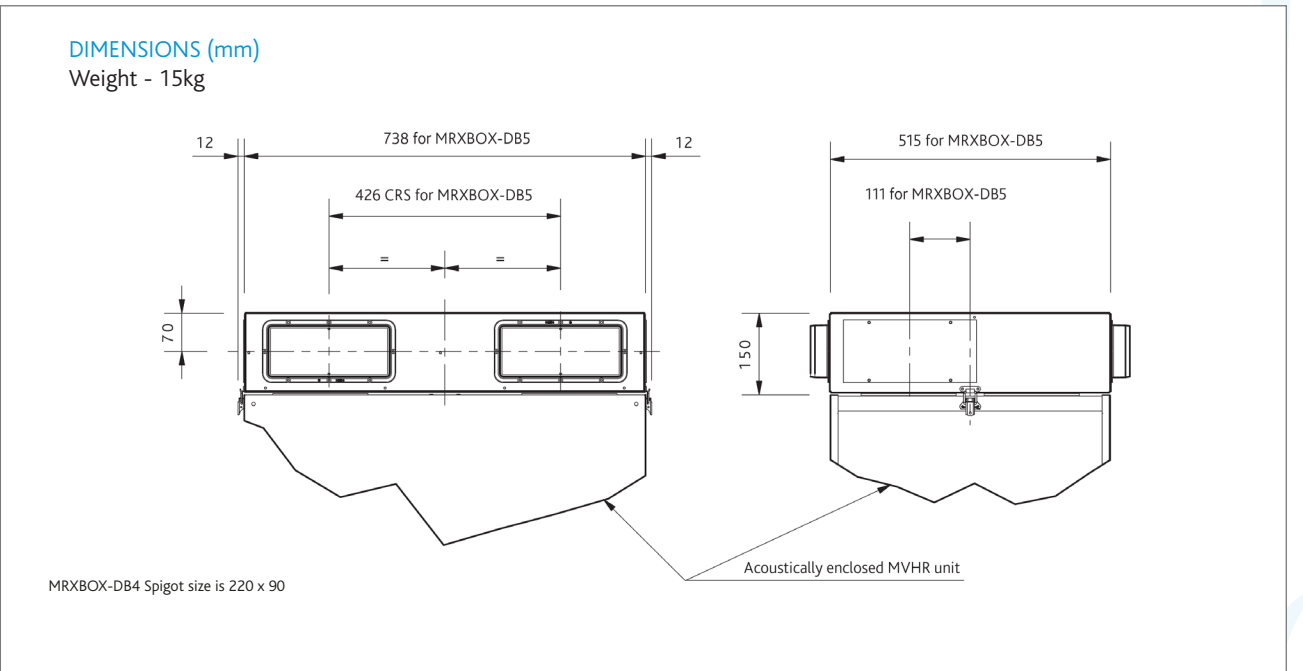
Tamper proof label following commissioning, includes system status indication.

MVHR-ECO5-FILTERKIT

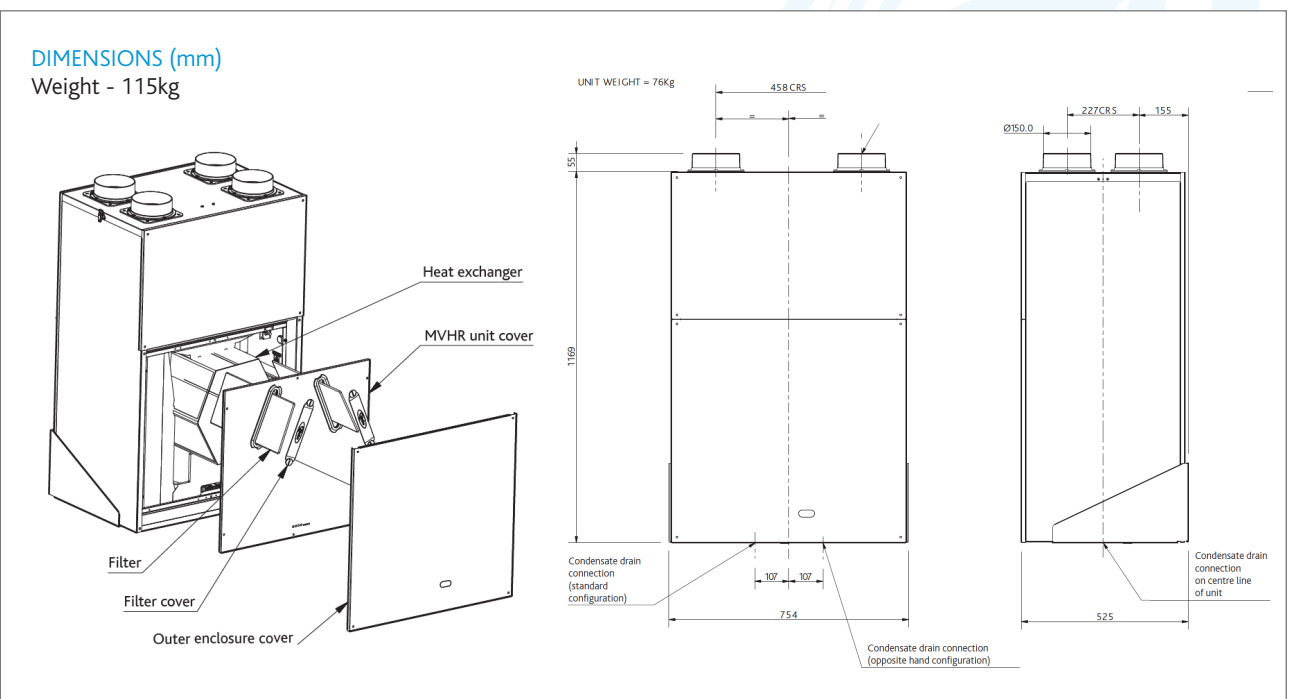
Ancillaries

Distribution Box

The MRXBOX-DB5 is fitted on top of the MRXBOXAB-ECO5-1Z before installation and offers a neat arrangement by directly distributing the initial ducting. It further benefits this MVHR system by reducing any in-line noise breakout, therefore improving this acoustic solution.

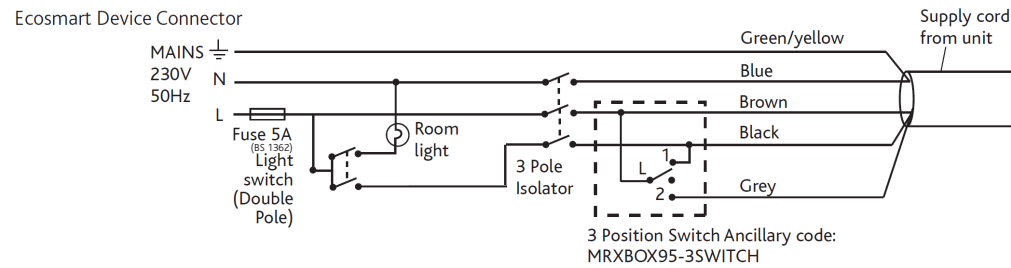


Technical – MRXBOXAB-ECO5-1Z

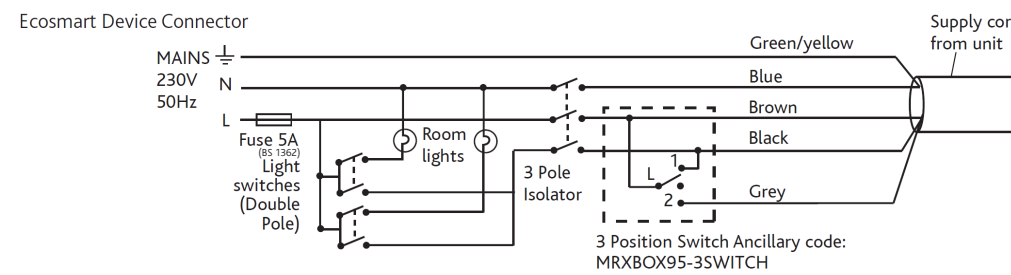


MRXBOXAB-ECO5-1Z

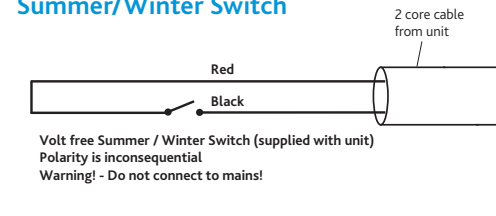
UNIT SERVING KITCHEN & BATHROOM



UNIT SERVING KITCHEN & TWO BATHROOMS



Summer/Winter Switch



Electrical Details

ELECTRICAL DETAILS: MRXBOXAB-ECO5-1Z	
Voltage:	230V 1ph 50Hz
Consumption:	2 Amp
Fuse rating:	5 Amp

Optional Sensors, Switches and Detectors

MRXBOX95-PIR (Passive Infrared)

A low voltage sensor, detects movement and activates system. Incorporates overrun timer and timer adjustments.

MRXBOX95-HUM (Relative Humidity)

A low voltage sensor, activates the system when the RH level is above set point. Incorporates overrun timer and RH setpoint level adjustment.

MRXBOX95-RFI (Remote Fail Indicator)

If fan failure occurs, the audio visual indicator will flash a warning.



MRXBOX-VSC CONTROL SCREEN COMPATIBLE WITH THIS UNIT

MRXBOX-VSC (LCD Touchscreen Controller)

Simple, intuitive and discreet, the LCD control puts you in total control of your MVHR system. With the wide range of functions and settings.



Technical Data

MRXBOXAB-ECO5-1Z / MRXBOXAB-ECO5-1Z-OH
Acoustically Enclosed Wall Mounted Multi-room Heat Recovery 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 ISO Coarse (G3 Grade) filters on fresh air inlet and system extract. The heat exchanger and filters shall be accessible via the front access panel, enabling quick and easy maintenance.

The unit shall have low energy, high efficiency EC fan/motor assemblies with sealed for life bearings, the impellers shall be backward curved centrifugal type. The motors shall be suitable of an ambient temperature of 40°C. The unit shall be supplied complete with a condensate drip tray and 21.5mm drain connection.

The unit shall be suitable for 150mm diameter circular ducting. The breakout noise level and power requirements shall be as detailed by the unit manufacturer and in accordance with the ventilation equipment schedule. Units shall be one of MRXBOXAB-ECO5-1Z and MRXBOXAB-ECO5-1Z-OH as manufactured by Nuair. The unit shall be provided within a white pre-painted or coated steel acoustic enclosure lined with a minimum of 20mm class '0' acoustic foam insulation to reduce breakout noise.

In-duct noise shall be attenuated on Intake/Exhaust/Supply/Extract by means of a 4-way attenuator mounted within the enclosure and close coupled directly to the unit. Flexible duct connections shall be within the enclosure, pre-fitted between the attenuator section and the connection spigots on the top face of the enclosure. (Removing the need for flexible duct connectors outside of the unit which may cause breakout).

The MVHR unit and attenuator assembly shall be retained within the enclosure on a metal tray supported on turret type anti-vibration mounts of suitable deflection to ensure that vibration is not transmitted to the supporting structure.

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. This unit is also available in Opposite Hand formatting.

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 the switched live signal from light/ remote switches or any ancillary sensors. When signals are received, the fan shall alter its speed to adjustable, normal and boost rates.

The unit shall have the facility to commission the supply and extract fans independently on minimum speed (continuous background ventilation), and boost speed, via inbuilt minimum and maximum speed adjustment. The fans shall have infinitely variable speed control.

INTEGRAL AUTOMATIC SUMMER BYPASS

Including Automatic SUMMER BYPASS where intake and return air temperatures shall be measured so that supply air temperatures can be maximised during winter months and minimised as external ambient temperature rises. The Summer Bypass damper shall be opened by a wax actuator. Supply and Extract air shall be filtered irrespective of the bypass setting (open or closed).

INTEGRAL HUMIDITY SENSOR

The integral humidity sensor incorporated within the extract fan chamber will automatically boost both the extract and supply fan, to the commissioned boost speed, when the humidity level exceeds that set by the front panel mounted adjustment potentiometer.

SUMMER/WINTER (SW) SWITCH

The unit shall feature volt-free connections for a two-position Summer/Winter switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles. (Summer/Winter)

Summer setting shall target under 20 degrees C internal dwelling temperature. Winter setting shall ensure heat recovery at all times. Temperature control logic shall be factory pre-set and require no on-site programming. The unit shall feature 3 commissionable speeds for both supply and extract. It shall be possible to enable the unit to its 3rd speed by means of a switch or a programmable thermostat with occupant override (IAQ-STAT).

The 3rd speed (overheating) shall be inhibited when outside air temperature exceeds inside temperature and bypass closes so that extracted air cools incoming fresh air.

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:

- ◆ Independent control of background supply and extract flow rates.
- ◆ Independent control of boost speed supply and extract flow rates.
- ◆ Integral fan failure indication.
- ◆ Integral S/L terminal for boost from remote switch, e.g. light switch, kitchen boost switch.
- ◆ Integral heat exchanger frost protection.
- ◆ Discreet daily run monitor.
- ◆ Integral humidistat.

OPTIONAL CONTROLS

MRXBOX95-RFI (Remote Fail Indicator)

MRXBOX95-PIR (Passive Infrared)
A low voltage sensor which detects movement and activates system.

MRXBOX95-HUM (Relative Humidity)

A low voltage sensor which activates the system when the relative humidity level is above a set point.

MRXBOX-VSC LCD Touchscreen Controller

Controller for MVHR system with a 3.2" touch screen display.

The unit shall be offered with a 5 year warranty which starts from the day of delivery, and includes parts and labour for the first year and parts only for the remaining 4 years.

All Round MVHR Solutions

MRXBOXAB-ECO-LP2

MRXBOXAB-ECO-LP2 and MRXBOXAB-ECO-LP2-OH are specially designed for apartment applications where space is at a premium.

The new MRXBOXAB-ECO-LP2 offers the lowest specific fan power of any low-profile, void-mounted MVHR system and is specifically designed to fit easily into apartments with ceiling void restrictions where space is at a premium.

The MRXBOXAB-ECO-LP2 has been designed with automatic 100% bypass as listed on the SAP Product Characteristics Database (PCDB).

The MRXBOXAB-ECO-LP2 is designed to provide optimised balanced (supply and extract) mechanical ventilation with heat recovery and listed on the PCDB.

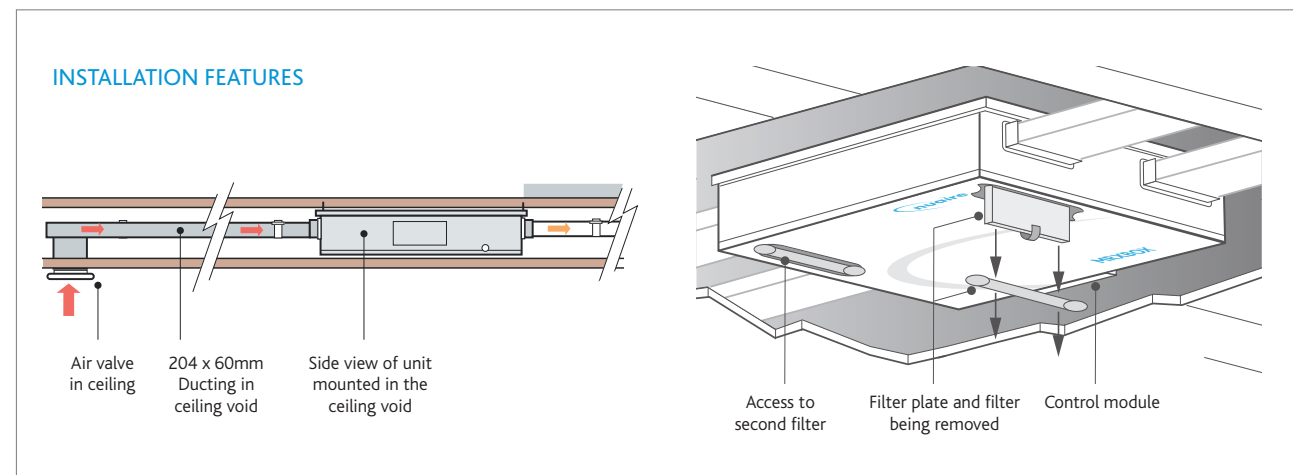
The unit operates by continuously extracting moisture laden air from 'wet' rooms within the property and at the same time drawing in fresh supply air from outside. The heat from the extracted stale air is recovered via a heat exchanger inside the heat recovery unit, which becomes tempered then filtered before supplying into the habitable rooms creating comfortable and well ventilated homes.

The two independent fans have full speed control for background and boost ventilation rates.

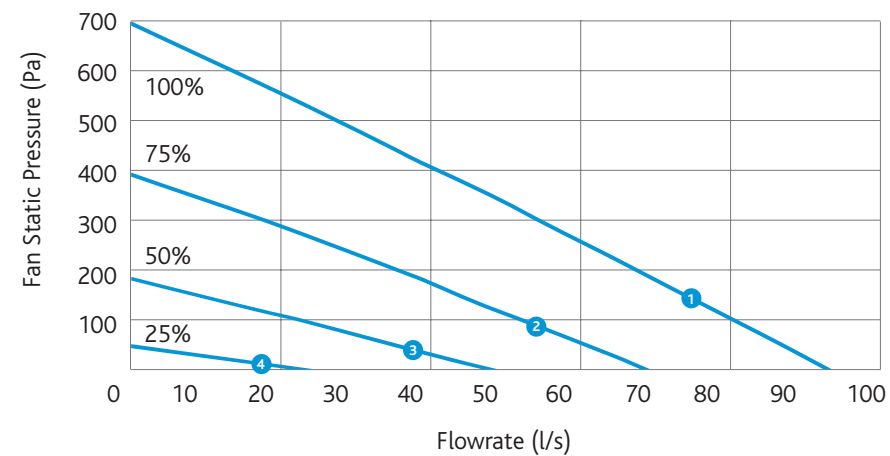
The MRXBOXAB-ECO-LP2 has a summer bypass function. This feature activates automatically and attempts to maintain the home at a comfortable temperature. For example, if the outside temperature is warmer than the inside, the unit will continue to draw air through the heat exchanger. If the house is warmer than outside, the unit will bypass the heat exchanger and draw air in directly from outside.



Typical Installation



Performance — MRXBOXAB-ECO-LP2



MRXBOXAB-ECO-LP2(SW)

Low profile multi-room supply and extract heat recovery with automatic Summer bypass.

MRXBOXAB-ECO-LP2-OH(SW)

Low profile multi-room supply and extract heat recovery with automatic Summer bypass with reverse handing.

Summer/Winter (SW) Switch

A two-position switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles.

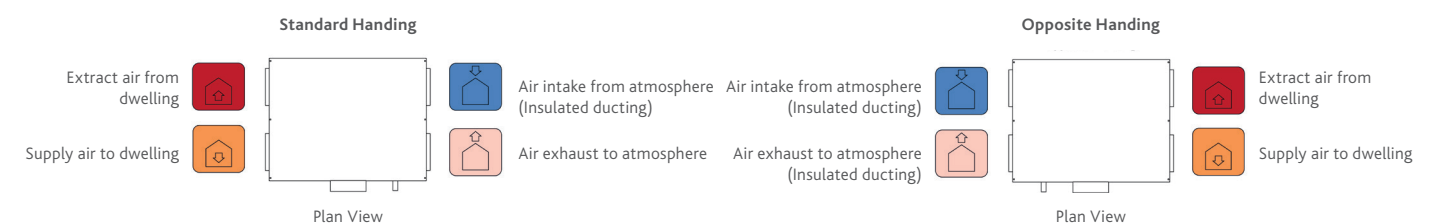
Electrical & Sound

ECO-LP2 Sound Data

Curve	Maximum power consumption (Watts)		Sound Power Levels dB re 1pW (Frequency Hz)								dBa @3m
			63	125	250	500	1k	2k	4k	8k	
1	163	Open inlet	51	45	50	48	40	42	29	19	
		Open outlet	54	49	59	64	61	60	51	43	
		Breakout	58	60	61	58	48	41	33	25	40
2	69	Open inlet	51	43	46	44	36	36	22	<16	
		Open outlet	51	45	54	59	55	54	44	34	
		Breakout	54	57	56	52	41	34	25	18	34
3	22	Open inlet	45	37	34	32	24	23	<16	<16	
		Open outlet	44	37	43	46	43	41	29	19	
		Breakout	47	50	44	40	30	22	<16	<16	23
4	7	Open inlet	38	31	24	22	<16	<16	<16	<16	
		Open outlet	37	30	33	36	33	31	19	<16	
		Breakout	40	43	34	30	20	<16	<16	<16	<16

The maximum power consumption shown above (Watts) is consumed on units running continuously, not taking into account any heat recovery saving based on SAP Product Characteristic Database (PCDB) testing. The breakout case-radiated dBA values are given for Hemispherical free field radiation at 3m - to obtain the Spherical radiated data, subtract 3 dBA.

Please note: Sound data is provided at a particular duty point for 25%, 50%, 75% and 100%. For accurate sound data at a specific speed duty, please use Nuaire's fan selector or call the office on 029 2085 8500.



MRXBOXAB-ECO-LP2

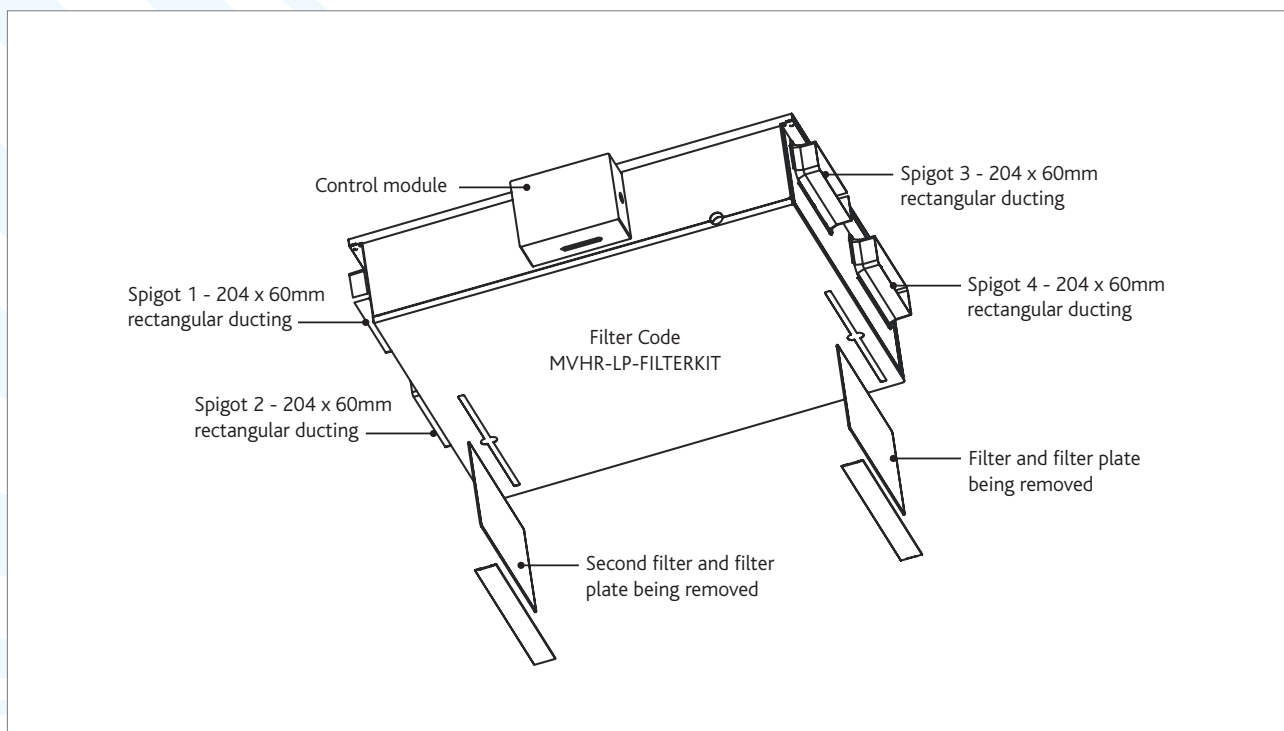
SAP PCDB 2009 Test Results

Product Code	MRXBOXAB-ECO-LP2		
SAP Identifier	MRXBOXAB-ECO-LP2		
Exhaust Terminal Configuration	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.43	78%	Yes
Kitchen + 2 Wet Room	0.45	78%	Yes
Kitchen + 3 Wet Room	0.55	79%	Yes
Kitchen + 4 Wet Room	0.68	79%	Yes
Kitchen + 5 Wet Room	0.82	79%	Yes

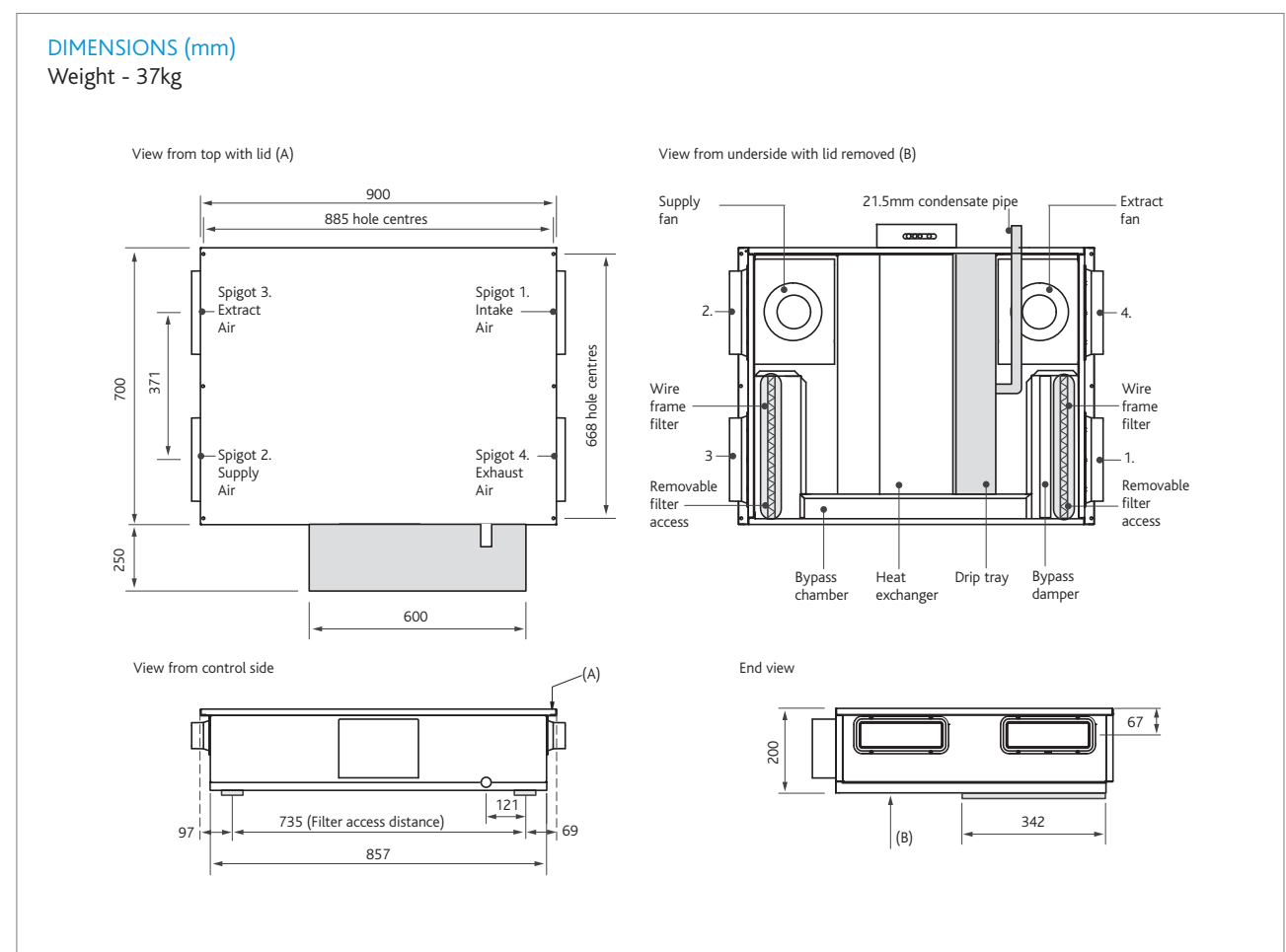
SAP PCDB 2012 Test Results

Product Code	MRXBOXAB-ECO-LP2		
SAP Identifier	MRXBOXAB-ECO-LP2		
Exhaust Terminal Configuration	Specific Fan Power (W/l/s)	Heat Exchange Efficiency	Energy Saving Trust Best Practice Compliant
Kitchen + 1 Wet Room	0.48	78%	Yes
Kitchen + 2 Wet Room	0.61	79%	Yes
Kitchen + 3 Wet Room	0.77	79%	Yes
Kitchen + 4 Wet Room	1.01	79%	Yes
Kitchen + 5 Wet Room	1.26	79%	Yes

General Arrangement



Technical – MRXBOXAB-ECO-LP2



Electrical Details

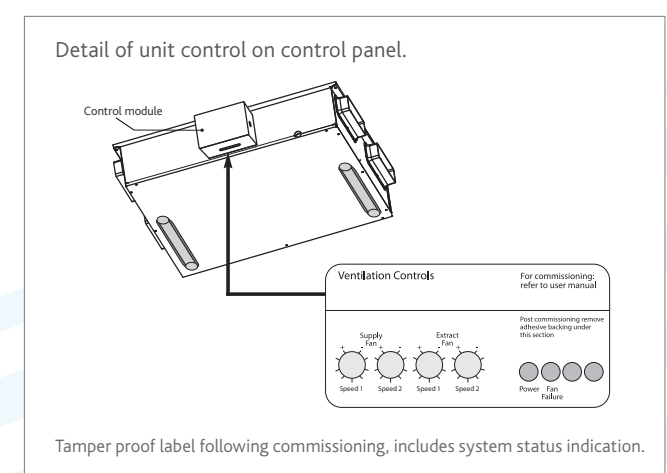
Please note: The electrical connection of the unit must be carried out by a qualified electrician.

The unit is supplied with a flexible cord for connection to the mains supply.

NOTE: This unit must be earthed.

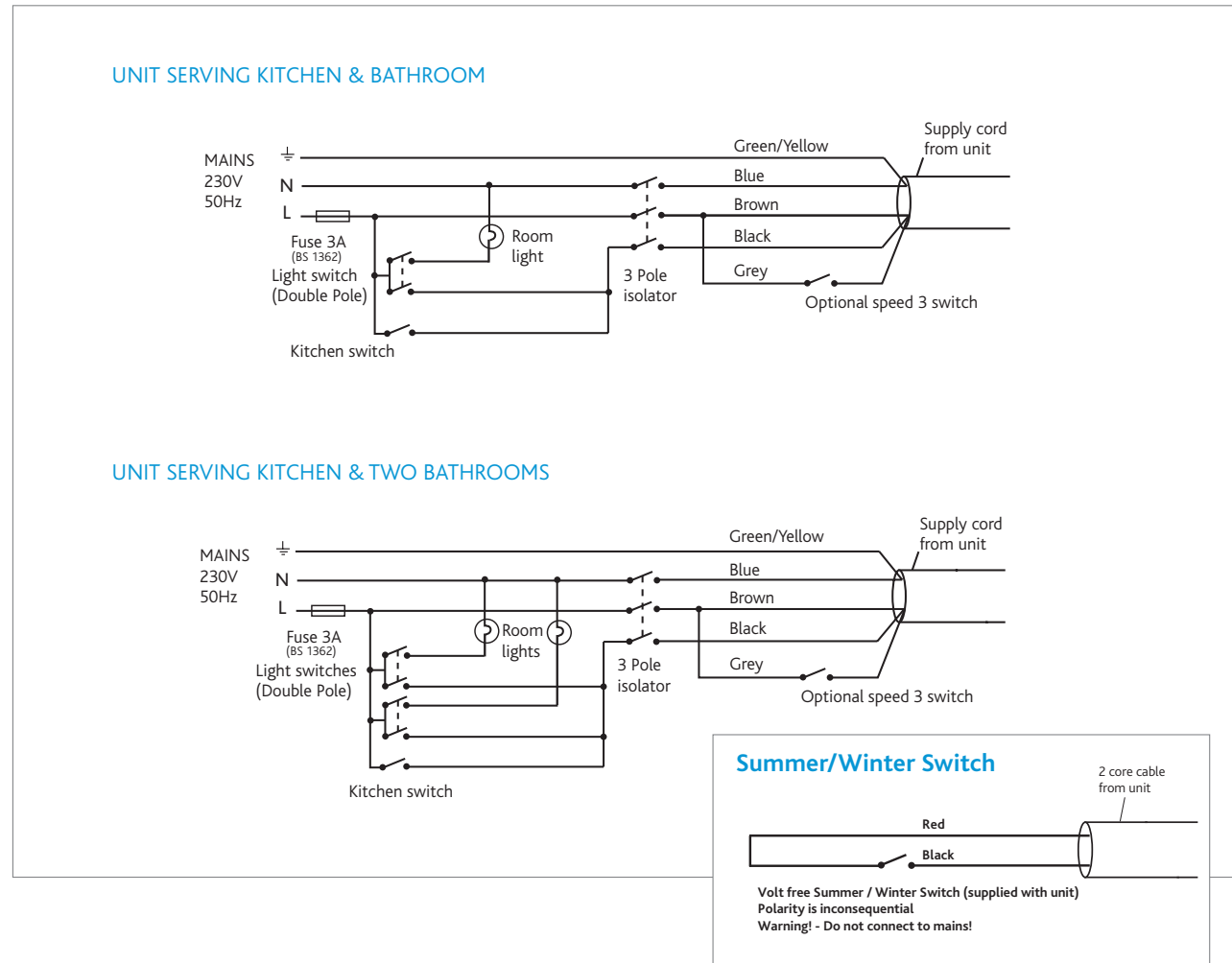
The three core cable from the mains power supply should be connected to a fixed wiring installation in accordance with current IEE wiring regulations.

Electrical Details: MRXBOXAB-ECO-LP2	
Voltage:	230V 1ph 50Hz
Consumption:	1.2 Amp
Fuse rating:	3 Amp



MRXBOXAB-ECO-LP2

Wiring - MRXBOXAB-ECO-LP2



Optional Sensors, Switches and Detectors

MRXBOX95-PIR (Passive Infrared)

A low voltage sensor, detects movement and activates system. Incorporates overrun timer and timer adjustments.



MRXBOX95-HUM (Relative Humidity)

A low voltage sensor, activates the system when the RH level is above set point. Incorporates overrun timer and RH setpoint level adjustment.



MRXBOX95-RFI (Remote Fail Indicator)

If fan failure occurs, the audio visual indicator will flash a warning.



MRXBOX-VSC CONTROL SCREEN COMPATIBLE WITH THIS UNIT

MRXBOX-VSC (LCD Touchscreen Controller)

Simple, intuitive and discreet, the LCD control puts you in total control of your MVHR system. With the wide range of functions and settings.



Consultants Specification

MRXBOXAB-ECO-LP2

The unit shall be manufactured from galvanised sheet steel with a white, pre-painted removable access panel. The unit shall be fully insulated providing excellent thermal and acoustic characteristics and shall be complete with a multi-plate, aluminium, counter-flow, high-efficiency heat exchanger block, with a thermal efficiency of up to 80%. The heat exchanger shall be protected by ISO Coarse (G3 Grade) filters on fresh air inlet and system extract. The heat exchanger and filters shall be accessible via the underside access panels, enabling quick and easy maintenance.

The unit shall have a maximum depth of 200mm to fit within ceiling void restrictions. The unit shall have low energy, high-efficiency EC fan/motor assemblies with sealed for life bearings, the impellers shall be backward curved centrifugal type.

The motors shall be suitable for an ambient temperature of 40°C.

Motor assemblies shall be removable from the underside of the unit and will not require the unit to be removed from situ.

The unit shall be supplied complete with a condensate drip tray and 21.5mm drain connection.

The unit shall be suitable for 204x60mm rectangular ducting.

Note: The unit is also available in opposite handed format, refer to spigot configuration for set up.

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

Units shall be MRXBOXAB-ECO-LP2 and MRXBOXAB-ECO-LP2-OH as manufactured by Nuaire and shall be listed on the PCDB database.

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 moisture-laden 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:

- Switched live signal from light/remote switches.

When signals are received, the fan shall alter its speed to adjustable, normal and boost rates.

The unit shall have the facility to commission the supply and extract fans independently on minimum speed (continuous background ventilation) and boost speed via inbuilt minimum and maximum speed adjustment. The fans shall have infinitely variable speed control.

INTEGRAL AUTOMATIC SUMMER BYPASS

Including Automatic Summer bypass where intake and return air temperatures shall be measured so that supply air temperatures can be maximised during winter months and minimised as external ambient temperature rises. The Summer bypass damper shall be opened by a wax actuator. Supply and Extract air shall be filtered irrespective of the bypass setting (open or closed).

SUMMER/WINTER (SW) SWITCH

The unit shall feature volt-free connections for a two-position Summer/Winter switch allowing occupant to have direct control of heat exchanger bypass logic in providing 2 dwelling target temperature profiles. (Summer/Winter) Summer setting shall target under 20 degrees C internal dwelling temperature. Winter setting shall ensure heat recovery at all times. Temperature control logic shall be factory pre-set and require no on-site programming. The unit shall feature 3 commissionable speeds for both supply and extract. It shall be possible to enable the unit to its 3rd speed by means of a switch or a programmable thermostat with occupant override (IAQ-STAT). The 3rd speed (overheating) shall be inhibited when outside air temperature exceeds inside temperature and bypass closes so that extracted air cools incoming fresh air.

CONTROL OPTIONS

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

- Independent control of background supply and extract flow rates.
- Independent control of boost speed supply and extract flow rates.
- Integral heat exchanger frost protection.
- Fan failure indication.
- Integral S/L terminal for boost from remote switch, e.g. light switch.
- Additional S/L terminal for 100% boost speed from remote switch, e.g. plate switch.
- Discreet daily run monitor.
- Remote fail indicator.
- Indication and controls – The unit shall have clear LED visual indication for maintenance, servicing and operation mode, i.e. summer bypass, frost protection.

MRXBOX-VSC (VISUAL SYSTEM CONTROLLER)

The MRXBOX-VSC is compatible with the Nuaire MRXBOXAB-ECO-LP2 heat recovery units and can be purchased separately. The controller comes complete with commissioning and end user functions.

The display will be a 3.5" LCD display and will remain on standby until such time as the screen is touched.

The initial display will show the MVHR system status as listed below:

- Current fan speed.
- Current indoor/outside temperature.
- Indicate when the summer bypass is activated.
- Indicate when frost protection is activated.
- Indicate when the filters require cleaning/changing.

REMOTE COMMISSIONING

(MRXBOXAB-ECO-LP2-C & MRXBOXAB-ECO-LP2OH-C units only)

These units shall have a remote control PCB fitted with a 1m flexible conduit providing improved access for commissioning.

The unit shall be offered with a 5 year warranty which starts from the day of delivery, and includes parts and labour for the first year and parts only for the remaining 4 years.

OPTIONAL CONTROLS

MRXBOX95-RFI (Remote Fail Indicator)

MRXBOX95-PIR (Passive Infrared)

A low voltage sensor which detects movement and activates system.

MRXBOX95-HUM (Relative Humidity)

A low voltage sensor which activates the system when the relative humidity level is above a set point.

MRXBOX-VSC LCD Touchscreen Controller

Controller for MVHR system with a 3.2" touch screen display.

NUAIRE

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As part of our policy of continuous product development Nuaire reserves the right to alter specifications without prior notice. Telephone calls may be recorded for quality and training purposes.