

Victoria Buildings | Albert Street | Lockwood | Huddersfield | HD1 3PR Tel : 01484 422625 Fax : 01484 430959

Project Details			
Our Reference	QA5449GT	Prepared By	Gary Tingle
Project Reference	Barnsley Fracture Clinic & SDEC	AHU Reference	AHU02 Frailty SDEC
Date	08 /10/2025	AHU Number	2

General Details			
Supply Duty	1.600 m ³ /s @ 175 external static Pa	Extract Duty	1.600 m ³ /s @ 165 external static Pa
Unit arrangement	Double deck	Leakage Class	L2
Unit Location	External	Number Of Sections	5

Unit Construction							
AHU Construction Type				HTM03 Specification			
Frame Work	50mm Frame	Panel Type	50mm Panels	Panel Insulation	Rock Wool	Weather Proof	Yes
Internal Skins	0.9mm White Plastisol	External skins	0.9mm Goosewing Grey Plastisol	Base Type	RSC 150X75	Roof Type	Single Pitch 100mm

Unit Construction Notes

Sections Dimensions & Weights				
Section No.	Width	Height	Length	Weight
A	1250 mm	1350 mm	1910 mm	258 kg
B	1250 mm	2500 mm	1900 mm	519 kg
C	1250 mm	1400 mm	4230 mm	866 kg
D	1250 mm	1350 mm	970 mm	148 kg
E	1250 mm	1400 mm	1910 mm	352 kg

Overall Dimensions & Weights			
Width	Height	Length	Weight
1250 mm	2750 mm	8040 mm	2143 kg

Supply Components

Inlet Section							
Air Flow	1.600 m ³ /s	Velocity	1.21 m/s	Flanged Spigot	No	Open End	Onair
Weather Louvre	Yes	Weather Cowl	No	Inlet guard	No	Bird Mesh	Yes
Damper	Yes	Actuator	No	Handle fitted	No	Dimensions	1150 x 1150 mm

002 Accessories	
Dumbo test point fitted	
Low Profile LED light wired to an external switch	

Access Section							
Type	Hinged door	View Port	Yes	Light	Yes	Aluminium Walk Way	None

Frost/Fog Coil							
Medium	LTHW	Tube Material	Copper	Fin Material	No Fins	Case Material	Galvanised
Air On Db	-5.00 °C	Air Off Db	5.00 °C	Duty	(19.38 x 1) kW	Stages	5
Water flow temp	75.00°C	Water return temp	65.00°C	Flow Rate	(0.47 x 1) l/s	Water Pressure	10 KPa
Rows	5	Fin Spacing	99.00mm (0/inch)	Inlet connection	1"	Outlet connection	1"
Glycol type	None	Glycol %	0	No of sets of conns	1.00	Eliminators	None

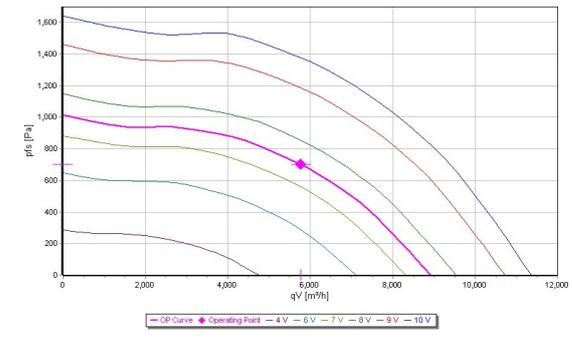
Panel Filter							
Type	Cotton / Synthetic Fibre pre filter	Class EN	ISO Coarse 70% / (M5 EN779)	Withdrawal	Front	qty/ size	1 / 596x596 ,1 / 497x597 ,1 / 597x292
View Port	Yes	Light	Yes	Filter Depth	50 mm		
Gauge Type	None	Design Pa	Dirty	Spare set	1 Set		

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004 Accessories							
Dumbo test point fitted							
Magnahelic guage 0 - 250 Pa							
Low Profile LED light wired to an external switch							
Access Section							
Type	Hinged door	View Port	Yes	Light	Yes	Aluminium Walk Way	None
Heat Recovery Section (Plate Heat Exchanger)							
Type		Model	KV-100/P1/1134/BS K131,H-ErP-2018.000	Material	Aluminium	ERP 2018	2018: Min. 2018
PHX Face & Bypass	1=Yes, on side	Actuator	No	Dry Efficiency	73.500 %	Total Efficiency	73.900 %
SS Drain Tray	Full Fixed	Connection	22mm Plain	View Ports	Yes	Lights	Yes
Winter				Summer			
Fresh Air on Db	5.00 °C	Return Air On Db	21.00 °C	Fresh Air on Db	30.00 °C	Return Air On Db	21.00 °C
Fresh Air on Wb	5.00 °C	Return Air On Wb	14.60 °C	Fresh Air on Wb	22.00 °C	Return Air On Wb	14.60 °C
Supply Air Off Db	17.60 °C	Exhaust Air Off Db	9.40 °C	Supply Air Off Db	23.40 °C	Exhaust Air Off Db	27.60 °C
Supply Air Off Wb	10.90 °C	Exhaust Air Off Wb	9.40 °C	Supply Air Off Wb	20.00 °C	Exhaust Air Off Wb	17.00 °C
Supply Air Off RH	43.200 %	Duty	24.60 kW	Supply Air Off RH	73.800 %	Duty	13.20 kW
005 Accessories							
Low Profile LED light wired to an external switch							
Access Section							
Type	Hinged door PHX-4	View Port	Yes	Light	Yes	Aluminium Walk Way	None
Drain Pan							
Material	Stainless Steel (304)	Main Tray Size	350 x 1150 mm	Tray Type	Full Fixed	Intermediate Tray	No
006 Accessories							
Dumbo test point fitted							
Low Profile LED light wired to an external switch							
Access Section							
Type	Hinged door	View Port	Yes	Light	Yes	Aluminium Walk Way	None

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Plenum Fan			
Air Volume	1.600 m ³ /s	Ext Static Pa	175
Model	(N43-45019) GKH_CIE 450 136.6FF IE (3x400V) V2	Type	Plenum
Duty % Per Fan	Single Fan	Quantity	1
Impeller Type	Backward Curve	Make	Rosenberg
Drive type	Direct Drive	Motor Type	EC
Dynamic Pa	35 Pa	Fan Total Pa	738 Pa
Abs Power	1.93 kW	Motor Power	3.94 kW
FLC Amps	6.00 A	Volts/Ph/Hz	3/NaN/NaN
Fan Speed	1886 rpm	Max Fan Speed	0 rpm
Control Volts	7.48 V	Speed Pot	Yes
View Port	Yes	Isolator	Yes
Light	Yes	Quick release	Yes
SFP Value @ Clean filters	.95kW/m3/s		



1 SWL Inside inlet duct (db) 2 SWL Inside outlet duct (db)

Frequency Hz	63	125	250	500	1K	2K	4K	8K
Inlet 1	42	51	74	73	74	73	68	65
Inlet 2	55	63	80	80	81	77	73	64

007 Accessories

Dumbo test point fitted
Low Profile LED light wired to an external switch
Quick release fan terminal box fitted (stainless steel)
Fan wired to speed potentiometre
Fan wired to Isolator IP65
test

Access Section

Type	Hinged door	View Port	Yes	Light	Yes	Aluminium Walk Way	None
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Chilled Water Cooling Coil

Medium	Chilled Water	Tube Material	Copper	Fin Material	0.12 Copper/PreTinned	Case Material	Stainless Steel 304
Air On Db	32.00 °C	Air Off Db	18.00 °C	Duty	(45.13 x 1) kW	Stages	15
Air On Wb	22.00 °C	Air Off Wb	16.70 °C	SS DrainTray	Yes	Connection	22mm Plain
Air On RH	41.90 %	Air Off RH	88.30 %	DT fixed	Yes	DT Cleanable	Yes
Water flow temp	7.00°C	Water return temp	12.00°C	Flow Rate	(2.15 x 1) l/s	Water Pressure	20 KPa
Rows	3	Fin Spacing	2.54mm (10/inch)	Inlet connection	2"	Outlet connection	2"
Glycol type	None	Glycol %	0	No of sets of conns	1.00	Eliminators	not needed - Not Incl.

Drain Pan

Material	Stainless Steel (304)	Main Tray Size	400 x 1150 mm	Tray Type	Full Fixed	Intermediate Tray	No
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009 Accessories

Dumbo test point fitted
Low Profile LED light wired to an external switch

Access Section

Type	Hinged door	View Port	Yes	Light	Yes	Aluminium	None
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						Walk Way	
LPHW Heating Coil							
Medium	Hot Water	Tube Material	Copper	Fin Material	0.12 Copper	Case Material	Galvanised
Air On Db	12.00 °C	Air Off Db	26.00 °C	Duty	(27.14 x 1) kW	Face Velocity	1.84
Water flow temp	75.00°C	Water return temp	65.00°C	Flow Rate	(0.66 x 1) l/s	Water Pressure	8 KPa
Rows	1	Fin Spacing	2.82mm (9/inch)	Inlet connection	1¼"	Outlet connection	1¼"
Glycol type	None	Glycol %	0	No of sets of conns	1.00	Eliminators	None
011 Accessories							
Dumbo test point fitted							
Low Profile LED light wired to an external switch							
Access Section							
Type	Hinged door	View Port	Yes	Light	Yes	Aluminium Walk Way	None
Bag Filter							
Type	Metal hdr / Synthetic soft bag filter	Class EN	ISO ePM2.5 70% / (F7 EN779)	Withdrawal	Front	qty/ size	1 / 592x592 ,1 / 490x592 ,1 / 592x287
View Port	Yes	Light	Yes	Filter Depth	380 mm		
Gauge Type	None	Design Pa	Dirty	Spare set	1 Set		
012 Accessories							
Low Profile LED light wired to an external switch							
Dumbo test point fitted							
Magnahelic guage 0 - 250 Pa							
Access Section							
Type	Hinged door	View Port	Yes	Light	Yes	Aluminium Walk Way	None
Outlet Section							
Air Flow	1.600 m³/s	Velocity	1.21 m/s	Flanged Spigot	Yes	Open End	Ofair
Weather Louvre	No	Weather Cowl	No	Inlet guard	No	Bird Mesh	No
Damper	Yes	Actuator	No	Handle fitted	No	Dimensions	1150 x 1150 mm
Extract Components							
Inlet Section							
Air Flow	1.600 m³/s	Velocity	1.21 m/s	Flanged Spigot	Yes	Open End	Onair
Weather Louvre	No	Weather Cowl	No	Inlet guard	No	Bird Mesh	No
Damper	Yes	Actuator	No	Handle fitted	No	Dimensions	1150 x 1150 mm
Panel Filter							
Type	Cotton / Synthetic Fibre pre filter	Class EN	ISO Coarse 70% / (M5 EN779)	Withdrawal	Front	qty/ size	1 / 596x596 ,1 / 497x597 ,1 / 597x292
View Port	Yes	Light	Yes	Filter Depth	50 mm		
Gauge Type	None	Design Pa	Dirty	Spare set	1 Set		
015 Accessories							
Dumbo test point fitted							
Magnahelic guage 0 - 250 Pa							
Low Profile LED light wired to an external switch							
Access Section							
Type	Hinged door	View Port	Yes	Light	Yes	Aluminium Walk Way	None

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016 Accessories							
Dumbo test point fitted							
Low Profile LED light wired to an external switch							

Access Section							
Type	Hinged door	View Port	Yes	Light	Yes	Aluminium Walk Way	None

Plenum Fan			
Air Volume	1.600 m ³ /s	Ext Static Pa	165
Model	(N43-40009) GKH_CIE 400 125.5HF (3x400V) V2	Type	Plenum
Duty % Per Fan	Single Fan	Quantity	1
Impeller Type	Backward Curve	Make	Rosenberg
Drive type	Direct Drive	Motor Type	EC
Dynamic Pa	53 Pa	Fan Total Pa	475 Pa
Abs Power	1.47 kW	Motor Power	2.40 kW
FLC Amps	3.80 A	Volts/Ph/Hz	3/NaN/NaN
Fan Speed	2151 rpm	Max Fan Speed	0 rpm
Control Volts	8.29 V	Speed Pot	Yes
View Port	Yes	Isolator	Yes
Light	Yes	Quick release	Yes
SFP Value @ Clean filters	.81kW/m ³ /s		

The graph plots static pressure (Pst) in Pa on the y-axis (0 to 1400) against air flow (qV) in m³/h on the x-axis (0 to 9000). Multiple curves represent different supply voltages: 4V, 6V, 7V, 8V, 9V, and 10V. A pink diamond indicates the operating point at approximately 5500 m³/h and 450 Pa.

1 SWL Inside inlet duct (db) 2 SWL Inside outlet duct (db)

Frequency Hz	63	125	250	500	1K	2K	4K	8K
Inlet 1	50	60	74	75	75	74	69	66
Inlet 2	57	67	80	81	84	80	76	68

017 Accessories							
Dumbo test point fitted							
Low Profile LED light wired to an external switch							
Quick release fan terminal box fitted (stainless steel)							
Fan wired to speed potentiometre							
Fan wired to Isolator IP65							
test							

Access Section							
Type	Hinged door	View Port	Yes	Light	Yes	Aluminium Walk Way	None

Outlet Section							
Air Flow	1.600 m ³ /s	Velocity	1.21 m/s	Flanged Spigot	Yes	Open End	Ofair
Weather Louvre	No	Weather Cowl	No	Inlet guard	No	Bird Mesh	No
Damper	Yes	Actuator	No	Handle fitted	No	Dimensions	1150 x 1150 mm

018 Notes							
Duct to atmosphere by others							

Acoustic Data Supply

Frequency Hz	63	125	250	500	1K	2K	4K	8K	Overall dbA
Inlet	45	45	68	67	68	67	62	59	72
Outlet	56	56	73	73	74	70	66	57	77
Case Break Out To Atmosphere	41	41	53	44	38	32	25	16	46

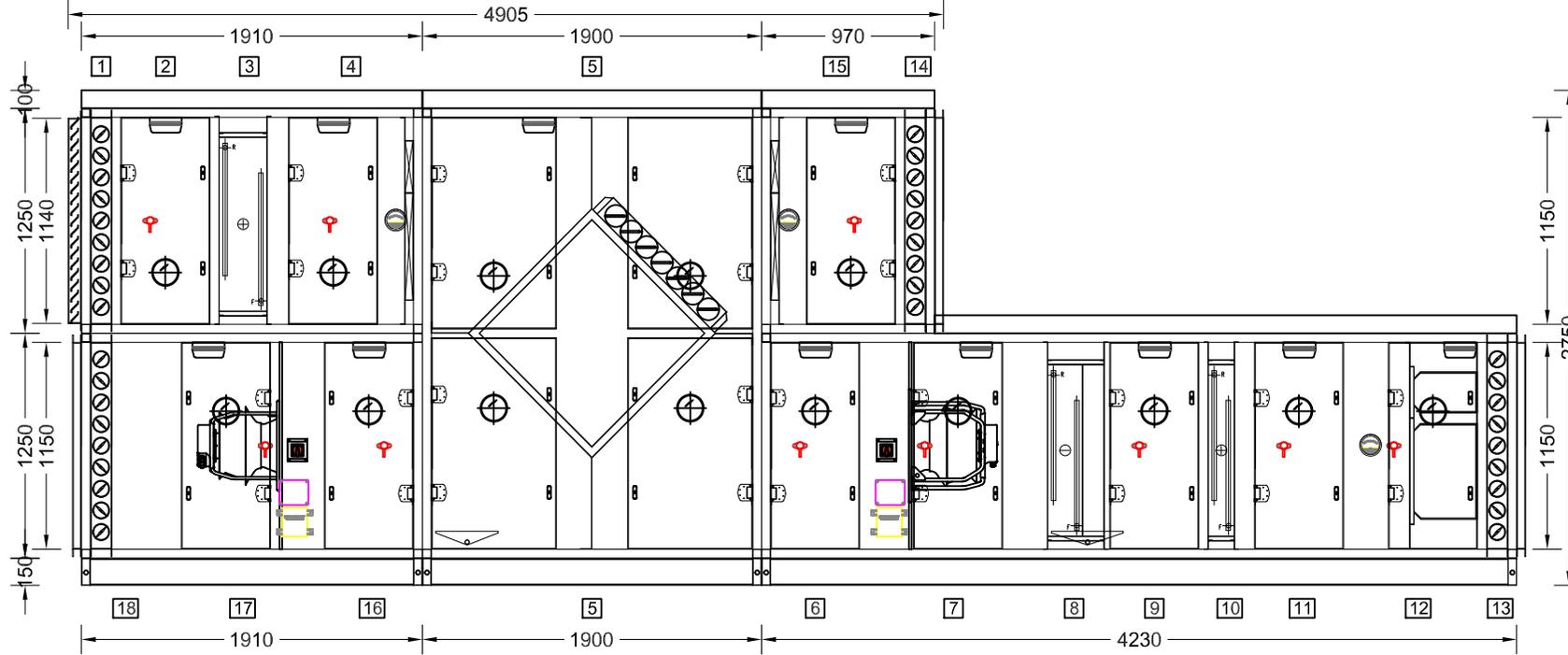
Acoustic Data Exhaust

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Frequency Hz	63	125	250	500	1K	2K	4K	8K	Overall dbA
Inlet	56	56	70	71	71	70	65	62	76
Outlet	65	65	78	79	82	78	74	66	85
Case Break Out To Atmosphere	45	45	53	45	41	35	28	20	48

Specific Fan Power Value							
Supply Air Flow	1.600 m ³ /s	Supply SFPv	.95 kW/m ³ /s	Extract Air Volume	1.600 m ³ /s	Extract SFPv	.81 kW/m ³ /s
Supply Abs Power	1.52 Kw	Supply Filter State	Clean	Extract Abs Power	1.3 Kw	Extract Filter State	Clean
AHU Specific Fan Power Value	1.76 kW/m ³ /s						

Supply:
 Size: Non-standard
 Airflow: 1.6 m3/s
 E.S.P.: 175 Pa
 Exhaust:
 Size: Non-standard
 Airflow: 1.6 m3/s
 E.S.P.: 165 Pa
 Unit Wgt: 2142.82 kg



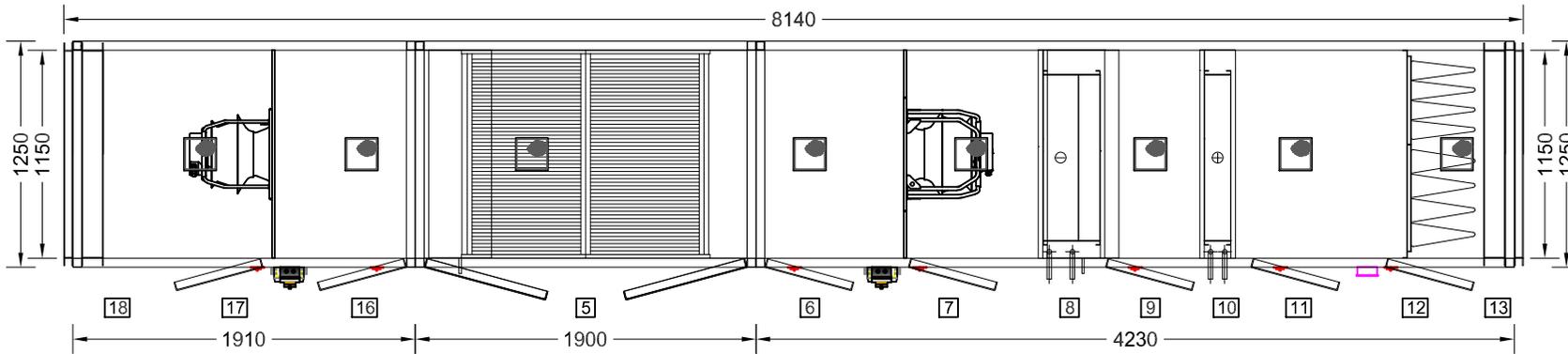
Section A:	
S.NoModule	Length(mm)
1	Inlet Section 195
2	Access Section 550
3	Fog / Frost Heating Coils 890
4	Panel Filter 775
Section B:	
S.NoModule	Length(mm)
5	Plate heat exchanger 1900
Section C:	
S.NoModule	Length(mm)
6	Access Section 575
7	IE Motor Plug Fan 1000
8	Cooling Coil 350
9	Access Section 550
10	Heating Coil 260
11	Access Section 550
12	Bag Filter 750
13	Outlet Section 195
Section D:	
S.NoModule	Length(mm)
14	Inlet Section 195
15	Panel Filter 775
Section E:	
S.NoModule	Length(mm)
16	Access Section 575
17	IE Motor Plug Fan 900
18	Outlet Section 435

ELEVATION

		AHU No.	2		Not To Scale All Dimensions shown are in mm		All dimensions shown are estimated. Detailed drawings to be produced on receipt of order.		FREDSHAW	No.	Revision	Date
Our Reference		Model	Non-standard		Selected	Initial	Date					
Project	Barnsley Fracture Clinic & SDEC	Air flow	1.6	m3/s	Approved							
Location	External	Quantity	1	Nos.	Dwg No.							

Supply:
 Size: Non-standard
 Airflow: 1.6 m3/s
 E.S.P.: 175 Pa
 Exhaust:
 Size: Non-standard
 Airflow: 1.6 m3/s
 E.S.P.: 165 Pa
 Unit Wgt: 2142.82 kg

Section A:	
S.NoModule	Length(mm)
1	Inlet Section 195
2	Access Section 550
3	Fog / Frost Heating Coils 890
4	Panel Filter 775
Section B:	
S.NoModule	Length(mm)
5	Plate heat exchanger 1900
Section C:	
S.NoModule	Length(mm)
6	Access Section 575
7	IE Motor Plug Fan 1000
8	Cooling Coil 350
9	Access Section 550
10	Heating Coil 260
11	Access Section 550
12	Bag Filter 750
13	Outlet Section 195
Section D:	
S.NoModule	Length(mm)
14	Inlet Section 195
15	Panel Filter 775
Section E:	
S.NoModule	Length(mm)
16	Access Section 575
17	IE Motor Plug Fan 900
18	Outlet Section 435

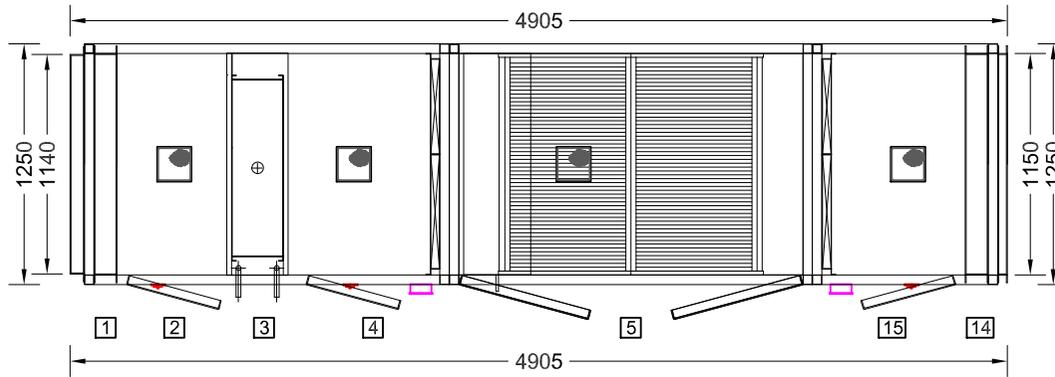


PLAN LOWER DECK

		AHU No.	2		Not To Scale All Dimensions shown are in mm		All dimensions shown are estimated. Detailed drawings to be produced on receipt of order.		FREDSHAW	No.	Revision	Date
Our Reference		Model	Non-standard		Selected	Initial	Date					
Project	Barnsley Fracture Clinic & SDEC	Air flow	1.6	m3/s	Approved							
Location	External	Quantity	1	Nos.	Dwg No.							

Supply:
 Size: Non-standard
 Airflow: 1.6 m3/s
 E.S.P.: 175 Pa
 Exhaust:
 Size: Non-standard
 Airflow: 1.6 m3/s
 E.S.P.: 165 Pa
 Unit Wgt: 2142.82 kg

Section A:	
S.NoModule	Length(mm)
1	Inlet Section 195
2	Access Section 550
3	Fog / Frost Heating Coils 890
4	Panel Filter 775
Section B:	
S.NoModule	Length(mm)
5	Plate heat exchanger 1900
Section C:	
S.NoModule	Length(mm)
6	Access Section 575
7	IE Motor Plug Fan 1000
8	Cooling Coil 350
9	Access Section 550
10	Heating Coil 260
11	Access Section 550
12	Bag Filter 750
13	Outlet Section 195
Section D:	
S.NoModule	Length(mm)
14	Inlet Section 195
15	Panel Filter 775
Section E:	
S.NoModule	Length(mm)
16	Access Section 575
17	IE Motor Plug Fan 900
18	Outlet Section 435



PLAN UPPER DECK

		AHU No.	2		Not To Scale All Dimensions shown are in mm		All dimensions shown are estimated. Detailed drawings to be produced on receipt of order.		FREDSHAW	No.	Revision	Date
Our Reference		Model	Non-standard		Selected	Initial	Date					
Project	Barnsley Fracture Clinic & SDEC	Air flow	1.6	m3/s	Approved							
Location	External	Quantity	1	Nos.	Dwg No.							