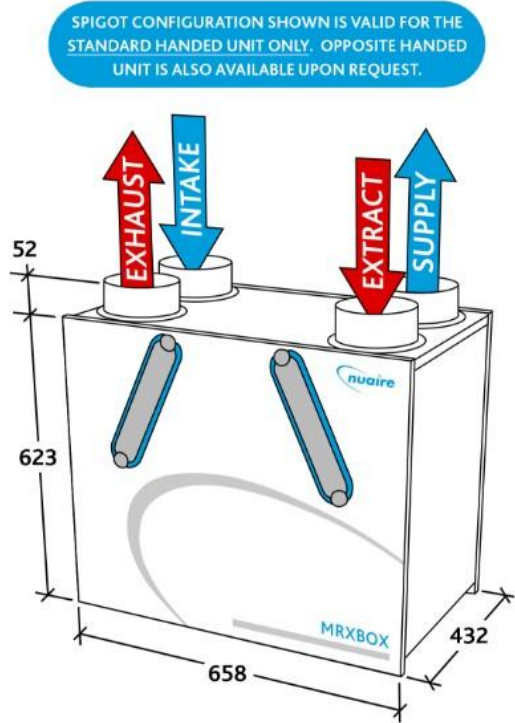




SUMMARY FAN DATA SHEET

Nuaire, Western Industrial Estate, Caerphilly, CF83 1NA, United Kingdom. email:info@nuaire.co.uk
UK Commercial enquiries T:029 2085 8200 UK Residential enquiries T:029 2085 8500 International enquiries T:+44.29 2085 8497
Whilst the information given on this data sheet is fan specific, it is in summary and reference to the product selection catalogue and installation & maintenance documents is recommended.
This data sheet produced on 14 Mar 2025 15:39 using software version 5.8.4590.0

Fan Dimensions



Length: Width: Height:
432 658 623
Spigot size: 150
Duct size: 150
Drawing is for dimensional purposes only. Dimensions in mm.
Please see selected ancillaries section for additional dimensions for any requested additional ancillaries.

SAP Appendix Q Test Results

Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency %
Kitchen + 1 wet room	0.5	90%
Kitchen + 2 wet rooms	0.53	90%
Kitchen + 3 wet rooms	0.6	89%
Kitchen + 4 wet rooms	0.75	88%
Kitchen + 5 wet rooms	0.92	88%
Kitchen + 6 wet rooms	1.1	87%
Kitchen + 7 wet rooms	1.36	87%



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Technical Data

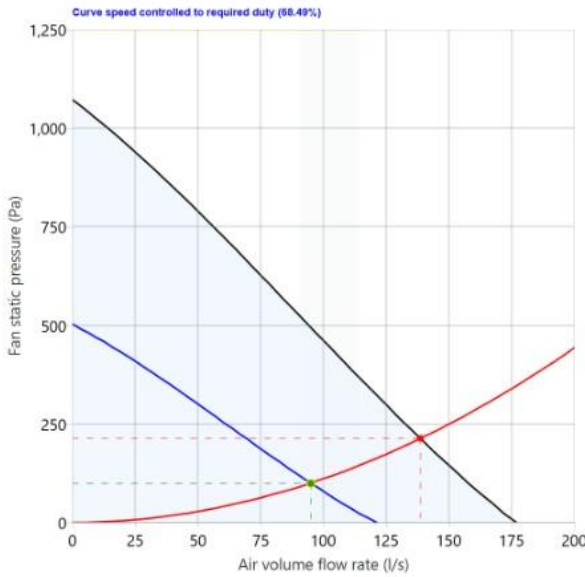
MRXBOX-ECO - Wall Mounted Multi Room Xbox
Fan Code: **MRXBOXAB-ECO4**
Installation Manual Links: 671797
Required duty: 95 l/s at 100 Pa
Actual duty: 139 l/s at 214 Pa
Actual at required flow: 95 l/s at 495 Pa
When speed controlled to required duty (68.49%):
Motor Input Power: 0.113 kW

At full speed:
Motor Input Power: 0.351 kW
Maximum Fan Speed: 3,230 RPM
Electrical Supply: 230V, 1 Phase, 50 Hz
Motor current (flc): 2.4 A
Max. operating temp: 40°C
Weight: 44 kg
Starting currents are nominal.

Sound Data

Acoustic performance to ISO 13347 and AMCA 300.
Noise calculated speed controlled to required duty (68.49%)
Sound Power Levels re 1 pWatts (Hz):
Hz 63 125 250 500 1k 2k 4k 8k dBA
Breakout 55 59 59 51 41 34 24 <16 35
Open Inlet (Intake & Extract) 47 51 51 50 43 39 26 18
Open Outlet (Supply & Exhaust) 55 62 63 62 55 54 46 41
dBA is hemi-spherical at 3 metres. For spherical deduct 3 dBA.
Please note that the noise data stated on this data sheet for the unit and/or silencer is tested in accordance with UK, European and International industry laboratory standards. However onsite conditions may vary and we would recommend that this information is verified by an acoustic specialist in order to ensure its suitability for the intended application.

Performance Chart



Specification

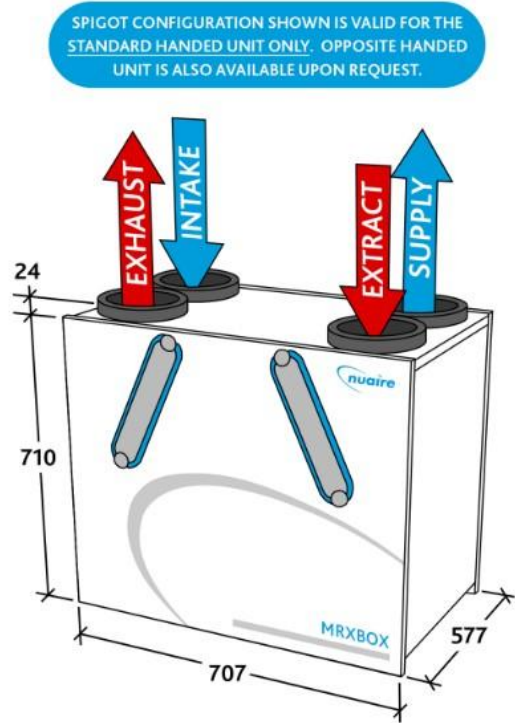
The unit shall be fully insulated providing excellent thermal and acoustic characteristics and shall be complete with a multi plate counter flow high efficiency heat exchanger block, with a thermal efficiency of up to 95%. The heat exchanger shall be protected by filters on fresh air inlet and system 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 a condensate drip tray and 32mm drain connection.
The unit shall be suitable for both 200mm and 180mm 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.
The unit shall be offered with a five year warranty. The product warranty applies to the UK mainland and in accordance with Clause 14 of our Conditions of Sale. Customers purchasing from outside of the UK should contact Nuaire International Sales office for further details.



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Fan Dimensions



Length: Width: Height:
577 707 710
Spigot size: 200
Duct size: 200
Drawing is for dimensional purposes only. Dimensions in mm.
Please see selected ancillaries section for additional dimensions for any requested additional ancillaries.

SAP Appendix Q Test Results

Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency %
Kitchen + 1 wet room	0.62	94%
Kitchen + 2 wet rooms	0.62	93%
Kitchen + 3 wet rooms	0.66	93%
Kitchen + 4 wet rooms	0.79	92%
Kitchen + 5 wet rooms	0.94	91%
Kitchen + 6 wet rooms	1.15	91%
Kitchen + 7 wet rooms	1.41	91%



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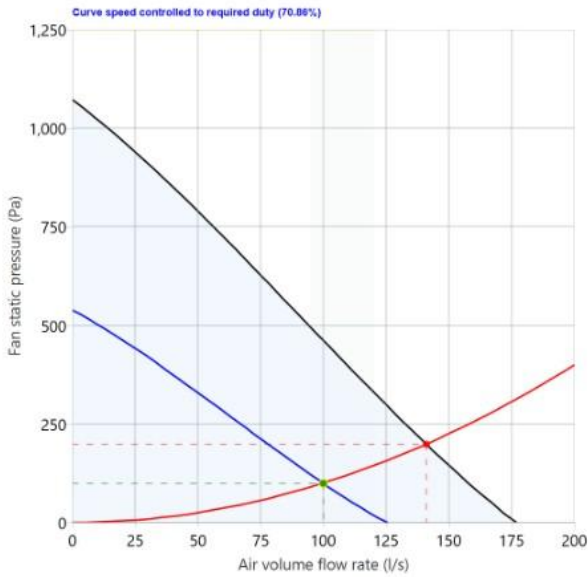
MRXBOX-ECO - Wall Mounted Multi Room Xbox
Fan Code: **MRXBOXAB-ECO4**
Installation Manual Links: 671797
Required duty: 100 l/s at 100 Pa
Actual duty: 141 l/s at 199 Pa
Actual at required flow: 100 l/s at 462 Pa
When speed controlled to required duty (70.86%):
Motor Input Power: 0.125 kW

At full speed:
Motor Input Power: 0.351 kW
Maximum Fan Speed: 3,230 RPM
Electrical Supply: 230V, 1 Phase, 50 Hz
Motor current (flc): 2.4 A
Max. operating temp: 40°C
Weight: 44 kg
Starting currents are nominal.

Sound Data

Acoustic performance to ISO 13347 and AMCA 300.
Noise calculated speed controlled to required duty (70.86%)
Sound Power Levels re 1 pWatts (Hz):
Hz 63 125 250 500 1k 2k 4k 8k dBA
Breakout 56 59 59 52 41 35 25 <16 35
Open Inlet (Intake 48 51 52 50 43 39 27 18
& Extract)
Open Outlet 55 62 64 63 56 55 47 42
(Supply & Exhaust)
dBA is hemi-spherical at 3 metres. For spherical deduct 3 dBA.
Please note that the noise data stated on this data sheet for the unit and/or silencer is tested in accordance with UK, European and International industry laboratory standards. However onsite conditions may vary and we would recommend that this information is verified by an acoustic specialist in order to ensure its suitability for the intended application.

Performance Chart



Specification

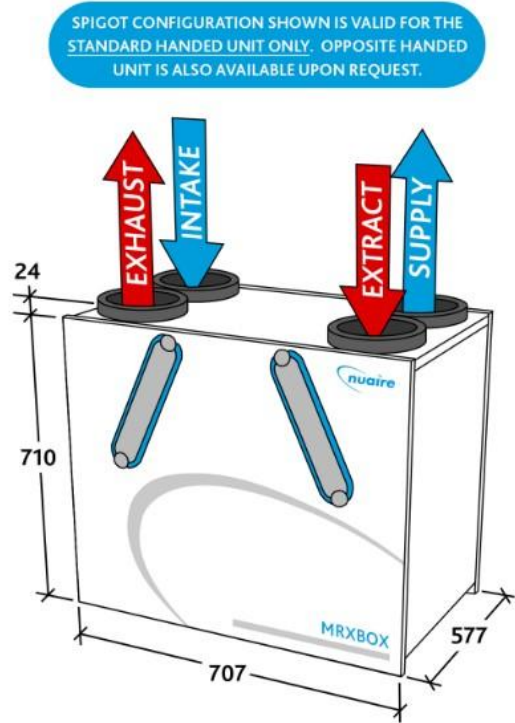
The unit shall be fully insulated providing excellent thermal and acoustic characteristics and shall be complete with a multi plate counter flow high efficiency heat exchanger block, with a thermal efficiency of up to 95%. The heat exchanger shall be protected by filters on fresh air inlet and system 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 a condensate drip tray and 32mm drain connection.
The unit shall be suitable for both 200mm and 180mm 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.
The unit shall be offered with a five year warranty. The product warranty applies to the UK mainland and in accordance with Clause 14 of our Conditions of Sale. Customers purchasing from outside of the UK should contact Nuaire International Sales office for further details.



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Fan Dimensions



Length: Width: Height:
577 707 710
Spigot size: 200
Duct size: 200
Drawing is for dimensional purposes only. Dimensions in mm.
Please see selected ancillaries section for additional dimensions for any requested additional ancillaries.

SAP Appendix Q Test Results

Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency %
Kitchen + 1 wet room	0.62	94%
Kitchen + 2 wet rooms	0.62	93%
Kitchen + 3 wet rooms	0.66	93%
Kitchen + 4 wet rooms	0.79	92%
Kitchen + 5 wet rooms	0.94	91%
Kitchen + 6 wet rooms	1.15	91%
Kitchen + 7 wet rooms	1.41	91%



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Technical Data

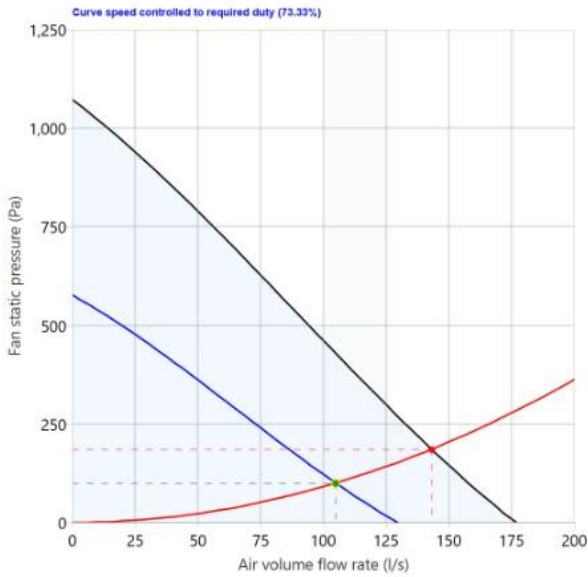
MRXBOX-ECO - Wall Mounted Multi Room Xbox
Fan Code: **MRXBOXAB-ECO4**
Installation Manual Links: 671797
Required duty: 105 l/s at 100 Pa
Actual duty: 143 l/s at 186 Pa
Actual at required flow: 105 l/s at 429 Pa
When speed controlled to required duty (73.33%):
Motor Input Power: 0.139 kW

At full speed:
Motor Input Power: 0.352 kW
Maximum Fan Speed: 3,230 RPM
Electrical Supply: 230V, 1 Phase, 50 Hz
Motor current (flc): 2.4 A
Max. operating temp: 40°C
Weight: 44 kg
Starting currents are nominal.

Sound Data

Acoustic performance to ISO 13347 and AMCA 300.
Noise calculated speed controlled to required duty (73.33%)
Sound Power Levels re 1 pWatts (Hz):
Hz 63 125 250 500 1k 2k 4k 8k dBA
Breakout 56 59 59 53 42 35 25 <16 36
Open Inlet (Intake & Extract) 48 52 52 51 44 40 28 19
Open Outlet (Supply & Exhaust) 56 62 64 64 56 55 48 42
dBA is hemi-spherical at 3 metres. For spherical deduct 3 dBA.
Please note that the noise data stated on this data sheet for the unit and/or silencer is tested in accordance with UK, European and International industry laboratory standards. However onsite conditions may vary and we would recommend that this information is verified by an acoustic specialist in order to ensure its suitability for the intended application.

Performance Chart



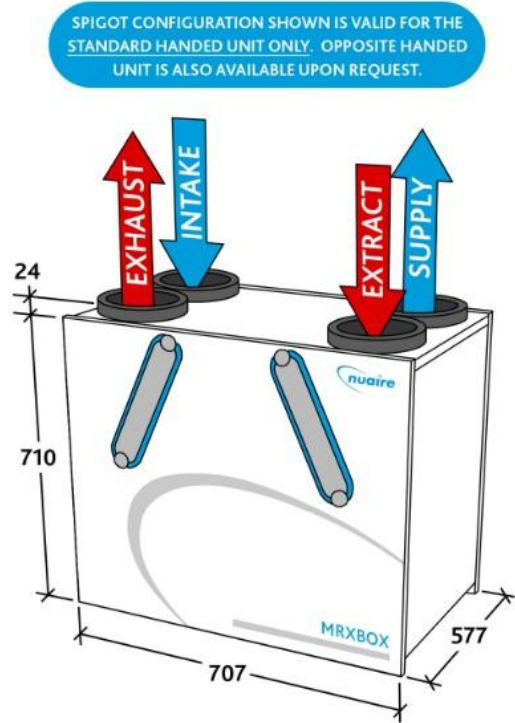
Specification

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 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 a condensate drip tray and 32mm drain connection.
The unit shall be suitable for both 200mm and 180mm 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.
The unit shall be offered with a five year warranty. The product warranty applies to the UK mainland and in accordance with Clause 14 of our Conditions of Sale. Customers purchasing from outside of the UK should contact Nuaire International Sales office for further details.

nuaire SUMMARY FAN DATA SHEET

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Fan Dimensions



SAP Appendix Q Test Results

Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency %
Kitchen + 1 wet room	0.62	94%
Kitchen + 2 wet rooms	0.62	93%
Kitchen + 3 wet rooms	0.66	93%
Kitchen + 4 wet rooms	0.79	92%
Kitchen + 5 wet rooms	0.94	91%
Kitchen + 6 wet rooms	1.15	91%
Kitchen + 7 wet rooms	1.41	91%

nuaire SUMMARY FAN DATA SHEET

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Technical Data

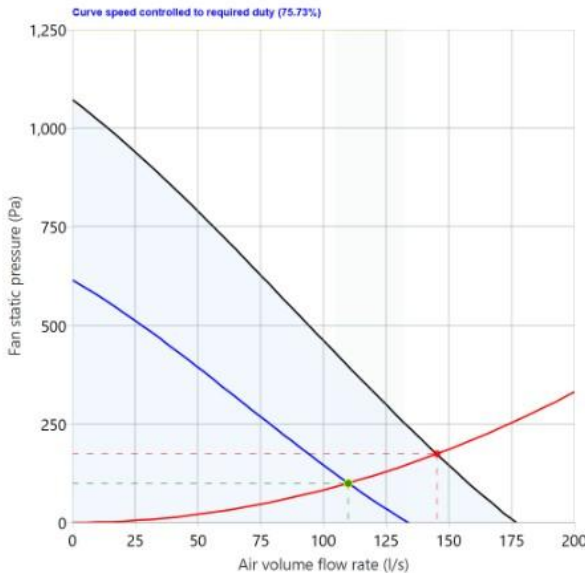
MRXBOX-ECO - Wall Mounted Multi Room Xbox
Fan Code: **MRXBOXAB-ECO4**
Installation Manual Links: 671797
Required duty: 110 l/s at 100 Pa
Actual duty: 145 l/s at 174 Pa
Actual at required flow: 110 l/s at 396 Pa
When speed controlled to required duty (75.73%):
Motor Input Power: 0.153 kW

At full speed:
Motor Input Power: 0.352 kW
Maximum Fan Speed: 3,230 RPM
Electrical Supply: 230V, 1 Phase, 50 Hz
Motor current (flc): 2.4 A
Max. operating temp: 40°C
Weight: 44 kg
Starting currents are nominal.

Sound Data

Acoustic performance to ISO 13347 and AMCA 300.
Noise calculated speed controlled to required duty (75.73%)
Sound Power Levels re 1 pWatts (Hz):
Hz 63 125 250 500 1k 2k 4k 8k dBA
Breakout 57 59 60 53 42 36 26 16 36
Open Inlet (Intake & Extract) 48 52 53 52 44 40 28 20
Open Outlet (Supply & Exhaust) 56 62 64 64 57 56 48 43
dBA is hemi-spherical at 3 metres. For spherical deduct 3 dBA.
Please note that the noise data stated on this data sheet for the unit and/or silencer is tested in accordance with UK, European and International industry laboratory standards. However onsite conditions may vary and we would recommend that this information is verified by an acoustic specialist in order to ensure its suitability for the intended application.

Performance Chart



Specification

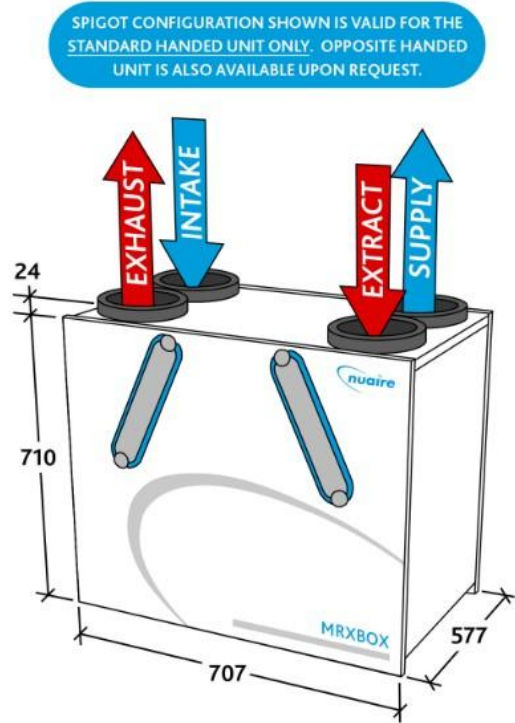
The unit shall be fully insulated providing excellent thermal and acoustic characteristics and shall be complete with a multi plate counter flow high efficiency heat exchanger block, with a thermal efficiency of up to 95%. The heat exchanger shall be protected by filters on fresh air inlet and system 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 a condensate drip tray and 32mm drain connection.
The unit shall be suitable for both 200mm and 180mm 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.
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Fan Dimensions



Length: Width: Height:
577 707 710
Spigot size: 200
Duct size: 200
Drawing is for dimensional purposes only. Dimensions in mm.
Please see selected ancillaries section for additional dimensions for any requested additional ancillaries.

SAP Appendix Q Test Results

Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency %
Kitchen + 1 wet room	0.62	94%
Kitchen + 2 wet rooms	0.62	93%
Kitchen + 3 wet rooms	0.66	93%
Kitchen + 4 wet rooms	0.79	92%
Kitchen + 5 wet rooms	0.94	91%
Kitchen + 6 wet rooms	1.15	91%
Kitchen + 7 wet rooms	1.41	91%



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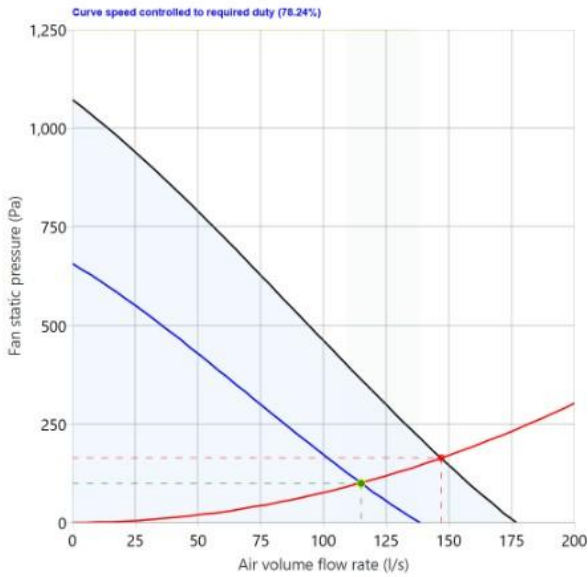
MRXBOX-ECO - Wall Mounted Multi Room Xbox
Fan Code: **MRXBOXAB-ECO4**
Installation Manual Links: 671797
Required duty: 115 l/s at 100 Pa
Actual duty: 147 l/s at 164 Pa
Actual at required flow: 115 l/s at 363 Pa
When speed controlled to required duty (78.24%):
Motor Input Power: 0.169 kW

At full speed:
Motor Input Power: 0.352 kW
Maximum Fan Speed: 3,230 RPM
Electrical Supply: 230V, 1 Phase, 50 Hz
Motor current (flc): 2.4 A
Max. operating temp: 40°C
Weight: 44 kg
Starting currents are nominal.

Sound Data

Acoustic performance to ISO 13347 and AMCA 300.
Noise calculated speed controlled to required duty (78.24%)
Sound Power Levels re 1 pWatts (Hz):
Hz 63 125 250 500 1k 2k 4k 8k dBA
Breakout 57 60 60 54 43 36 26 17 37
Open Inlet (Intake 49 52 53 52 45 41 29 20
& Extract)
Open Outlet 56 62 64 65 57 56 49 44
(Supply & Exhaust)
dBA is hemi-spherical at 3 metres. For spherical deduct 3 dBA.
Please note that the noise data stated on this data sheet for the unit and/or silencer is tested in accordance with UK, European and International industry laboratory standards. However onsite conditions may vary and we would recommend that this information is verified by an acoustic specialist in order to ensure its suitability for the intended application.

Performance Chart



Specification

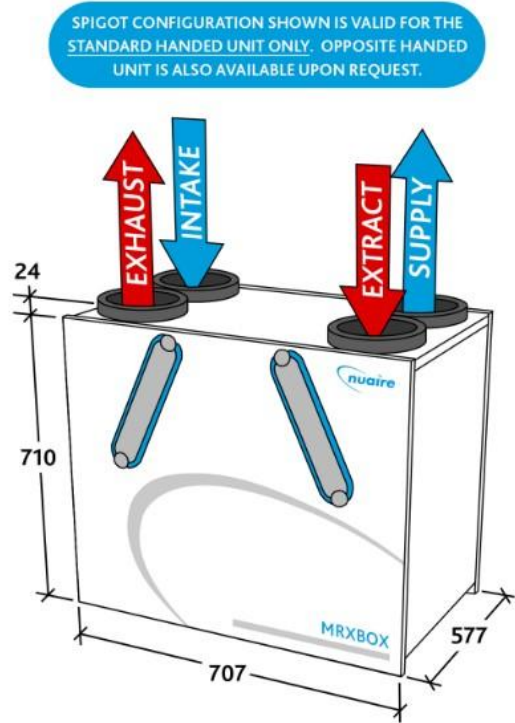
The unit shall be fully insulated providing excellent thermal and acoustic characteristics and shall be complete with a multi plate counter flow high efficiency heat exchanger block, with a thermal efficiency of up to 95%. The heat exchanger shall be protected by filters on fresh air inlet and system 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 a condensate drip tray and 32mm drain connection.
The unit shall be suitable for both 200mm and 180mm 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.
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Fan Dimensions



Length: Width: Height:
577 707 710
Spigot size: 200
Duct size: 200
Drawing is for dimensional purposes only. Dimensions in mm.
Please see selected ancillaries section for additional dimensions for any requested additional ancillaries.

SAP Appendix Q Test Results

Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency %
Kitchen + 1 wet room	0.62	94%
Kitchen + 2 wet rooms	0.62	93%
Kitchen + 3 wet rooms	0.66	93%
Kitchen + 4 wet rooms	0.79	92%
Kitchen + 5 wet rooms	0.94	91%
Kitchen + 6 wet rooms	1.15	91%
Kitchen + 7 wet rooms	1.41	91%



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Technical Data

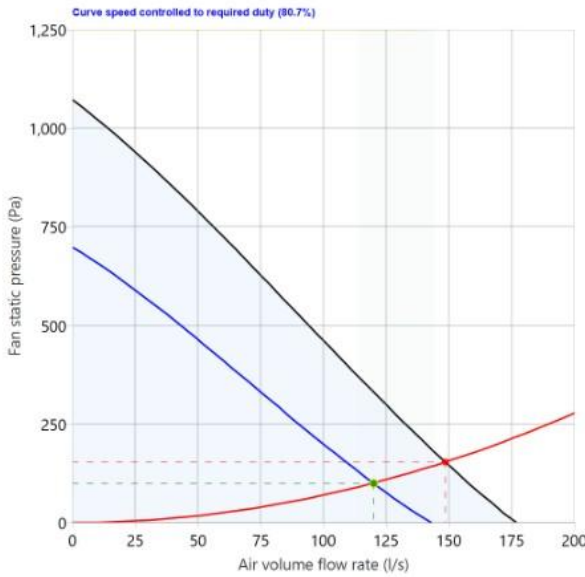
MRXBOX-ECO - Wall Mounted Multi Room Xbox
Fan Code: **MRXBOXAB-ECO4**
Installation Manual Links: 671797
Required duty: 120 l/s at 100 Pa
Actual duty: 149 l/s at 153 Pa
Actual at required flow: 120 l/s at 331 Pa
When speed controlled to required duty (80.7%):
Motor Input Power: 0.185 kW

At full speed:
Motor Input Power: 0.352 kW
Maximum Fan Speed: 3,230 RPM
Electrical Supply: 230V, 1 Phase, 50 Hz
Motor current (flc): 2.4 A
Max. operating temp: 40°C
Weight: 44 kg
Starting currents are nominal.

Sound Data

Acoustic performance to ISO 13347 and AMCA 300.
Noise calculated speed controlled to required duty (80.7%)
Sound Power Levels re 1 pWatts (Hz):
Hz 63 125 250 500 1k 2k 4k 8k dBA
Breakout 58 60 60 55 43 36 27 17 37
Open Inlet (Intake 49 52 53 53 45 41 30 21
& Extract)
Open Outlet 57 63 64 66 58 57 49 44
(Supply & Exhaust)
dBA is hemi-spherical at 3 metres. For spherical deduct 3 dBA.
Please note that the noise data stated on this data sheet for the unit and/or silencer is tested in accordance with UK, European and International industry laboratory standards. However onsite conditions may vary and we would recommend that this information is verified by an acoustic specialist in order to ensure its suitability for the intended application.

Performance Chart



Specification

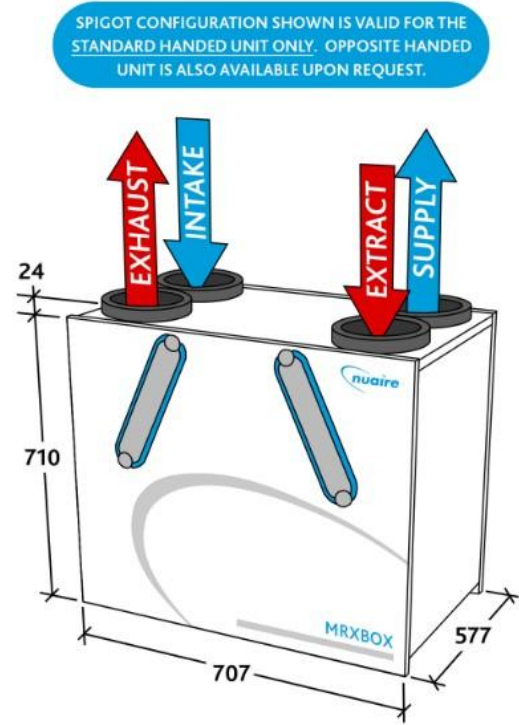
The unit shall be fully insulated providing excellent thermal and acoustic characteristics and shall be complete with a multi plate counter flow high efficiency heat exchanger block, with a thermal efficiency of up to 95%. The heat exchanger shall be protected by filters on fresh air inlet and system 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 a condensate drip tray and 32mm drain connection.
The unit shall be suitable for both 200mm and 180mm 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.
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Fan Dimensions



Length: Width: Height:
577 707 710
Spigot size: 200
Duct size: 200
Drawing is for dimensional purposes only. Dimensions in mm.
Please see selected ancillaries section for additional dimensions for any requested additional ancillaries.

SAP Appendix Q Test Results

Application	Specific Fan Power (W/l/s)	Heat Exchange Efficiency %
Kitchen + 1 wet room	0.62	94%
Kitchen + 2 wet rooms	0.62	93%
Kitchen + 3 wet rooms	0.66	93%
Kitchen + 4 wet rooms	0.79	92%
Kitchen + 5 wet rooms	0.94	91%
Kitchen + 6 wet rooms	1.15	91%
Kitchen + 7 wet rooms	1.41	91%

WHOLE HOUSE MECHANICAL VENTILATION
WITH HEAT RECOVERY - MVHR

WALL MOUNTED
STANDARD MVHR

EIS 230

TAKE
FLÄKT
HOME



EIS 230 QUICK FACTS

- With summer bypass and frost-stat
- Efficient, low energy solution to control moisture and pollution in residential properties up to 400m²
- up to 89% heat exchange efficiency
- Variable choice of low (trickle), boost and purge speed at installation
- For wall, cupboard or loft installation
- Universal handing for models without humidistat
- Low noise
- Low running costs
- complies with Building Regulations Parts L1A 2013 and F 2013
- Manufactured in UK to ISO 9001
- Accurate commissioning via optional integral LCD or remote LCD commissioning unit

TECHNICAL DATA

GENERAL FEATURES

- Up to 230 litre/sec at 50pa - max 238 litre/sec capacity
- Sfp down to 0.46 W/l/s
- Summer bypass which allows the airflow to bypass the heat exchanger automatically when internal and external temperatures are between adjustable setpoints.
- Frost-stat
- Run-time and power outage counters
- Easy to install and maintain
- Easy to access ISO Coarse filters
- Universal handing for models without humidistat - left or right
- For fitting vertically into lofts, or cupboards - wall fixing bracket supplied
- Variable low (trickle), boost and purge options for each motor
- Boost speed can be activated by a 230v switched live from:
 - A light switch (if more than one light switch is used, each one must be a double pole switch)
 - Remote humidistat
 - Passive infra red
 - Remote switch/pull cord - 230V
- Ultra quiet
- Low running costs

CONTROL FEATURES - STANDARD

- Independent variable speed adjustment for each motor for trickle, boost and purge speeds.
- Adjustable boost speed over-run timer from 0 to 90 minutes.
- Adjustable boost speed delay from 0 to 5 minutes
- Remote purge - adjustable over-run timer from 0 to 250 minutes, pre-set to 15 minutes (adjustable at factory).
- Adjustable night time boost and purge inhibitor
- Integral frost-stat - proportionally reduces intake motor speed as temperature falls
- Automatic summer bypass

CONTROL FEATURES - CUSTOMISED
FACTORY SETTINGS

- Change of ductwork handing on humidistat version (trip point can be set at manufacture)
- Integral humidistat - proportionally increases motor speeds with rising humidity
- 0-10V connections can be added for:
 - BMS - for remote motor shut-off
 - CO₂ detector
 - Home automation system
- Relay for external pre-heater
- 3 Speed selector switch
- Remote purge
- Purge speed over-run time
- Holiday mode for reduced speeds when property is unoccupied (factory set option) - default setting is 50% of trickle speed
- Run-time and power outage counters downloadable via QR code.

TECHNICAL FEATURES

- Compact unit - casing from steel sheet - epoxy paint finish
- Foam construction lining
- Low energy EC brushless motor with single width, single inlet, direct drive, forward curved impellers
- Operates in temperature up to 60 C
- Easy to access standard, disposable ISO Coarse filters
- Counter flow heat exchanger



COMPLIES WITH

- Part L1A 2013 of Building Regulations for enhanced energy saving capability
- Part F 2013 of Building Regulations for reliable, efficient ventilation
- EU RoHS Directive Compliant.
- Complies with IEC60335-2-80, LVD2006/95/CE and EMC2014/30/UE (European Directive against radio interference and electro-magnetic compatibility)
- Manufactured in UK to ISO 9001
- CE marked
- SAP PCDB Listed

WHOLE HOUSE MECHANICAL VENTILATION
WITH HEAT RECOVERY - MVHR

TECHNICAL CHARACTERISTICS										
Model	Airflow l/sec					Total Power - Watts				
	100%	80%	60%	40%	20%	100%	80%	60%	40%	20%
EIS 230	238	186	135	84	35	355	184	85	32	8

EIS 230	Sound Power Levels, Lw (dB) - Octave Bands Frequency Hz.									Sound Pressure dBA @ 3m
	Curve Ref	63	125	250	500	1k	2k	4k	8k	
100% (238 l/sec)	Extract	67	63	66	64	64	61	58	54	43.1
	Supply	72	68	71	69	69	66	63	59	
	Breakout	67	65	64	57	51	53	49	32	
80% (186 l/sec)	Extract	63	58	61	59	58	55	51	46	37.4
	Supply	68	63	66	64	63	60	56	51	
	Breakout	62	59	60	52	45	44	39	28	
60% (135 l/sec)	Extract	58	52	53	51	51	48	43	35	32.8
	Supply	63	57	58	56	56	53	48	40	
	Breakout	58	54	57	45	39	37	31	25	
40% (84 l/sec)	Extract	51	44	44	42	42	37	31	21	26.0
	Supply	56	49	49	47	47	42	36	26	
	Breakout	52	47	48	41	36	31	26	23	
20% (35 l/sec)	Extract	40	32	30	29	27	24	14	16	24.0
	Supply	45	37	35	34	32	29	22	25	
	Breakout	44	36	34	33	31	28	20	21	

The breakout dB(A) sound pressure values are given for hemispherical free field propagation at a distance of 3m from the unit
All the above data has been independently tested to BS EN ISO 3743-1:2010

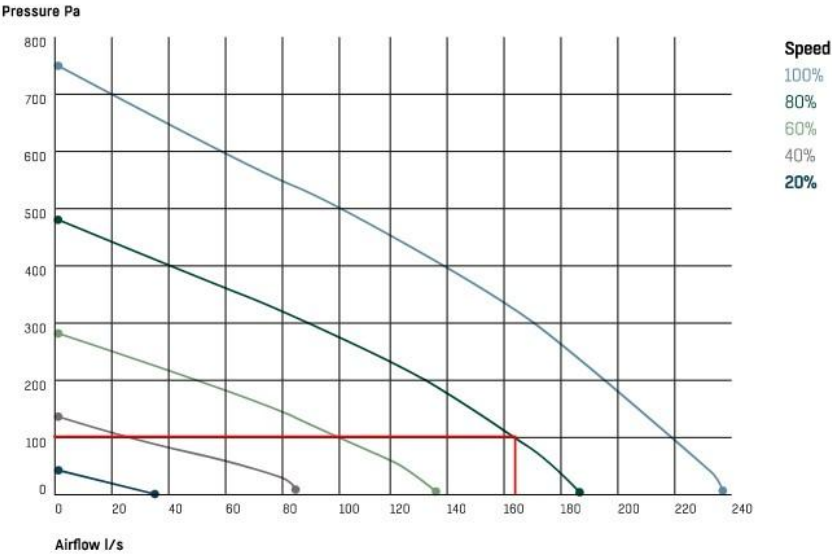
RESULTS for SAP CALCULATIONS ENERGY LEVEL PERFORMANCE - using rigid ducting only						
Exhaust Terminal Configuration	2009 Data			2012 Data		
	Airflow (l/sec)	Specific Fan Power (W/l/sec)	Heat Exchange Efficiency	Airflow (l/sec)	Specific Fan Power (W/l/sec)	Heat Exchange Efficiency
Kitchen + 1 additional wet room	15	0.75	89%	21	0.56	89%
Kitchen + 2 additional wet rooms	21	0.56	89%	29	0.47	89%
Kitchen + 3 additional wet rooms	27	0.46	89%	37	0.50	88%
Kitchen + 4 additional wet rooms	33	0.46	88%	45	0.56	87%
Kitchen + 5 additional wet rooms	39	0.49	88%	53	0.66	86%
Kitchen + 6 additional wet rooms	45	0.55	87%	61	0.78	85%
Kitchen + 7 additional wet rooms	51	0.63	86%	69	0.94	84%

Figures at minimum flow rate conditions

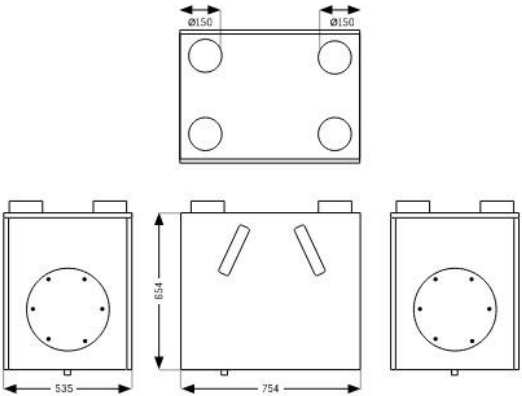
EIS 230

TECHNICAL DATA

PERFORMANCE



DIMENSIONS - MM



MODELS AVAILABLE

- EIS 230 BYPASS UNIVERSAL
- EIS 230 / LCD BYPASS UNIVERSAL INTEGRAL LCD
- EIS 230 / LH BYPASS, LEFT HANDED, HUMIDISTAT
- EIS 230 / LH / LCD BYPASS, LEFT HANDED, HUMIDISTAT, INTEGRAL LCD
- EIS 230 / RH BYPASS, RIGHT HANDED, HUMIDISTAT
- EIS 230 / RH / LCD BYPASS, RIGHT HANDED, HUMIDISTAT, INTEGRAL LCD

WHOLE HOUSE MECHANICAL VENTILATION
WITH HEAT RECOVERY - MVHR

WALL MOUNTED
ACOUSTIC MVHR

EIS 230 - WHISPER



WHISPER RANGE

TAKE
FLÄKT
HOME



EIS 230 - WHISPER QUICK FACTS

- Very low noise levels - lined with Class "0" fire resistant acoustic foam
- With summer bypass and frost-stat
- Efficient, low energy solution to control moisture and pollution in residential properties up to 400m²
- Up to 89% heat exchange efficiency
- Variable choice of low (trickle), boost and purge speed at installation
- For wall, cupboard or loft installation - no extra cabinet required
- Universal handing for models without humidistat
- Low running costs
- Complies with Building Regulations Parts L1A 2013 and F 2013
- Manufactured in UK to ISO 9001
- Accurate commissioning via integral touch screen LCD

GENERAL FEATURES

- Up to 230 litre/sec at 50pa - max 238 litre/sec capacity
- Sfp down to 0.46 W/l/s
- Summer bypass which allows the airflow to bypass the heat exchanger automatically when internal and external temperatures are between adjustable setpoints.
- Frost-stat
- Run-time and power outage counters
- Easy to install and maintain
- Easy to access ISO Coarse filters
- Universal handing for models without humidistat - left or right for fitting vertically into lofts, or cupboards - wall fixing bracket supplied-- weight only 42 kgs
- Variable low (trickle), boost and purge options for each motor
- Boost speed can be activated by a 230V switched live from:
 - A light switch (if more than one light switch is used, each one must be a double pole switch)
 - Remote humidistat
 - Passive infra red
 - Remote switch/pull cord
- Low running costs

CONTROL FEATURES - STANDARD

- Independent variable speed adjustment for each motor for trickle, boost and purge speeds.
- Adjustable boost speed over-run timer from 0 to 90 minutes.
- Adjustable boost speed delay from 0 to 5 minutes
- Remote purge - adjustable over-run timer from 0 to 250 minutes, pre-set to 15 minutes (adjustable at factory).
- Adjustable night time boost and purge inhibitor
- Integral frost-stat - proportionally reduces intake motor speed as temperature falls
- Automatic summer bypass

CONTROL FEATURES - CUSTOMISED
FACTORY SETTINGS

- Change of ductwork handing on humidistat version (trip point can be set at manufacture)
- Integral humidistat - proportionally increases motor speeds with rising humidity
- 0-10V connections can be added for:
 - BMS - for remote motor shut-off
 - CO₂ detector
 - Home automation system
- Relay for external pre-heater
- 3 Speed selector switch
- Remote purge
- Purge speed over-run time
- Holiday mode for reduced speeds when property is unoccupied (factory set option) - default setting is 50% of trickle speed
- Run-time and power outage counters downloadable via QR code.

TECHNICAL FEATURES

- Casing from steel sheet - epoxy paint finish
- Foam construction lining
- Low energy EC brushless motor with single width, single inlet, direct drive, forward curved impellers
- Operates in temperature up to 60 C
- Easy to access standard, disposable ISO Coarse filters
- Counter flow heat exchanger



COMPLIES WITH

- Part L1A 2013 of Building Regulations for enhanced energy saving capability
- Part F 2013 of Building Regulations for reliable, efficient ventilation
- EU RoHS Directive Compliant.
- Complies with IEC60335-2-80, LVD2006/95/CE and EMC2014/30/UE (European Directive against radio interference and electro-magnetic compatibility)
- Manufactured in UK to ISO 9001
- CE marked
- SAP PCDB Listed

WHOLE HOUSE MECHANICAL VENTILATION
WITH HEAT RECOVERY - MVHR

TECHNICAL CHARACTERISTICS										
Model	Airflow l/sec					Total Power - Watts				
	100%	80%	60%	40%	20%	100%	80%	60%	40%	20%
EIS 230 - WHISPER	238	186	135	84	35	355	184	85	32	8

EIS 230 - WHISPER		Sound Power Levels, Lw (dB) - Octave Bands Frequency Hz.								Sound Pressure dBA @ 3m	Noise Rating based on dB @ 1m
Curve Ref		63	125	250	500	1k	2k	4k	8k		
100% (238 l/sec)	Extract	61	63	57	49	43	34	28	54	41.1	47
	Supply	75	79	74	66	63	52	52	59		
	Breakout	61	61	56	49	52	46	29	32		
80% (186 l/sec)	Extract	57	59	51	44	37	28	23	46	34.9	40
	Supply	71	71	66	60	58	46	47	51		
	Breakout	57	57	48	43	44	38	22	28		
60% (135 l/sec)	Extract	51	55	45	36	27	15	8	36	28.9	37
	Supply	64	68	60	51	48	34	29	41		
	Breakout	51	54	42	37	36	28	10	24		
40% (84 l/sec)	Extract	49	44	35	26	17	4	6	21	20.7	26
	Supply	59	52	48	41	36	19	12	26		
	Breakout	52	38	36	25	21	11	7	21		
20% 35 l/sec	Extract	36	36	28	12	3	2	6	11	5.8	12
	Supply	42	41	31	21	12	2	6	15		
	Breakout	35	31	15	7	1	3	7	14		

The breakout dB(A) sound pressure values are given for hemispherical free field propagation at a distance of 3m from the unit
All the above data has been independently tested to BS EN ISO 3743-1:2010

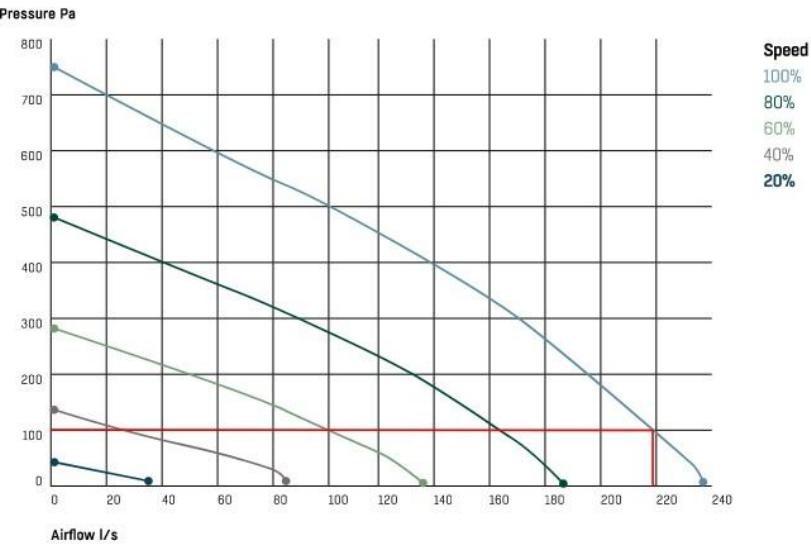
RESULTS for SAP CALCULATIONS ENERGY LEVEL PERFORMANCE - using rigid ducting only						
Exhaust Terminal Configuration	2009 Data			2012 Data		
	Airflow (l/sec)	Specific Fan Power (W/l/sec)	Heat Exchange Efficiency	Airflow (l/sec)	Specific Fan Power (W/l/sec)	Heat Exchange Efficiency
Kitchen + 1 additional wet room	15	0.75	89%	21	0.56	89%
Kitchen + 2 additional wet rooms	21	0.56	89%	29	0.47	89%
Kitchen + 3 additional wet rooms	27	0.46	89%	37	0.50	88%
Kitchen + 4 additional wet rooms	33	0.46	88%	45	0.56	87%
Kitchen + 7 additional wet rooms	51	0.63	86%	69	0.94	84%

Figures at minimum flow rate conditions

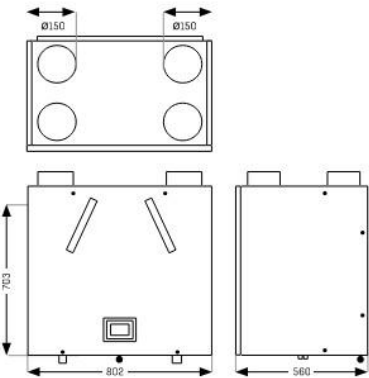
EIS 230 - WHISPER

TECHNICAL DATA

PERFORMANCE



DIMENSIONS - MM



MODELS AVAILABLE

- EIS 230 / WHISPER / LCD BYPASS, ATTENUATION, UNIVERSAL, INTEGRAL LCD
- EIS 230 / WHISPER / LH / LCD BYPASS, ATTENUATION, LEFT HANDED, HUMIDISTAT, INTEGRAL LCD
- EIS 230 / WHISPER / RH / LCD BYPASS, ATTENUATION, RIGHT HANDED, HUMIDISTAT, INTEGRAL LCD

Appendix N: Energy centres Heat Pump Data sheet

Chillers Technical Information



R32 e-series Modular Chiller Range

Project Reference	Aylesham Project - Phase 1
Quote Reference	0
Prepared By	John Keegan



les.mitsubishielectric.co.uk

VR32-1.6



Important Note

EAHV-M1800YCL(-N)

Air Source Reversible Heat Pump / Chiller

Note: The applications for e-series have been divided into three types: Cooling Only, Heating&Cooling, Heating Only. The Heating Only applications share similar features with the Heating&Cooling applications, except for the total minimum water circulation volume, which differs. In the case of Heating Only, the total minimum water volume has been calculated based on the assumption that for multi-unit systems with more than 6 unites, grouping of 6 units method is considered. Please regard this calculation as guidance. For each project involving "Heating Only" applications, the total minimum water volume needs to be calculated. Please refer to the Databook in the following link for this calculation:

https://library.mitsubishielectric.co.uk/pdf/book/DB_MEES23K029_e-series_YCL_JL23#page-1

les.mitsubishielectric.co.uk



EAHV-M1800YCL(-N)

Air Source Reversible Heat Pump / Chiller

Refrigerant			
Refrigerant Type			R32
GWP			675
Total Charge Per Unit	kg		46
Equivalent CO ₂ Emissions per Unit	kg		31,050

Compressors			
Compressor Type			Inverter Scroll Hermetic Compressor
Starting Method			Inverter
Number of Compressors per Unit	No.		4
Compressor Motor Output (per Compressor)	kW		11.5

Water Side Heat Exchangers			
Heat Exchanger Type			Stainless Steel Plate
Minimum Water Circuit Volume per Unit	Litres		1650/850
Total Minimum Water Circuit Volume	Litres		6800

Fans			
Fan Type			Propeller Fan
Starting Method			Inverter
Number of Fans per Unit	No.		4
Total Airflow per Unit	l/s		18000
Fan Motor Output (per Fan)	kW		0.92
Available External Static Pressure	Pa		20

Electrical Data			
Power Supply per Unit	V/ph/Hz		380-415V/3-phase/50Hz
Max Total Current per Unit	A		120
Starting Current per Unit	A		23.1

Weight			
Weight per Unit (with headers)	kg		1307
Total Weight (with Headers)	kg		10456



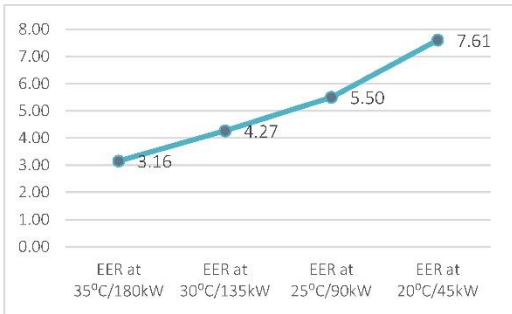
EAHV-M1800YCL(-N)

Air Source Reversible Heat Pump / Chiller

Seasonal Efficiencies - SEER User Defined

Prated,c	kW	180
Fluid Outlet Temp	°C	7
SEER*	kW/kW	5.51

EER at 35°C/180kW	kW/kW	3.16
EER at 30°C/135kW	kW/kW	4.27
EER at 25°C/90kW	kW/kW	5.50
EER at 20°C/45kW	kW/kW	7.61



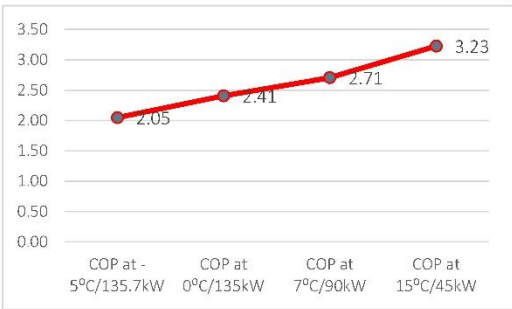
*SEER given as an indication based on the guidance found in Part L of the building regulations with a fixed flow rate of 8.6l/s.

$$SEER = (0.03 \cdot EER@35^{\circ}C) + (0.33 \cdot EER@30^{\circ}C) + (0.41 \cdot EER@25^{\circ}C) + (0.23 \cdot EER@20^{\circ}C)$$

Seasonal Efficiencies - SCOP User Defined

Prated,h	kW	135.7
Fluid Outlet Temp	°C	55
SCOP**	kW/kW	2.61

COP at -5°C/135.7kW	kW/kW	2.05
COP at 0°C/135kW	kW/kW	2.41
COP at 7°C/90kW	kW/kW	2.71
COP at 15°C/45kW	kW/kW	3.23



**SCOP given as an indication based on simplified ambient temperatures and weighting from EN18525 with a fixed flow rate of 8.6l/s.

$$SCOP = (0.05 \cdot COP@-5^{\circ}C) + (0.4 \cdot COP@0^{\circ}C) + (0.45 \cdot COP@7^{\circ}C) + (0.1 \cdot COP@15^{\circ}C)$$



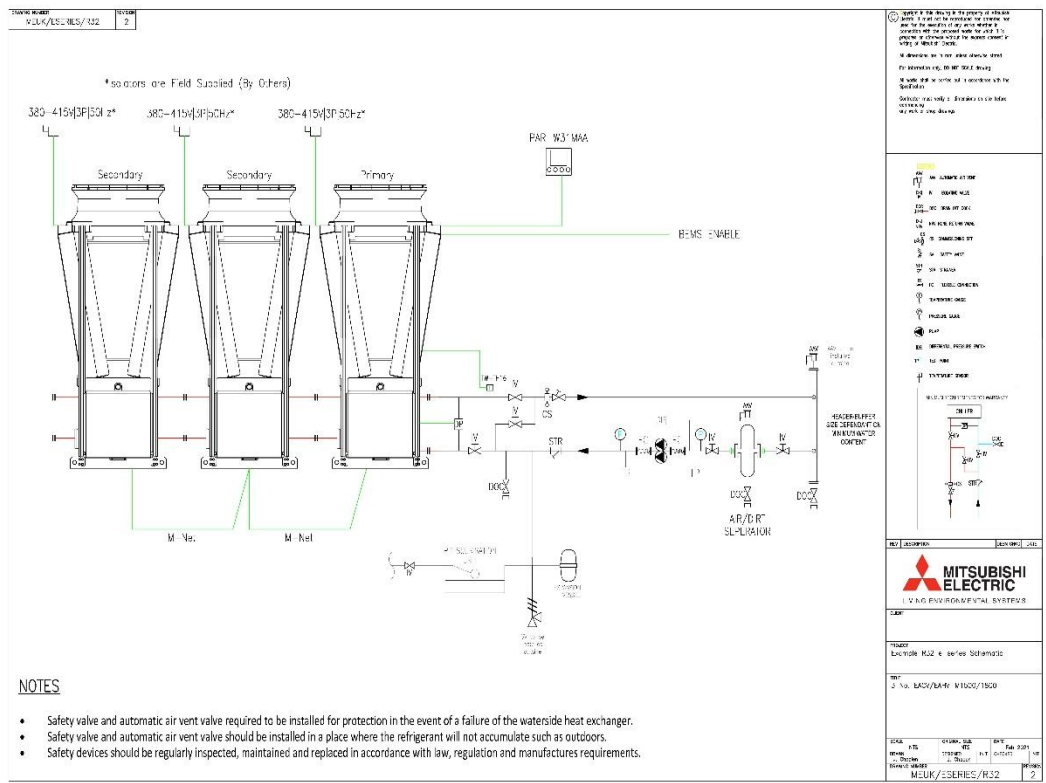
Technical Selection

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EAHV-M1800YCL(-N)

Air Source Reversible Heat Pump / Chiller

Example Schematic



Water Filtration

Strainer	Magnetic Filter	Air Dirt Separator
20 Mesh or More (Minimum)	Recommended if steel pipe	Minimum

Minimum-Without this filtration method the installations risks not receiving full warranty.
Recommended -This filtration method has recognised benefits for this type of system but its inclusion will not affect warranty



Technical Selection

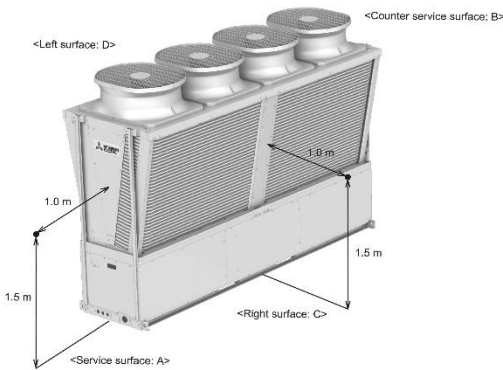
Page 4 / 7

EAHV-M1800YCL(-N)

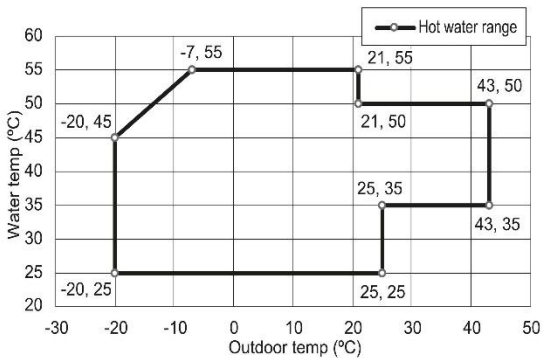
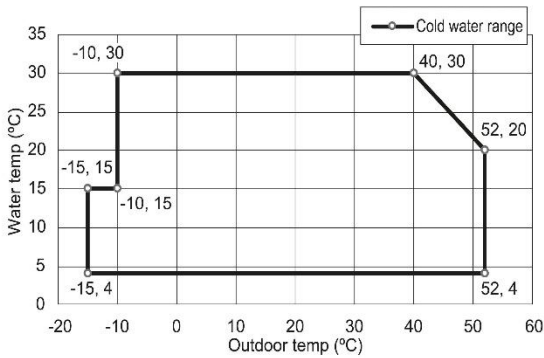
Air Source Reversible Heat Pump / Chiller

Noise Level

EAHV-M1800YCL(-N)	
Measured Location	Sound Pressure Level dB(A)
Service Surface A	67
Counter Service Surface B	67
Right Surface C	71
Left Surface D	71



Operating Window



EAHV Models Only



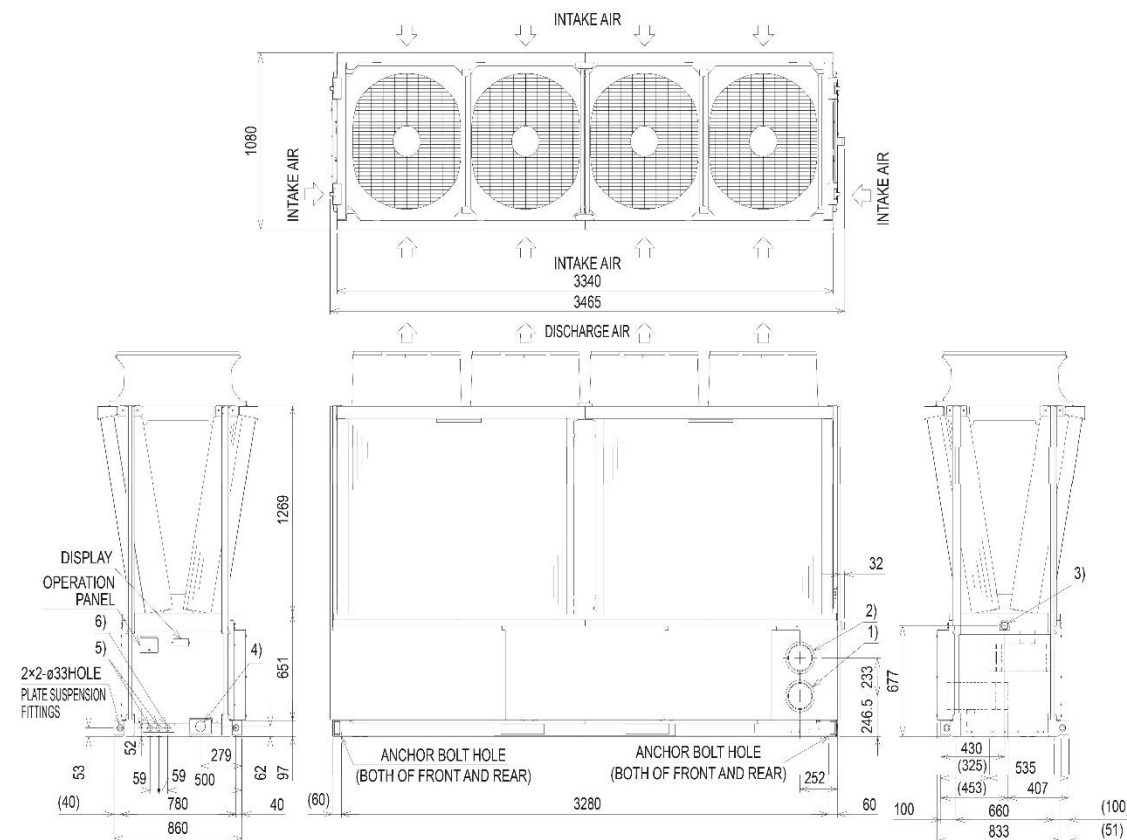
Technical Selection

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EAHV-M1800YCL(-N)

Air Source Reversible Heat Pump / Chiller

Dimensions



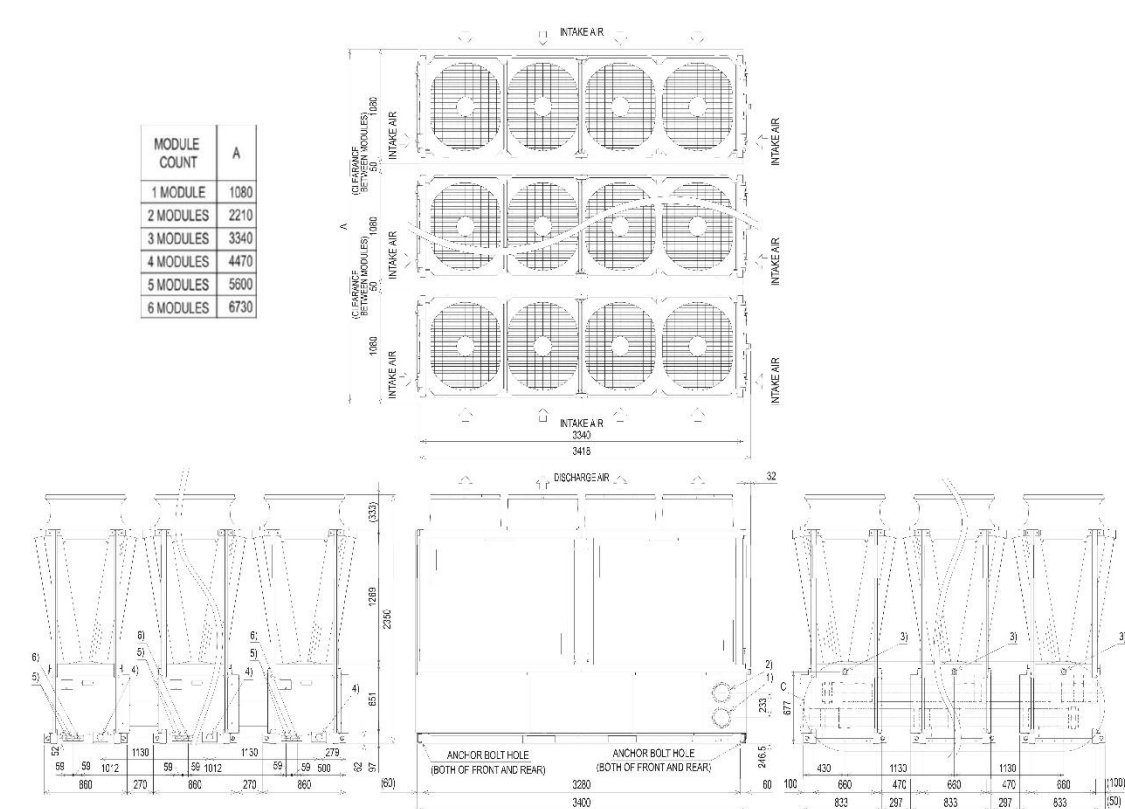
Technical Selection

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EAHV-M1800YCL(-N)

Air Source Reversible Heat Pump / Chiller

Dimensions





Technical Selection

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EAHV-M1800YCL(-N)

Air Source Reversible Heat Pump / Chiller

Import to Read

IMPORTANT: Please read and observe our “Safety precaution” warnings and cautions and any warnings included within the Technical guidance set out in the relevant equipment data book before you carry out any function on the product. This output is based upon the best available information but is given as indicative guidance only and should not be considered as final system design. We recommend that the information in this Technical Proposal Form is read in conjunction with the latest equipment data book and installation manual at all times. All water systems should be designed, installed and commissioned in accordance with industry good practice guidelines; such as, but not limited to: BSRIA Guide BG2/2010 – Water System Commissioning, BSRIA Guide BG29/2012 – Pre-Commissioning of Pipework Systems, BSRIA Guide BG50/2013 – Water Treatment for Closed Heating & Cooling Systems, CIBSE Commissioning Code W – Water distribution systems.

Mitsubishi Electric takes no design responsibility or liability for the system, components, equipment selections or control strategy – it is your responsibility to check the suitability of the proposed equipment selections. In order to comply with the Mitsubishi Electric warranty requirements all Mitsubishi Electric products must have adequate planned preventative maintenance undertaken in accordance with our recommendations. To meet Mitsubishi Electric’s warranty requirements a suitable method of filtration must be provided within the system – please refer to installation manual available from the document library. The recommended water flow rates must be maintained at all times when the equipment is operating. Particular attention should be paid to any change in pressure drop due to glycol and start up temperatures. Operating the equipment with less than the minimum flow rate will invalidate the warranty.

The freezing temperatures, capacity de-rates and pressure drop based on glycol concentration will vary between manufacturers. We also remind you of our quotation texts:

This quotation is given by Mitsubishi Electric in good faith based upon information provided by you or your company. We have not undertaken a site survey to support this quotation. Whilst we endeavour to factor into our quotation any special site conditions or user requirements which you may have expressly identified to us previously in writing, this quotation is not a project system design and is not a confirmation of project volumetric or yield analysis. We recommend that you assess final product selection and make the final system design based upon your own volumetric or yield analysis and project knowledge, including any project requirements which might impact on that selection. Please check carefully any requirement for a Mitsubishi Electric product to integrate with any third party equipment. We are not responsible for integration capability of our products with any third party equipment unless we have expressly confirmed that this integration is approved in the current Mitsubishi Electric product specification or in a current technical bulletin.

Q-TON HIGH PERFORMANCE

Q-ton is a system that uses renewable
aerothermal energy to significantly save energy
and consumption.

HIGH PERFORMANCE

- Especially suitable for DHW and heating production in cold outdoor temperatures, down to -25° C.
- Can produce up to 17,000 litres/day of mixed DHW at 45° C or at 90° C without mixing.
- Keeps nominal output down to -7° C.

ENVIRONMENTALLY RESPONSIBLE

- Minimises the environmental impact thanks to the low GWP value = 1 with CO2 refrigerant.
- ODP (ozone depletion coefficient) equal to zero.

EFFICIENCY AT THE TOP

- The industry's highest energy efficiency coefficient in DHW production mode (COP 4.3).
- Maximum operating cost reduction.

FLEXIBILITY AND RELIABILITY

- Modular up to 16 units.
- Durable, high-quality internal components.
- Boasts extreme versatility of use and easy operation and maintenance management.

OPERATION AT THE CLICK OF A BUTTON

- Touch screen control panel with user-friendly graphics.
- Possibility of sending notifications via MODBUS communication with the RCI-MDQ2 interface.

-25°C
Operating limit

17000
Litres of DHW per day

-7°C
100% nominal output down to -7° C

90°C
DHW temperature without mixing

1
GWP
Minimum Global Warming Potential

0
ODP
Zero Ozone Depletion Potential

High efficiency

4.3
COP
Maximum energy efficiency coefficient in DHW

16
Connectable Q-ton outdoor units

10

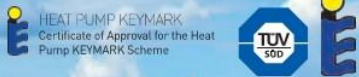
Q-TON, DHW AND HEATING FROM FREE NATURAL ENERGY

Q-ton systems are the only ones on the market that use R744 gas and that can work on low temperature thermal systems having a seasonal energy efficiency class of A+. These systems, being ECO friendly, are attentive to the possible risks associated with the emission of climate-altering gases into the atmosphere and, to avoid possible gas leaks, are equipped with leakage control sensors.

R744
R744 (CO2) REFRIGERANT GAS

90°C
DOMESTIC HOT WATER PRODUCTION UP TO 90° C

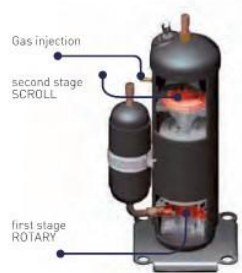
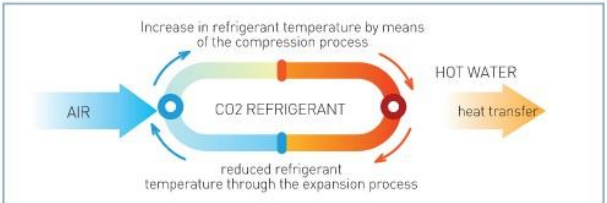
52°C
HOT WATER FOR HEATING UP TO 52° C



Q-TON CO2 HEAT PUMP

GSR dual stage compressor

Thanks to the action of its dual stage compressor, Q-ton makes it possible to produce a high amount of energy for heating or for domestic hot water production. The nominal thermal power generated is stable and constant even when outside temperatures lower.



LCD touch panel

The management and main parameters of the system can be controlled both from the LCD wire control and remotely via MODBUS protocols. The system independently selects the operating priority of the system (heating or domestic hot water) by means of the wire control. The flow temperatures of the circuit can be set either as fixed way or by selecting the climate curve.

- EASY TO USE**
LCD panel with lit buttons.
Wide 2.8-inch display.
Backlighting.
- PROGRAMMING**
Daily, weekly and annual programming can be set.
- PEAK-CUT TIMER**
Possibility of setting a DHW production schedule based on peak demand.
- DAYLIGHT SAVINGS TIME UPDATE**
The system automatically adapts to standard time for easy programming.
- THE TANK**
The tank can always be manually filled.
- CLIMATIC CURVE**
In heating mode, you can set a customisable climate curve that automatically defines the flow temperature according to the outside temperature conditions.



Domestic hot water

Q-TON,
DHW PRODUCTION MODE OPERATION

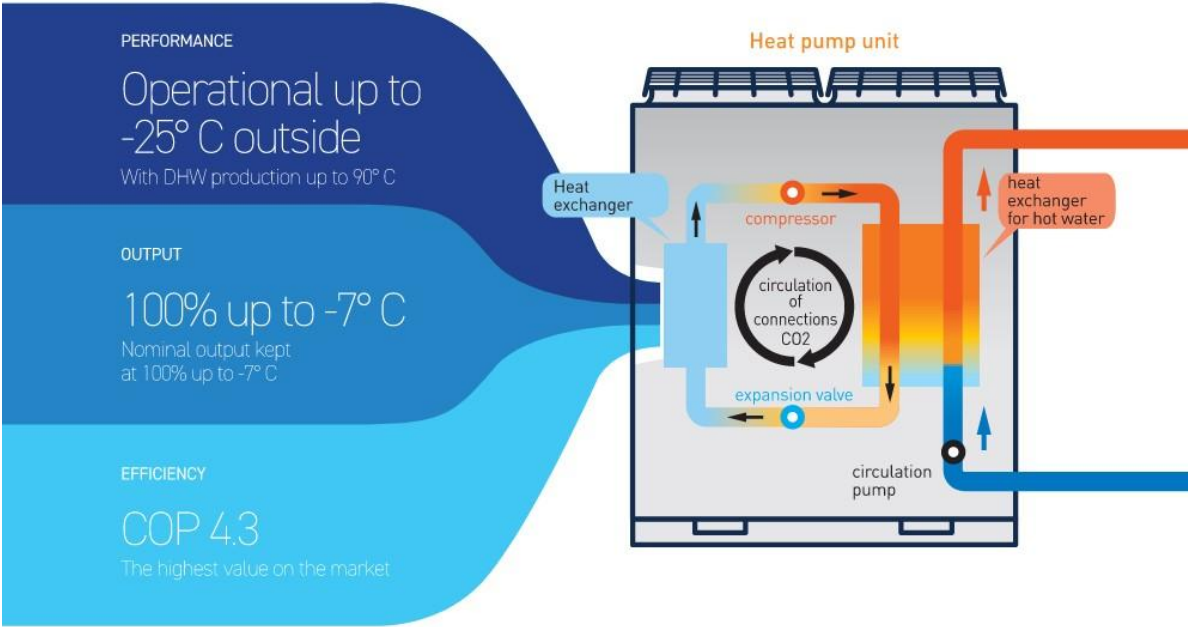
The Q-ton heat pump absorbs “free” heat from the outside air and amplifies it to quickly and efficiently generate hot water, up to 90° C without any need for an additional heating element.

Q-ton reduces operating costs and carbon emissions by 40 to 75% compared to conventional systems. It is suitable for installation in new buildings and does not require a backup heating system. In existing buildings with conventional heating systems, it is applicable with the domestic hot water production function only.



DOMESTIC HOT WATER

Q-ton installation is ideal for replacing old heating systems such as boilers because it produces DHW according to the actual capacity required by the user.



90°C

Achievable temperature

16

Connectable outdoor units

480

Maximum modular power in kW

HOW IT WORKS

Q-ton uses a cold refrigerant coil that absorbs heat from outside air and compresses the refrigerant with the exclusive 2-stage compressor to increase its temperature. The heat exchanger then uses the heat generated to produce domestic hot water.

POWER AND DESIGN FLEXIBILITY

Up to 16 outdoor units can be controlled via a single control.

The maximum power that can be achieved by a combined system is 480 kW.

These outputs make Q-ton suitable for installation in large new apartment buildings or in very large apartment buildings with existing district heating systems.

SENSORS IN THE TANKS

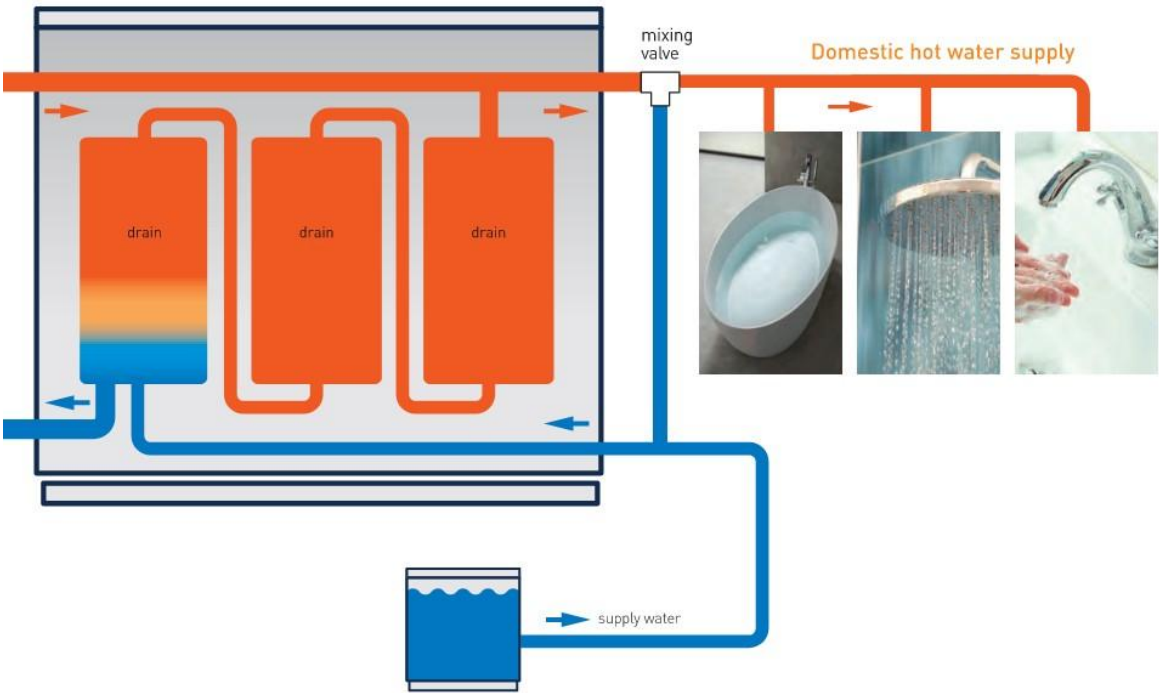
Each storage tank has five compartments into which temperature sensors can be inserted to detect the volume (in %) of hot water contained in the tank at a given time.

PROGRAMMING

The control system is programmed to maintain specific volumes of hot water at different times of the day, according to user needs.

LOWER COSTS

Further savings for users thanks to the possibility of heating and storing water at times when electricity rates are lower.



Heating

Q-TON, HEATING MODE OPERATION

The application of Q-ton for heating offers efficiency, low consumption and respect for the environment.

The use of CO2 as a refrigerant makes the heat pump much more environmentally friendly than conventional systems.



HEATING

Possibility of heating rooms at low temperature with return temperatures below 30° C.

Q-ton allows combined use with radiant flooring systems and high efficiency radiators.

POWER AND DESIGN FLEXIBILITY

Up to 16 outdoor units can be controlled via a single control.

The maximum power that can be achieved by a combined system is 480 kW.

These outputs make Q-ton suitable for installation in large new apartment buildings or in very large apartment buildings with existing district heating systems.

PERFORMANCE

Operational up to -25° C outside

OUTPUT

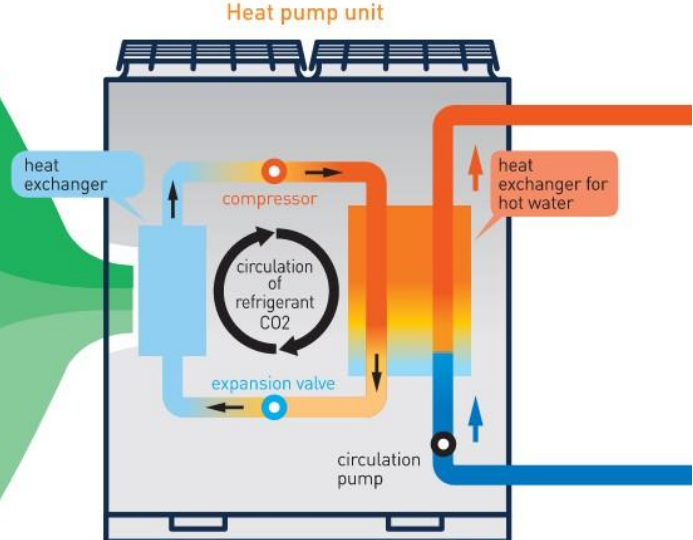
100% up to -7° C

Nominal output kept at 100% up to -7° C

EFFICIENCY

146%

In average climatic conditions



480

Maximum modular power in kW

52° C

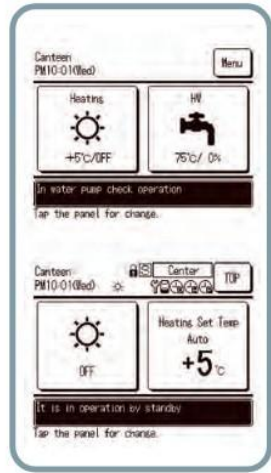
Achievable temperature



For radiant flooring



For high efficiency hydronic terminals

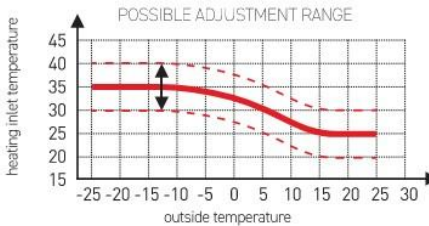


OPERATING MODES

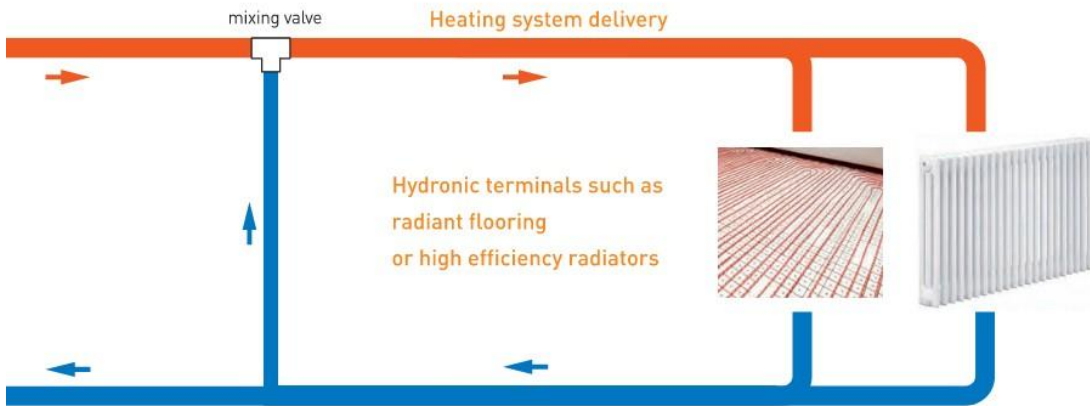
MHI has improved the touch screen control, updating the heating and domestic hot water settings

Two types of control can be set when using the system in heating mode.

1. AUTO SETTING: the hydronic system delivery temperature is automatically set according to a climate curve. This curve can be shifted lower or higher within a range of 5° C.



2. MANUAL SETTING: The inlet temperature can be set manually between 20° C and 52° C.



Heating and domestic hot water

Q-TON,
IN COMBINED MODE OPERATION

Q-ton is a high performance, flexible, environmentally-friendly system that is able to meet the many demands of the market.
Thanks to optimal energy management, maximum performance efficiency is ensured, even at low outside temperatures.



HEATING AND DOMESTIC HOT WATER
Q-ton is a heat pump that can meet low temperature heating and DHW production demands.
The priority of use (heating or DHW) can also be selected.

PERFORMANCE

Operational up to -25° C outside

OUTPUT

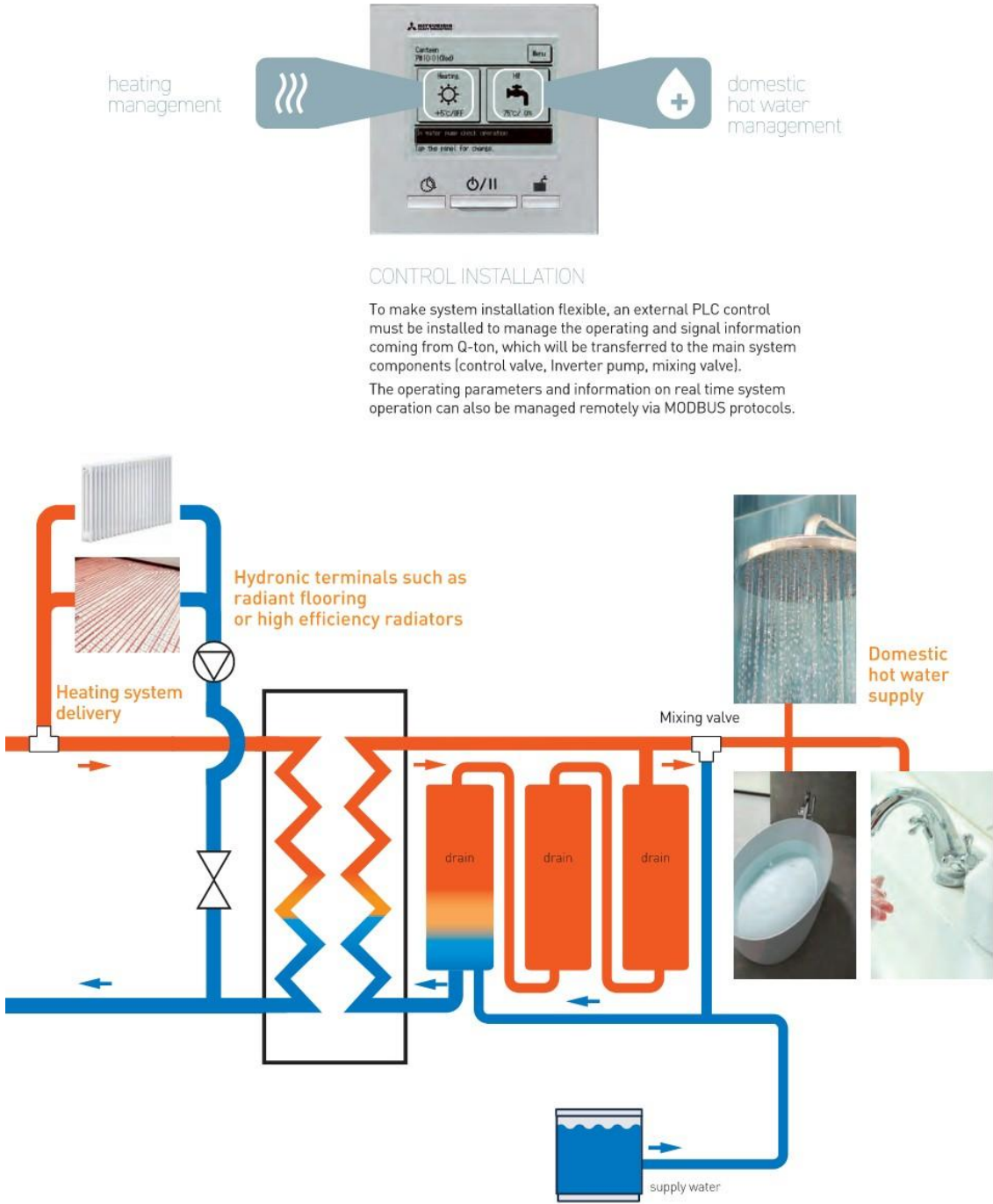
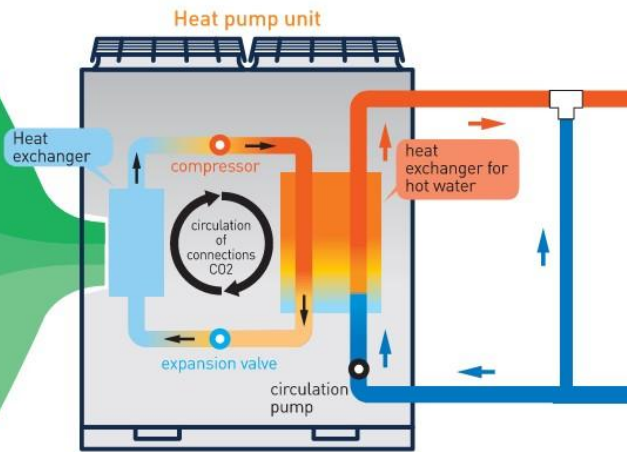
100% up to -7° C

Nominal output kept at 100% up to -7° C

FLEXIBILITY

Heating + DHW

A single system that meets all your needs



CONTROL INSTALLATION
To make system installation flexible, an external PLC control must be installed to manage the operating and signal information coming from Q-ton, which will be transferred to the main system components (control valve, Inverter pump, mixing valve).
The operating parameters and information on real time system operation can also be managed remotely via MODBUS protocols.



Heating and domestic hot water
CONFIGURATIONS

Q-TON
DHW AND HEATING

16 units controlled by
a single command

Up to 480 kW of capacity, connecting 16 units,
each of them 30 kW.

The extremely flexible modular configuration
makes Q-ton installation possible for heating
and DHW production, adapting the power of the
system to different applications. A single control
device can be used to manage the entire system
if all units are set to the same operating mode.



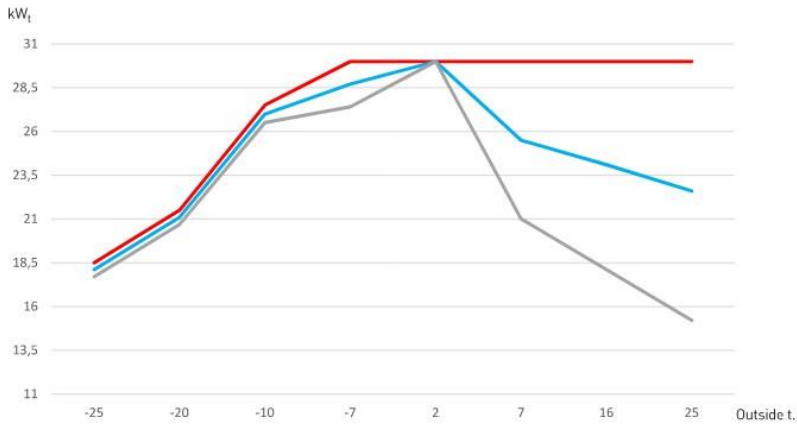
Depending on the application and installation needs, a module
of 30 kW can produce 17,000 liters of DHW per day.

Model		ESA30EH2-25	
Heating	Output power (radiant flooring)	kW	30
	Electrical absorption	A7/W35 ¹	8.4
	Performance coefficient	COP	3.57
Domestic Water	Output power (DHW production)	kW	30
	Electrical absorption	A16/W65 ²	7.0
	Performance coefficient	COP	4.30
Seasonal heating data	Theoretical load [Pdesignh] @ -10°C	kW	27
	Seasonal energy efficiency (ηs)	%	146
	Energy efficiency class	W35	A+
	Annual energy consumption	kWh/a	14822
	Test cycle profile		XXL
Seasonal domestic water data	Energy efficiency (ηdhw)	%	114
	Energy efficiency class		A
	Annual energy consumption	kWh/a	1909
Operating limits	Outside air temperature	Heating °C	-25~25
		DHW °C	-25~43
	Delivery water temperature	Heating °C	25~45
Refrigerant circuit data		DHW °C	60~90
	Refrigerant	type [GWP]	R744 (1)
	Quantity [tons CO2]	kg (t)	8.5 (0.00)
Hydraulic data	Compressor	type	Dual Stage - DC Inverter
	Heat exchanger	type	Tube bundle
	Circulation pump	Prevalence m (kPa)	5 m (49 kPa) @ 17 litres/min
	Water connections	Dimensions inches	3/4" [DN20]
Electrical data	Operating pressure	Min/Max bar	1/5
	Power supply	Ph-V-Hz	3Ph-380~415V-50Hz
	Maximum current	A	21
	Power cable (recommended)	type	5x6 mm ²
Product specifications	Fan	Air flow m ³ /h	15600
		Prevalence Pa	50
	Sound power level	dB(A)	77
	Dimensions	LxDxH mm	1350x720x1690
Controls	Weight	Net kg	375
	Wire remote control	Not included	RC-Q1EH2
	Climatic curve		Available
	Modbus	Optional	RCI-MDQE2

Notes: The data contained above refer to the following standards: EN14511:2013; EN14825:2013; EN50564:2011; EN12102:2011; [EUNo:811:2013; [EUNo:813:2013; OJ 2014/C 207/02:2014. 1. Water conditions: inlet 20° C, outlet 35° C. 2. Water conditions: inlet 17° C, outlet 65° C.



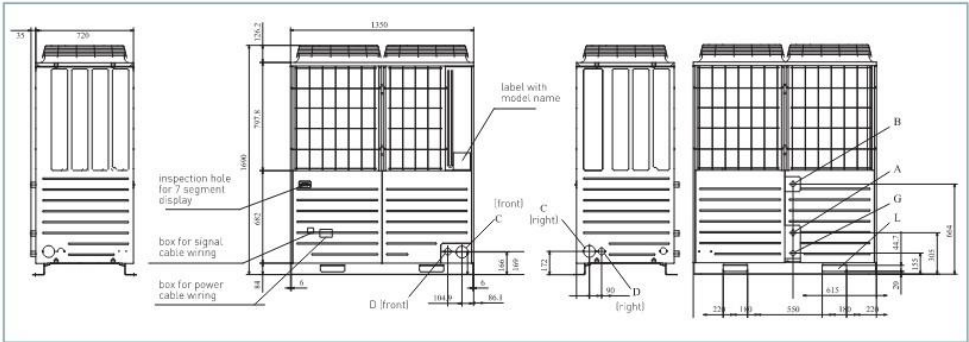
Output curves in heating at 35° C



The data contained take into account the defrost cycles.

- Water conditions: inlet 20° C, outlet 35° C.
- Water conditions: inlet 25° C, outlet 35° C.
- Water conditions: inlet 30° C, outlet 35° C.

ESA30EH2-25 diagrams and measurements



Item	Description	
A	Water inlet port	RC 3/4 [20A copper pipe]
B	Hot water outlet port	RC 3/4 [20A copper pipe]
C	Output lines for connection between the heat pump and the tank	Ø 88 (or Ø 100)
D	Power cable inlet	Ø 50 (right, front) bottom hole 40x80
G	Drain water piping output	RC 3/4 [20A copper pipe]
L	Opening for movement	180x44,7



Appendix O: Point Thermal Bridging Calculations

The below is an extract for point thermal bridging simulation and calculations for standard PV (fixation details and guardrails fixation details showing the expected point thermal bridging value / chi value. The y value is already 0.1 W/m²K as shown in the provided extract from . This is the highest value of the suggested range per the comment. The 0.05 is the point thermal bridge (x-value/chi-value) which is based on a standard details for expected point thermal bridges which ranges between 0.01-0.03.

Conclusions:

1. Rooftrack IFP_GR Roof Point Fixing System:

The Q value of this detail was calculated to be 2.987W which represents a further .606W over the base case detail which was calculated to be 2.381W.

Using the Formula: $X = (Q_{\text{bridge}} - Q_{\text{No Bridge}}) / \text{Temperature difference}$ results in a Chi Value of 0.028.

2. Guardrail connection

The Q value of this detail was calculated to be 2.382W which represents a further .001W over the base case detail which was calculated to be 2.381W.

Using the Formula: $X = (Q_{\text{bridge}} - Q_{\text{No Bridge}}) / \text{Temperature difference}$ results in a Chi Value of 0.01.

Boundary Conditions (Cont):

- Surface resistances followed BR443 guideline
- Interior: 7.7 W/m²K.
- Exterior: 25 W/m²K.

Material Properties:

- Thermal conductivity values (λ) were sourced from BR443 or manufacturer declarations where available.

Typical λ values included:

- Mild steel: 50 W/m K.
- Stainless steel: 17 W/m K.

Analysis Setup

1. Thermal Modelling:

A 3D thermal simulation was conducted using Physibel SOLIDO software to evaluate the heat flow through the structural detail. Three scenarios were modeled:

1. Without the thermal bridge - representing the baseline scenario without the thermal bridge.
2. Rooftrack IFP_GR Roof Point Fixing System
3. Guardrail Connection - incorporating the detail where the thermal bridge is present.

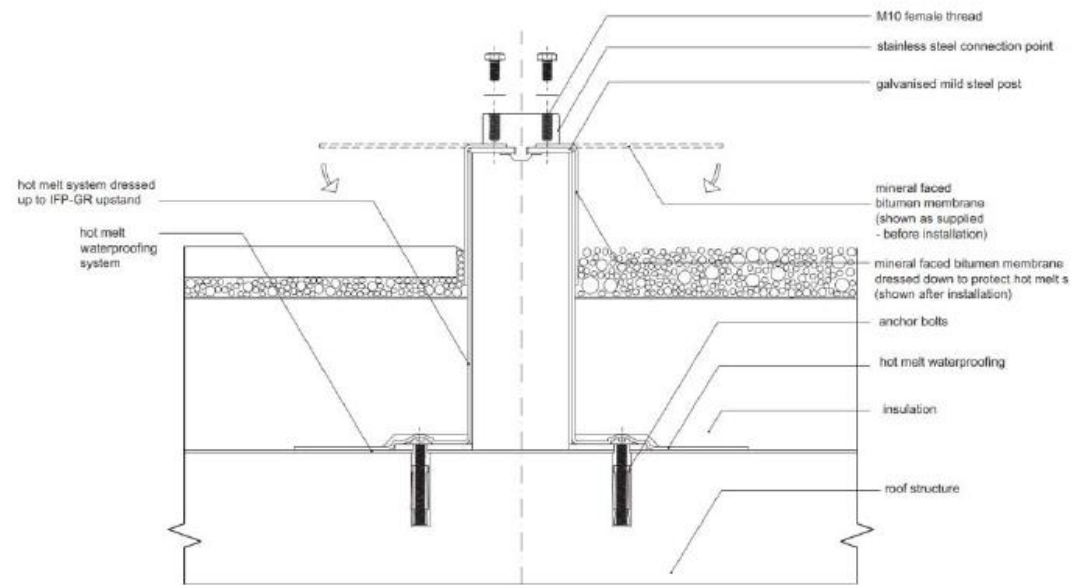
Formula for calculating Chi Values:

$$\chi = \frac{\dot{Q}_{\text{bridge}} - \dot{Q}_{\text{no bridge}}}{\Delta T}$$

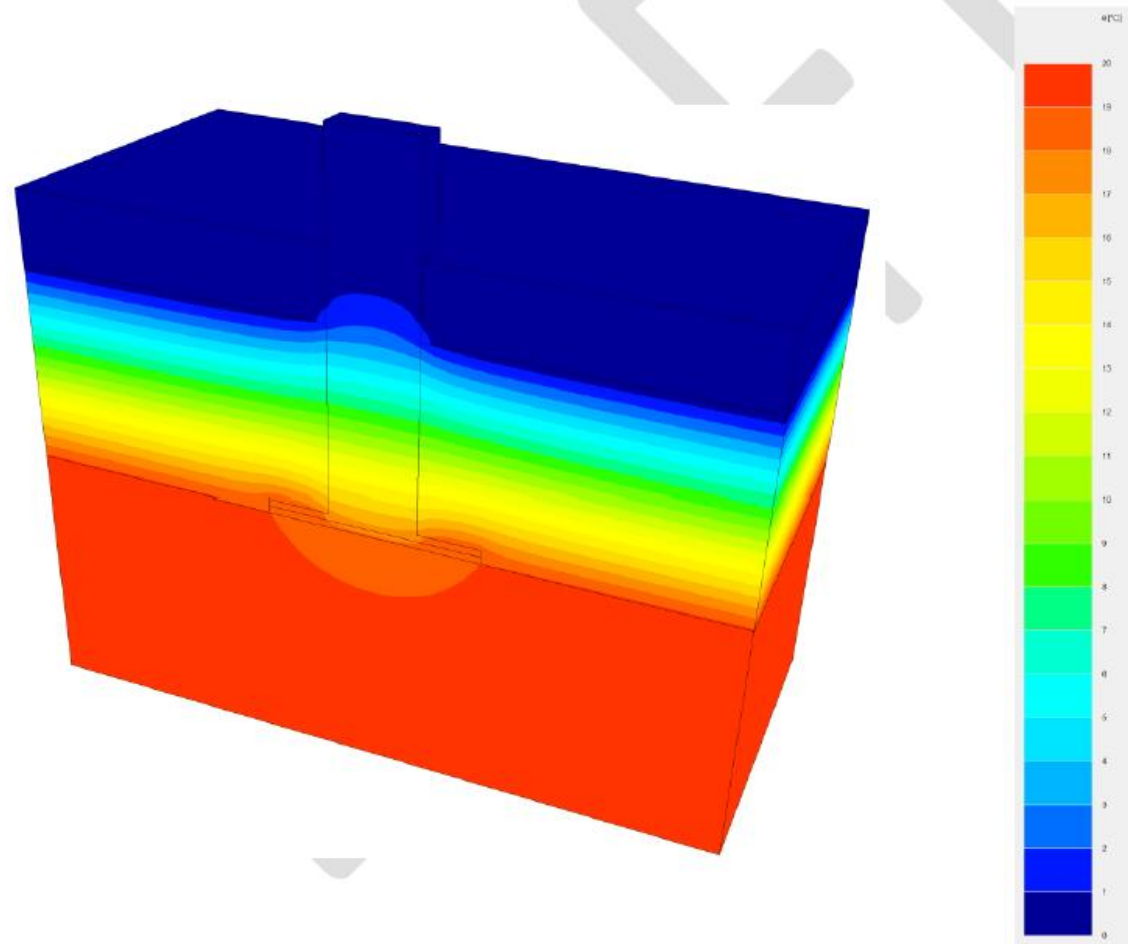
Where:

- X: Chi value (point thermal transmittance) in W/K.
- $\dot{Q}_{\text{bridge}}$: Heat transfer rate of the model with the thermal bridge (W).
- $\dot{Q}_{\text{no bridge}}$: Heat transfer rate of the model without the thermal bridge (W).
- ΔT : Temperature difference between internal and external environments (K).

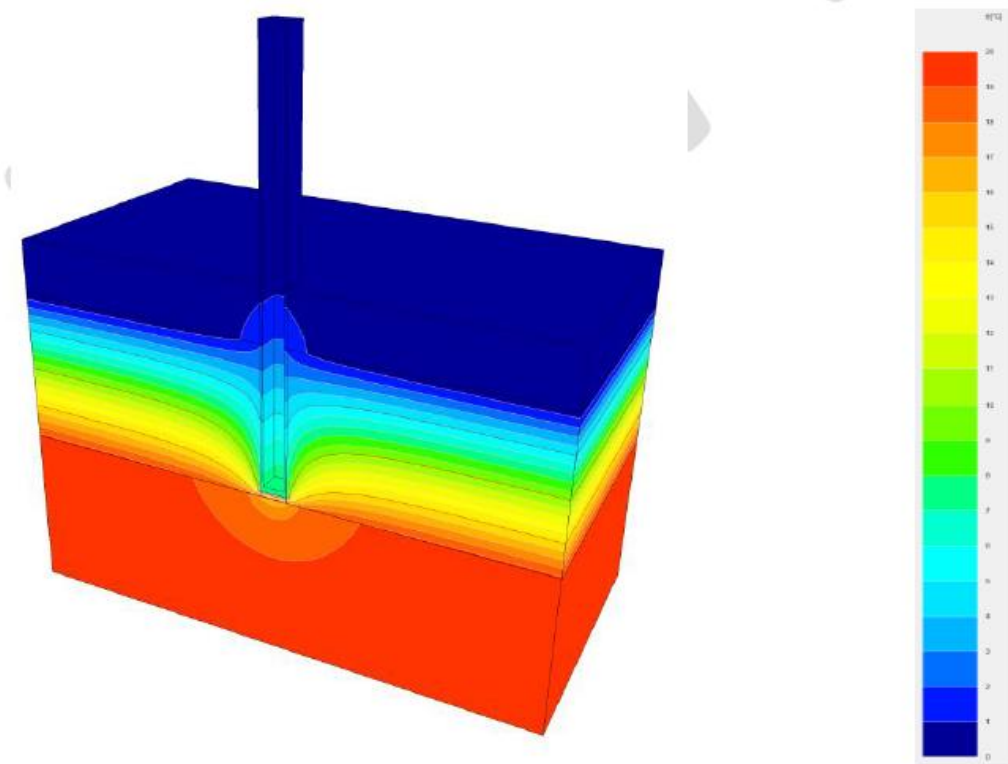
Inverted roof



Rooftrack IFP_GR Point Fixing System



Guardrail connection to roof slab



Guardrail connection to roof slab – Thermal Analysis

Appendix P: Energy Saving/Generation Technologies Residential Calculation

12.80 Block ABC

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)
27 BA-01-01	87	-374.64	0.133	-49.8453	-239.673	0.125	-29.9641
27 BA-01-02	53	-235.453	0.1329	-31.298	-138.7838	0.125	-17.3463
27 BA-02-01	87	-374.6403	0.133	-49.8453	-239.673	0.125	-29.9641
27 BA-02-02	53	-235.2098	0.1329	-31.2659	-139.0271	0.125	-17.3783
27 BA-03-02	53	-235.2098	0.1329	-31.2659	-139.0271	0.125	-17.3783
27 BA-04-02	53	-235.2098	0.1329	-31.2659	-139.0271	0.125	-17.3783
27 BC-02-04	82	-354.8121	0.133	-47.2006	-224.1959	0.125	-28.0278
27 BC-03-04	82	-354.8121	0.133	-47.2006	-224.1959	0.125	-28.0278
27 BA-01-03	72.1	-315.0708	0.133	-41.9025	-194.0325	0.125	-24.2532
27 BA-02-03	72.1	-315.0708	0.133	-41.9025	-194.0325	0.125	-24.2532
27 BA-03-03	72.1	-315.0708	0.133	-41.9025	-194.0325	0.125	-24.2532
27 BA-04-03	72.1	-315.0708	0.133	-41.9025	-194.0325	0.125	-24.2532
27 BC-02-03	67	-293.8139	0.133	-39.0706	-179.2779	0.125	-22.41
27 BC-03-03	67	-293.8139	0.133	-39.0706	-179.2779	0.125	-22.41
27 BE-10-01_EP	73	-223.5893	0.1327	-29.6597	-104.4296	0.1248	-13.0314
27 BA-01-03	72.1	-315.0708	0.133	-41.9025	-194.0325	0.125	-24.2532
27 BA-02-03	72.1	-315.0708	0.133	-41.9025	-194.0325	0.125	-24.2532
27 BA-03-03	72.1	-315.0708	0.133	-41.9025	-194.0325	0.125	-24.2532
27 BA-04-03	72.1	-315.0708	0.133	-41.9025	-194.0325	0.125	-24.2532
27 BC-02-03	50	-222.535	0.1329	-29.5784	-130.5186	0.125	-16.3148
27 BC-03-03	50	-222.535	0.1329	-29.5784	-130.5186	0.125	-16.3148
B 27 BE-10-01_EP	73	-223.5918	0.1327	-29.6601	-104.4271	0.1248	-13.0311
27 BA-01-01	87	-374.6403	0.133	-49.8453	-239.673	0.125	-29.9641
27 BA-01-04	52	-231.442	0.1329	-30.7637	-135.7337	0.125	-16.9637
27 BA-02-01	87	-374.6403	0.133	-49.8453	-239.673	0.125	-29.9641
27 BA-02-04	52	-231.442	0.1329	-30.7637	-135.7337	0.125	-16.9637
27 BA-03-01	87	-374.6403	0.133	-49.8453	-239.673	0.125	-29.9641
27 BA-03-04	52	-231.442	0.1329	-30.7637	-135.7337	0.125	-16.9637
27 BA-04-01	87	-374.6403	0.133	-49.8453	-239.673	0.125	-29.9641
27 BA-04-02	87	-375.1175	0.133	-49.9083	-239.1958	0.125	-29.9013
27 BA-04-04	52	-231.442	0.1329	-30.7637	-135.7337	0.125	-16.9637
27 BA-05-04	53	-235.1945	0.1329	-31.2639	-139.0424	0.125	-17.3803
27 BA-06-04	53	-235.1945	0.1329	-31.2639	-139.0424	0.125	-17.3803
27 BB-01-01	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-01-02	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-01-03	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-01-04	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-02-01	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912

27 BB-02-02	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-02-03	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-02-04	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-03-01	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-03-02	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-03-03	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-03-04	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-04-01	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-04-02	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-04-03	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-04-04	74	-322.5974	0.133	-42.9058	-199.9219	0.125	-24.9912
27 BB-05-01	69.87	-305.6547	0.133	-40.6481	-187.7024	0.125	-23.4634
27 BB-05-02	69	-302.0668	0.133	-40.1701	-185.1472	0.125	-23.1439
27 BB-05-03	69	-302.0668	0.133	-40.1701	-185.1472	0.125	-23.1439
27 BB-05-04	69	-302.0668	0.133	-40.1701	-185.1472	0.125	-23.1439
27 BB-06-01	69.87	-305.6547	0.133	-40.6481	-187.7024	0.125	-23.4634
27 BB-06-02	69	-302.0668	0.133	-40.1701	-185.1472	0.125	-23.1439
27 BB-06-03	69	-302.0668	0.133	-40.1701	-185.1472	0.125	-23.1439
27 BB-06-04	69	-302.0668	0.133	-40.1701	-185.1472	0.125	-23.1439
27 BC-01-01	52	-231.079	0.1329	-30.7158	-136.0968	0.125	-17.0114
27 BC-01-02	86	-370.7427	0.133	-49.3253	-236.5095	0.125	-29.568
27 BC-02-01	52	-231.079	0.1329	-30.7158	-136.0968	0.125	-17.0114
27 BC-02-02	86	-370.7427	0.133	-49.3253	-236.5095	0.125	-29.568
27 BC-03-01	52	-231.079	0.1329	-30.7158	-136.0968	0.125	-17.0114
27 BC-03-02	86	-370.7427	0.133	-49.3253	-236.5095	0.125	-29.568
27 BC-04-01	52	-231.079	0.1329	-30.7158	-136.0968	0.125	-17.0114
27 BC-04-02	86	-370.7427	0.133	-49.3253	-236.5095	0.125	-29.568
27 BC-04-03	80	-346.8091	0.133	-46.1334	-218.0767	0.125	-27.2623
27 BC-05-01	62	-273.0313	0.133	-36.3023	-164.7552	0.125	-20.5942
27 BC-05-02	63	-277.1703	0.133	-36.8536	-167.6772	0.125	-20.9598
27 BC-05-03	86	-370.6862	0.133	-49.3178	-236.566	0.125	-29.5755
27 BC-06-01	62	-273.0313	0.133	-36.3023	-164.7552	0.125	-20.5942
				-2819.7808			-1626.3288

12.81 Block E

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)
27 BE-10-02_EP	103	-308.0704	0.1327	-40.8938	-154.7508	0.1248	-19.3152
27 BE-10-01_EP	73	-223.5893	0.1327	-29.6597	-104.4296	0.1248	-13.0314
B 27 BE-10-01_EP	73	-223.5918	0.1327	-29.6601	-104.4271	0.1248	-13.0311
27 BE-01-01	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-01-02	73	-223.6811	0.1327	-29.6718	-104.3378	0.1248	-13.0194
27 BE-01-03	72	-220.7636	0.1326	-29.2842	-102.7619	0.1248	-12.8228

27 BE-01-04_EP	53	-164.5939	0.1326	-21.8248	-73.5568	0.1248	-9.1789
27 BE-01-05_EP	56	-173.5499	0.1326	-23.0139	-78.081	0.1248	-9.7432
27 BE-01-06	60	-185.4002	0.1326	-24.5874	-84.2044	0.1248	-10.5075
27 BE-01-07	41	-128.7675	0.1326	-17.0684	-55.4623	0.1248	-6.9213
27 BE-01-08	41	-128.7404	0.1326	-17.03649	-55.4894	0.1248	-6.9249
27 BE-01-09	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-02-01	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-02-02	73	-223.6811	0.1327	-29.6718	-104.3378	0.1248	-13.0194
27 BE-02-03	72	-220.7636	0.1326	-29.2842	-102.7619	0.1248	-12.8228
27 BE-02-04	53	-164.5939	0.1326	-21.8248	-73.5568	0.1248	-9.1789
27 BE-02-05_EP	56	-173.5499	0.1326	-23.0139	-78.081	0.1248	-9.7432
27 BE-02-06	60	-185.4002	0.1326	-24.5874	-84.2044	0.1248	-10.5075
27 BE-02-07	41	-128.7675	0.1326	-17.0684	-55.4623	0.1248	-6.9213
27 BE-02-08	41	-128.7404	0.1326	-17.03649	-55.4894	0.1248	-6.9249
27 BE-02-09	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-03-01	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-03-02	73	-223.6811	0.1327	-29.6718	-104.3378	0.1248	-13.0194
27 BE-03-03	72	-220.7636	0.1326	-29.2842	-102.7619	0.1248	-12.8228
27 BE-03-04_EP	53	-164.5939	0.1326	-21.8248	-73.5568	0.1248	-9.1789
27 BE-03-05_EP	56	-173.5499	0.1326	-23.0139	-78.081	0.1248	-9.7432
27 BE-03-06	60	-185.4002	0.1326	-24.5874	-84.2044	0.1248	-10.5075
27 BE-03-07	41	-128.7675	0.1326	-17.0684	-55.4623	0.1248	-6.9213
27 BE-03-08	41	-128.7404	0.1326	-17.03649	-55.4894	0.1248	-6.9249
27 BE-03-09	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-04-01	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-04-02	73	-223.6811	0.1327	-29.6718	-104.3378	0.1248	-13.0194
27 BE-04-03	72	-220.7636	0.1326	-29.2842	-102.7619	0.1248	-12.8228
27 BE-04-04_EP	53	-164.5939	0.1326	-21.8248	-73.5568	0.1248	-9.1789
27 BE-04-05_EP	56	-173.5499	0.1326	-23.0139	-78.081	0.1248	-9.7432
27 BE-04-06	60	-185.4002	0.1326	-24.5874	-84.2044	0.1248	-10.5075
27 BE-04-07	41	-128.7675	0.1326	-17.0684	-55.4623	0.1248	-6.9213
27 BE-04-08	41	-128.7404	0.1326	-17.03649	-55.4894	0.1248	-6.9249
27 BE-04-09	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-05-01	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-05-02	73	-223.6811	0.1327	-29.6718	-104.3378	0.1248	-13.0194
27 BE-05-03	72	-220.7636	0.1326	-29.2842	-102.7619	0.1248	-12.8228
27 BE-05-04_EP	53	-164.5939	0.1326	-21.8248	-73.5568	0.1248	-9.1789
27 BE-05-05_EP	56	-173.5499	0.1326	-23.0139	-78.081	0.1248	-9.7432
27 BE-05-06	60	-185.4002	0.1326	-24.5874	-84.2044	0.1248	-10.5075
27 BE-05-07	41	-128.7675	0.1326	-17.0684	-55.4623	0.1248	-6.9213
27 BE-05-08	41	-128.7404	0.1326	-17.03649	-55.4894	0.1248	-6.9249
27 BE-05-09	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-06-01	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709

27 BE-06-02	73	-223.6811	0.1327	-29.6718	-104.3378	0.1248	-13.0194
27 BE-06-03	72	-220.7636	0.1326	-29.2842	-102.7619	0.1248	-12.8228
27 BE-06-04_EP	53	-164.5939	0.1326	-21.8248	-73.5568	0.1248	-9.1789
27 BE-06-05_EP	56	-173.5499	0.1326	-23.0139	-78.081	0.1248	-9.7432
27 BE-06-06	60	-185.4002	0.1326	-24.5874	-84.2044	0.1248	-10.5075
27 BE-06-07	41	-128.7675	0.1326	-17.0684	-55.4623	0.1248	-6.9213
27 BE-06-08	41	-128.7404	0.1326	-17.03649	-55.4894	0.1248	-6.9249
27 BE-06-09	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-07-01	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-07-02	73	-223.6811	0.1327	-29.6718	-104.3378	0.1248	-13.0194
27 BE-07-03	72	-220.7636	0.1326	-29.2842	-102.7619	0.1248	-12.8228
27 BE-07-04_EP	53	-164.5939	0.1326	-21.8248	-73.5568	0.1248	-9.1789
27 BE-07-05_EP	56	-173.5499	0.1326	-23.0139	-78.081	0.1248	-9.7432
27 BE-07-06	60	-185.4002	0.1326	-24.5874	-84.2044	0.1248	-10.5075
27 BE-07-07	41	-128.7675	0.1326	-17.0684	-55.4623	0.1248	-6.9213
27 BE-07-08	41	-128.7404	0.1326	-17.03649	-55.4894	0.1248	-6.9249
27 BE-07-09	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-08-01	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-08-02	73	-223.6811	0.1327	-29.6718	-104.3378	0.1248	-13.0194
27 BE-08-03	72	-220.7636	0.1326	-29.2842	-102.7619	0.1248	-12.8228
27 BE-08-04	53	-164.5939	0.1326	-21.8248	-73.5568	0.1248	-9.1789
27 BE-08-05	56	-173.5499	0.1326	-23.0139	-78.081	0.1248	-9.7432
27 BE-08-06	60	-185.4002	0.1326	-24.5874	-84.2044	0.1248	-10.5075
27 BE-08-07	41	-128.7675	0.1326	-17.0684	-55.4623	0.1248	-6.9213
27 BE-08-08	41	-128.7404	0.1326	-17.03649	-55.4894	0.1248	-6.9249
27 BE-08-09	54	-167.5499	0.1326	-22.2173	-75.0942	0.1248	-9.3709
27 BE-09-01	84.8	-257.5509	0.1327	-34.1733	-123.4902	0.1248	-15.4105
27 BE-09-02	101	-302.6848	0.1327	-40.1769	-151.1495	0.1248	-18.8649
27 BE-09-03	101	-302.6848	0.1327	-40.1769	-151.1495	0.1248	-18.8649
27 BE-09-04	84.8	-257.5509	0.1327	-34.1733	-123.4902	0.1248	-15.4105
				-1904.28672			-816.8069

12.82 Block F

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)
27 BF-01-01	83	-402.333	0.1332	-53.5809	-281.4141	0.1251	-35.2058
27 BF-01-02	86	-415.6732	0.1332	-55.3625	-292.7877	0.1251	-36.6292
27 BF-01-03	86	-415.6732	0.1332	-55.3625	-292.7877	0.1251	-36.6292
27 BF-01-04	83	-402.333	0.1332	-53.5809	-281.4141	0.1251	-35.2058
27 BF-02-01	83	-402.333	0.1332	-53.5809	-281.4141	0.1251	-35.2058
27 BF-02-02	86	-415.6732	0.1332	-55.3625	-292.7877	0.1251	-36.6292
27 BF-02-03	86	-415.6732	0.1332	-55.3625	-292.7877	0.1251	-36.6292
27 BF-02-04	83	-402.333	0.1332	-53.5809	-281.4141	0.1251	-35.2058
27 BF-03-01	83	-402.333	0.1332	-53.5809	-281.4141	0.1251	-35.2058

27 BF-03-02	86	-415.6732	0.1332	-55.3625	-292.7877	0.1251	-36.6292
27 BF-03-03	86	-415.6732	0.1332	-55.3625	-292.7877	0.1251	-36.6292
27 BF-03-04	83	-402.333	0.1332	-53.5809	-281.4141	0.1251	-35.2058
27 BF-04-01	83	-402.333	0.1332	-53.5809	-281.4141	0.1251	-35.2058
27 BF-04-02	86	-415.6732	0.1332	-55.3625	-292.7877	0.1251	-36.6292
27 BF-04-03	86	-415.6732	0.1332	-55.3625	-292.7877	0.1251	-36.6292
27 BF-04-04	83	-402.333	0.1332	-53.5809	-281.4141	0.1251	-35.2058
27 BF-05-01	83	-402.333	0.1332	-53.5809	-281.4141	0.1251	-35.2058
27 BF-05-02	86	-415.6732	0.1332	-55.3625	-292.7877	0.1251	-36.6292
27 BF-05-03	86	-415.6732	0.1332	-55.3625	-292.7877	0.1251	-36.6292
27 BF-05-04	83	-402.333	0.1332	-53.5809	-281.4141	0.1251	-35.2058
				-1089.434			-718.35

12.83 Block G

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)
27 BG-01-01	59	-169.9303	0.1326	-22.5259	-73.0883	0.1248	-9.1178
27 BG-01-02	51	-147.7138	0.1325	-19.5776	-62.3531	0.1248	-7.7788
27 BG-01-03	66	-189.2451	0.1326	-25.0897	-82.6062	0.1247	-10.305
27 BG-01-04	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-01-05	103	-287.388	0.1327	-38.1308	-136.8648	0.1248	-17.0774
27 BG-01-06	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
27 BG-01-07	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-02-01	59	-169.9303	0.1326	-22.5259	-73.0883	0.1248	-9.1178
27 BG-02-02	51	-147.7138	0.1325	-19.5776	-62.3531	0.1248	-7.7788
27 BG-02-03	66	-189.2451	0.1326	-25.0897	-82.6062	0.1247	-10.305
27 BG-02-04	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-02-05	103	-287.388	0.1327	-38.1308	-136.8648	0.1248	-17.0774
27 BG-02-06	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
27 BG-02-07	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-03-01	59	-169.9303	0.1326	-22.5259	-73.0883	0.1248	-9.1178
27 BG-03-02	51	-147.7138	0.1325	-19.5776	-62.3531	0.1248	-7.7788
27 BG-03-03	66	-189.2451	0.1326	-25.0897	-82.6062	0.1247	-10.305
27 BG-03-04	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-03-05	103	-287.388	0.1327	-38.1308	-136.8648	0.1248	-17.0774
27 BG-03-06	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
27 BG-03-07	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-04-01	59	-169.9303	0.1326	-22.5259	-73.0883	0.1248	-9.1178
27 BG-04-02	51	-147.7138	0.1325	-19.5776	-62.3531	0.1248	-7.7788
27 BG-04-03	66	-189.2451	0.1326	-25.0897	-82.6062	0.1247	-10.305
27 BG-04-04	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-04-05	103	-287.388	0.1327	-38.1308	-136.8648	0.1248	-17.0774
27 BG-04-06	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
27 BG-04-07	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-05-01	73	-208.3679	0.1326	-27.6287	-92.3161	0.1247	-11.5164

27 BG-05-02	50	-144.9258	0.1325	-19.2076	-61.0221	0.1248	-7.6128
27 BG-05-03	66	-189.2451	0.1326	-25.0897	-82.6062	0.1247	-10.305
27 BG-05-04	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-05-05	103	-287.388	0.1327	-38.1308	-136.8648	0.1248	-17.0774
27 BG-05-06	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
27 BG-05-07	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-06-01	73	-208.3679	0.1326	-27.6287	-92.3161	0.1247	-11.5164
27 BG-06-02	50	-144.9258	0.1325	-19.2076	-61.0221	0.1248	-7.6128
27 BG-06-03	66	-189.2451	0.1326	-25.0897	-82.6062	0.1247	-10.305
27 BG-06-04	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-06-05	103	-287.388	0.1327	-38.1308	-136.8648	0.1248	-17.0774
27 BG-06-06	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
27 BG-06-07	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-07-01	73	-208.3679	0.1326	-27.6287	-92.3161	0.1247	-11.5164
27 BG-07-02	50	-144.9258	0.1325	-19.2076	-61.0221	0.1248	-7.6128
27 BG-07-03	66	-189.2451	0.1326	-25.0897	-82.6062	0.1247	-10.305
27 BG-07-04	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-07-05	103	-287.388	0.1327	-38.1308	-136.8648	0.1248	-17.0774
27 BG-07-06	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
27 BG-07-07	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-08-01	73	-208.3679	0.1326	-27.6287	-92.3161	0.1247	-11.5164
27 BG-08-02	50	-144.9258	0.1325	-19.2076	-61.0221	0.1248	-7.6128
27 BG-08-03	66	-189.2451	0.1326	-25.0897	-82.6062	0.1247	-10.305
27 BG-08-04	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-08-05	103	-287.388	0.1327	-38.1308	-136.8648	0.1248	-17.0774
27 BG-08-06	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
27 BG-08-07	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-09-01	95	-271.9843	0.1327	-36.0821	-127.5547	0.1248	-15.9148
27 BG-09-02	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
27 BG-09-03	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-09-04	103	-287.388	0.1327	-38.1308	-136.8648	0.1248	-17.0774
27 BG-09-05	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
27 BG-10-01	97	-271.9843	0.1327	-36.0821	-127.5547	0.1248	-15.9148
27 BG-10-02	50	-145.0547	0.1325	-19.2246	-60.8933	0.1247	-7.5959
27 BG-10-03	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-10-04	103	-287.388	0.1327	-38.1308	-136.8648	0.1248	-17.0774
27 BG-10-05	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
27 BG-11-01	97	-271.9843	0.1327	-36.0821	-127.5547	0.1248	-15.9148
27 BG-11-02	50	-145.0547	0.1325	-19.2246	-60.8933	0.1247	-7.5959
27 BG-11-03	74	-211.081	0.1326	-27.9889	-93.7219	0.1248	-11.6918
27 BG-11-04	103	-287.388	0.1327	-38.1308	-136.8648	0.1248	-17.0774
27 BG-11-05	40	-117.0668	0.1325	-15.5108	-47.6915	0.1248	-5.9501
				-1840.5298			-770.8762

12.84 Block H

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)
27 BH-01-01	93	-328.7204	0.1329	-43.6736	-182.0304	0.1249	-22.7344
27 BH-01-02	70	-252.2274	0.1328	-33.4923	-132.2088	0.1249	-16.5091
27 BH-01-03	72	-258.9241	0.1328	-34.3832	-136.4959	0.1249	-17.0454
27 BH-01-04	90	-319.0284	0.1328	-42.3826	-175.2466	0.1249	-21.8862
27 BH-01-05	80	-285.9076	0.1328	-37.9733	-153.448	0.1249	-19.1629
27 BH-02-01	93	-328.7204	0.1329	-43.6736	-182.0304	0.1249	-22.7344
27 BH-02-02	70	-252.2274	0.1328	-33.4923	-132.2088	0.1249	-16.5091
27 BH-02-03	72	-258.9241	0.1328	-34.3832	-136.4959	0.1249	-17.0454
27 BH-02-04	90	-319.0284	0.1328	-42.3826	-175.2466	0.1249	-21.8862
27 BH-02-05	80	-286.3421	0.1328	-38.0306	-153.0135	0.1249	-19.1059
27 BH-02-06	60	-217.696	0.1328	-28.9006	-111.8207	0.1249	-13.9637
27 BH-03-01	93	-328.7204	0.1329	-43.6736	-182.0304	0.1249	-22.7344
27 BH-03-02	70	-252.2274	0.1328	-33.4923	-132.2088	0.1249	-16.5091
27 BH-03-03	72	-258.9241	0.1328	-34.3832	-136.4959	0.1249	-17.0454
27 BH-03-04	90	-319.0284	0.1328	-42.3826	-175.2466	0.1249	-21.8862
27 BH-03-05	80	-286.3421	0.1328	-38.0306	-153.0135	0.1249	-19.1059
27 BH-03-06	60	-217.696	0.1328	-28.9006	-111.8207	0.1249	-13.9637
27 BH-04-01	93	-328.7204	0.1329	-43.6736	-182.0304	0.1249	-22.7344
27 BH-04-02	70	-252.2274	0.1328	-33.4923	-132.2088	0.1249	-16.5091
27 BH-04-03	72	-258.9241	0.1328	-34.3832	-136.4959	0.1249	-17.0454
27 BH-04-04	90	-319.0284	0.1328	-42.3826	-175.2466	0.1249	-21.8862
27 BH-04-05	80	-286.3421	0.1328	-38.0306	-153.0135	0.1249	-19.1059
27 BH-04-06	60	-217.696	0.1328	-28.9006	-111.8207	0.1249	-13.9637
27 BH-05-01	82	-292.9682	0.1328	-38.9126	-157.3713	0.1249	-19.6507
27 BH-05-02	72	-259.0921	0.1328	-34.4053	-136.3279	0.1249	-17.0233
27 BH-05-03	88	-312.4114	0.1328	-41.5015	-170.8798	0.1249	-21.3409
27 BH-05-04	80	-285.9832	0.1328	-37.9833	-153.3724	0.1249	-19.153
27 BH-05-05	81	-289.2477	0.1328	-38.4179	-155.5999	0.1249	-19.4318
27 BH-06-01	82	-292.9682	0.1328	-38.9126	-157.3713	0.1249	-19.6507
27 BH-06-02	72	-259.0921	0.1328	-34.4053	-136.3279	0.1249	-17.0233
27 BH-06-03	88	-312.4114	0.1328	-41.5015	-170.8798	0.1249	-21.3409
27 BH-06-04	80	-285.9832	0.1328	-37.9833	-153.3724	0.1249	-19.153
27 BH-06-05	81	-289.2477	0.1328	-38.4179	-155.5999	0.1249	-19.4318
27 BH-07-01	82	-292.9682	0.1328	-38.9126	-157.3713	0.1249	-19.6507
27 BH-07-02	72	-259.0921	0.1328	-34.4053	-136.3279	0.1249	-17.0233
27 BH-07-03	88	-312.4114	0.1328	-41.5015	-170.8798	0.1249	-21.3409
27 BH-07-04	80	-285.9832	0.1328	-37.9833	-153.3724	0.1249	-19.153
27 BH-07-05	81	-289.2477	0.1328	-38.4179	-155.5999	0.1249	-19.4318
27 BH-08-01	82	-292.9682	0.1328	-38.9126	-157.3713	0.1249	-19.6507
27 BH-08-02	72	-259.0921	0.1328	-34.4053	-136.3279	0.1249	-17.0233
27 BH-08-03	88	-312.4114	0.1328	-41.5015	-170.8798	0.1249	-21.3409
27 BH-08-04	80	-285.9832	0.1328	-37.9833	-153.3724	0.1249	-19.153

27 BH-08-05	81	-289.2477	0.1328	-38.4179	-155.5999	0.1249	-19.4318
				-1619.3761			-817.4709

12.85 Block J1J2

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)
27 BJ1-00-01_EP	97.3	-215.6441	0.1325	-28.569	-84.9369	0.1246	-10.5867
27 BJ1-00-02_EP	135.6	-292.6786	0.1326	-38.8034	-126.2195	0.1247	-15.7358
27 BJ1-02-01	74	-166.435	0.1324	-22.0404	-62.1672	0.1246	-7.7481
27 BJ1-02-02	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-02-03	43	-98.6239	0.1323	-13.0529	-34.2125	0.1246	-4.2645
27 BJ1-02-04	40	-92.0039	0.1323	-12.1756	-31.5649	0.1247	-3.9346
27 BJ1-02-05	52	-118.5054	0.1324	-15.6873	-42.134	0.1246	-5.2512
27 BJ1-02-06	68	-153.5852	0.1324	-20.3366	-56.4817	0.1246	-7.0388
27 BJ1-02-07	68	-142.6361	0.1324	-18.8853	-51.9847	0.1246	-6.4787
27 BJ1-02-08	52	-118.4577	0.1324	-15.6811	-42.1817	0.1246	-5.2574
27 BJ1-02-09	76	-170.7398	0.1324	-22.6112	-64.0409	0.1246	-7.9816
27 BJ1-03-01	74	-166.435	0.1324	-22.0404	-62.1672	0.1246	-7.7481
27 BJ1-03-02	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-03-03	43	-98.6239	0.1323	-13.0529	-34.2125	0.1246	-4.2645
27 BJ1-03-04	40	-92.0039	0.1323	-12.1756	-31.5649	0.1247	-3.9346
27 BJ1-03-05	52	-118.5054	0.1324	-15.6873	-42.134	0.1246	-5.2512
27 BJ1-03-06	68	-153.5852	0.1324	-20.3366	-56.4817	0.1246	-7.0388
27 BJ1-03-07	68	-142.6361	0.1324	-18.8853	-51.9847	0.1246	-6.4787
27 BJ1-03-08	52	-118.4577	0.1324	-15.6811	-42.1817	0.1246	-5.2574
27 BJ1-03-09	76	-170.7398	0.1324	-22.6112	-64.0409	0.1246	-7.9816
27 BJ1-04-01	74	-166.435	0.1324	-22.0404	-62.1672	0.1246	-7.7481
27 BJ1-04-02	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-04-03	43	-98.6239	0.1323	-13.0529	-34.2125	0.1246	-4.2645
27 BJ1-04-04	40	-92.0039	0.1323	-12.1756	-31.5649	0.1247	-3.9346
27 BJ1-04-05	52	-118.5054	0.1324	-15.6873	-42.134	0.1246	-5.2512
27 BJ1-04-06	68	-153.5852	0.1324	-20.3366	-56.4817	0.1246	-7.0388
27 BJ1-04-07	63	-142.6361	0.1324	-18.8853	-51.9847	0.1246	-6.4787
27 BJ1-04-08	52	-118.4577	0.1324	-15.6811	-42.1817	0.1246	-5.2574
27 BJ1-04-09	76	-170.7398	0.1324	-22.6112	-64.0409	0.1246	-7.9816
27 BJ1-05-01	74	-166.435	0.1324	-22.0404	-62.1672	0.1246	-7.7481
27 BJ1-05-02	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-05-03	43	-98.6239	0.1323	-13.0529	-34.2125	0.1246	-4.2645
27 BJ1-05-04	40	-92.0039	0.1323	-12.1756	-31.5649	0.1247	-3.9346
27 BJ1-05-05	52	-118.5054	0.1324	-15.6873	-42.134	0.1246	-5.2512
27 BJ1-05-06	68	-153.5852	0.1324	-20.3366	-56.4817	0.1246	-7.0388
27 BJ1-05-07	63	-142.6361	0.1324	-18.8853	-51.9847	0.1246	-6.4787
27 BJ1-05-08	52	-118.4577	0.1324	-15.6811	-42.1817	0.1246	-5.2574

27 BJ1-05-09	76	-170.7398	0.1324	-22.6112	-64.0409	0.1246	-7.9816
27 BJ1-06-01	74	-166.435	0.1324	-22.0404	-62.1672	0.1246	-7.7481
27 BJ1-06-02	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-06-03	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-06-04	52	-118.5054	0.1324	-15.6873	-42.134	0.1246	-5.2512
27 BJ1-06-05	68	-153.5852	0.1324	-20.3366	-56.4817	0.1246	-7.0388
27 BJ1-06-06	63	-142.6361	0.1324	-18.8853	-51.9847	0.1246	-6.4787
27 BJ1-06-07	52	-118.4577	0.1324	-15.6811	-42.1817	0.1246	-5.2574
27 BJ1-06-08	76	-170.7398	0.1324	-22.6112	-64.0409	0.1246	-7.9816
27 BJ1-07-01	74	-166.435	0.1324	-22.0404	-62.1672	0.1246	-7.7481
27 BJ1-07-02	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-07-03	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-07-04	52	-118.5054	0.1324	-15.6873	-42.134	0.1246	-5.2512
27 BJ1-07-05	68	-153.5852	0.1324	-20.3366	-56.4817	0.1246	-7.0388
27 BJ1-07-06	63	-142.6361	0.1324	-18.8853	-51.9847	0.1246	-6.4787
27 BJ1-07-07	52	-118.4577	0.1324	-15.6811	-42.1817	0.1246	-5.2574
27 BJ1-07-08	76	-170.7398	0.1324	-22.6112	-64.0409	0.1246	-7.9816
27 BJ1-08-01	74	-166.435	0.1324	-22.0404	-62.1672	0.1246	-7.7481
27 BJ1-08-02	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-08-03	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-08-04	52	-118.5054	0.1324	-15.6873	-42.134	0.1246	-5.2512
27 BJ1-08-05	68	-153.5852	0.1324	-20.3366	-56.4817	0.1246	-7.0388
27 BJ1-08-06	63	-142.6361	0.1324	-18.8853	-51.9847	0.1246	-6.4787
27 BJ1-08-07	52	-118.4577	0.1324	-15.6811	-42.1817	0.1246	-5.2574
27 BJ1-08-08	76	-170.7398	0.1324	-22.6112	-64.0409	0.1246	-7.9816
27 BJ1-09-01	74	-166.435	0.1324	-22.0404	-62.1672	0.1246	-7.7481
27 BJ1-09-02	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-09-03	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-09-04	52	-118.5054	0.1324	-15.6873	-42.134	0.1246	-5.2512
27 BJ1-09-05	68	-153.5852	0.1324	-20.3366	-56.4817	0.1246	-7.0388
27 BJ1-09-06	63	-142.6361	0.1324	-18.8853	-51.9847	0.1246	-6.4787
27 BJ1-09-07	52	-118.4577	0.1324	-15.6811	-42.1817	0.1246	-5.2574
27 BJ1-09-08	76	-170.7398	0.1324	-22.6112	-64.0409	0.1246	-7.9816
27 BJ1-10-01	74	-166.435	0.1324	-22.0404	-62.1672	0.1246	-7.7481
27 BJ1-10-02	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-10-03	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-10-04	52	-118.5054	0.1324	-15.6873	-42.134	0.1246	-5.2512
27 BJ1-10-05	68	-153.5852	0.1324	-20.3366	-56.4817	0.1246	-7.0388
27 BJ1-10-06	63	-142.6361	0.1324	-18.8853	-51.9847	0.1246	-6.4787
27 BJ1-10-07	52	-118.4577	0.1324	-15.6811	-42.1817	0.1246	-5.2574
27 BJ1-10-08	76	-170.7398	0.1324	-22.6112	-64.0409	0.1246	-7.9816
27 BJ1-11-01	74	-166.435	0.1324	-22.0404	-62.1672	0.1246	-7.7481
27 BJ1-11-02	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-11-03	42	-96.4164	0.1323	-12.7603	-33.3308	0.1246	-4.1546
27 BJ1-11-04	52	-118.5054	0.1324	-15.6873	-42.134	0.1246	-5.2512
27 BJ1-11-05	68	-153.5852	0.1324	-20.3366	-56.4817	0.1246	-7.0388

27 BJ1-11-06	63	-142.6361	0.1324	-18.8853	-51.9847	0.1246	-6.4787
27 BJ1-11-07	52	-118.4577	0.1324	-15.6811	-42.1817	0.1246	-5.2574
27 BJ1-11-08	76	-170.7398	0.1324	-22.6112	-64.0409	0.1246	-7.9816
27 BJ1-12-01	100	-221.2329	0.1325	-29.3109	-87.689	0.1246	-10.9298
27 BJ1-12-02	100	-221.2329	0.1325	-29.3109	-87.689	0.1246	-10.9298
27 BJ1-12-03	100	-221.1483	0.1325	-29.2998	-87.7737	0.1246	-10.9408
27 BJ1-12-04	100	-221.1865	0.1325	-29.3048	-87.7354	0.1246	-10.9358
27 BJ1-13-01	100	-221.2329	0.1325	-29.3109	-87.689	0.1246	-10.9298
27 BJ1-13-02	100	-221.2329	0.1325	-29.3109	-87.689	0.1246	-10.9298
27 BJ1-13-03	100	-221.1483	0.1325	-29.2998	-87.7737	0.1246	-10.9408
27 BJ1-13-04	100	-221.1865	0.1325	-29.3048	-87.7354	0.1246	-10.9358
27 BJ1-14-01	100	-221.2329	0.1325	-29.3109	-87.689	0.1246	-10.9298
27 BJ1-14-02	100	-221.2329	0.1325	-29.3109	-87.689	0.1246	-10.9298
27 BJ1-14-03	100	-221.1483	0.1325	-29.2998	-87.7737	0.1246	-10.9408
27 BJ1-14-04	100	-221.1865	0.1325	-29.3048	-87.7354	0.1246	-10.9358
27 BJ1-15-01	100	-221.2329	0.1325	-29.3109	-87.689	0.1246	-10.9298
27 BJ1-15-02	100	-221.2329	0.1325	-29.3109	-87.689	0.1246	-10.9298
27 BJ1-15-03	100	-221.1483	0.1325	-29.2998	-87.7737	0.1246	-10.9408
27 BJ1-15-04	100	-221.1865	0.1325	-29.3048	-87.7354	0.1246	-10.9358
27 BJ2-00-01	86.64	-418.9543	0.1332	-55.8001	-294.7789	0.1251	-36.8755
27 BJ2-00-02	122.5	-567.8723	0.1333	-75.7247	-441.2726	0.1252	-55.2352
27 BJ2-00-03	79.5	-387.0291	0.1332	-51.5371	-267.8853	0.1251	-33.5101
27 BJ2-00-04	87.1	-420.8334	0.1332	-56.0513	-296.6892	0.1251	-37.1156
27 BJ2-00-05	117.17	-546.3752	0.1333	-72.8452	-418.8616	0.1252	-52.4268
27 BJ2-02-01	93	-446.1248	0.1332	-59.4313	-320.0015	0.1251	-40.0373
27 BJ2-02-02	54	-269.2497	0.1331	-35.8274	-175.5979	0.1251	-21.9626
27 BJ2-02-03	44	-221.9525	0.133	-29.523	-140.5159	0.1251	-17.5745
27 BJ2-02-04	74	-362.0537	0.1331	-48.2039	-247.5522	0.1251	-30.966
27 BJ2-03-01	93	-446.1248	0.1332	-59.4313	-320.0015	0.1251	-40.0373
27 BJ2-03-02	54	-269.2497	0.1331	-35.8274	-175.5979	0.1251	-21.9626
27 BJ2-03-03	44	-221.9525	0.133	-29.523	-140.5159	0.1251	-17.5745
27 BJ2-03-04	74	-362.0537	0.1331	-48.2039	-247.5522	0.1251	-30.966
27 BJ2-04-01	93	-446.1248	0.1332	-59.4313	-320.0015	0.1251	-40.0373
27 BJ2-04-02	54	-269.2497	0.1331	-35.8274	-175.5979	0.1251	-21.9626
27 BJ2-04-03	44	-221.9525	0.133	-29.523	-140.5159	0.1251	-17.5745
27 BJ2-04-04	74	-362.0537	0.1331	-48.2039	-247.5522	0.1251	-30.966
27 BJ2-05-01	93	-446.1248	0.1332	-59.4313	-320.0015	0.1251	-40.0373
27 BJ2-05-02	54	-269.2497	0.1331	-35.8274	-175.5979	0.1251	-21.9626
27 BJ2-05-03	44	-221.9525	0.133	-29.523	-140.5159	0.1251	-17.5745
27 BJ2-05-04	74	-362.0537	0.1331	-48.2039	-247.5522	0.1251	-30.966
				-2997.6766			-1355.4201

12.86 Block K

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)

27 BK-01-01	60	-200.2973	0.1327	-26.5758	-96.2677	0.1248	-12.0162
27 BK-01-02	51	-171.4502	0.1327	-22.7435	-80.63	0.1248	-10.0643
27 BK-01-03	59	-197.0585	0.1327	-26.1455	-94.5638	0.1248	-11.8038
27 BK-01-04	93	-302.6928	0.1328	-40.1912	-156.983	0.1248	-19.5981
27 BK-01-05	99	-320.6757	0.1328	-42.5851	-168.6566	0.1248	-21.0558
27 BK-01-06	52	-174.7258	0.1327	-23.1785	-82.2973	0.1248	-10.272
27 BK-01-07	40	-136.068	0.1326	-18.0435	-61.642	0.1248	-7.6942
27 BK-01-08	73	-241.5022	0.1327	-32.0517	-119.3186	0.1248	-14.8934
27 BK-02-01	83	-272.4229	0.1327	-36.1634	-137.8254	0.1248	-17.2049
27 BK-02-02	62	-206.6096	0.1327	-27.4145	-99.8409	0.1248	-12.4626
27 BK-02-03	62	-206.6096	0.1327	-27.4145	-99.8409	0.1248	-12.4626
27 BK-02-04	62	-206.5907	0.1327	-27.412	-99.8599	0.1248	-12.4651
27 BK-02-05	63	-209.9873	0.1327	-27.8631	-101.406	0.1248	-12.6568
27 BK-02-06	51	-171.4502	0.1327	-22.7435	-80.63	0.1248	-10.0643
27 BK-02-07	59	-197.0585	0.1327	-26.1455	-94.5638	0.1248	-11.8038
27 BK-02-08	93	-302.6928	0.1328	-40.1912	-156.983	0.1248	-19.5981
27 BK-02-09	99	-320.6757	0.1328	-42.5851	-168.6566	0.1248	-21.0558
27 BK-02-10	52	-174.7258	0.1327	-23.1785	-82.2973	0.1248	-10.272
27 BK-02-11	40	-136.068	0.1326	-18.0435	-61.642	0.1248	-7.6942
27 BK-02-12	73	-241.5022	0.1327	-32.0517	-119.3186	0.1248	-14.8934
27 BK-02-13	60	-200.2973	0.1327	-26.5758	-96.2677	0.1248	-12.0162
27 BK-03-01	83	-272.4229	0.1327	-36.1634	-137.8254	0.1248	17.2049
27 BK-03-02	62	-206.6096	0.1327	-27.4145	-99.8409	0.1248	-12.4626
27 BK-03-03	62	-206.6096	0.1327	-27.4145	-99.8409	0.1248	-12.4626
27 BK-03-04	62	-206.5907	0.1327	-27.412	-99.8599	0.1248	-12.4651
27 BK-03-05	63	-209.9873	0.1327	-27.8631	-101.406	0.1248	-12.6568
27 BK-03-06	51	-171.4502	0.1327	-22.7435	-80.63	0.1248	-10.0643
27 BK-03-07	59	-197.0585	0.1327	-26.1455	-94.5638	0.1248	-11.8038
27 BK-03-08	92	-299.69	0.1328	-39.7915	-155.043	0.1248	-19.3557
27 BK-03-09	99	-320.6757	0.1328	-42.5851	-168.6566	0.1248	-21.0558
27 BK-03-10	52	-174.7258	0.1327	-23.1785	-82.2973	0.1248	-10.272
27 BK-03-11	40	-136.068	0.1326	-18.0435	-61.642	0.1248	-7.6942
27 BK-03-12	73	-241.5022	0.1327	-32.0517	-119.3186	0.1248	-14.8934
27 BK-03-13	60	-200.2973	0.1327	-26.5758	-96.2677	0.1248	-12.0162

27 BK-04-01	83	-272.4229	0.1327	-36.1634	-137.8254	0.1248	17.2049
27 BK-04-02	62	-206.6096	0.1327	-27.4145	-99.8409	0.1248	-12.4626
27 BK-04-03	62	-206.6096	0.1327	-27.4145	-99.8409	0.1248	-12.4626
27 BK-04-04	62	-206.5907	0.1327	-27.412	-99.8599	0.1248	-12.4651
27 BK-04-05	63	-209.9873	0.1327	-27.8631	-101.406	0.1248	-12.6568
27 BK-04-06	51	-171.4502	0.1327	-22.7435	-80.63	0.1248	-10.0643
27 BK-04-07	59	-197.0585	0.1327	-26.1455	-94.5638	0.1248	-11.8038
27 BK-04-08	92	-299.69	0.1328	-39.7915	-155.043	0.1248	-19.3557
27 BK-04-09	99	-320.6757	0.1328	-42.5851	-168.6566	0.1248	-21.0558
27 BK-04-10	52	-174.7258	0.1327	-23.1785	-82.2973	0.1248	-10.272
27 BK-04-11	40	-136.068	0.1326	-18.0435	-61.642	0.1248	-7.6942
27 BK-04-12	73	-241.5022	0.1327	-32.0517	-119.3186	0.1248	-14.8934
27 BK-04-13	60	-200.2973	0.1327	-26.5758	-96.2677	0.1248	-12.0162
27 BK-05-01	83	-272.4229	0.1327	-36.1634	-137.8254	0.1248	17.2049
27 BK-05-02	62	-206.6096	0.1327	-27.4145	-99.8409	0.1248	-12.4626
27 BK-05-03	62	-206.6096	0.1327	-27.4145	-99.8409	0.1248	-12.4626
27 BK-05-04	124	-392.4458	0.1329	-52.1493	-220.4552	0.1249	-27.5317
27 BK-05-05	126	-397.8955	0.1329	-52.8763	-224.8911	0.1249	-28.0874
27 BK-05-06	51	-171.4502	0.1327	-22.7435	-80.63	0.1248	-10.0643
27 BK-05-07	59	-197.0585	0.1327	-26.1455	-94.5638	0.1248	-11.8038
27 BK-05-08	92	-299.69	0.1328	-39.7915	-155.043	0.1248	-19.3557
27 BK-05-09	99	-320.6757	0.1328	-42.5851	-168.6566	0.1248	-21.0558
27 BK-05-10	52	-174.7258	0.1327	-23.1785	-82.2973	0.1248	-10.272
27 BK-05-11	40	-136.068	0.1326	-18.0435	-61.642	0.1248	-7.6942
27 BK-05-12	73	-241.5022	0.1327	-32.0517	-119.3186	0.1248	-14.8934
27 BK-05-13	60	-200.2973	0.1327	-26.5758	-96.2677	0.1248	-12.0162
27 BK-06-01	60	-200.2973	0.1327	-26.5758	-96.2677	0.1248	-12.0162
27 BK-06-02	51	-171.4502	0.1327	-22.7435	-80.63	0.1248	-10.0643
27 BK-06-03	59	-197.0585	0.1327	-26.1455	-94.5638	0.1248	-11.8038
27 BK-06-04	92	-299.69	0.1328	-39.7915	-155.043	0.1248	-19.3557
27 BK-06-05	99	-320.6757	0.1328	-42.5851	-168.6566	0.1248	-21.0558
27 BK-06-06	52	-174.7258	0.1327	-23.1785	-82.2973	0.1248	-10.272
27 BK-06-07	40	-136.068	0.1326	-18.0435	-61.642	0.1248	-7.6942
27 BK-06-08	73	-241.5022	0.1327	-32.0517	-119.3186	0.1248	-14.8934

27 BK-07-01	60	-200.2973	0.1327	-26.5758	-96.2677	0.1248	-12.0162
27 BK-07-02	51	-171.4502	0.1327	-22.7435	-80.63	0.1248	-10.0643
27 BK-07-03	59	-197.0585	0.1327	-26.1455	-94.5638	0.1248	-11.8038
27 BK-07-04	92	-299.69	0.1328	-39.7915	-155.043	0.1248	-19.3557
27 BK-07-05	99	-320.6757	0.1328	-42.5851	-168.6566	0.1248	-21.0558
27 BK-07-06	52	-174.7258	0.1327	-23.1785	-82.2973	0.1248	-10.272
27 BK-07-07	40	-136.068	0.1326	-18.0435	-61.642	0.1248	-7.6942
27 BK-07-08	73	-241.5022	0.1327	-32.0517	-119.3186	0.1248	-14.8934
27 BK-08-01	60	-200.2973	0.1327	-26.5758	-96.2677	0.1248	-12.0162
27 BK-08-02	51	-171.4502	0.1327	-22.7435	-80.63	0.1248	-10.0643
27 BK-08-03	118	-375.6469	0.1329	-49.9093	-207.5976	0.1249	-25.9232
27 BK-08-04	145	-450.1388	0.133	-59.8469	-266.56	0.1249	-33.3005
27 BK-08-05	148	-458.3954	0.133	-60.9488	-273.1316	0.1249	-34.1221
27 BK-08-06	51	-171.4502	0.1327	-22.7435	-80.63	0.1248	-10.0643
27 BK-08-07	100	-323.3642	0.1328	-42.9435	-170.9108	0.1249	-21.3391
27 BK-08-08	40	-136.068	0.1326	-18.0435	-61.642	0.1248	-7.6942
27 BK-08-09	73	-241.5022	0.1327	-32.0517	-119.3186	0.1248	-14.8934
	5923			-2589.2321			-1116.2657

12.87 Block L

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)
27 BL-02-01	85	-258.1436	0.1327	-34.252	-123.7962	0.1248	-15.4485
27 BL-02-02	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-02-03	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-02-04	78	-238.3362	0.1327	-31.6189	-112.1498	0.1248	-13.9934
27 BL-02-05	92	-278.0018	0.1327	-36.8926	-135.3919	0.1248	-16.8955
27 BL-02-06	60	-185.4832	0.1326	-24.5983	-84.1214	0.1248	-10.4966
27 BL-02-07	71	-217.8324	0.1326	-28.8948	-101.1997	0.1248	-12.6279
27 BL-02-08	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-02-09	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-02-10	67	-206.051	0.1326	-27.3299	-95.0075	0.1248	-11.8556
27 BL-03-01	85	-258.1436	0.1327	-34.252	-123.7962	0.1248	-15.4485
27 BL-03-02	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-03-03	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-03-04	78	-238.3362	0.1327	-31.6189	-112.1498	0.1248	-13.9934
27 BL-03-05	92	-278.0018	0.1327	-36.8926	-135.3919	0.1248	-16.8955
27 BL-03-06	60	-185.4832	0.1326	-24.5983	-84.1214	0.1248	-10.4966
27 BL-03-07	71	-217.8324	0.1326	-28.8948	-101.1997	0.1248	-12.6279

27 BL-03-08	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-03-09	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-03-10	67	-206.051	0.1326	-27.3299	-95.0075	0.1248	-11.8556
27 BL-04-01	85	-258.1436	0.1327	-34.252	-123.7962	0.1248	-15.4485
27 BL-04-02	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-04-03	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-04-04	78	-238.3362	0.1327	-31.6189	-112.1498	0.1248	-13.9934
27 BL-04-05	92	-278.0018	0.1327	-36.8926	-135.3919	0.1248	-16.8955
27 BL-04-06	60	-185.4832	0.1326	-24.5983	-84.1214	0.1248	-10.4966
27 BL-04-07	71	-217.8324	0.1326	-28.8948	-101.1997	0.1248	-12.6279
27 BL-04-08	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-04-09	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-04-10	67	-206.051	0.1326	-27.3299	-95.0075	0.1248	-11.8556
27 BL-05-01	85	-258.1436	0.1327	-34.252	-123.7962	0.1248	-15.4485
27 BL-05-02	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-05-03	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-05-04	78	-238.3362	0.1327	-31.6189	-112.1498	0.1248	-13.9934
27 BL-05-05	92	-278.0018	0.1327	-36.8926	-135.3919	0.1248	-16.8955
27 BL-05-06	60	-185.4832	0.1326	-24.5983	-84.1214	0.1248	-10.4966
27 BL-05-07	71	-217.8324	0.1326	-28.8948	-101.1997	0.1248	-12.6279
27 BL-05-08	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-05-09	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-05-10	67	-206.051	0.1326	-27.3299	-95.0075	0.1248	-11.8556
27 BL-06-01	85	-258.1436	0.1327	-34.252	-123.7962	0.1248	-15.4485
27 BL-06-02	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-06-03	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-06-04	78	-238.3362	0.1327	-31.6189	-112.1498	0.1248	-13.9934
27 BL-06-05	92	-278.0018	0.1327	-36.8926	-135.3919	0.1248	-16.8955
27 BL-06-06	60	-185.4832	0.1326	-24.5983	-84.1214	0.1248	-10.4966
27 BL-06-07	71	-217.8324	0.1326	-28.8948	-101.1997	0.1248	-12.6279
27 BL-06-08	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-06-09	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-06-10	67	-206.051	0.1326	-27.3299	-95.0075	0.1248	-11.8556
27 BL-07-01	85	-258.1436	0.1327	-34.252	-123.7962	0.1248	-15.4485
27 BL-07-02	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-07-03	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-07-04	78	-238.3362	0.1327	-31.6189	-112.1498	0.1248	-13.9934
27 BL-07-05	92	-278.0018	0.1327	-36.8926	-135.3919	0.1248	-16.8955
27 BL-07-06	60	-185.4832	0.1326	-24.5983	-84.1214	0.1248	-10.4966
27 BL-07-07	71	-217.8324	0.1326	-28.8948	-101.1997	0.1248	-12.6279
27 BL-07-08	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-07-09	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-07-10	67	-206.051	0.1326	-27.3299	-95.0075	0.1248	-11.8556
27 BL-08-01	85	-258.1436	0.1327	-34.252	-123.7962	0.1248	-15.4485
27 BL-08-02	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-08-03	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282

27 BL-08-04	78	-238.3362	0.1327	-31.6189	-112.1498	0.1248	-13.9934
27 BL-08-05	92	-278.0018	0.1327	-36.8926	-135.3919	0.1248	-16.8955
27 BL-08-06	60	-185.4832	0.1326	-24.5983	-84.1214	0.1248	-10.4966
27 BL-08-07	71	-217.8324	0.1326	-28.8948	-101.1997	0.1248	-12.6279
27 BL-08-08	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-08-09	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-08-10	67	-206.051	0.1326	-27.3299	-95.0075	0.1248	-11.8556
27 BL-09-01	85	-258.1436	0.1327	-34.252	-123.7962	0.1248	-15.4485
27 BL-09-02	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-09-03	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-09-04	78	-238.3362	0.1327	-31.6189	-112.1498	0.1248	-13.9934
27 BL-09-05	92	-278.0018	0.1327	-36.8926	-135.3919	0.1248	-16.8955
27 BL-09-06	60	-185.4832	0.1326	-24.5983	-84.1214	0.1248	-10.4966
27 BL-09-07	71	-217.8324	0.1326	-28.8948	-101.1997	0.1248	-12.6279
27 BL-09-08	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-09-09	71	-217.8595	0.1326	-28.8984	-101.1726	0.1248	-12.6244
27 BL-09-10	67	-206.051	0.1326	-27.3299	-95.0075	0.1248	-11.8556
27 BL-10-01	85	-258.1436	0.1327	-34.252	-123.7962	0.1248	-15.4485
27 BL-10-02	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-10-03	40	-125.8201	0.1325	-16.6771	-53.9163	0.1248	-6.7282
27 BL-10-04	78	-238.3362	0.1327	-31.6189	-112.1498	0.1248	-13.9934
27 BL-10-05	92	-278.0018	0.1327	-36.8926	-135.3919	0.1248	-16.8955
				-2334.0177			-1019.9754

12.88 Block M

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)
27 BM-02-01	99	-181.6958	0.1324	-24.05	-62.9704	0.1246	-7.8436
27 BM-02-02_EP	72	-134.1411	0.1323	-17.7479	-43.7979	0.1246	-5.4554
27 BM-02-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-02-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-02-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-02-06	49	-92.3861	0.1323	-12.219	-28.7113	0.1246	-3.5767
27 BM-02-07	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-02-08	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-02-09	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-03-01	99	-181.6958	0.1324	-24.05	-62.9704	0.1246	-7.8436
27 BM-03-02_EP	72	-134.1411	0.1323	-17.7479	-43.7979	0.1246	-5.4554
27 BM-03-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-03-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-03-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-03-06	59	-110.6394	0.1323	-14.6356	-35.1717	0.1246	-4.3811
27 BM-03-07	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-03-08	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518

27 BM-03-09	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-04-01	99	-181.6958	0.1324	-24.05	-62.9704	0.1246	-7.8436
27 BM-04-02_EP	72	-134.1411	0.1323	-17.7479	-43.7979	0.1246	-5.4554
27 BM-04-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-04-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-04-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-04-06	59	-110.6394	0.1323	-14.6356	-35.1717	0.1246	-4.3811
27 BM-04-07	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-04-08	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-04-09	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-05-01	99	-181.6958	0.1324	-24.05	-62.9704	0.1246	-7.8436
27 BM-05-02_EP	72	-134.1411	0.1323	-17.7479	-43.7979	0.1246	-5.4554
27 BM-05-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-05-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-05-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-05-06	59	-110.6394	0.1323	-14.6356	-35.1717	0.1246	-4.3811
27 BM-05-07	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-05-08	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-05-09	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-06-01	99	-181.6958	0.1324	-24.05	-62.9704	0.1246	-7.8436
27 BM-05-06_EP	72	-134.1411	0.1323	-17.7479	-43.7979	0.1246	-5.4554
27 BM-06-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-06-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-06-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-06-06	59	-110.6394	0.1323	-14.6356	-35.1717	0.1246	-4.3811
27 BM-06-07	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-06-08	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-06-09	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-07-01	99	-181.6958	0.1324	-24.05	-62.9704	0.1246	-7.8436
27 BM-07-02_EP	72	-134.1411	0.1323	-17.7479	-43.7979	0.1246	-5.4554
27 BM-07-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-07-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-07-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-07-06	59	-110.6394	0.1323	-14.6356	-35.1717	0.1246	-4.3811
27 BM-07-07	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-07-08	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-07-09	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-08-01	92	-169.5328	0.1323	-22.4374	-57.8337	0.1246	-7.2038
27 BM-08-02_EP	72	-134.1411	0.1323	-17.7479	-43.7979	0.1246	-5.4554
27 BM-08-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-08-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-08-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-08-06	59	-110.6394	0.1323	-14.6356	-35.1717	0.1246	-4.3811
27 BM-08-07	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518
27 BM-08-08	40	-75.964	0.1322	-10.0449	-22.891	0.1246	-2.8518

27 BM-14-01	92	-169.5328	0.1323	-22.4374	-57.8337	0.1246	-7.2038
27 BM-14-02_EP	72	-134.1564	0.1323	-17.7499	-43.7826	0.1246	-5.4534
27 BM-14-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-14-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-14-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-14-06_EP	75	-139.5369	0.1323	-18.4626	-45.8162	0.1246	-5.7067
27 BM-14-07_EP	59	-110.6825	0.1323	-14.6413	-35.1286	0.1246	-4.3755
27 BM-14-08	73	-135.93	0.1323	-17.9848	-44.4804	0.1246	-5.5404
27 BM-15-01	92	-169.5328	0.1323	-22.4374	-57.8337	0.1246	-7.2038
27 BM-15-02_EP	72	-134.1564	0.1323	-17.7499	-43.7826	0.1246	-5.4534
27 BM-15-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-15-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-15-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-15-06_EP	75	-139.5369	0.1323	-18.4626	-45.8162	0.1246	-5.7067
27 BM-15-07_EP	59	-110.6825	0.1323	-14.6413	-35.1286	0.1246	-4.3755
27 BM-15-08	73	-135.93	0.1323	-17.9848	-44.4804	0.1246	-5.5404
27 BM-16-01	92	-169.5328	0.1323	-22.4374	-57.8337	0.1246	-7.2038
27 BM-16-02_EP	72	-134.1564	0.1323	-17.7499	-43.7826	0.1246	-5.4534
27 BM-16-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-16-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-16-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-16-06_EP	75	-139.5369	0.1323	-18.4626	-45.8162	0.1246	-5.7067
27 BM-16-07_EP	59	-110.6825	0.1323	-14.6413	-35.1286	0.1246	-4.3755
27 BM-16-08	73	-135.93	0.1323	-17.9848	-44.4804	0.1246	-5.5404
27 BM-17-01_EP	95	-174.7504	0.1324	23.1291	-60.0302	0.1246	-7.4774
27 BM-17-02_EP	72	-134.1564	0.1323	-17.7499	-43.7826	0.1246	-5.4534
27 BM-17-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-17-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-17-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-17-06_EP	75	-139.5369	0.1323	-18.4626	-45.8162	0.1246	-5.7067
27 BM-17-07_EP	59	-110.6825	0.1323	-14.6413	-35.1286	0.1246	-4.3755
27 BM-17-08	73	-135.93	0.1323	-17.9848	-44.4804	0.1246	-5.5404
27 BM-18-01_EP	95	-174.7504	0.1324	23.1291	-60.0302	0.1246	-7.4774
27 BM-18-02_EP	72	-134.1564	0.1323	-17.7499	-43.7826	0.1246	-5.4534
27 BM-18-03	51	-96.0755	0.1323	-12.7074	-29.9647	0.1246	-3.7326
27 BM-18-04	74	-137.7285	0.1323	-18.223	-45.1532	0.1246	-5.6242
27 BM-18-05	95	-174.7623	0.1324	-23.1307	-60.0183	0.1246	-7.4759
27 BM-18-06_EP	75	-139.5369	0.1323	-18.4626	-45.8162	0.1246	-5.7067
27 BM-18-07_EP	59	-110.6825	0.1323	-14.6413	-35.1286	0.1246	-4.3755
27 BM-18-08	73	-135.9264	0.1323	-17.9843	-44.484	0.1246	-5.5409

27 BM-19-01_EP	95	-174.7504	0.1324	23.1291	-60.0302	0.1246	-7.4774
27 BM-19-02_EP	103	-188.4531	0.1324	-24.9462	-66.0985	0.1246	-8.234
27 BM-19-03_EP	105	-191.9536	0.1324	-25.4104	-67.5408	0.1246	-8.4133
27 BM-20-01_EP	95	-174.7504	0.1324	-23.1291	-60.0302	0.1246	-7.4774
27 BM-20-02_EP	103	-188.4531	0.1324	-24.9462	-66.0985	0.1246	-8.234
27 BM-20-03_EP	105	-191.9536	0.1324	-25.4104	-67.5408	0.1246	-8.4133
				-2500.3241			-819.2893

12.89 Block N

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)
27 BN-01-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-01-02	4	-12.9147	0.1319	-1.7031	-2.2938	0.1247	-0.2861
27 BN-01-03	59	-159.1107	0.1325	-21.0839	-65.2141	0.1247	-8.1334
27 BN-01-04	59	-159.2342	0.1325	-21.1002	-65.0906	0.1247	-8.1172
27 BN-02-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-02-02	40	-109.6152	0.1324	-14.5184	-42.4695	0.1247	-5.2969
27 BN-02-03_EP	59	-159.1107	0.1325	-21.0839	-65.2141	0.1247	-8.1334
27 BN-02-04	59	-159.2342	0.1325	-21.1002	-65.0906	0.1247	-8.1172
27 BN-02-05	62	-166.9141	0.1325	-22.1192	-68.8171	0.1247	-8.5825
27 BN-02-06	62	-166.9007	0.1325	-22.1174	-68.8304	0.1247	-8.5843
27 BN-02-07	62	-166.9141	0.1325	-22.1192	-68.8171	0.1247	-8.5825
27 BN-02-08	89	-235.505	0.1326	-31.2247	-102.8833	0.1247	-12.8311
27 BN-03-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-03-02	40	-109.6152	0.1324	-14.5184	-42.4695	0.1247	-5.2969
27 BN-03-03	59	-159.1107	0.1325	-21.0839	-65.2141	0.1247	-8.1334
27 BN-03-04	59	-159.2342	0.1325	-21.1002	-65.0906	0.1247	-8.1172
27 BN-03-05	62	-166.9141	0.1325	-22.1192	-68.8171	0.1247	-8.5825
27 BN-03-06	62	-166.9007	0.1325	-22.1174	-68.8304	0.1247	-8.5843
27 BN-03-07	62	-166.9141	0.1325	-22.1192	-68.8171	0.1247	-8.5825
27 BN-03-08	89	-235.505	0.1326	-31.2247	-102.8833	0.1247	-12.8311
27 BN-04-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-04-02	40	-109.6152	0.1324	-14.5184	-42.4695	0.1247	-5.2969
27 BN-04-03	59	-159.1107	0.1325	-21.0839	-65.2141	0.1247	-8.1334
27 BN-04-04	59	-159.2342	0.1325	-21.1002	-65.0906	0.1247	-8.1172
27 BN-04-05	62	-166.9141	0.1325	-22.1192	-68.8171	0.1247	-8.5825
27 BN-04-06	62	-166.9007	0.1325	-22.1174	-68.8304	0.1247	-8.5843
27 BN-04-07	62	-166.9141	0.1325	-22.1192	-68.8171	0.1247	-8.5825
27 BN-04-08	89	-235.505	0.1326	-31.2247	-102.8833	0.1247	-12.8311
27 BN-05-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-05-02	40	-109.6152	0.1324	-14.5184	-42.4695	0.1247	-5.2969

27 BN-05-03	59	-159.1107	0.1325	-21.0839	-65.2141	0.1247	-8.1334
27 BN-05-04	59	-159.2342	0.1325	-21.1002	-65.0906	0.1247	-8.1172
27 BN-05-05	62	-166.9141	0.1325	-22.1192	-68.8171	0.1247	-8.5825
27 BN-05-06	62	-166.9007	0.1325	-22.1174	-68.8304	0.1247	-8.5843
27 BN-05-07	62	-166.9141	0.1325	-22.1192	-68.8171	0.1247	-8.5825
27 BN-05-08	89	-235.505	0.1326	-31.2247	-102.8833	0.1247	-12.8311
27 BN-06-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-06-02	40	-109.6152	0.1324	-14.5184	-42.4695	0.1247	-5.2969
27 BN-06-03	59	-159.1107	0.1325	-21.0839	-65.2141	0.1247	-8.1334
27 BN-06-04	59	-159.2342	0.1325	-21.1002	-65.0906	0.1247	-8.1172
27 BN-07-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-07-02	52	-141.0506	0.1325	-18.688	-56.6594	0.1247	-7.0656
27 BN-07-03_EP	56	-151.3086	0.1325	-20.0489	-61.6099	0.1247	-7.6839
27 BN-07-04_EP	59	-159.1351	0.1325	-21.0872	-65.1897	0.1247	-8.1302
27 BN-08-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-08-02	40	-109.6152	0.1324	-14.5184	-42.4695	0.1247	-5.2969
27 BN-08-03_EP	56	-151.3086	0.1325	-20.0489	-61.6099	0.1247	-7.6839
27 BN-08-04_EP	59	-159.1351	0.1325	-21.0872	-65.1897	0.1247	-8.1302
27 BN-09-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-09-02	40	-109.6152	0.1324	-14.5184	-42.4695	0.1247	-5.2969
27 BN-09-03_EP	56	-151.3086	0.1325	-20.0489	-61.6099	0.1247	-7.6839
27 BN-09-04_EP	59	-159.1351	0.1325	-21.0872	-65.1897	0.1247	-8.1302
27 BN-10-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-10-02	40	-109.6152	0.1324	-14.5184	-42.4695	0.1247	-5.2969
27 BN-10-03_EP	56	-151.3086	0.1325	-20.0489	-61.6099	0.1247	-7.6839
27 BN-10-04_EP	59	-159.1351	0.1325	-21.0872	-65.1897	0.1247	-8.1302
27 BN-11-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-11-02	40	-109.6152	0.1324	-14.5184	-42.4695	0.1247	-5.2969
27 BN-11-03_EP	56	-151.3086	0.1325	-20.0489	-61.6099	0.1247	-7.6839
27 BN-11-04_EP	59	-159.1351	0.1325	-21.0872	-65.1897	0.1247	-8.1302
27 BN-12-01	52	-140.9246	0.1325	-18.6714	-56.7855	0.1247	-7.0821
27 BN-12-02	40	-109.6152	0.1324	-14.5184	-42.4695	0.1247	-5.2969
27 BN-12-03_EP	56	-151.3086	0.1325	-20.0489	-61.6099	0.1247	-7.6839
27 BN-12-04_EP	59	-159.1351	0.1325	-21.0872	-65.1897	0.1247	-8.1302
				-1279.8751			-492.0157

12.90 Block P

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)
27 BP-01-05	51	-147.8908	0.1325	-19.6009	-62.1761	0.1247	-7.7556

27 BP-02-01	84	-238.4508	0.1326	-31.624	-107.5418	0.1247	-13.4133
27 BP-02-02	105	-292.6828	0.1327	-38.8349	-139.8079	0.1248	-17.4437
27 BP-02-03	93	-261.9736	0.1326	-34.7506	-121.0896	0.1247	-15.1054
27 BP-02-04	84	-237.934	0.1326	-31.5559	-108.0586	0.1248	-13.4808
27 BP-02-05	63	-181.3107	0.1326	-24.0361	-78.1837	0.1247	-9.7514
27 BP-03-01	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-03-02	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-03-03	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-03-04	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-03-05	63	-181.171	0.1326	-24.0177	-78.3234	0.1247	-9.7697
27 BP-04-01	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-04-02	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-04-03	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-04-04	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-04-05	63	-181.171	0.1326	-24.0177	-78.3234	0.1247	-9.7697
27 BP-05-01	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-05-02	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-05-03	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-05-04	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-05-05	63	-181.171	0.1326	-24.0177	-78.3234	0.1247	-9.7697
27 BP-06-01	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-06-02	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-06-03	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-06-04	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-06-05	63	-181.171	0.1326	-24.0177	-78.3234	0.1247	-9.7697
27 BP-07-01	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-07-02	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-07-03	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-07-04	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-07-05	63	-181.171	0.1326	-24.0177	-78.3234	0.1247	-9.7697
27 BP-08-01	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-08-02	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-08-03	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-08-04	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795

27 BP-08-05	63	-181.171	0.1326	-24.0177	-78.3234	0.1247	-9.7697
27 BP-09-01	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-09-02	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-09-03	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-09-04	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-09-05	63	-181.171	0.1326	-24.0177	-78.3234	0.1247	-9.7697
27 BP-10-01	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-10-02	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-10-03	105	-292.569	0.1327	-38.8199	-139.9216	0.1248	-17.4586
27 BP-10-04	84	-237.9444	0.1326	-31.5573	-108.0482	0.1248	-13.4795
27 BP-10-05	63	-181.171	0.1326	-24.0177	-78.3234	0.1247	-9.7697
27 BP-11-01	67	-192.1028	0.1326	-25.4689	-83.8674	0.1247	-10.4617
27 BP-11-02	105	-292.5294	0.1327	-38.8147	-139.9613	0.1248	-17.4638
27 BP-11-03	86	-243.2699	0.1326	-32.2649	-110.9606	0.1248	-13.8429
27 BP-11-04	60	-172.9871	0.1326	-22.9313	-74.1504	0.1247	-9.2485
				-1618.059			-701.1343

12.91 Block Q

		USED (12a)			EXPORTED (12a)		
	Area	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)	PV (kWh/year)	Emission Factor (kgCO2/kWh)	Emissions (kgCO2e/year)
27 BQ-01-03	51	-255.197	0.1331	-33.9541	-164.9368	0.1251	-20.6282
27 BQ-01-04	51	-255.0294	0.1331	-33.9319	-165.1044	0.1251	-20.6503
27 BQ-01-05	71.65	-351.8606	0.1331	-46.8431	-238.3862	0.1251	-29.8154
27 BQ-02-03	81.87	-397.4148	0.1332	-52.924	-277.0236	0.1251	-34.6554
27 BQ-02-04	70.2	-344.6872	0.1331	-45.8868	-233.6146	0.1251	-29.2217
27 BQ-02-05	71.65	-351.8606	0.1331	-46.8431	-238.3862	0.1251	-29.8154
27 BQ-03-03	81.67	-396.5228	0.1332	-52.8049	-276.268	0.1251	-34.5609
27 BQ-03-04	70.32	-345.2973	0.1331	-45.9681	-233.993	0.1251	-29.2687
27 BQ-03-05	70.8	-347.8386	0.1331	-46.3067	-235.406	0.1251	-29.4433
27 BQ-04-03	81.67	-396.5228	0.1332	-52.8049	-276.268	0.1251	-34.5609
27 BQ-04-04	70.32	-345.2973	0.1331	-45.9681	-233.993	0.1251	-29.2687
27 BQ-04-05	70.8	-347.8386	0.1331	-46.3067	-235.406	0.1251	-29.4433
27 BQ-05-03	81.67	-396.5228	0.1332	-52.8049	-276.268	0.1251	-34.5609
27 BQ-05-04	70.32	-345.2973	0.1331	-45.9681	-233.993	0.1251	-29.2687
27 BQ-05-05	70.8	-347.8386	0.1331	-46.3067	-235.406	0.1251	-29.4433
27 BQ-02-01	83	-402.5506	0.1332	-53.6097	-281.1965	0.1251	-35.1771
27 BQ-02-02	59	-292.6584	0.1331	-38.9482	-193.3787	0.1251	-24.1876
27 BQ-02-06	84.98	-411.2193	0.1332	-54.7675	-288.8389	0.1251	-36.1346
27 BQ-03-01	83.42	-404.3599	0.1332	-53.8514	-282.8472	0.1251	-35.3841
27 BQ-03-02	71.99	-353.5426	0.1331	-47.0673	-239.5051	0.1251	-29.9546

27 BQ-03-06	85.5	-413.5152	0.1332	-55.0742	-290.8267	0.1251	-36.3834
27 BQ-04-01	83.42	-404.3599	0.1332	-53.8514	-282.8472	0.1251	-35.3841
27 BQ-04-02	71.99	-353.5426	0.1331	-47.0673	-239.5051	0.1251	-29.9546
27 BQ-04-06	85.5	-413.5152	0.1332	-55.0742	-290.8267	0.1251	-36.3834
27 BQ-05-01	83.42	-404.3599	0.1332	-53.8514	-282.8472	0.1251	-35.3841
27 BQ-05-02	71.99	-353.5426	0.1331	-47.0673	-239.5051	0.1251	-29.9546
27 BQ-05-06	85.5	-413.5152	0.1332	-55.0742	-290.8267	0.1251	-36.3834
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