ECOSMART BOXER AHU STANDARD CONFIGURATIONS

COMPLETE PACKAGED AIR HANDLING UNITS WITH ALL THE NECESSARY CONTROLS.



AIR HANDLING UNITS (AHU'S) ECOSMART BOXER

TECHNICAL INFORMATION



BENEFITS

VERY QUIET

25mm double skinned panels provide better acoustic and thermal properties over conventional AHU's.

REDUCE INSTALLATION TIME

All components are pre-assembled, wired and tested at the Nuaire manufacturing facility. Units are delivered conveniently in sections for easy site assembly.

SIMPLE PRECISE COMMISSIONING

Minimum and maximum ventilation rates precisely set and limited at AHU requiring no throttling dampers.

ENERGY EFFICIENT

All models have Ecosmart controls built in, which provide the most energy efficient and cost effective solution.

PART LAND ENERGY EFFICIENT

Fan impellers are selected for optimum efficiency and noise characteristics. Motors are IE2 to BS 5000 direct drive and high efficiency belt drive.

IMPROVED LIFE CYCLE/NO SYSTEM OVERLOADS

Ecosmart is pre-programmed to automatically give a soft start function which prevents electrical overloading and minimises mechanical wear.

LONG LASTING

Each section is manufactured from a highly rigid pentapost framework with heavy gauge AluzincY, corrosion resistant steel panels.

CONSTANT PRESSURE CONTROL AVAILABLE

For further information contact Nuaire.

COIL OPTIONS

DX & chilled water coils are available, call Nuaire for further details. Note: Undressed coils are also available.

WARRANTY

Ecosmart Boxer has a 5 year warranty.

ANCILLARIES & COMPONENT OPTIONS:



Weather terminals.



Vertical and horizontal heat exchangers.



Silencers.



Base frames.



Dampers.



DX Coils.



Monometrer.

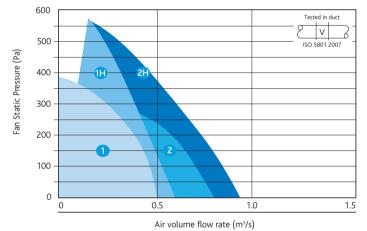


Filter sizes 1 & 2 = G4 panel, sizes 3 - 7 = G4 bag or G4 bag & F7 bag.

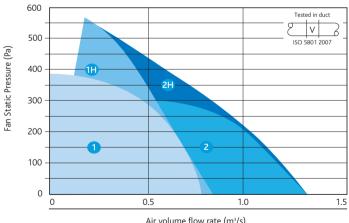
Ecosmart Boxer supply unit filter and heating coil 600 Tested in duct σ V _6 500 ISO 5801 2007 Fan Static Pressure (Pa) 400 **1H** 2H 300 200 100 0 0.5 1.5 0 1.0 Air volume flow rate (m³/s)

PERFORMANCE - ECOSMART BOXER SIZES 1 and 2





Ecosmart Boxer fan unit only



Air volume flow rate (m³/s)

Casing



Ecosmart Boxer sizes 1 and 2.

Code descriptions

ESBH	S	- 2 -	LC
1	2	3	4

1. Ecosmart Boxer range

- 2. S = Supply
 - EX = Extract
- 3. Size 1 2
- 4. L = Low Pressure hot water heater battery LC = Low Pressure hot water heater battery and CHCW chilled water cooling coil

LD = Low Pressure hot water heater battery and DX cooling coil

ED = Electric heater battery and

DX = Direct expansion (refrigerant type coil)

Note: If no Ecosmart control is required example code would be: BHS2NC-LC. If fan control only is required (undressed coils) example code would be: BHS2FC-LC.

AIR HANDLING UNITS (AHU'S) ECOSMART BOXER

TECHNICAL INFORMATION



PERFORMANCE - ECOSMART BOXER SIZES 1 and 2

ELECT	ELECTRICAL & SOUND												
	Motor Rating	Electric Coil Data	Fan Input Power			Ducte Data	d sound p	ower level	s dB re 1pV	V			Breakout dBA@
Curve	(kW)	(kW)	(watts)	RPM	Туре	125	250	500	1K	2K	4K	8K	3m
1	1.28	18	1110	1272	I inlet O outlet	73 77	67 75	57 77	59 78	59 78	54 73	45 67	25
1H	1.13	18	1620	1480	I inlet O outlet	72 77	66 74	62 75	58 76	58 76	52 72	42 64	24
2	1.6	24	1620	960	I inlet O outlet	72 77	66 74	62 75	58 76	58 76	52 72	42 64	24
2H	1.6	24	1600	1065	I inlet O outlet	79 81	74 81	69 76	69 76	65 72	60 69	54 63	33

EXTRACT

Code	Phase	FLC (amps)	SC (amps)
ESBHEX1	1	4.84	4.84
ESBHEX1H	1	7.3	7.3
ESBHEX2	1	6.4	6.4
ESBHEX2H	1	9.4	9.4
	ESBHEX1 ESBHEX1H ESBHEX2	ESBHEX11ESBHEX1H1ESBHEX21	Code Phase (amps) ESBHEX1 1 4.84 ESBHEX1H 1 7.3 ESBHEX2 1 6.4

SUPPLY WITH ELECTRIC HEATER & COOLING COIL							
Curve	Code	Phase	FLC (amps)	SC (amps)			
1	ESBHS1-EC	3	29.5	4.8			
1H	ESBHS1H-EC	3	32.2	7.2			
2H	ESBHS2H-EC	3	42.4	9.0			

SUPPL	Y WITH ELE	CIRIC HEAT	EK	
			Total FLC	
Curve	Code	Phase	(amps)	

UDDIV WITH FLECTDIC HEATER

Curve	Code	Phase	(amps)	(amps)
1	ESBHS1-E	3	29.9	4.9
1H	ESBHS1H-E	3	32.2	7.22
2	ESBHS2-E	3	40.7	7.32
2H	ESBHS2H-E	3	42.8	9.4

SUPPLY WITH ELECTRIC HEATER & DX COOLING COIL

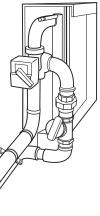
Curve	Code	Phase	FLC (amps)	SC (amps)
1	ESBHS1-ED	3	29.5	4.84
1H	ESBHS1H-ED	3	32.2	7.22
2	ESBHS2-ED	3	40.7	7.32
2H	ESBHS2H-ED	3	42.8	9.4

Flow valve setting

Total SC

DX COIL DATA

Unit Size		Rating	•	PD through Coil KPa	Conn size
1	0.4	8	5	10	2x12&16od
2	0.7	13.5	5	16	2x12&22od



			$\langle \langle \rangle$			
Unit Size	Frost Coils In	Out	Cooling Coils In	Out	Heating Coils In	Out
1	0.75BSP	0.75BSP	1 BSP	1 BSP	1.25BSP	1.25BSP
2	0.75BSP	0.75BSP	1.25BSP	1.25BSP	1.25BSP	1.25BSP

For wiring diagrams refer to pages 110.

SUPPLY WITH LPHW HEATER

Curve	Code	Phase	FLC (amps)	SC (amps)
1	ESBHS1-L	1	4.84	4.84
1H	ESBHS1H-L	1	7.2	7.2
2	ESBHS2-L	1	6.4	6.4
2H	ESBHS2H-L	1	9.0	9.0

SUPPLY WITH LPHW HEATER & DX COOLING COIL

			FLC	SC
Curve	Code	Phase	(amps)	(amps)
1	ESBHS1-LD	1	0.0	0.0
1H	ESBHS1H-LD	1	5.2	5.2
2	ESBHS2-LD	1	0.0	0.0
2H	ESBHS2H-LD	1	9.4	9.4

SUPPLY WITH LPHW HEATER & COOLING COIL

Curve	Code	Phase	FLC (amps)	SC (amps)
1	ESBHS1-LC	3	4.84	4.84
1H	ESBHS1H-LC	3	5.2	5.2
2	ESBHS2-LC	3	6.4	6.4
2H	ESBHS2H-LC	3	9.0	9.0

AIR HANDLING UNITS (AHU'S) **ECOSMART BOXER**

TECHNICAL INFORMATION

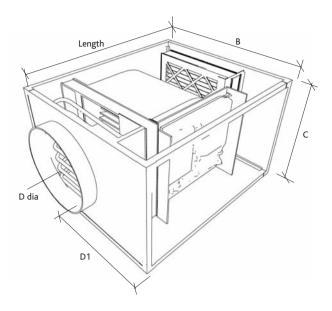
DIMENSIONS AND CONFIGURATIONS

Ecosmart BOXER sizes 1 and 2

DIMENSIONS (mm) & WEIGHTS (KG)												
	ESBHE	X*	ESBHS*	L/E		ESBHS* LC/LD, ED/EC Heating & Cooling						
Size	L	W	L	W	L	W	В	с	D dia	D1		
1	700	84	1000	132	1600	170	954	530	400	342		
2	1000	117	1130	185	1730	264	954	670	500	342		

NB: Units are handed left hand side as standard. (L=Length, W=Weight). Right hand side is available on request.

For component 'Z' factors please refer to page 109.





Model shown: size 1 and 2 (right hand extract).



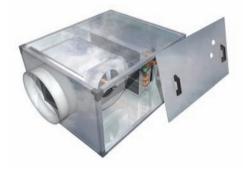
Model shown: size 1 and 2 (right hand LPHW supply).



Model shown: size 1 and 2 (right hand electric supply).



Model shown: size 1 and 2 (left hand extract).

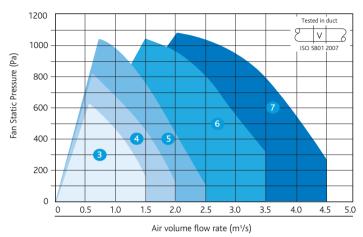


Model shown: size 1 and 2 (left hand LPHW supply).



Model shown: size 1 and 2 (left hand electric supply).

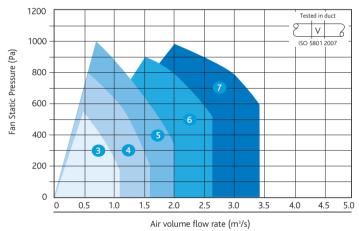




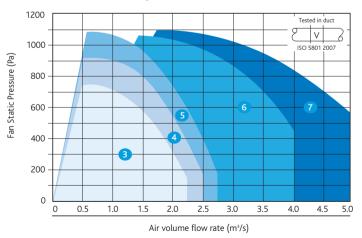
PERFORMANCE - ECOSMART BOXER SIZES 3 - 7

Ecosmart Boxer supply unit filter and heating coil

Ecosmart Boxer Supply unit filter and heating and cooling coil



Ecosmart Boxer fan unit only



N.B. Unit air volume flowrates are calculated by component velocity.

Casing



Ecosmart Boxer sizes 3 - 7

Code descriptions

ESBH	S	- 3 -	LC
1	2	3	4

- 1. Ecosmart Boxer range
- 2. S = Supply
- EX = Extract
- 3. Size 3 7
- L = Low Pressure hot water heater battery

LC = Low Pressure hot water heater battery and CHCW chilled water cooling coil

LD = Low Pressure hot water heater battery and DX cooling coil

ED = Electric heater battery and

DX = Direct expansion (refrigerant type coil)

Note: If no Ecosmart control is required example code would be: BHS3NC-LC.

If fan control only is required

(undressed coils) example code would be: BHS3FC-LC.

Please note: Sizes 3 - 7 do not have filters included as standard.

PERFORMANCE - ECOSMART BOXER SIZES 3 - 7

ELECTRICAL & SOUND															
Curve	Motor Rating (kW)	Electric Coil Data (kW)	Fan Input Power (watts)	RPM	Pole	Phase	Туре	Ducted Data 125	l sound po 250	ower leve 500	ls dB re 1 1K	рW 2К	4K	8K	Breakout dBA@ 3m
3	2.2	27	1.584	1920	4	3	I inlet O outlet	84 87	81 82	82 81	76 75	73 71	67 66	62 62	40
4	3	36	2.407	2160	2	3	I inlet O outlet	87 90	84 85	85 84	79 78	76 74	70 69	65 65	43
5	4	54	3.132	2340	2	3	I inlet O outlet	89 92	86 87	87 86	81 80	78 76	72 71	67 67	45
6	4	54	4.035	1780	4	3	I inlet O outlet	84 84	86 84	83 84	80 85	77 80	72 74	65 66	43
7	5.5	54	5.177	1630	4	3	I inlet O outlet	86 87	91 90	85 87	81 86	79 82	74 75	69 70	45

CODING

Curve	Extract Code	Supply with LPHW Heater Code	Supply with LPHW Heater & Cooling Coil Code	Supply with LPHW Heater & DX Cooling Coil Code	FLC (amps)	SC (amps)
3	ESBHEX3	ESBHS3-L	ESBHS3-LC	ESBHS3-LD	5	5
4	ESBHEX4	ESBHS4-L	ESBHS4-LC	ESBHS4-LD	7	7
5	ESBHEX5	ESBHS5-L	ESBHS5-LC	ESBHS5-LD	8	8
6	ESBHEX6	ESBHS6-L	ESBHS6-LC	ESBHS6-LD	8.5	8.5
7	ESBHEX7	ESBHS7-L	ESBHS7-LC	ESBHS7-LD	11	11

CODING

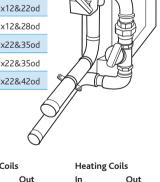
Curve	Supply with Electric Heater & DX Cooling Coil Code	Supply with Electric Heater Code	Supply with Electric Heater & Cooling Coil Code	FLC (amps)	SC (amps)
3	ESBHS3-ED	ESBHS3-E	ESBHS3-EC	5	27
4	ESBHS4-ED	ESBHS4-E	ESBHS4-EC	57	7
5	ESBHS5-ED	ESBHS5-E	ESBHS5-EC	83	8
6	ESBHS6-ED	ESBHS6-E	ESBHS6-EC	83.5	8.5
7	ESBHS7-ED	ESBHS7-E	ESBHS7-EC	86	11

DX COIL DATA

Unit Size	Max Air Flow m³/s	Rating	•	PD through Coil KPa	Conn size
3	1.0	19	5	18	2x12&22od
4	1.4	27	5	15	2x12&28od
5	1.9	37	5	13	2x22&35od
6	2.5	48	5	11	2x22&35od
7	3.5	68	5	11	2x22&42od



Flow valve setting.



Z FACTORS FOR ANCILLARIES

Casing Module	1	2	3	4	5	6	7
Silencer	102	41	20	11	8	3.1	2
Damper	61	25	12	6.8	4.8	1.9	1.2
Frost coil LPHW	122	50	23	14	9.6	3.8	2.4
Frost coil electric	122	50	23	14	9.6	3.8	2.4
Weather cowl	61	25	12	6.8	4.8	1.9	1.2
Plate heat exchanger	612	148	117	68	48	1.9	12
H or V							

Unit	Frost Coils	5	Cooling Co	oils	Heating C	Heating Coils		
Size	In	Out	In	Out	In	Out		
3	1 BSP	1 BSP	1.25BSP	1.25BSP	1.25BSP	1.25BSP		
4	1 BSP	1 BSP	1.25BSP	1.25BSP	1.5BSP	1.5BSP		
5	1.25BSP	1.25BSP	1.5BSP	1.5BSP	2 BSP	2 BSP		
6	1.25BSP	1.25BSP	2 BSP	2 BSP	2 BSP	2 BSP		
7	1.5BSP	1.5BSP	2 BSP	2 BSP	2 BSP	2 BSP		

For wiring diagrams refer to pages 110.

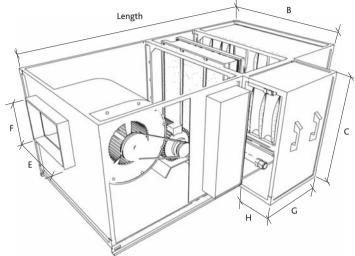
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DIMENSIONS AND CONFIGURATIONS

Ecosmart BOXER size 3 - 7

DIMENSIONS (mm) & WEIGHTS (KG)												
	ESBHI	EX*	ESBH	S*L/E		ESBHS* Heating & Cooling						
Size	L	w	L	w	L	W	В	с	E	F	G	н
3	1200	199	2400	402	3000	529	800	800	373	403	600	350
4	1200	243	2400	442	3000	590	1000	800	373	535	600	450
5	1200	255	2400	490	3000	600	1000	1000	373	535	600	450
6	1500	390	2700	702	3300	858	1300	1000	557	479	600	500
7	1500	507	2700	913	3300	1115	1300	1300	638	638	600	500

NB: Units are handed left hand side as standard. (L=Length, W=Weight). Right hand side is available on request.





Model shown: size 7 (right hand with cooling coil).



Model shown: size 7 (left hand with cooling coil).



Model shown: size 7 (right hand with DX cooling coil).



Model shown: size 7 (right hand supply with electric heater).



Model shown: size 7 (left hand with DX cooling coil).



Model shown: size 7 (left hand supply with electric heater).

ECOSMART BOXER SIZES 3 - 7



Model shown: size 7 (right hand supply with electric heater and cooling coil).



Model shown: size 7 (right hand supply with electric heater and DX coil).



Model shown: size 7 (left hand supply with electric heater and cooling coil).



Model shown: size 7 (left hand supply with electric heater and DX coil).



Model shown: size 7 (left hand supply with LPHW heater).







Model shown: size 7 (right hand supply with LPHW heater and cooling coil).

Model shown: size 7 (left hand supply with LPHW heater and cooling coil).).



ECOSMART BOXER SIZES 3 - 7



Model shown: size 7 (right hand supply with LPHW heater and DX cooling coil).



Model shown: size 7 (left hand supply with LPHW heater and DX cooling coil).





Model shown: size 7 (left hand with extract).

Model shown: size 7 (right hand with extract).

Please note: Sizes 3 - 7 do not have filters included as standard.

ECOSMART BOXER COILS FOR LPHW

TECHNICAL INFORMATION

AII VOLU	Ime Flow rat	DXER Size 1 an te (m ³ /s)		0.6	2 6	NOW		0.4				0.2			Connection size
Water on/off		Heat Output	Air Off C	Water flow rate	Water dp	Heat Output	Air Off C		Water dp	Heat Output	Air Off C	Water flow rate	Water dp		nectic
C	С	(kŴ)	с	(l/s)	(kPa)	(kŴ)	С	(l/s)	(kPa)	(kŴ)	С	(l/s)	(kPa)		Conr
00/74	-3 3	25 11.5	31 35	0.556 0.514	11.5 10	19 17.6	36 39	0.424 0.392	7.1 6.3	10.8 10	41 44	0.242 0.224	2.74 2.40		22
82/71	9	21 19.2	38 41	0.472	8.6 7.3	16	42	0.36	5.4	9.2	47 50	0.206	2.08		mm
	15 -3	21.4	26	0.428	3.2	14.8 16	45 30	0.32	4.6 1.98	8.4 9.4	35	0.188	1.78 0.76		
~~ / ~~	3	19.4	30	0.238	2.72	15	33	0.182	1.69	8.6	38	0.104	0.65		15
80/60	9 15	17.6 15.6	33 36	0.214 0.19	2.27 1.85	13.4 12	36 39	0.164 0.146	1.41 1.16	7.8 7	41 43	0.094 0.084	0.55 0.45		mm
	-3	13:0	16	0.17	1.53	10.6	19	0.140	0.95	6	21	0.072	0.35		
	3	12	20	0.146	1.18	9.2	22	0.112	0.74	5	24	0.062	0.27		15
60/40	9 15	10 8	23 26	0.122 0.096	0.87 0.58	7.6 6	24 27	0.092 0.072	0.53 0.35	4 3.6	26 28	0.05 0.046	0.19 0.16		mm
FCOS	MART BO	XER Size 3			2 6	ROW									ze
Air Volu	ime Flow rat	te (m ³ /s)		1.7				1.3				1			Connection size
Water on/off	Air On	Heat Output	Air Off C	Water flow rate	Water dp	Heat Output		Water flow rate	Water dp	Heat Output	Air Off C	Water flow rate	Water dp		ectio
с	с	(kŴ)	С	(l/s)	(kPa)	(kŴ)	с	(l/s)	(kPa)	(kŴ)	с	(l/s)	(kPa)		Conr
82/71	-3 3	60 55	26 29	1.32 1.22	11 9.6	54 50	31 35	1.2 1.1	9.4 8.3	46 43	35 38	1 0.96	7.4 6.6		1.25
	9	50	33	1.1	8.2	46	38	1	7.2	40	41	0.88	5.8		
	15 -3	45 50	37 21	0.97	7 3.4	41 45	41 26	0.92	6.2 2.9	36 39	44 29	0.8	5 2.33		
80/60	3	45	25	0.55	2.83	41	29	0.5	2.42	36	32	0.44	2.07		
	9 15	40 35	28 32	0.49 0.43	2.37 1.93	37 33	32 36	0.45 0.4	2.06 1.71	32 28	35 38	0.39 0.35	1.72 1.45		1"
	-3	33	12	0.43	1.55	29	15	0.35	1.39	25	17	0.33	1.14		
60/40	3	27	16	0.33	1.28	25	19	0.3	1.10	21	20	0.26	0.92		1"
	9 15	22 17	20 23	0.27 0.2	0.94 0.59	20 15	22 24	0.24 0.19	0.78 0.54	17 14	23 26	0.21 0.16	0.66 0.43		
FCOS	MART BO	XER Size 5			2 6	ROW									e
Air Volu	ime Flow rat	te (m ³ /s)		2.1				1.8				1.4			Connection size
Water on/off	Air On	Heat Output	Air Off C	Water flow rate	Water dp	Heat Output	Air Off C	Water flow rate	Water dp	Heat Output	Air Off C	Water flow rate	Water dp		ectio
С	с	(kŴ)	с	(l/s)	(kPa)	(kŴ)	С	(l/s)	(kPa)	(kŴ)	С	(l/s)	(kPa)		ũ
82/71	-3 3	94 87	34 37	2.1 1.9	12.9 11.3	86 79	36 39	1.9 1.77	11 9.7	72 67	39 42	1.6 1.48	8.2 7.3		2"
02/71	9	80	40	1.78	9.8	73	42	1.63	8.5	61	45	1.36	6.4		2
	15 -3	73 81	43 29	1.62 0.99	8.4 3.9	67 74	45 31	1.48 0.91	7.3 3.4	56 62	48 34	1.24 0.76	5.5 2.59		
80/60	3	74	32	0.99	3.9	68									
00,00	9	67					34	0.83	3.05	57	37	0.69	2.23		
	15		35 38	0.82	3.00	61	37	0.75	2.60	51	39	0.63	1.93		1.25
	15 -3	60 54	38	0.73	3.00 2.51	61 55	37 40	0.75 0.67	2.60 2.19	51 46	39 42	0.63 0.56	1.93 1.61		1.25
60/40	-3 3	60 54 47	38 18 21	0.73 0.66 0.57	3.00 2.51 2.15 1.71	61 55 49 43	37 40 19 22	0.75 0.67 0.6 0.52	2.60 2.19 1.84 1.48	51 46 41 36	39 42 21 24	0.63 0.56 0.5 0.43	1.93 1.61 1.35 1.07		1.25
60/40	-3	60 54	38 18	0.73 0.66	3.00 2.51 2.15	61 55 49	37 40 19	0.75 0.67 0.6	2.60 2.19 1.84	51 46 41	39 42 21	0.63 0.56 0.5	1.93 1.61 1.35		1.25 1.25
	-3 3 9 15	60 54 47 39 32	38 18 21 24	0.73 0.66 0.57 0.48	3.00 2.51 2.15 1.71 1.31 0.91	61 55 49 43 36 29	37 40 19 22 25	0.75 0.67 0.6 0.52 0.43	2.60 2.19 1.84 1.48 1.10	51 46 41 36 30	39 42 21 24 26	0.63 0.56 0.5 0.43 0.36	1.93 1.61 1.35 1.07 0.81		1.25
ECOS Air Volu	-3 3 9 15	60 54 47 39 32 XER Size 6 te (m ³ /s)	38 18 21 24 27	0.73 0.66 0.57 0.48 0.38 3.9	3.00 2.51 2.15 1.71 1.31 0.91 2 F	61 55 49 43 36 29 80W	37 40 19 22 25 28	0.75 0.67 0.6 0.52 0.43 0.35	2.60 2.19 1.84 1.48 1.10 0.80	51 46 41 36 30 24	39 42 21 24 26 29	0.63 0.56 0.5 0.43 0.36 0.29 2	1.93 1.61 1.35 1.07 0.81 0.58		1.25
<mark>ECOS</mark> Air Volu Water	-3 3 9 15 MART BO Ime Flow rat	60 54 47 39 32 EXER Size 6 te (m ³ /s) Heat	38 18 21 24 27 Air Off	0.73 0.66 0.57 0.48 0.38 3.9 Water flow	3.00 2.51 2.15 1.71 1.31 0.91	61 55 49 43 36 29 80W Heat	37 40 19 22 25 28 Air Off	0.75 0.67 0.6 0.52 0.43 0.35 3 Water flow	2.60 2.19 1.84 1.48 1.10	51 46 41 36 30 24 Heat	39 42 21 24 26 29 Air Off	0.63 0.56 0.5 0.43 0.36 0.29 2 Water flow	1.93 1.61 1.35 1.07 0.81		1.25
ECOS Air Volu	-3 3 9 15 MART BO Ime Flow rat	60 54 47 39 32 XER Size 6 te (m ³ /s)	38 18 21 24 27 Air Off C C	0.73 0.66 0.57 0.48 0.38 3.9	3.00 2.51 2.15 1.71 1.31 0.91 2 F	61 55 49 43 36 29 80W	37 40 19 22 25 28 Air Off	0.75 0.67 0.6 0.52 0.43 0.35	2.60 2.19 1.84 1.48 1.10 0.80	51 46 41 36 30 24	39 42 21 24 26 29 Air Off C C	0.63 0.56 0.5 0.43 0.36 0.29 2	1.93 1.61 1.35 1.07 0.81 0.58		1.25
ECOS Air Volu Water on/off C	-3 3 9 15 MART BC Ime Flow rat Air On	60 54 47 39 32 EXER Size 6 te (m ³ /s) Heat Output	38 18 21 24 27 Air Off C	0.73 0.66 0.57 0.48 0.38 3.9 Water flow rate	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp	61 55 49 43 36 29 COW Heat Output	37 40 19 22 25 28 Air Off C	0.75 0.67 0.6 0.52 0.43 0.35 3 Water flow rate	2.60 2.19 1.84 1.48 1.10 0.80 Water dp	51 46 41 36 30 24 Heat Output	39 42 21 24 26 29 Air Off C	0.63 0.56 0.5 0.43 0.36 0.29 2 Water flow rate	1.93 1.61 1.35 1.07 0.81 0.58 Water dp		Connection size
ECOS Air Volu Water on/off	-3 3 9 15 MART BO Ime Flow rat Air On C -3 3 9	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132	38 18 21 24 27 Air Off C C 30 34 37	0.73 0.66 0.57 0.48 0.38 Water flow rate (U/s) 3.5 3.2 2.9	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1	61 55 49 43 36 29 ROW Heat Output (kW) 139 128 117	37 40 19 22 25 28 Air Off C C 35 38 41	0.75 0.67 0.52 0.43 0.35 Water flow rate (l/s) 3.1 2.85 2.61	2.60 2.19 1.84 1.48 1.10 0.80 Water dp (kPa) 9.9 8.8 7.7	51 46 30 24 Heat Output (kW) 106 98 90	39 42 21 24 26 29 Air Off C C 40 43 46	0.63 0.56 0.43 0.36 0.29 2 Water flow rate (I/s) 2.35 2.17 1.99	1.93 1.61 1.35 1.07 0.81 0.58 Water dp (kPa) 6.6 5.9 5.3		1.25
ECOS Air Volu Water on/off C	-3 3 9 15 MART BO Ime Flow rat Air On C -3 3 9 15	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119	38 18 21 24 27 Air Off C C C 30 34 37 40	0.73 0.66 0.57 0.48 0.38 Water flow rate (U(s) 3.5 3.2 2.9 2.6	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9	61 55 49 43 36 29 COW Heat 0utput (kW) 139 128 117 106	37 40 19 22 25 28 Air Off C C 35 38 41 44	0.75 0.67 0.52 0.43 0.35 Water flow rate (l/s) 3.1 2.85 2.61 2.36	2.60 2.19 1.84 1.48 1.10 0.80 Water dp (kPa) 9.9 8.8 7.7 6.7	51 46 30 24 Heat Output (kW) 106 98 90 81	39 42 21 24 26 29 Air Off C C 40 43 46 48	0.63 0.56 0.43 0.36 0.29 2 Water flow rate (I/s) 2.35 2.17 1.99 1.8	1.93 1.61 1.35 1.07 0.81 0.58 Water dp (kPa) 6.6 5.9 5.3 4.6		Connection size
ECOS Air Volu Water on/off C 82/71	-3 3 9 15 MART BO ume Flow rat Air On C -3 3 9 15 -3 3 3	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118	38 18 21 24 27 Air Off C C 30 34 37 40 25 28	0.73 0.66 0.57 0.48 0.38 Water flow rate (<i>U</i> /s) 3.5 3.2 2.9 2.6 1.6 1.44	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4	61 55 49 43 36 29 ROW Heat Output (kW) 139 128 117 106 116 105	37 40 19 22 25 28 Air Off C C C 35 38 41 44 29 32	0.75 0.67 0.52 0.43 0.35 Water flow rate (Us) 3.1 2.85 2.61 2.36 1.42 1.28	2.60 2.19 1.84 1.48 1.10 0.80 Water dp (kPa) 9.9 8.8 7.7 6.7 3.3 3.2.87	51 46 30 24 Heat Output (kW) 106 98 90 81 89 81	39 42 21 24 26 29 29 Air Off C C C 40 43 46 48 33 36	0.63 0.56 0.43 0.36 0.29 2 Water flow rate (<i>U</i> s) 2.35 2.17 1.99 1.8 1.1 0.99	1.93 1.61 1.35 1.07 0.81 0.58 Water dp (kPa) 6.6 6.5.9 5.3 4.6 2.28 1.97		Connection size
ECOS Air Volu Water on/off C	-3 3 9 15 MART BO ime Flow rat Air On C -3 3 9 15 -3 3 9	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106	38 18 21 24 27 Air Off C C 30 34 37 40 25 28 31	0.73 0.66 0.57 0.48 0.38 Water flow rate (U/s) 3.5 3.2 2.9 2.6 1.6 1.44 1.29	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92	61 55 49 43 36 29 COW Heat Output (kW) 139 128 117 106 116 105 94	37 40 19 22 25 28 Air Off C C C 35 38 41 44 29 23 5	0.75 0.67 0.52 0.43 0.35 Water flow rate (I/s) 3.1 2.85 2.61 2.36 1.42 1.28 1.15	2.60 2.19 1.84 1.48 1.10 0.80 Water dp (kPa) 9.9 8.7.7 6.7 3.3 2.87 2.47	51 46 30 24 Heat Output (kW) 106 98 90 81 89 81 72	39 42 21 24 26 29 Air Off C C C 40 43 46 48 33 36 38	0.63 0.56 0.43 0.36 0.29 2 Water flow rate (I/s) 2.35 2.17 1.99 1.8 1.1 0.99 0.88	1.93 1.61 1.35 1.07 0.81 0.58 Water dp (kPa) 6.6 5.9 5.3 4.6 2.28 1.97 1.67		Connection size
ECOS Air Volu Water on/off C 82/71	-3 3 9 15 MART BO ume Flow rat Air On C -3 3 9 15 -3 3 3	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118	38 18 21 24 27 Air Off C C 30 34 37 40 25 28	0.73 0.66 0.57 0.48 0.38 Water flow rate (<i>U</i> /s) 3.5 3.2 2.9 2.6 1.6 1.44	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4	61 55 49 43 36 29 ROW Heat Output (kW) 139 128 117 106 116 105	37 40 19 22 25 28 Air Off C C C 35 38 41 44 29 32	0.75 0.67 0.52 0.43 0.35 Water flow rate (Us) 3.1 2.85 2.61 2.36 1.42 1.28	2.60 2.19 1.84 1.48 1.10 0.80 Water dp (kPa) 9.9 8.8 7.7 6.7 3.3 3.2.87	51 46 30 24 Heat Output (kW) 106 98 90 81 89 81	39 42 21 24 26 29 29 Air Off C C C 40 43 46 48 33 36	0.63 0.56 0.43 0.36 0.29 2 Water flow rate (<i>U</i> s) 2.35 2.17 1.99 1.8 1.1 0.99	1.93 1.61 1.35 1.07 0.81 0.58 Water dp (kPa) 6.6 6.5.9 5.3 4.6 2.28 1.97		1.25 Connection size
ECOS Air Volu Water on/off C 82/71 80/60	-3 3 9 15 MART BO ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 3	60 54 47 39 32 0XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106 93 83 70	38 18 21 24 27 Air Off C C 30 34 37 40 25 28 31 35 14 18	0.73 0.66 0.57 0.48 0.38 Water flow rate (<i>U</i> /s) 3.5 3.2 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92 2.42 2.04 1.63	61 55 49 43 29 80 80 80 80 80 80 80 80 80 80 80 80 80	37 40 19 22 5 28 Air Off C C 35 38 41 44 29 32 35 38 41 44 17 20	0.75 0.67 0.52 0.43 0.35 Water flow rate (Us) 3.1 2.85 2.61 2.36 1.428 1.15 1 1 9.089 0.75	2.60 2.19 1.84 1.48 1.10 0.80 Water dp (kPa) 9.9 8.8 7.7 6.7 3.3 2.87 2.47 2.03 1.73 1.36	51 46 30 24 Heat Output (kW) 106 98 90 81 89 81 72 64 56 47	39 42 21 26 29 Air Off C C C 40 43 46 48 33 36 38 33 638 41 20 22	0.63 0.56 0.43 0.36 0.29 2 Water flow rate (<i>U</i> s) 2.35 2.17 1.99 1.8 1.1 0.99 0.88 0.78 0.67 0.57	1.93 1.61 1.35 1.07 0.81 0.58 Water dp (kPa) 6.6 5.9 5.3 4.6 2.28 1.97 1.67 1.41 1.14 0.91		1.25 Connection size
ECOS Air Volu Water on/off C 82/71	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 5 5 5	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106 93 83	38 18 21 24 27 7 Air Off C C 30 34 37 40 25 28 31 35 14	0.73 0.66 0.57 0.48 0.38 Water flow rate (<i>Us</i>) 3.5 3.2 2.6 1.6 1.44 1.29 1.13 1	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92 2.42 2.04	61 55 49 43 36 29 8 CW Heat (kW) 139 128 117 106 116 105 94 83 73	37 40 19 22 5 28 Air Off C C 35 38 41 44 29 32 35 38 23 38	0.75 0.67 0.52 0.43 0.35 Water flow rate (l/s) 3.1 2.85 2.61 2.36 1.42 1.28 1.15 1 1	2.60 2.19 1.84 1.48 1.10 0.80 (kPa) 9.9 8.8 7.7 6.7 3.3 2.87 2.47 2.03 1.73	51 46 30 24 Heat Output (kW) 106 98 90 81 89 81 72 64 56	39 42 21 24 26 29 29 Air Off C C 40 43 46 48 33 36 8 38 41 20	0.63 0.56 0.43 0.29 2 Water flow rate (l/s) 2.35 2.17 1.99 1.8 1.1 0.99 0.88 0.78 0.67	1.93 1.61 1.35 1.07 0.81 0.58 Water dp (kPa) (kPa) (kPa) 6.5.9 5.3 4.6 2.28 1.97 1.67 1.41		1.25 Connection size
ECOS Air Volu Water on/off C 82/71 80/60 60/40	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15	60 54 47 39 32 EXER Size 6 te (m ³ /s) Heat 0utput (kW) 157 144 132 119 131 144 132 119 33 83 70 56 42	38 18 21 24 27 Air Off C C 30 34 37 40 25 28 31 35 14 18 21	0.73 0.66 0.57 0.48 0.38 Water flow rate (U/s) 3.5 3.2 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85 0.68	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 1.0 4 9.1 7.9 3.4 2.92 2.42 2.42 2.42 2.63 1.19 0.80	61 55 49 43 29 20 20 20 20 20 20 20 20 20 20 20 20 20	37 40 19 22 25 28 Air Off C C C 35 38 41 44 29 32 35 38 41 23 538 41 44	0.75 0.67 0.52 0.43 0.35 Water flow rate (<i>U</i> (<i>s</i>) 3.1 2.85 2.61 2.36 1.42 1.28 1.15 1 1 0.89 0.75 0.61	2.60 2.19 1.84 1.48 1.10 0.80 Water dp (kPa) 9.9 8.8 7.7 6.7 3.3 2.87 2.47 2.03 1.73 1.36 1.02	51 46 30 24 Heat Output (kW) 106 98 89 81 89 81 72 64 56 47 37	39 42 21 24 26 29 Air Off C C C 40 43 46 48 33 46 48 33 36 38 41 20 22 24	0.63 0.56 0.43 0.36 0.29 Vater flow rate (<i>Us</i>) 2.35 2.17 1.99 1.8 1.1 0.99 0.88 0.78 0.67 0.45	1.93 1.61 1.35 1.07 0.81 0.58 Water dp (kPa) 6.6 5.9 5.3 4.6 2.28 1.97 1.67 1.41 1.14 0.65		1.25 Oursection 2"
ECOS Air Volu Water on/off C 82/71 80/60 60/40 ECOS Air Volu	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106 93 83 70 56 42 XER Size 7 te (m ³ /s)	38 18 21 24 27 Air Off C C 30 34 37 40 25 28 31 35 14 18 21 24 27 25 28 31 35 14 18 21 24 27 27 28 28 27 28 28 29 28 28 28 28 28 28 28 28 28 28	0.73 0.66 0.57 0.48 0.38 3.9 Water flow rate (<i>Us</i>) 3.5 3.2 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85 0.68 0.51	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92 2.42 2.04 1.63 1.19 0.80 2 F	61 55 49 43 36 29 W Heat Output (kW) 128 117 106 116 105 94 83 73 62 50 37	37 40 19 22 25 28 Air Off C C C C 35 38 41 44 29 32 35 38 17 20 23 5 38	0.75 0.67 0.52 0.43 0.35 Water flow rate (I/s) 3.1 2.85 2.61 2.36 1.42 1.28 1.28 1.28 1.28 1.15 1 0.89 0.75 0.61 0.61 0.61	2.60 2.19 1.84 1.48 1.40 0.80 (kPa) 9.9 8.8 7.7 6.7 3.3 2.87 2.47 2.03 1.73 1.36 1.02 0.66	51 46 30 24 Heat Output (kW) 98 90 81 72 64 89 81 72 64 56 47 37 25	39 42 21 24 26 29 40 40 43 46 48 33 36 38 36 38 41 20 22 24 25	0.63 0.56 0.43 0.36 0.29 Water flow rate (<i>I</i> /s) 2.35 2.17 1.99 1.8 1.1 0.99 0.88 0.78 0.67 0.57 0.57 0.45 0.31	1.93 1.61 1.35 1.07 0.81 0.58 (kPa) (kPa) (kPa) 6 5.9 5.3 4.6 2.28 1.97 1.67 1.41 1.14 0.91 0.65 0.39	For further assistance please call Nuaire. Note:	1.25 ² ² ² ² ² 1.5 ¹
ECOS Air Volu Water on/off C 82/71 80/60 60/40 ECOS Air Volu Water	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 3 9 15 5 MART BC ime Flow rat	60 54 47 39 32 EXER Size 6 (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106 93 83 70 56 42 EXER Size 7	38 18 21 24 27 Air Off C C 30 34 37 40 25 28 31 35 14 18 21	0.73 0.66 0.57 0.48 0.38 Water flow rate (<i>U</i> /s) 3.5 3.2 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85 0.68 0.51	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 1.0 4 9.1 7.9 3.4 2.92 2.42 2.42 2.42 2.63 1.19 0.80	61 55 49 43 36 29 W Heat Output (kW) 139 128 117 106 116 105 94 83 73 62 50 37	37 40 19 22 25 28 Air Off C C C 35 38 41 41 44 29 32 35 38 17 20 23 5 38	0.75 0.67 0.52 0.43 0.35 Water flow rate (<i>Us</i>) 3.1 2.85 2.61 2.36 1.42 1.28 1.15 1 1 0.89 0.75 0.61 0.45	2.60 2.19 1.84 1.48 1.10 0.80 Water dp (kPa) 9.9 8.8 7.7 6.7 3.3 2.87 2.47 2.03 1.73 1.36 1.02	51 46 30 24 Heat Output (kW) 106 98 90 81 72 64 56 47 37 25 Heat	39 42 21 24 26 29 40 40 43 46 48 33 36 38 36 38 41 20 22 24 25	0.63 0.56 0.43 0.36 0.29 2 Water flow rate (<i>l</i> (<i>s</i>) 2.35 2.35 2.37 1.99 1.8 1.1 0.99 0.88 0.78 0.67 0.67 0.45 0.31	1.93 1.61 1.35 1.07 0.81 0.58 Water dp (kPa) 6.6 5.9 5.3 4.6 2.28 1.97 1.67 1.41 1.14 0.65	please call Nuaire. Note: dp figures do not include	1.25 ² ² ² ² ² 1.5 ¹
ECOS Air Volu Water on/off C 82/71 80/60 60/40 ECOS Air Volu Water on/off	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106 93 83 70 56 42 XER Size 7 te (m ³ /s) Heat Output (kW)	38 18 21 24 27 Air Off C 30 34 40 25 28 31 35 14 18 21 24 24 27 24 27 26 26 28 27 40 27 25 28 21 27 20 25 28 27 20 20 25 20 25 26 20 25 20 25 26 20 25 20 25 20 25 20 25 25 20 25 25 25 25 25 25 25 25 25 25	0.73 0.66 0.57 0.48 0.38 Water flow rate (Us) 3.5 3.2 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85 0.68 0.51	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92 2.42 2.04 1.63 1.19 0.80 2 F Water dp (kPa)	61 55 49 43 36 29 80W Heat 0utput (kW) 139 128 117 106 116 105 94 83 73 62 50 37 80W Heat 0utput (kW)	37 40 19 22 25 28 Air Off C C 35 38 41 44 29 32 35 38 41 7 20 23 5 38 8 41 44	0.75 0.67 0.52 0.43 0.35 3 Water flow rate (l/s) 3.1 2.36 1.42 1.28 1.28 1.28 1.28 1.28 0.75 0.61 0.61 0.61 0.61 0.61 0.61 0.61 0.62 0.52 0.43 0.35	2.60 2.19 1.84 1.48 1.40 0.80 (kPa) 9.9 8.8 7.7 6.7 3.3 2.87 2.47 2.03 1.73 1.36 1.02 0.06 0.06 0.06	51 46 30 24 Heat Output (kW) 106 98 81 89 81 72 64 56 47 72 55 Heat Output (kW)	39 42 21 24 26 29 40 43 46 48 33 46 48 33 36 38 41 20 22 22 24 25	0.63 0.5 0.43 0.36 0.29 Water flow rate (l/s) 2.35 2.17 1.99 1.8 1.1 0.99 0.88 0.78 0.88 0.78 0.67 0.57 0.45 0.31	1.93 1.61 1.35 1.07 0.81 0.58 (kPa) (kPa) 6.5 9.5 3.3 4.6 2.28 1.97 1.67 1.41 1.14 0.91 0.65 0.39 Water dp (kPa)	please call Nuaire. Note: dp figures do not include 3 port valve.	1.25 ² ² ² ² ² 1.5 ¹
ECOSI Air Volu Water on/off 2 82/71 80/60 60/40 ECOSI Air Volu Water on/off C	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15	60 54 47 39 32 EXER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106 93 83 70 56 42 EXER Size 7 te (m ³ /s) Heat Output Comparison Heat Output Comparison Heat Output Comparison Heat Output Comparison Heat Output Comparison Heat Output Heat Output Comparison Heat Output Heat Output Heat Output Heat Output Heat Output Heat Output Heat Output Heat Output Heat Heat Output Heat H	38 18 21 24 27 Air Off C C 30 34 37 40 25 28 31 35 14 18 21 24 24 27 24 27 24 27 24 27 24 27 24 27 24 27 27 28 28 28 28 29 29 29 20 20 20 20 20 20 20 20 20 20	0.73 0.66 0.57 0.48 0.38 Water flow rate (<i>U</i> /s) 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85 0.68 0.51	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92 2.42 2.42 2.42 2.42 2.63 1.19 0.80 2 F Water dp	61 55 49 43 36 29 COW Heat 0utput (kW) 128 117 106 116 105 94 83 73 62 50 37 73 62 50 37	37 40 19 22 25 28 Air Off C C 35 38 41 44 29 22 35 38 41 22 35 38 41 22 35 38 41 22 5 38 41 22 5 38 41 22 5 28 28 28 28 28 28 28 28 28 28 28 28 28	0.75 0.67 0.52 0.43 0.35 Water flow rate (<i>U</i> s) 3.1 2.85 2.61 2.36 1.42 1.28 1.15 1 1 0.89 0.75 0.61 0.45	2.60 2.19 1.84 1.48 1.10 0.80 Water dp (kPa) 9.9 8.8 7.7 6.7 3.3 2.87 2.47 2.03 1.36 1.02 0.66	51 46 30 24 Heat Output (kW) 106 98 90 81 72 64 56 47 37 25 Heat Output	39 42 21 26 29 Air Off C C C 40 43 46 48 33 36 38 41 20 22 24 25 Air Off C	0.63 0.56 0.43 0.29 2 Water flow rate (<i>U</i> s) 2.35 2.37 1.99 1.8 1.1 0.99 0.88 0.78 0.67 0.57 0.45 0.31	1.93 1.61 1.35 1.07 0.81 0.58 Water dp (kPa) 6.6 5.9 5.3 4.6 2.28 1.97 1.67 1.41 1.14 0.91 0.65 0.39 Water dp	please call Nuaire. Note: dp figures do not include 3 port valve. Approximately double these figures when valves	Connection size Connection size Connection size
ECOSI Air Volu Water on/off 2 82/71 80/60 60/40 ECOSI Air Volu Water on/off C	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106 93 83 70 56 42 XER Size 7 te (m ³ /s) Heat Output (kW) 201 184 168	38 18 21 24 27 Air Off C 30 34 40 25 28 31 35 14 18 21 24 24 27 30 34 40 25 28 31 35 14 18 21 24 27 25 28 31 35 28 21 25 28 27 28 27 28 27 28 29 29 20 20 20 20 20 20 20 20 20 20	0.73 0.66 0.57 0.48 0.38 Water flow rate (Us) 3.5 3.2 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85 0.68 0.51 1 4.8 Water flow rate (Us) 4.5 4.5 4.1 3.7	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92 2.42 2.04 1.63 1.19 0.80 2 F Water dp (kPa) 13 11.2 9.8	61 55 49 43 36 29 8 0 W Heat 0 utput (kW) 139 128 117 106 116 105 94 83 73 62 50 37 8 0 W Heat 0 4 8 4 117 106 105 94 4 3 9 128 117 106 29 128 117 106 29 128 128 128 128 128 128 128 128 128 128	37 40 19 22 25 28 Air Off C C 35 38 41 44 29 32 35 38 41 29 32 35 38 41 20 23 5 38 41 20 23 5 38 41 20 23 35 38 41 20 5 24 20 20 20 20 20 20 20 20 20 20 20 20 20	0.75 0.67 0.52 0.43 0.35 3 Water flow rate (l/s) 3.1 2.36 1.42 1.28 1.28 1.28 1.28 1.28 0.89 0.75 0.41 0.42 0.45 0.45 0.45	2.60 2.19 1.84 1.48 1.40 0.80 (kPa) 9.9 8.8 7.7 6.7 3.3 2.87 2.47 2.03 1.73 1.36 1.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02	51 46 30 24 Heat Output (kW) 98 90 81 72 64 56 47 37 25 Heat Output (kW)	39 42 21 24 26 29 40 43 46 48 33 46 48 33 36 38 41 20 22 22 24 25 40 40 42 45	0.63 0.5 0.43 0.36 0.29 Water flow rate (l/s) 2.35 2.17 1.99 1.8 1.1 0.99 0.88 0.78 0.88 0.78 0.67 0.57 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0.45	1.93 1.61 1.35 1.07 0.81 0.58 (kPa) (kPa) 6.59 5.3 4.6 2.28 1.97 1.67 1.41 1.14 0.91 0.65 0.39 Water dp (kPa) 9.6 8.5,7.5	please call Nuaire. Note: dp figures do not include 3 port valve. Approximately double	Connection size 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1
ECOSI Air Volu Water on/off 82/71 80/60 60/40 ECOSI Air Volu Water on/off C	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 -3 3 9 15 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106 93 83 70 56 42 XER Size 7 te (m ³ /s) Heat Output (kW) 201 184 168 151	38 18 21 24 27 Air Off C 30 34 40 25 28 31 35 14 18 21 24 27 30 34 40 25 28 31 35 14 18 21 24 27 20 25 28 31 35 28 21 20 25 28 31 35 28 21 20 25 28 31 35 28 21 20 25 28 31 35 28 21 20 25 28 31 35 28 21 20 20 20 20 20 20 20 20 20 20	0.73 0.66 0.57 0.48 0.38 Water flow rate (Us) 3.5 3.2 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85 0.68 0.51 1 4.8 Water flow rate (Us) 4.5 4.1 3.7 3.4	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92 2.42 2.04 1.63 1.19 0.80 2 F Water dp (kPa) 13 11.2 9.8 8.4	61 55 49 43 36 29 0 W Heat 0utput (kW) 128 117 106 116 105 94 83 73 62 50 37 80 W Heat 0utput (kW) 128 117 106 105 94 43 128 117 106 105 94 128 117 106 116 105 94 128 117 106 117 106 117 106 117 107 107 107 107 107 107 107 107 107	37 40 19 22 25 28 Air Off C C 35 38 41 44 29 32 35 38 41 20 23 538 41 7 20 23 538 8 41 20 23 538 8 41 20 53 8 41 20 53 53 8 41 20 53 53 8 41 20 53 53 8 41 20 53 53 8 41 20 53 53 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 41 20 53 53 8 8 8 41 20 20 20 53 8 8 8 41 20 20 20 20 20 20 20 20 20 20 20 20 20	0.75 0.67 0.52 0.43 0.35 Water flow rate (<i>I</i> /s) 3.5 2.61 2.85 2.61 2.85 2.61 2.36 1.42 1.28 1.28 1.15 1 0.89 0.75 0.61 0.61 0.61 0.61 0.52 0.61 0.52 0.61 0.5 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.55 0.55 0.55 0.55 0.55 0.55 0.5	2.60 2.19 1.84 1.48 1.40 0.80 (kPa) 9.9 8.8 7.7 7.67 3.3 2.87 2.47 2.03 1.73 1.36 1.02 0.02 0.02 0.02 0.02 1.73 1.36 1.02 0.02 0.02 1.02 0.02 0.02 0.02 0.02	51 46 30 24 Heat Output (kW) 98 90 81 89 81 72 64 56 47 37 25 Heat 0utput (kW) 166 133 139 125	39 42 21 24 26 29 Air Off 48 33 46 48 33 36 38 41 20 22 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 20 20 20 20 20 20 20 20 20 20 20 20 20	0.63 0.5 0.43 0.36 0.29 Water flow rate (l/s) 2.35 2.17 1.99 1.8 1.1 0.99 0.88 0.78 0.88 0.78 0.67 0.57 0.57 0.45 0.31 3.2 Water flow rate (l/s) 2.35 2.17 1.99 1.1 0.99 0.88 0.78 0.78 0.75 0.45 0.75 0.45 0.75 0.45 0.75 0.45 0.75 0.45 0.75 0.45 0.75 0.45 0.75 0.45 0.75 0.45 0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.7	1.93 1.61 1.35 1.07 0.81 0.58 (kPa) (kPa) (kPa) 0.59 5.3 4.6 5.9 5.3 4.6 5.9 5.3 4.6 6 5.9 5.3 4.6 6 5.9 5.3 4.6 1.97 1.67 1.07 0.81 0.58 0.58 0.59 5.3 1.07 0.58 0.58 0.58 0.58 0.58 0.58 0.58 0.58	please call Nuaire. Note: dp figures do not include 3 port valve. Approximately double these figures when valves	Connection size 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1
ECOSI Air Volu Water on/off 82/71 80/60 60/40 ECOSI Air Volu Water on/off C 82/71	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 MART BC imme Flow rat Air On C -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 -3 3 9 15 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	60 54 47 39 32 EXER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 166 93 83 70 56 42 EXER Size 7 te (m ³ /s) Heat Output (kW) 201 184 168 151 161 145	38 18 21 24 27 Air Off C C 30 34 37 40 25 28 31 35 14 18 21 24 25 28 31 35 14 18 21 24 27 25 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 31 35 28 28 31 35 28 28 31 35 28 28 28 28 28 28 28 28 28 28	0.73 0.66 0.57 0.48 0.38 Water flow rate (I/s) 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85 0.68 0.51 1 0.85 0.68 0.51 4.5 4.5 4.5 4.5 4.1 3.7 3.4	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92 2.42 2.04 1.63 1.19 0.80 2 F Water dp (kPa) 1.12 9.8 3.4 2.92 2.42 2.04 1.63 1.19 0.80 2 F Water dp (kPa) 1.13 1.04 1.04 1.04 1.04 1.04 1.04 1.04 1.04	61 55 49 43 36 29 8 0 0 0 128 117 106 115 94 83 73 6 94 83 73 6 50 37 73 6 50 37 8 8 8 8 8 8 8 8 8 9 4 8 3 7 3 6 29 9 4 9 4 9 4 9 4 9 4 9 4 9 4 9 4 9 4	37 40 19 225 28 Air Off C C C 35 38 41 44 44 29 92 35 38 41 20 23 25 38 41 20 23 25 38 41 40 40 23 35 38 41 40 40 23 25 25 28 28 28 28 28 28 28 28 28 28 28 28 28	0.75 0.67 0.52 0.43 0.35 Water flow rate (<i>U</i> s) 3.1 2.85 2.61 2.36 1.42 1.28 1.15 1 0.89 0.75 0.61 0.45 Water flow rate (<i>U</i> s) 4.2 8 1.15 1 0.89 0.75 0.61 0.45 Water flow rate 2.36 1.57 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.61 0.55 0.52 0.61 0.55 0.52 0.61 0.55 0.52 0.61 0.55 0.52 0.52 0.51 0.55 0.55 0.55 0.55 0.55 0.55 0.55	2.60 2.19 1.84 1.48 1.10 0.80 Water dp (kPa) 9.9 8.8 7.7 6.7 6.7 3.3 2.87 2.47 2.03 1.36 1.02 0.66 1.02 0.66 1.02 0.66 1.02 0.66 1.02 0.66 1.02 0.66 1.02 0.66 1.02 0.66 1.02 0.66 1.03 9 7.7 1.03 9 7.7 1.03 9 7.7 1.03 9 7.7 1.03 9 7.7 1.03 9 7.7 1.03 9 7.7 1.03 9 7.7 1.03 9 7.7 1.03 9 7.7 1.03 1.03 9 7.7 1.03 1.03 1.03 1.03 1.03 1.03 1.03 1.03	51 46 30 24 Heat Output (kW) 106 98 90 81 72 64 56 47 37 25 64 56 47 37 25 64 56 47 37 25	39 42 21 26 29 Air Off C C C 40 43 46 48 33 6 38 41 20 22 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 26 29 20 20 20 20 20 20 20 20 20 20 20 20 20	0.63 0.56 0.43 0.29 2 Water flow rate (<i>U</i> s) 2.35 2.17 1.99 1.8 1.1 0.99 0.88 0.78 0.57 0.45 0.31 0.57 0.45 0.31 0.57 0.45 0.31 0.57 0.45 0.31 0.59 0.88 0.78 0.51 0.57 0.45 0.31 0.51 0.51 0.51 0.51 0.51 0.51 0.51 0.5	1.93 1.61 1.35 1.07 0.81 0.58 Water dp (kPa) 6.6 5.9 5.3 4.6 2.28 1.97 1.67 1.41 0.91 0.65 0.39 Water dp (kPa) 0.65 0.39 Water dp (kPa) 6.5 5.3 4.6 1.97 1.67 1.41 0.91 0.65 0.39	please call Nuaire. Note: dp figures do not include 3 port valve. Approximately double these figures when valves	1.25 Oursection 2"
ECOSI Air Volu Water on/off 82/71 80/60 60/40 ECOSI Air Volu Water on/off C	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106 93 83 70 56 42 XER Size 7 te (m ³ /s) Heat Output (kW) 201 184 168 151 161 145 128	38 18 21 24 27 Air Off C 30 34 40 25 28 31 35 14 18 21 24 24 27 30 34 40 25 28 31 35 24 25 28 31 35 24 27 25 28 21 24 25 28 21 24 25 28 21 24 25 28 21 24 25 28 21 24 25 28 21 24 25 28 28 21 24 25 28 28 21 24 26 26 28 28 21 24 24 25 28 28 28 21 24 24 26 28 28 28 28 28 28 28 28 28 28	0.73 0.66 0.57 0.48 0.38 3.9 Water flow (<i>Us</i>) 3.5 3.2 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85 0.68 0.51 1 0.85 0.68 0.51 4.8 Water flow (<i>Us</i>) 4.5 4.1 3.7 3.4 1.97 1.56	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92 2.42 2.04 1.63 1.19 0.80 2 F Water dp (kPa) 13 11.2 9.8 8.4 4 4 3.2,95	61 55 49 43 36 29 0W Heat 0utput (kW) 128 117 106 116 105 94 83 73 62 50 37 80W Heat 0utput (kW) 128 117 106 105 94 43 37 36 22 90 128 117 106 105 94 128 117 106 116 105 94 128 117 106 116 116 105 94 128 117 106 117 106 117 105 94 128 117 106 116 116 116 116 117 105 94 128 117 106 117 105 94 128 117 106 117 105 94 128 117 116 116 116 117 116 117 116 117 116 117 117	37 40 19 22 25 28 Air Off C C 35 38 41 44 29 32 35 38 41 29 32 35 38 41 20 23 5 38 41 20 23 5 38 41 20 23 5 38 41 20 5 38 41 20 5 28 20 20 20 20 20 20 20 20 20 20 20 20 20	0.75 0.67 0.52 0.43 0.35 Water flow rate (<i>I</i> (<i>s</i>)) 3.5 2.61 2.85 2.61 2.85 2.61 2.85 2.61 2.36 1.42 1.28 1.15 1.05 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0	2.60 2.19 1.84 1.48 1.40 0.80 (kPa) 9.9 8.8 7.7 7.67 3.3 2.87 2.47 2.03 1.73 1.36 1.02 0.02 0.02 0.02 0.02 1.73 1.36 1.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02	51 46 30 24 Heat Output (kW) 98 90 81 89 81 72 64 56 47 37 25 Keat 0tput (kW) 166 133 139 125 134 127	39 42 21 24 26 29 40 43 46 48 33 46 48 33 36 38 41 20 22 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 20 20 20 20 20 20 20 20 20 20 20 20 20	0.63 0.5 0.43 0.36 0.29 Water flow rate (l/s) 2.35 2.17 1.99 1.8 1.1 0.99 0.88 0.78 0.88 0.78 0.67 0.57 0.57 0.45 0.67 0.57 0.45 0.31 Xuter flow rate (l/s) 2.35 2.17 1.99 1.99 0.88 0.78 0.88 0.78 0.88 0.78 0.88 0.75 0.45 0.57 0.45 0.45 0.45 0.45 0.57 0.45 0.57 0.45 0.45 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.75 0.75 0.88 0.75 0.75 0.75 0.88 0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.75	1.93 1.61 1.35 1.07 0.81 0.58 (kPa) (kPa) 6.5.9 5.3 4.6 5.9 5.3 4.6 2.28 1.97 1.67 1.41 1.14 0.91 0.63 0.63 9.6 8.5 5.5 6.4 4 2.26 8.5 5.5 6.4 4 3.2 2.26 6.4	please call Nuaire. Note: dp figures do not include 3 port valve. Approximately double these figures when valves	Connection size
ECOSI Air Volu Water on/off 82/71 80/60 60/40 ECOSI Air Volu Water on/off C 82/71	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106 93 83 70 56 42 XER Size 7 te (m ³ /s) Heat Output (kW) 201 184 168 151 161 145 128 111	38 18 21 24 27 Air Off C 30 34 37 40 25 28 31 35 14 18 21 24 27 30 34 37 40 25 28 31 35 24 25 28 31 35 24 27 25 28 31 35 28 21 24 27 25 28 31 35 28 21 26 27 28 28 29 20 25 28 28 29 20 25 28 28 21 20 25 28 28 21 20 25 28 28 21 29 20 20 25 28 20 20 20 20 20 20 20 20 20 20	0.73 0.66 0.57 0.48 0.38 3.9 Water flow (<i>Us</i>) 3.5 3.2 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85 0.68 0.51 1 0.85 0.68 0.51 4.8 Water flow (<i>Us</i>) 4.5 4.1 3.7 3.4 1.77 1.56 1.36	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92 2.42 2.04 1.63 1.19 0.80 2 F Water dp (kPa) 13 11.2 9.8 8.8 4 4 3.5 2.95 2.43	61 55 49 43 29 8 0 W Heat 0utput (kW) 128 117 106 116 105 94 83 73 62 50 37 8 0 W Heat 0utput (kW) 189 174 158 143 152 137 121 106	37 40 19 22 25 28 Air Off C C 38 41 44 29 32 35 38 41 20 23 538 41 20 23 538 41 20 23 538 41 20 23 538 41 20 23 538 23 23 23 23 23 23 23 23 23 23 23 23 23	0.75 0.67 0.52 0.43 0.35 Water flow rate (<i>I(s</i>) 1.42 1.28 1.28 1.42 1.28 1.42 1.28 1.15 1.42 1.28 1.42 1.28 1.42 1.28 1.42 1.28 1.42 1.28 1.5 1.5 0.61 0.61 0.61 0.61 0.61 0.5 0.61 0.5 0.61 0.5 0.5 0.61 0.5 0.5 0.61 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	2.60 2.19 1.84 1.48 1.40 0.80 (kPa) 9.9 8.8 7.7 6.7 3.3 2.87 2.47 3.3 1.36 1.02 0.66 1.0.66 1.0.66 1.0.66 1.0.7 3.8 3.3 2.87 2.47 2.72 2.24	51 46 30 24 Heat Output (kW) 106 98 90 81 72 64 56 47 37 55 47 37 55 47 37 55 47 37 25	39 42 21 24 26 29 40 43 46 48 33 46 48 33 36 38 41 20 22 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 20 20 20 20 20 20 20 20 20 20 20 20 20	0.63 0.5 0.43 0.36 0.29 Water flow rate (<i>I</i> /s) 2.17 1.99 1.8 1.1 0.99 0.88 0.78 0.67 0.57 0.57 0.45 0.67 0.57 0.45 0.31	1.93 1.61 1.35 1.07 0.81 0.58 (kPa) 6.6.6 5.9 5.3 4.6 2.28 1.97 1.67 1.41 1.14 0.91 0.65 0.65 0.65 0.65 0.65 0.65 0.65 0.65	please call Nuaire. Note: dp figures do not include 3 port valve. Approximately double these figures when valves	Connection size Connection size Connection size
ECOSI Air Volu Water on/off 82/71 80/60 60/40 ECOSI Air Volu Water on/off C 82/71	-3 3 9 15 MART BC ime Flow rat Air On C -3 3 9 15 -3 -3 3 9 15 -3 -3 3 9 15 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	60 54 47 39 32 XER Size 6 te (m ³ /s) Heat Output (kW) 157 144 132 119 131 118 106 93 83 70 56 42 XER Size 7 te (m ³ /s) Heat Output (kW) 201 184 168 151 161 145 128	38 18 21 24 27 Air Off C 30 34 40 25 28 31 35 14 18 21 24 24 27 30 34 40 25 28 31 35 24 25 28 31 35 24 27 25 28 21 24 25 28 21 24 25 28 21 24 25 28 21 24 25 28 21 24 25 28 21 24 25 28 28 21 24 25 28 28 21 24 26 26 28 28 21 24 24 25 28 28 28 21 24 24 26 28 28 28 28 28 28 28 28 28 28	0.73 0.66 0.57 0.48 0.38 3.9 Water flow (<i>Us</i>) 3.5 3.2 2.9 2.6 1.6 1.44 1.29 1.13 1 0.85 0.68 0.51 1 0.85 0.68 0.51 4.8 Water flow (<i>Us</i>) 4.5 4.1 3.7 3.4 1.97 1.56	3.00 2.51 2.15 1.71 1.31 0.91 2 F Water dp (kPa) 11.8 10.4 9.1 7.9 3.9 3.4 2.92 2.42 2.04 1.63 1.19 0.80 2 F Water dp (kPa) 13 11.2 9.8 8.4 4 4 3.2,95	61 55 49 43 36 29 0W Heat 0utput (kW) 128 117 106 116 105 94 83 73 62 50 37 80W Heat 0utput (kW) 128 117 106 105 94 43 37 36 22 90 128 117 106 105 94 128 117 106 116 105 94 128 117 106 116 116 105 94 128 117 106 117 106 117 105 94 128 117 106 116 116 116 116 117 105 94 128 117 106 117 105 94 128 117 106 117 105 94 128 117 116 116 116 117 116 117 116 117 116 117 117	37 40 19 22 25 28 Air Off C C 35 38 41 44 29 32 35 38 41 29 32 35 38 41 7 20 23 5 38 41 20 23 5 38 41 20 23 5 38 41 20 5 38 41 20 5 28 20 20 20 20 20 20 20 20 20 20 20 20 20	0.75 0.67 0.52 0.43 0.35 3 Water flow rate (<i>I</i> (<i>s</i>)) 3.5 2.61 2.85 2.61 2.85 2.61 2.85 2.61 2.36 1.42 1.28 1.15 1.05 0.45 0.45 0.45 0.45 0.45 0.45 0.45 0	2.60 2.19 1.84 1.48 1.40 0.80 (kPa) 9.9 8.8 7.7 7.67 3.3 2.87 2.47 2.03 1.73 1.36 1.02 0.02 0.02 0.02 0.02 1.73 1.36 1.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02	51 46 30 24 Heat Output (kW) 98 90 81 89 81 72 64 56 47 37 25 Keat 0tput (kW) 166 133 139 125 134 127	39 42 21 24 26 29 40 43 46 48 33 46 48 33 36 38 41 20 22 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 24 25 20 20 20 20 20 20 20 20 20 20 20 20 20	0.63 0.5 0.43 0.36 0.29 Water flow rate (l/s) 2.35 2.17 1.99 1.8 1.1 0.99 0.88 0.78 0.88 0.78 0.67 0.57 0.57 0.45 0.67 0.57 0.45 0.31 Xuter flow rate (l/s) 2.35 2.17 1.99 1.99 0.88 0.78 0.88 0.78 0.88 0.78 0.88 0.75 0.45 0.57 0.45 0.45 0.45 0.45 0.57 0.45 0.57 0.45 0.45 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.88 0.75 0.75 0.75 0.88 0.75 0.75 0.75 0.88 0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.75	1.93 1.61 1.35 1.07 0.81 0.58 (kPa) (kPa) 6.5.9 5.3 4.6 5.9 5.3 4.6 2.28 1.97 1.67 1.41 1.14 0.91 0.63 0.63 9.6 8.5 5.5 6.4 4 2.26 8.5 5.5 6.4 4 3.2 2.26 6.4	please call Nuaire. Note: dp figures do not include 3 port valve. Approximately double these figures when valves	Connection size

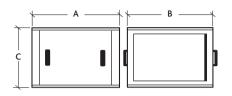
 $\ensuremath{^*\text{Please}}$ note: above tables are based on indicative selections. For more specific selection, contact Nuaire.

TECHNICAL INFORMATION



SILENCER MODULES

Splitters are faced with perforated sheet lined to prevent particle migration and filled with high density mineral wool.



Unit Code	Α	В	с	Weight (Kg)
ESBSIL1	900	954	530	70
ESBSIL2	900	954	670	90
ESBSIL3	900	800	800	95
ESBSIL4	900	1000	800	96
ESBSIL5	900	1000	1000	124
ESBSIL6	900	1300	1000	150
ESBSIL7	900	1300	1300	192

DYNAMIC ATTENUATION VALUES (at maximum velocity)

Length	125	250	500	1K	2K	4K	8K		
900	6	8	18	22	20	16	15		
1200	7	11	26	31	30	23	20		
Note: silencer cross sectional area matches the Ecosmart Boxer unit.									

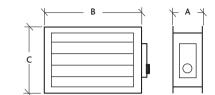
WEATHER ROOF FOR ECOSMART BOXER

For further information please contact Nuaire.

Example of horizontal unit with weather kit.

MOTORISED DAMPERS

Opposed blade design with quick fit flanges. 240V Open/Shut model (B) for efficient back draught protection and 24V modulating version (M) for balancing and control.

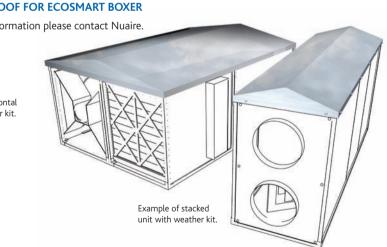


Unit	Α	Weight (Kg)
ESBD1	165	12
ESBD2	165	14
ESBD3	165	19
ESBD4	165	23
ESBD5	165	28
ESBD6	165	30
ESBD7	165	34

Note: Dimensions B & C are to suit unit supplied. Also available: motor open/spring return option. Code: ESBD* MO/SR.

FROST COIL = LPHW & ELECTRIC

600mm long section to suit unit size selected. For details contact Nuaire.

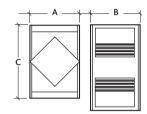


Z FACTORS FOR ANCILLARIES							
Casing Module	1	2	3	4	5	6	7
Silencer	102	41	20	11	8	3.1	2
Damper	61	25	12	6.8	4.8	1.9	1.2
Frost coil LPHW	122	50	23	14	9.6	3.8	2.4
Frost coil electric	122	50	23	14	9.6	3.8	2.4
Weather cowl	61	25	12	6.8	4.8	1.9	1.2
Plate heat exchanger	612	148	117	68	48	1.9	12

For further ancillaries please refer to Ducting and Ancillaries section or call Nuaire.

VERTICAL HEAT EXCHANGER

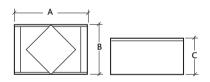
A plate exchanger core assembly providing efficient heat transfer between supply and extract air streams. An integral drip tray is incorporated with a 22mm drain connection. The tray is insulated to prevent secondary condensation.



	Length	Width	Height	
Unit	Α	В	с	Weight (Kg)
ESBHX1	1000	954	1060	150
ESBHX2	1130	954	1340	180
ESBHX3	1200	800	1600	210
ESBHX4	1400	1000	1600	263
ESBHX5	2200	1000	2000	360
ESBHX6	2200	1300	2000	440
ESBHX7	2500	1300	2600	594

HORIZONTAL HEAT EXCHANGER

Heat exchanger complete with integral drop tray with a 22mm drain connection.

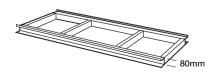


	Length	Width	Height	
Unit	Α	В	с	Weight (Kg)
ESBHX1H	1750	2000	530	150
ESBHX2H	1425	2000	670	180
ESBHX3H	1200	1600	800	200
ESBHX4H	1625	2000	800	280
ESBHX5H	2000	2000	1000	360
ESBHX6H	2200	2600	1000	600
ESBHX7H	2200	2600	1300	594

ESBBF2* - Available in a variety of lengths to suit unit sizes 1 - 7.

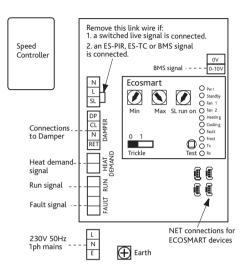
BASE FRAME

(Please contact Nuaire for further details). Provided as standard on sizes 3 - 7. Optional extras on sizes 1 and 2.



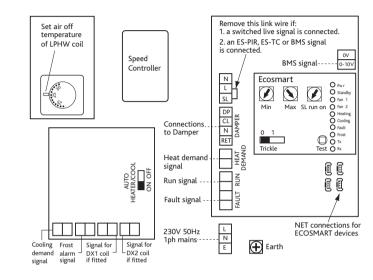
WIRING - ECOSMART BOXER SIZES 1 AND 2

ESBHS1, ESBHS2, ESBHEX1 and ESBHEX2



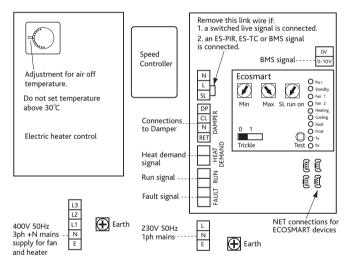
WIRING - ECOSMART BOXER SIZES 1 AND 2

ESBHS1-L, ESBHS2-L, ESBHS1-LD and ESBHS-2LD

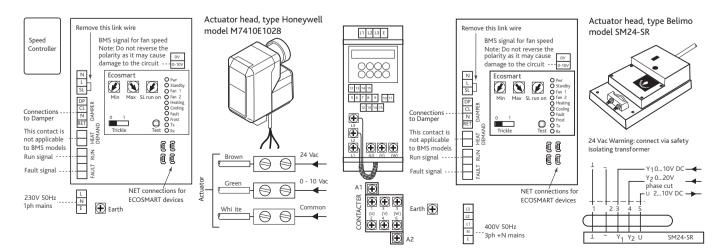


ESBHS1-E and ESBHS2-E

BMS MODES 3 TO 7



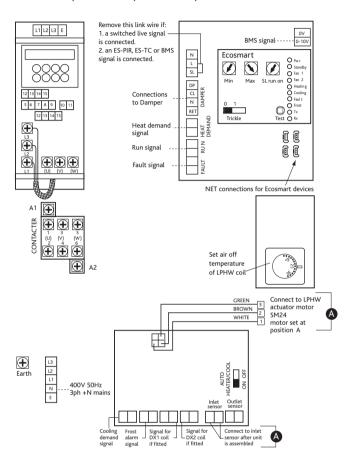
WIRING - ECOSMART BOXER SIZES 3 - 7 BMS MODES 1 AND 2



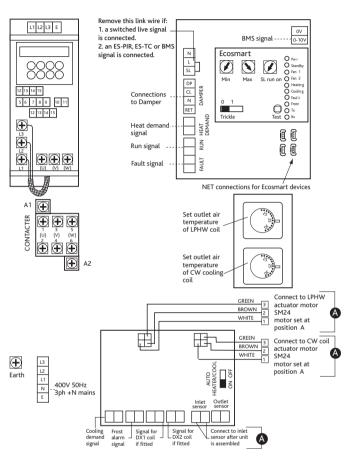
TECHNICAL INFORMATION



WIRING - ECOSMART BOXER SIZES 3 - 7 ESBHS3-L,ESBHS4-L, ESBHS5-L, ESBHS6-L AND ESBHS7, ESBHS3-LD, ESBHS4-LD, ESBHS5-LD, ESBHS6-LD AND ESBHS7-LD

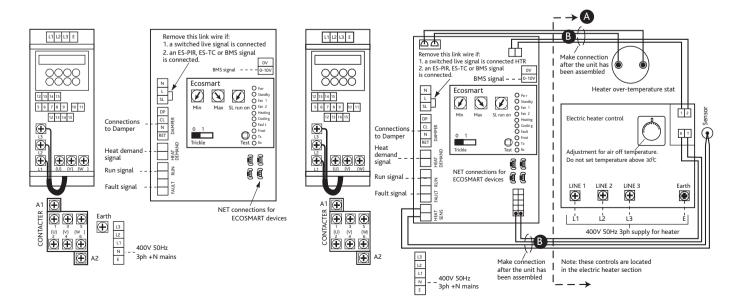


WIRING - ECOSMART BOXER SIZES 3 - 7 ESBHS3-LC, ESBHS4-LC, ESBHS5-LC, ESBHS6-LC AND ESBHS7-LC



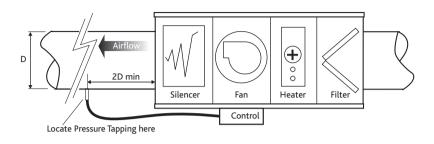
ESBHEX3, ESBHEX4, ESBHEX6 AND ESBHEX7

ESBHS3-E, ESBHS4-E, ESBHS5-E, ESBHS6-E AND ESBHS7-E



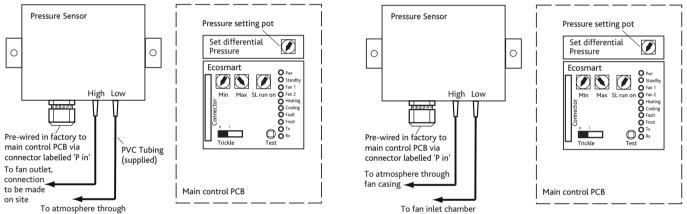
TECHNICAL INFORMATION

ECOSMART BOXER WITH CONSTANT PRESSURE CONTROLS



SUPPLY FANS SIZE 1 AND 2

EXTRACT FANS SIZE 1 AND 2



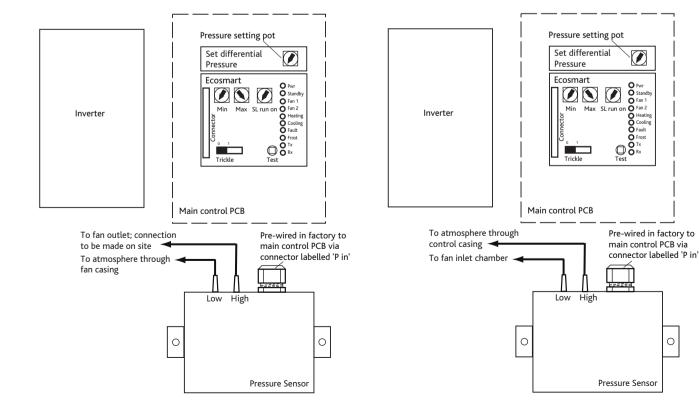
fan casing

SUPPLY FANS SIZE 3 AND ABOVE

EXTRACT FANS SIZE 3 AND ABOVE

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ECOSMART BOXER FAN CONTROL ONLY

Power requirements

Model	Flc fan only (1)	Electric heater max Kw	Flc heater (2)
BHSEX1FC, BHS1FC-L	4.8A		
BHS1FC-E	4.8A	18	25A
BHSEX2FC,	7.3A		
BHS2FC-E	7.2A	24	33A
BHSEX3FC, BHS3FC-L	4.6A		
BHS3FC-E	4.6A	27	38A
BHSEX4FC, BHS4FC-L	6.1A		
BHS4FC-E	6.1A	36	50A
BHSEX5FC, BHS5FC-L	7.8A		
BHS5FC-E	7.8A	54	75A
BHSEX6FC, BHS6FC-L	8.2A		
BHS6FC-E	8.2A	54	75A
BHSEX7FC, BHS7FC-L	11.4A		
BHS7FC-E	11.4A	54	75A

Note: (1) Sizes 1 and 2 fans are rated at 230V ac, 50Hz single phase. All other sizes are rated at 400V ac 50 Hz 3 phase.

(2) All electric heaters are rated at 400V ac 50 Hz 3 phase.

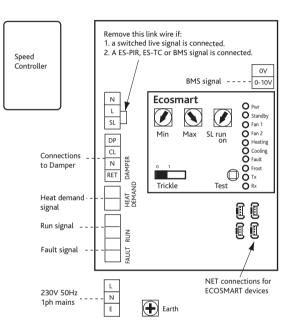
i There are no inrush starting currents quoted because the Ecosmart control incorporates a soft starting speed control feature.

ii. The inverters are preset to match the fan requirements. Under normal circumstances it should not be necessary to adjust them.

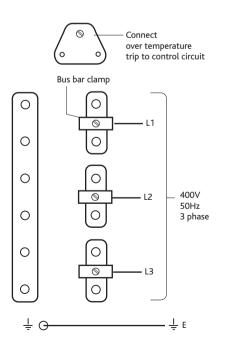
iii. Pay particular attention to the model type, recorded on the product rating plate and connect as follows.

SIZES 1 AND 2

Note: Inter connections between circuit boards are made in the factory.

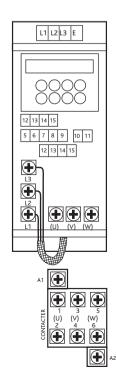


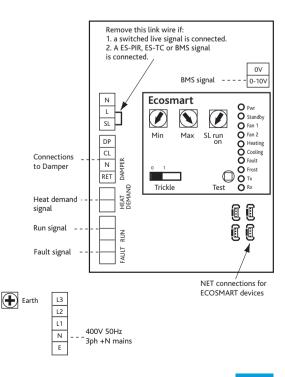
TYPICAL ELECTRIC HEATER WIRING



SIZES 3 TO 7

Note: Inter connections between circuit boards and inverter/contactor are made in the factory.





CONSULTANTS SPECIFICATION

ECOSMART BOXER UNITS SIZE 3 TO 7

AIR HANDLING UNIT SPECIFICATION

The Air Handling Unit shall be configured and arranged as detailed on the drawings and in accordance with the schedule of equipment. The units shall be manufactured from a highly rigid pentapost framework with 25mm double skinned infill panels. The panels shall contain inert high density infill. Panel materials are heavy gauge Aluzinc corrosion resistant steel. The units shall provide exceptional thermal and acoustic insertion. The general construction is to class A leakage.

The fan impeller and motor shall be selected to provide the most energy efficient solution conforming to part L regulations and shall be direct or belt drive with IE2 high efficiency motors to BS5000 as standard. The fan impeller shall be a high efficiency forward or backward curved centrifugal design, manufactured in galvanised steel.

The Fan unit shall have a 5 year warranty.

The unit and ancillaries shall be of the Ecosmart Boxer type as manufactured by Nuaire Ltd.

All other components shall be in accordance with the manufacturer's specification.

CONTROL SPECIFICATION

The Air Handling Unit shall be supplied with one of the following control options:-

1. ECOSMART CONTROLS -

The compact Ecosmart control system complete with all necessary controls to facilitate the operation of the ventilation system. It shall be come complete with an integral factory fitted Ecosmart PCB which will control the fan unit within the desired design parameters and provide the interface between all external control devices and the unit itself.

The Air Handling Unit shall have the following energy saving components integrally mounted, pre-wired to interface with the purpose made PCB, all components pre-wired, configured and factory fitted by the manufacturer: -

- Integral Frequency inverter/speed controller.
- Integral maximum and minimum speed adjustment for commissioning.
- Integral adjustable run on timer.
- Integral BMS interfaces summer/winter switching, heating control, 0-10V speed adjustment.
- Volt free failure and status indication.
- Integral air off temperature adjustment.
- Facility for remote temperature control.
- Integral background ventilation switch (trickle switch).
- Multiple IDC sockets for interconnection of sensors or fans using pre-plugged 4-core low voltage cable.
- Volt free frost alarm/heat demand interface.
- Frost protection/hold off stat.

ECOSMART SYSTEM OPERATION

The Ecosmart controls will enable the unit to automatically vary its speed as it receives signals from one of the interconnected sensors. When the signal is received the fan shall either increase speed gradually until the required level is achieved or it will work on a trickle and boost principle. This will then and move the fan duty point from trickle/background ventilation rate to the required boost ventilation rate. Both the trickle and boost rates are infinitely variable, easy to adjust and remove the need of a main balancing damper.

2. BMS INTERFACES

The fan unit shall be provided with the following integrated BMS interfaces

- 0 10 volt contacts to provide a full BMS interface. This will enable the following functions:Switch the unit on/off.
 Switch from low speed to high speed.
 Full speed control facility.
 Switch the heating function on/off.
 Switch the cooling function on/off.
- 2 No. Volt free contacts to provide fan run and failure indication to provide system status.
- An integrated commissioning/speed control to accurately commission the system, with minimum and maximum speeds easily adjusted via a miniature dial, as recommended in Part L. This will enable the unit to be configured to run between set parameters thus saving motor power and limiting noise.
- Commissioning set up The fan unit shall be provided with an integrated commissioning/speed control to accurately commission the system, as recommended in Part L, minimum and maximum speeds easily adjusted via miniature dial. The commissioning set up facility directly controls the integrated speed control/frequency inverter.

3. NO CONTROL IS AVAILABLE

(Example code BHS7NC-E).

COIL TYPES, HX AND CONTROLS

The control for the coils shall be fully integrated and shall maintain a constant off coil temperature. The system shall have frost protection which shall, at temperatures below 4 degrees C, fully open the 3-port valve and only start the fan when the temperature at the filter has risen above the designated set point. Unit to have contacts which will act as frost alarm and/or signal boiler to switch on.



CONSULTANTS SPECIFICATION

HEATING COILS - LOW PRESSURE HOT WATER

The Low Pressure Hot Water heating coil shall be manufactured from copper tubing with high efficiency aluminium fins contained within a galvanised steel frame, shall be factory fitted with a 3-port motorised diverting valve assembly comprising the 3-port valve, double regulating valve, drain cocks aactuator controlling the 3-port valve shall be control via the on-board PCB by the off coil temperature sensor. All components pre-piped, assembled and tested by the manufacturers.

HEATING COILS - ELECTRIC

The Electric Heater Battery shall be factory fitted and pre-wired to an integral closed loop thyristor control. The heat output can be configured on site to suit the specific requirements.

COOLING COILS - CHILLED WATER

The Chilled Water Coil shall be manufactured from copper tubing with high efficiency aluminium fins contained within a galvanised steel frame, it shall be factory fitted with a 3-port motorised diverting valve assembly comprising the 3-port valve, drain cocks and air vents. The actuator controlling the 3-port valve shall be control via the on-board PCB by the off coil temperature sensor. Coil supplied complete with an insulated condensate tray and moisture eliminator. All components pre-piped, assembled and tested by the manufacturer.

COOLING COILS – DX COILS

The DX Coil shall be manufactured from copper tubing with high efficiency aluminium fins and droplet eliminator contained within a galvanised steel frame. The coil shall be filled with dry nitrogen with the pipe connections capped. It shall be factory fitted and tested by the AHU manufacturer. Note: Fan control only example code is BHS7FC-LD.

HEAT EXCHANGER

The cross flow heat exchanger shall be complete with a motorised summer bypass; this will be activated when the heating, cooling or ventilation switch on the user control is switched to the ventilation position.

The Ecosmart controlled fan unit shall have a 5 year warranty. Non Ecosmart fan controlled units will have a 3 year warranty.

All equipment shall be as manufactured by Nuaire Ltd. *Suitable for 95% RH non condensing.