

TECHNICAL SUBMITTAL

15th June 2021

PROJECT: ROYAL FREE HOSPITAL 12TH FLOOR

CLIENT: ELLIS BUILDING SERVICES

QUOTATION: Q 11271 / 21 / REV 13

M&Y VENTILATION EQUIPMENT LIMITED
104 FRANKLYNN ROAD
HAYWARDS HEATH
WEST SUSSEX
RH16 4DN

TEL: 0844 756 0202

FAX: 0844 756 0203

sales@myventilation.co.uk

www.airhandlingunits.co.uk



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TECHNICAL SPECIFICATION SHEET

Date: 15 June 2021
Quote No: Q 11271

Project Reference: Royal Free Hospital - 12th Floor
Unit No: 11271-01-13

Unit Reference: Supply Water
Revision: 13

AHU Details

Design Supply Air Volume	4	m ³ /s
External Static Pressure	350	Pa
Unit Velocity	1.4	m/s

Energy Use

	Supply on Clean Filters	Overall	
Specific Fan Power	1.51	1.51	kW/(m ³ /s)

AHU Construction

Framework	50 mm
Framework Coating	Aluzinc Steel
Panel Depth	50 mm
External Panel Finish	GWG Plastisol 0.9mm
Internal Panel Finish	GWG Plastisol 0.9mm
Panel Insulation	Mineral Wool 50mm

Construction

Unit Location	External
Weather Roof	MICA Duo Pitch Roof
Baseframe	300 x 75 x 3.0 Folded Galv
Casing performance (EN 1886 Standard)	
Leakage Class	L2
Casing strength	D1
Thermal Transmittance	T3
Thermal Bridge	TB3

Overall Unit Dimensions

Length	Width	Height	Weight (Per Unit)
7605 mm	2000 mm	1900 mm	3251kg

Section Weights and Dimensions

Section No.	Length	Width	Height	Weight Approx +/-5%
A	775 mm	2000 mm	1600 mm	288kg
B	1230 mm	2000 mm	1600 mm	399kg
C	1500 mm	2000 mm	1600 mm	650kg
D	500 mm	2000 mm	1600 mm	428kg
E	650 mm	2000 mm	1600 mm	166kg
F	800 mm	2000 mm	1600 mm	606kg
G	1000 mm	2000 mm	1600 mm	299kg
H	1150 mm	2000 mm	1600 mm	384kg

Inlet Section

Component	Damper - Powdercoated Louvre - EWB50
Air Pressure Drop	10.00 Pa

Construction

Casing	Aluminium EN AW6060 T6
Control	Extended Spindle

Accessories

Damper actuators to be provided and fitted by others.
Traffolyte Component label
Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport

Steam Coil

Air On / Off	-7.00/5.0	°C/°C
Duty	58.15	kW
Steam Pressure	300.00	kPa
Steam Temp	143.6	°C
Steam Quantity	95.60	kg/h
Air Pressure Drop	5.00	Pa
Internal Volume	22.90	l

Construction

Casing Material	Galvanised
Tube Material	Copper
Fin Material	No Fins
Connection Size	1 x 2 x 1"(F) / 1 x 2 x 1"(R)

Accessories

Traffolyte Component label

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Access Section

Length 500 mm
Access Side Right

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Traffolyte Component Access label

Panel Filter

Panel Filter			Construction	
Clean PD	72	Pa	Grade	Coarse 85%(ISO16890)
Mean	111	Pa	Media	Card Frame-Cotton/Synthetic Media
Recommended dirty	150	Pa	Withdrawal	Front
			Size 1 / Qty	6 x 495 x 495 x 45 mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-250 Pa)
Traffolyte Component label
Spare filters included - 1 Set

Supply Fan - Dual Fan (100%-100%)

Supply Fan - Dual Fan (100%-100%)			Construction	
Design Air Volume	4	m ³ /s	Impeller	Backward Curve
Total Fan Resistance	1147	Pa	Internal Isolation	None
Fan Speed	1946	r/min		
Frequency @ Design Speed	66.42	Hz		
Max Frequency	78.00	Hz		
Maximum Fan Speed	2290	r/min		
Efficiency	80.01	%		

Motor Data (Electrical Loads per Fan)

Motor Data (Electrical Loads per Fan)			Construction	
FLC	21.40	Amps	Type	AC
Total Input Power	6.57	kW	Rating	IE3
Motor Power	11.00	kW		
Motor Speed	1465	r/min		
Electrical Supply	400/3/50.00			

Accessories

Removable wire mesh guard is fitted behind the fan access door.
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation
Over temperature protection thermister (For integration in to the controls system)
Factory fitted viewport
Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory Fitted Inlet Guard
Backdraft Damper will be fitted to fan
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
IP54 rated VSD drive(s) factory fitted externally on the access side of the unit and wired to the fan motor(s) with screened cable.
Factory fitted surround providing additional protection to externally factory fitted inverter.

Water Heating Coil Runaround

Water Heating Coil Runaround			Construction	
Air On / Off	5.00/12.9	°C/°C	Casing Material	FeZn 1.5 mm
Duty	34.40	kW	Tube Material	CU
Water(Inlet)/(Outlet)	18.00/1.50	°C/°C	Fin Material	CU-0.10
Water PD	43.68	kPa	Connection Size	1 x 1"(F) / 1 x 1"(R)
Water Flow Rate	0.85	L/s		
Air Pressure Drop	58.00	Pa		
Internal Volume	62.20	l		

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Accessories

Run around coil selection compliant to ERP2018 (Ecodesign directive 1253/2014)
Runaround coil pump and inter-connecting pipework designed, supplied and installed by others.
Traffolyte Component label

Access Section

Length 500 mm
Access Side Right

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Traffolyte Component Access label

Chilled Water Coil

Air On (db/wb)	30.00/20.00	°C/°C
Air Off (db/wb)	12.0/11.7	°C/°C
Duty	111.59	kW
Water(Inlet)/(Outlet)	6.00/12.00	°C/°C
Water PD	15	kPa
Water Flow Rate	4.43	L/s
Face Velocity	1.88	m/s
Air Pressure Drop	71.00	Pa
Internal Volume	53.80	l

Construction

Casing Material	Galvanised
Tube Material	Copper
Fin Material	Copper/PreTinned
Connection Size	1 x 2½"(F) / 1 x 2½"(R)
Eliminators	not needed BUT fit P400
Drain Tray	4 S Steel Removable draintray

Accessories

Valve and actuator to be supplied and fitted by others
Traffolyte Component label
Traffolyte label - Drain Trap Instruction

Access Section

Length 500 mm
Access Side Right

Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Traffolyte Component Access label

Steam Coil

Air On / Off	5.00/14.0	°C/°C
Duty	43.62	kW
Steam Pressure	300.00	kPa
Steam Temp	143.6	°C
Steam Quantity	71.70	kg/h
Air Pressure Drop	5.00	Pa
Internal Volume	10.20	l

Construction

Casing Material	Galvanised
Tube Material	Copper
Fin Material	Copper
Connection Size	1 x 2 x 1"(F) / 1 x 2 x 1"(R)

Accessories

Traffolyte Component label

Access Section

Length 500 mm
Access Side Right

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Accessories

Factory fitted IP44 Internal bulkhead light (42W) wired to an IP66 external switch
Factory fitted viewport
Traffolyte Component Access label

Rigid Filter

			Construction	
Clean Pd	67	Pa	Grade	ePM1 55%(ISO16890)
Mean	159	Pa	Media	ABS Frame/Synthetic Media
Recommended dirty	250	Pa	Withdrawal	Front
			Size 1 / Qty	4 x 592 x 592 x 292 mm
			Size 2 / Qty	2 x 592 x 292 x 292 mm

Accessories

Factory fitted Dwyer Minihelic gauge (Range 0-500 Pa)
Traffolyte Component label
Spare filters included - 1 Set

Outlet Section

			Construction	
Component	Damper		Casing	Aluminium EN AW6060 T6
Air Pressure Drop	1.00	Pa	Control	Manual

Accessories

Damper fitted with quadrant for manual adjustment (Air Balancing by others)
Traffolyte Component label

AHU Corridor Dimensions

Length	Width	Height	Weight (Per Unit)
7605 mm	600 mm	1900 mm	1028 kg



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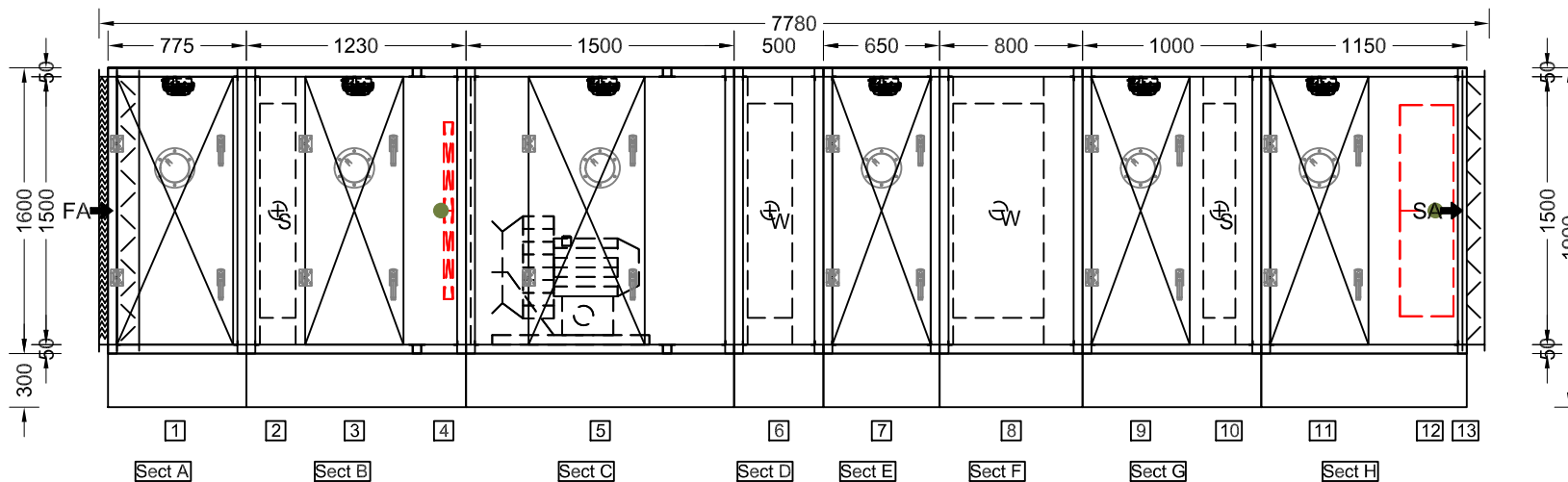
AHU Acoustic Data:

Acoustic Data (Supply Fan Sound Power Level): Per Fan

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Supply Fan Inlet Lw (dB):	71	73	88	78	77	75	73	79
Supply Fan Outlet Lw (dB):	80	79	92	90	88	81	79	81

The In-duct Sound Power Level Spectra are in dB re-1pW.

The fan sound power levels shown above do not include for the effects of mounting the fans within the AHU section(s). Please allow for the additional correction of 6db across the spectrum.



Unit Height including base 1900mm

Unit Width 2000mm

Section A: Weight = 288Kgs

Components

1 Inlet

Section B: Weight = 399Kgs

Components

2 Steam Heater

3 Access

4 Panel Filter

Section C: Weight = 650Kgs

Components

5 Plug Fan

Section D: Weight = 428Kgs

Components

6 Run Around Heater

Section E: Weight = 166Kgs

Components

7 Access

Section F: Weight = 606Kgs

Components

8 Cooling Coil

Section G: Weight = 299Kgs

Components

9 Access

10 Steam Heater

Section H: Weight = 384Kgs

Components

11 Access

12 Rigid Filter

13 Outlet

ELEVATION

M&Y Ventilation Equipment Limited

104 Franklyn Road, Haywards Heath,
West Sussex RH16 4DN

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F: 0844 756 0203

Email: sales@myventilation.co.uk

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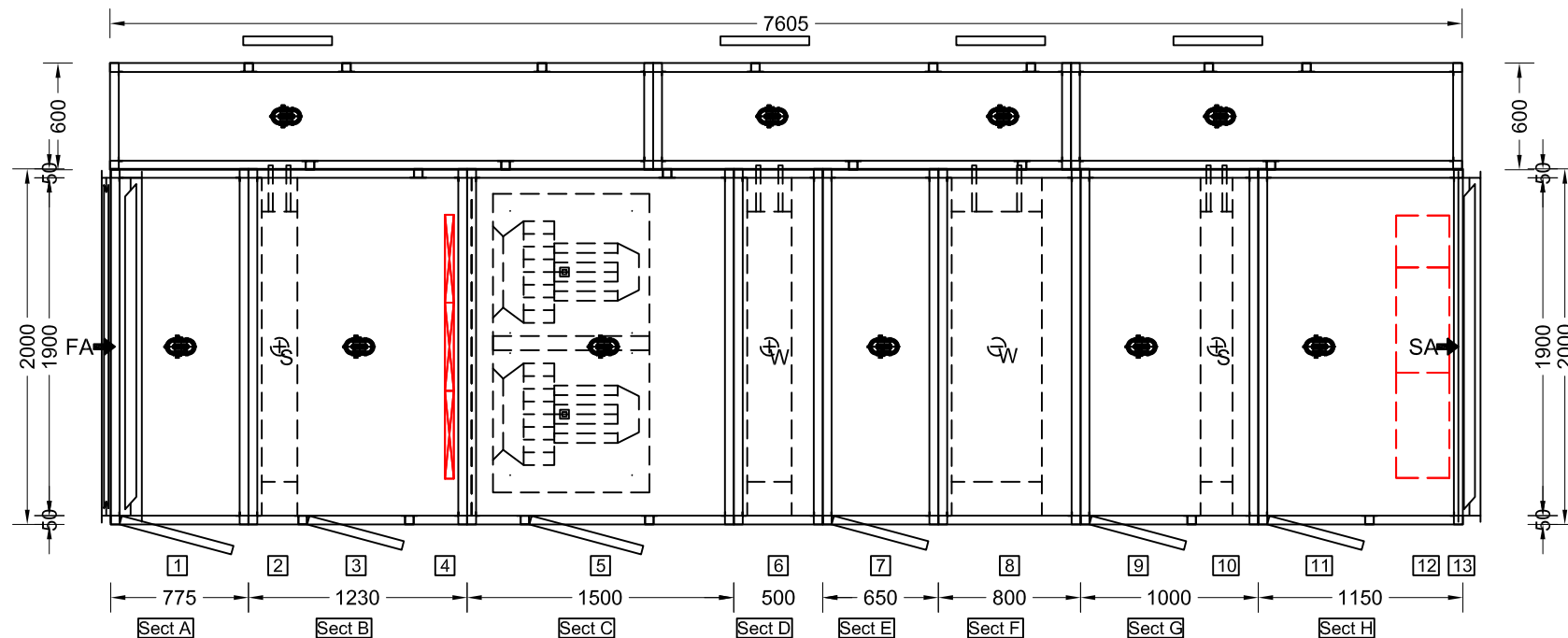
Quote No: Q 11271

Project Reference: Royal Free Hospital - 12th Floor

Unit No: 11271-01-13

Unit Reference: Supply Water

Revision: 13



Unit Height including base 1900mm

Unit Width 2600mm

Section A: Weight = 288Kgs

Components

1 Inlet

Section B: Weight = 399Kgs

Components

2 Steam Heater

3 Access

4 Panel Filter

Section C: Weight = 650Kgs

Components

5 Plug Fan

Section D: Weight = 428Kgs

Components

6 Run Around Heater

Section E: Weight = 166Kgs

Components

7 Access

Section F: Weight = 606Kgs

Components

8 Cooling Coil

Section G: Weight = 299Kgs

Components

9 Access

10 Steam Heater

Section H: Weight = 384Kgs

Components

11 Access

12 Rigid Filter

13 Outlet

PLAN DECK

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Revision: 13

TECHNICAL SPECIFICATION SHEET

Date: 15 June 2021
Quote No: Q 11271

Project Reference: Royal Free Hospital - 12th Floor
Unit No: 11271-02-13

Unit Reference: Extract
Revision: 13

AHU Details

Design Extract Air Volume	2.5	m ³ /s
External Static Pressure	350	Pa
Unit Velocity	1.33	m/s

Energy Use

	Extract on Clean Filters	Overall	
Specific Fan Power	0.73	0.73	kW/(m ³ /s)

AHU Construction

Framework	50 mm
Framework Coating	Aluzinc Steel
Panel Depth	50 mm
External Panel Finish	Mica Coated steel 0.90mm
Internal Panel Finish	Galv Sheet 0.9mm
Panel Insulation	Mineral Wool 50mm

Construction

Unit Location	External
Weather Roof	MICA Duo Pitch Roof
Baseframe	100 x 50 PFC
Casing performance (EN 1886 Standard)	
Leakage Class	L2
Casing strength	D1
Thermal Transmittance	T3
Thermal Bridge	TB3

Overall Unit Dimensions

Length	Width	Height
2950 mm	2040 mm	1170 mm

Inlet Section

Component	Spigot
Air Pressure Drop	0.00 Pa

Construction

Casing	Not Applicable
Control	Not Applicable

Panel Filter

Clean PD	55	Pa
Mean	102	Pa
Recommended dirty	150	Pa

Construction

Grade	Coarse 70%(ISO16890)
Media	Card Frame-Cotton/Synthetic Media
Withdrawal	Side
Size 1 / Qty	4 x 495 x 595 x 47 mm

Accessories

Factory fitted Pressure Differential Tappings either side of the filter.
Traffolyte Component label
Traffolyte Component Access label

Chilled Water Coil

Air On (db/wb)	22.00/15.43	°C/°C
Air Off (db/wb)	8.0/7.4	°C/°C
Duty	58.57	kW
Water(Inlet)/(Outlet)	1.50/18.00	°C/°C
Water PD	48	kPa
Water Flow Rate	0.85	L/s
Face Velocity	1.93	m/s
Air Pressure Drop	105.00	Pa
Internal Volume	50.20	l

Construction

Casing Material	Stainless Steel 304
Tube Material	Copper
Fin Material	0.18 mm Polyester Coated Aluminium
Connection Size	1 x 1¼"(F) / 1 x 1¼"(R)
Eliminators	not needed - Not Incl.
Drain Tray	4 S Steel Removable draintray

Accessories

Runaround coil pump and inter-connecting pipework designed, supplied and installed by others.
Traffolyte Component label
Traffolyte label - Drain Trap Instruction

TECHNICAL SPECIFICATION SHEET

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Unit No: 11271-02-13

Unit Reference: Extract
Revision: 13

Exhaust Fan - Dual Fan (100%-100%)

Design Air Volume	2.5	m³/s
Total Fan Resistance	503	Pa
Fan Speed	1285	r/min
Frequency @ Design Speed	44.34	Hz
Max Frequency	53.00	Hz
Maximum Fan Speed	1540	r/min
Efficiency	78.09	%

Construction

Impeller	Backward Curve
Internal Isolation	20mm Open Spring

Motor Data (Electrical Loads per Fan)

FLC	6.30	Amps
Total Input Power	1.93	kW
Motor Power	3.00	kW
Motor Speed	1450	r/min
Electrical Supply	400/3/50.00	

Construction

Type	AC
Rating	IE3

Accessories

Removable wire mesh guard is fitted behind the fan access door.
Fan Label kit, Fan Access, Traffolyte Warning label - Fan run down, Danger label - Safety, Electrical Isolation
Inlet Flexible Connection
Backdraft Damper will be fitted to fan
Fan motor(s) will be wired with screened cable to an externally mounted IP66 rated isolator(s)
TBA
TBA

Access Section

Length	500	mm
Access Side	Both	

Accessories

Traffolyte Component Access label

Outlet Section

Component	Hood MICA		Casing	Not Applicable
Air Pressure Drop	8.00	Pa	Control	Not Applicable



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Unit Reference: Extract
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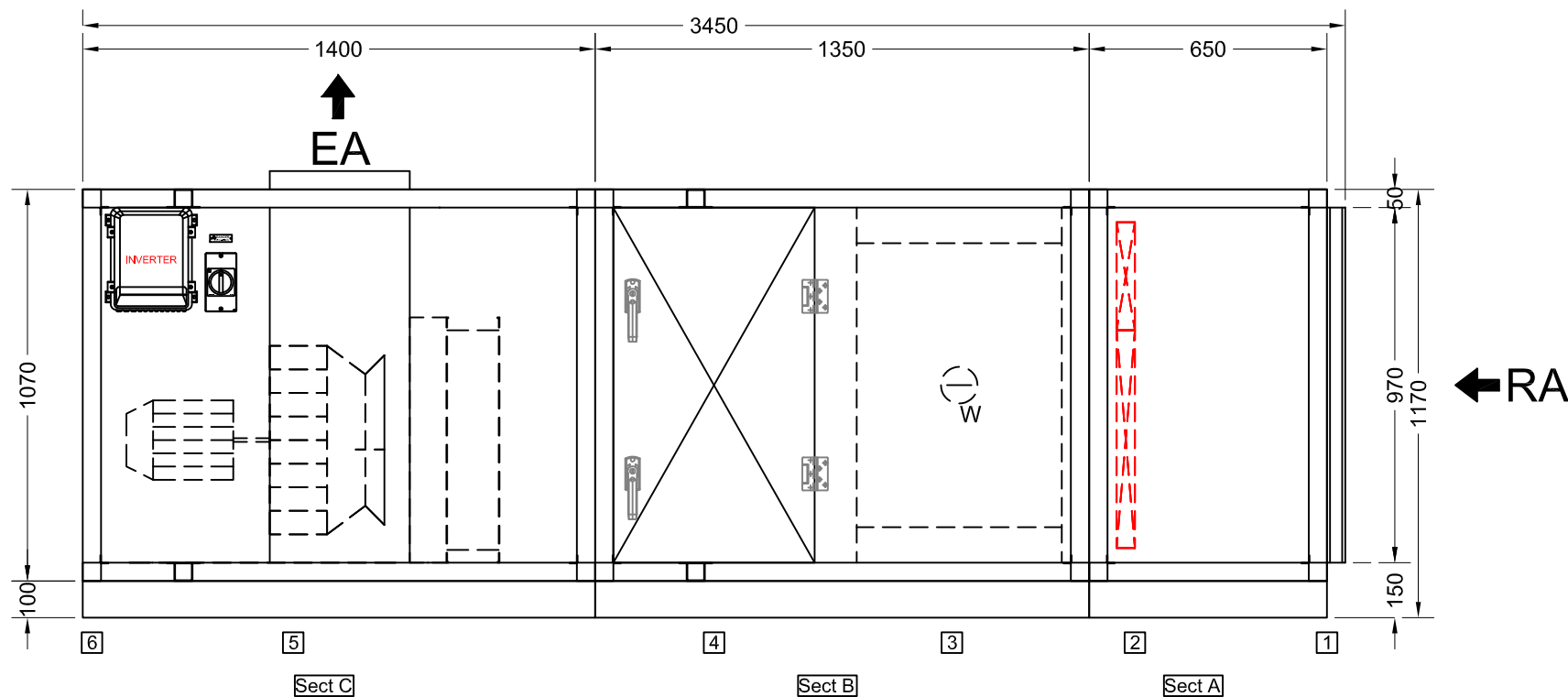
AHU Acoustic Data:

Acoustic Data (Extract Fan Sound Power Level): Per Fan

Frequency(Hz)	63	125	250	500	1K	2K	4K	8K
Extract Fan Inlet Lw (dB)	65	78	77	73	72	70	66	64
Extract Fan Outlet Lw (dB)	71	83	80	82	81	75	71	67

The In-duct Sound Power Level Spectra are in dB re-1pW.

The fan sound power levels shown above do not include for the effects of mounting the fans within the AHU section(s). Please allow for the additional correction of 6db across the spectrum.



Unit Height including base 1170mm

Unit Width 2040mm

Section A: Weight = 209Kgs

Components

- 1 Inlet
- 2 Panel Filter

Section B: Weight = 650Kgs

Components

- 3 Water Cooling Coil
- 4 Access

Section C: Weight = 527Kgs

Components

- 5 Plug Fan
- 6 Outlet

SIDE ELEVATION ON A.H.U.

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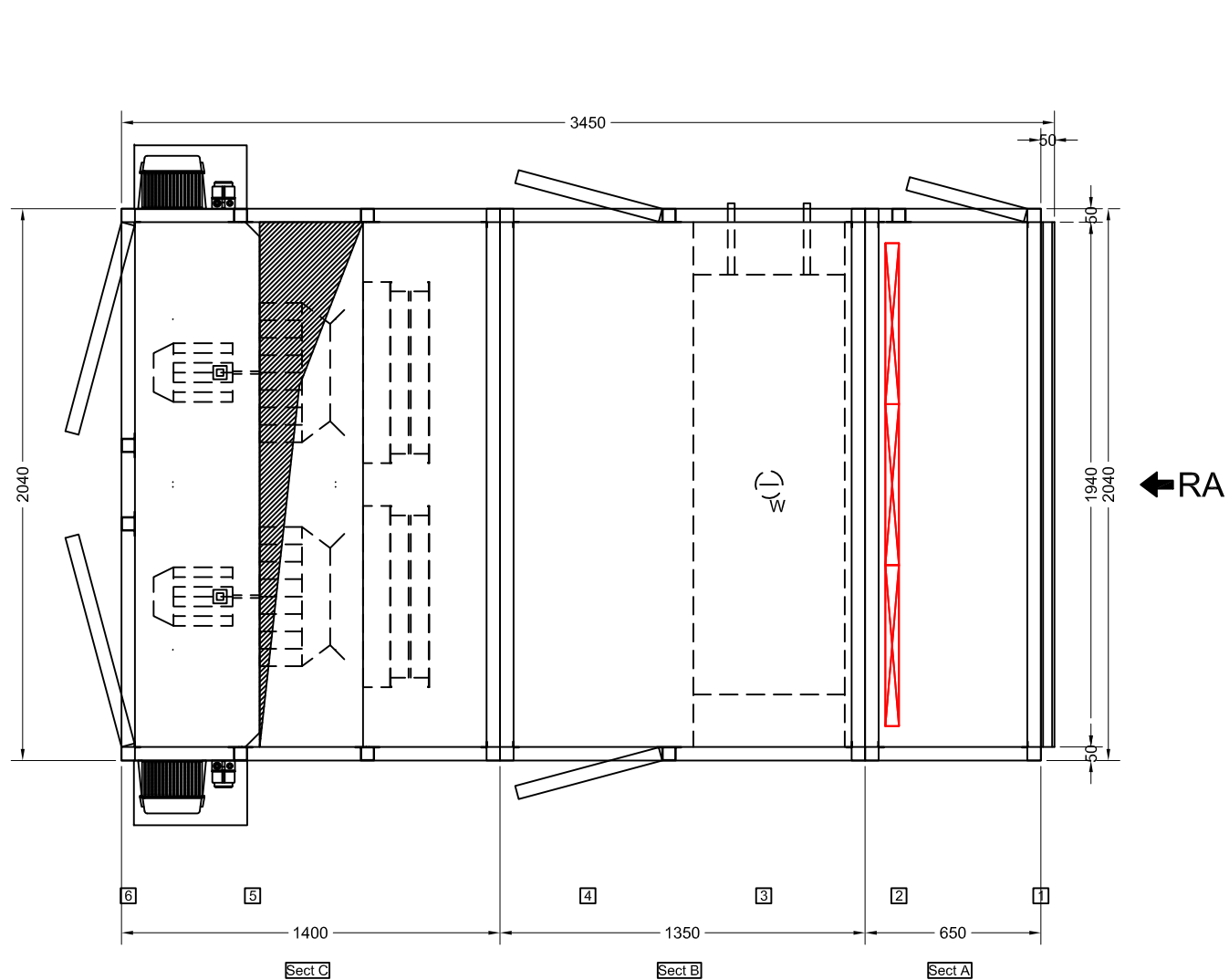
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Components

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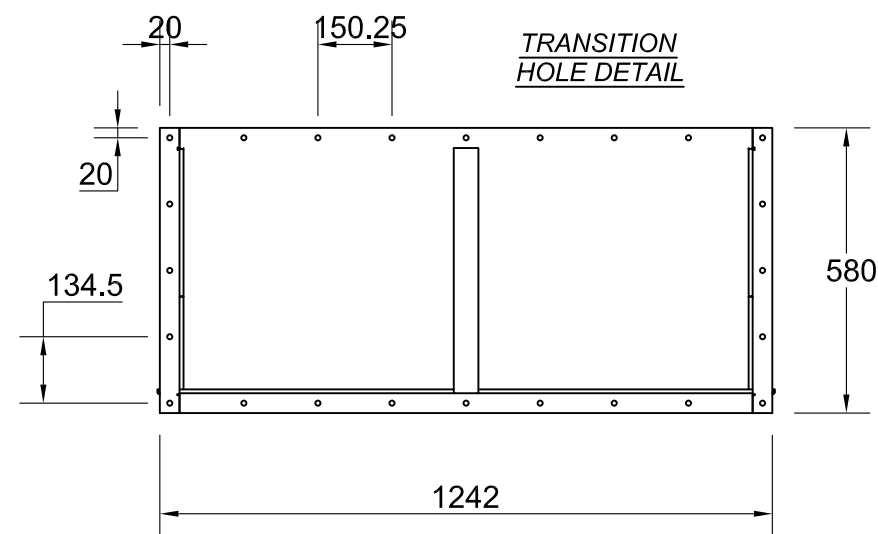
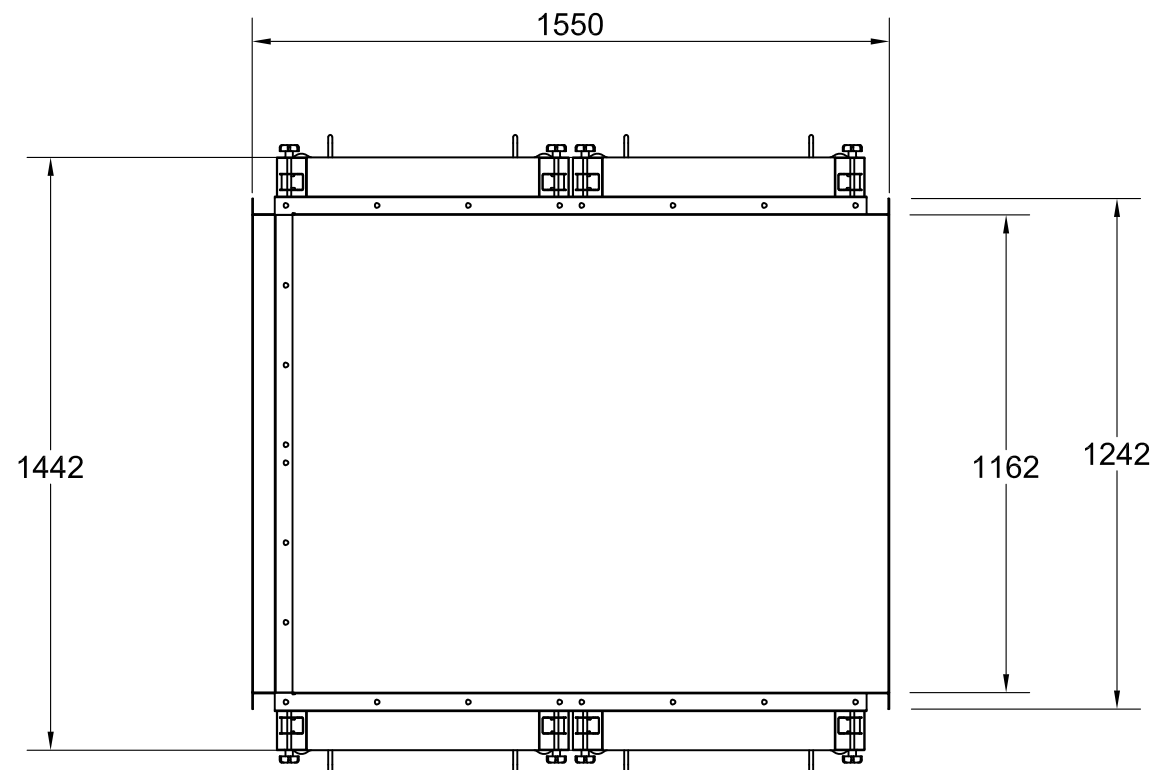
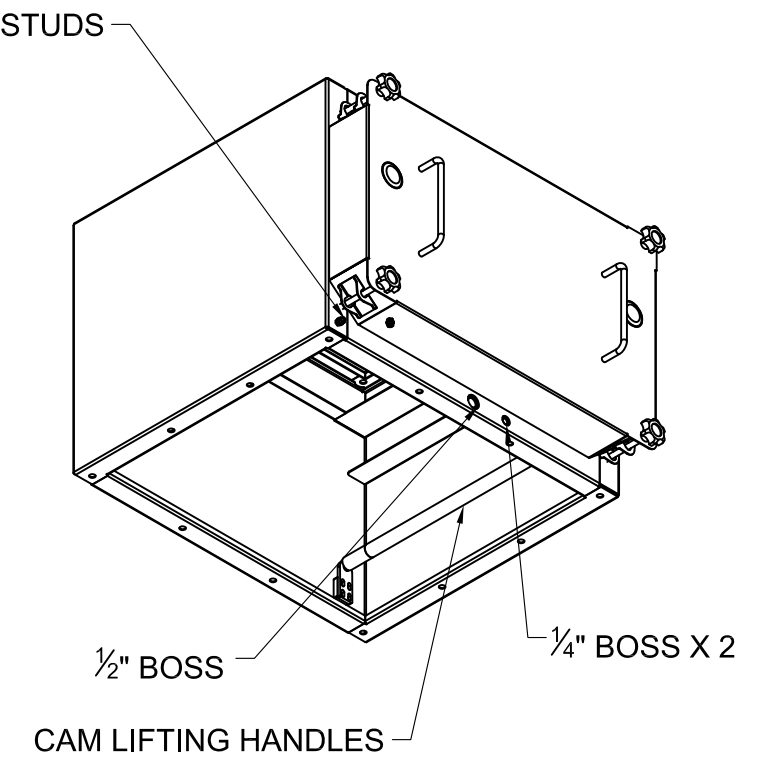
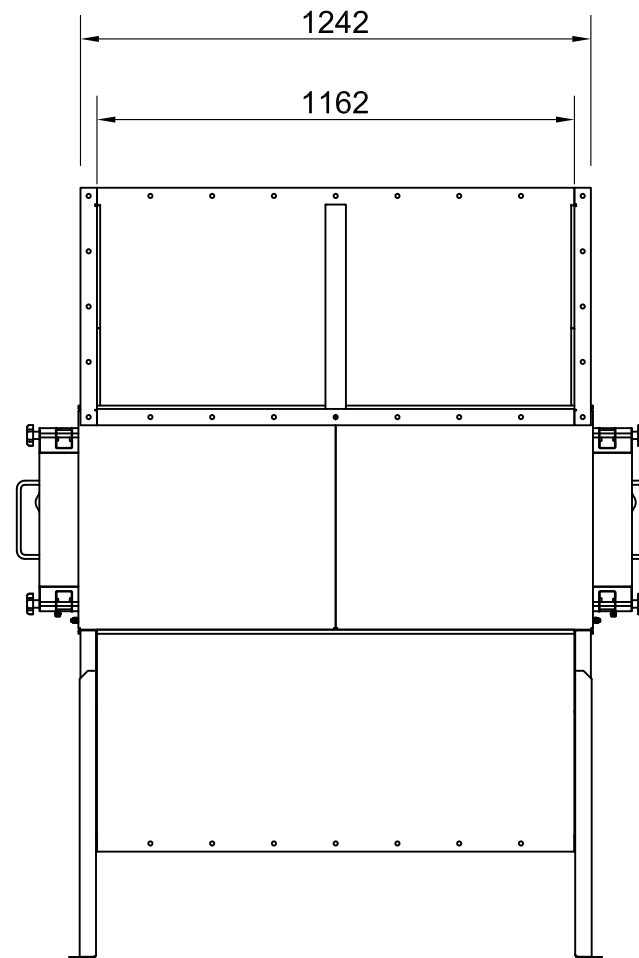
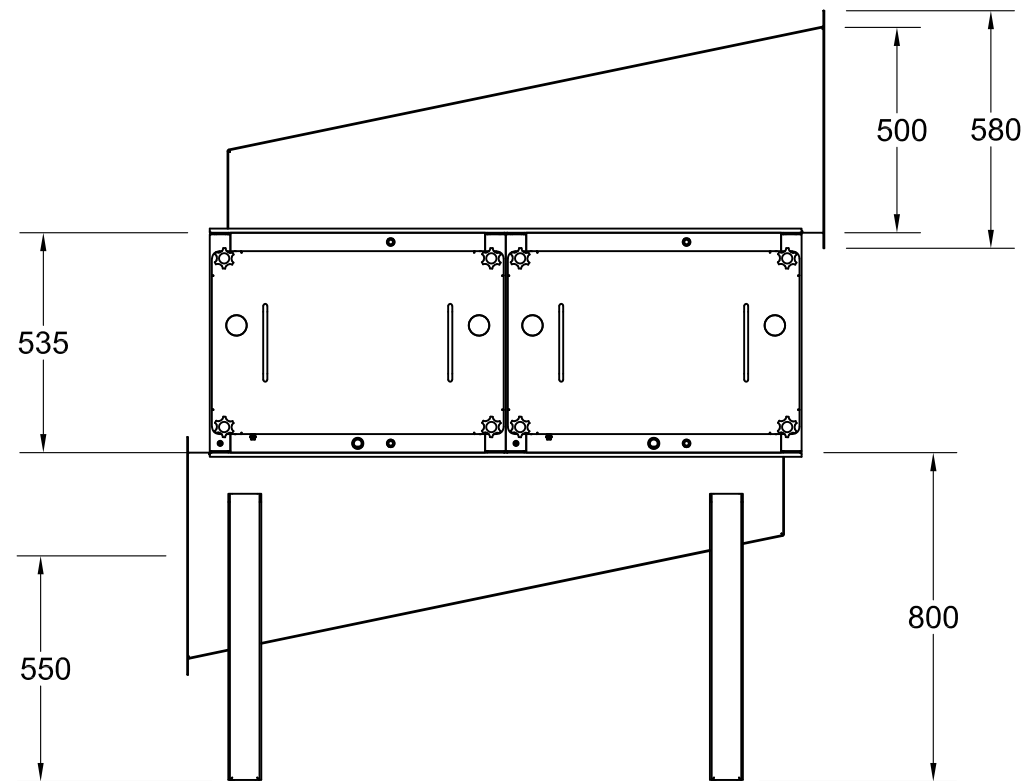
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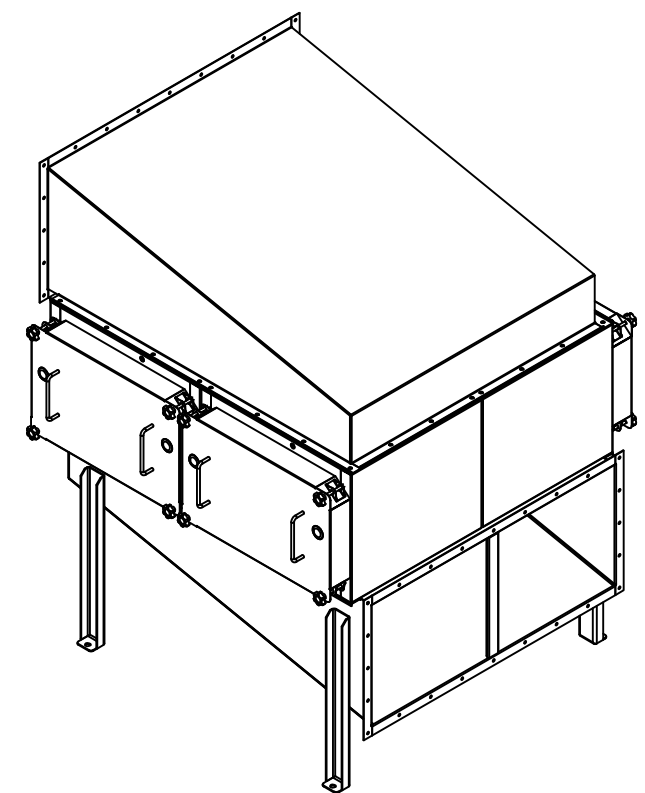
Unit Reference: Extract

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Supply AHU - Royal Free Hospital 12th Floor



SAFECHANGE HOUSINGS TO FIT x 4
610 X 610 X 292 GASKET SEAL HEPA FILTER



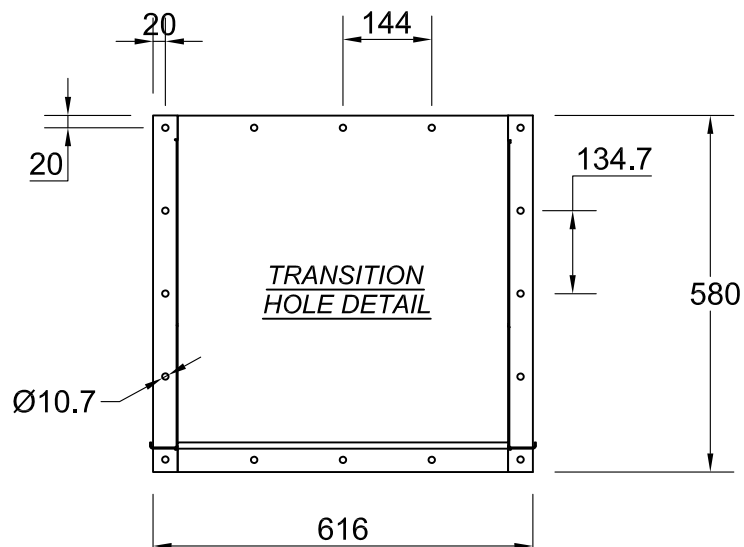
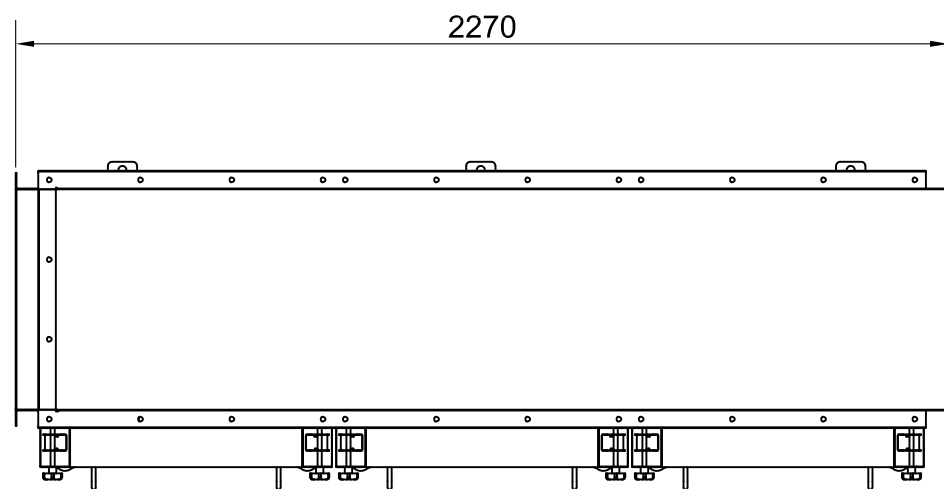
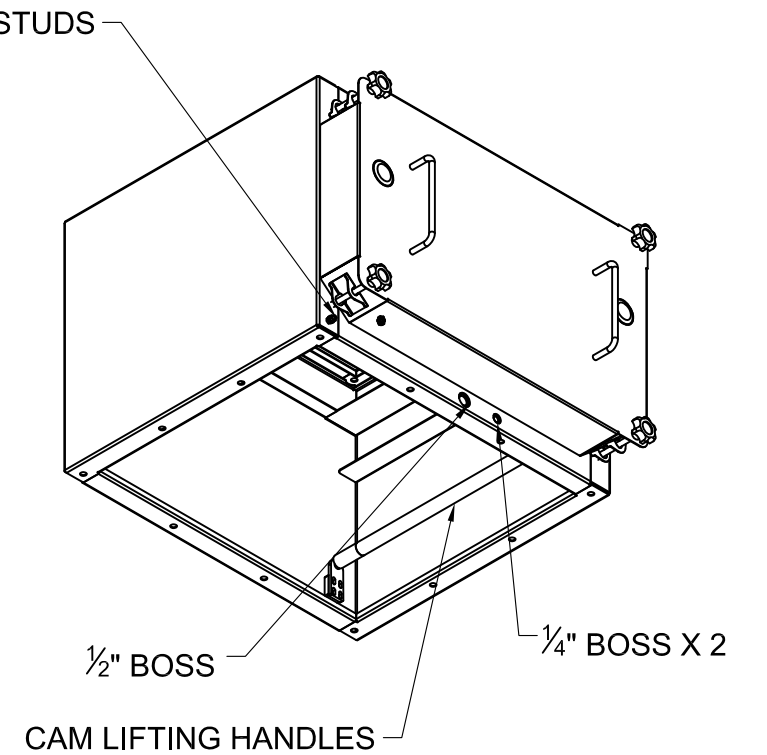
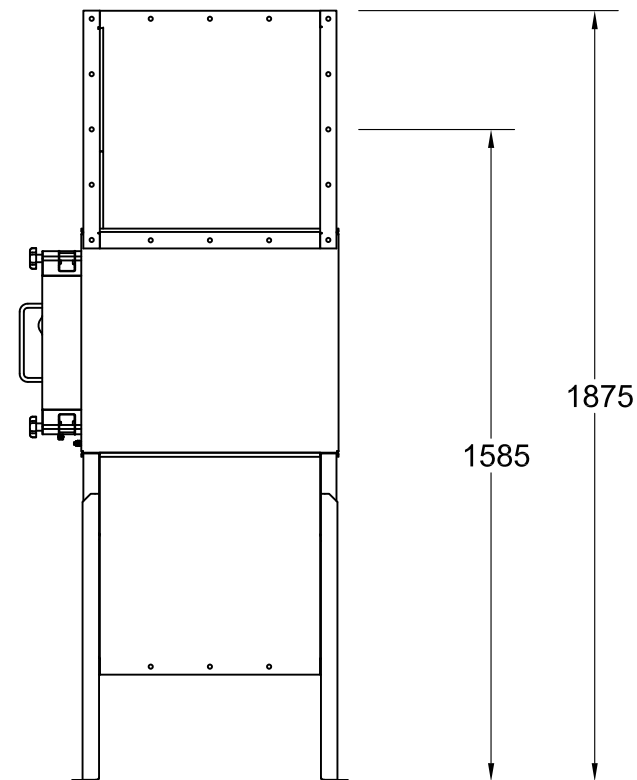
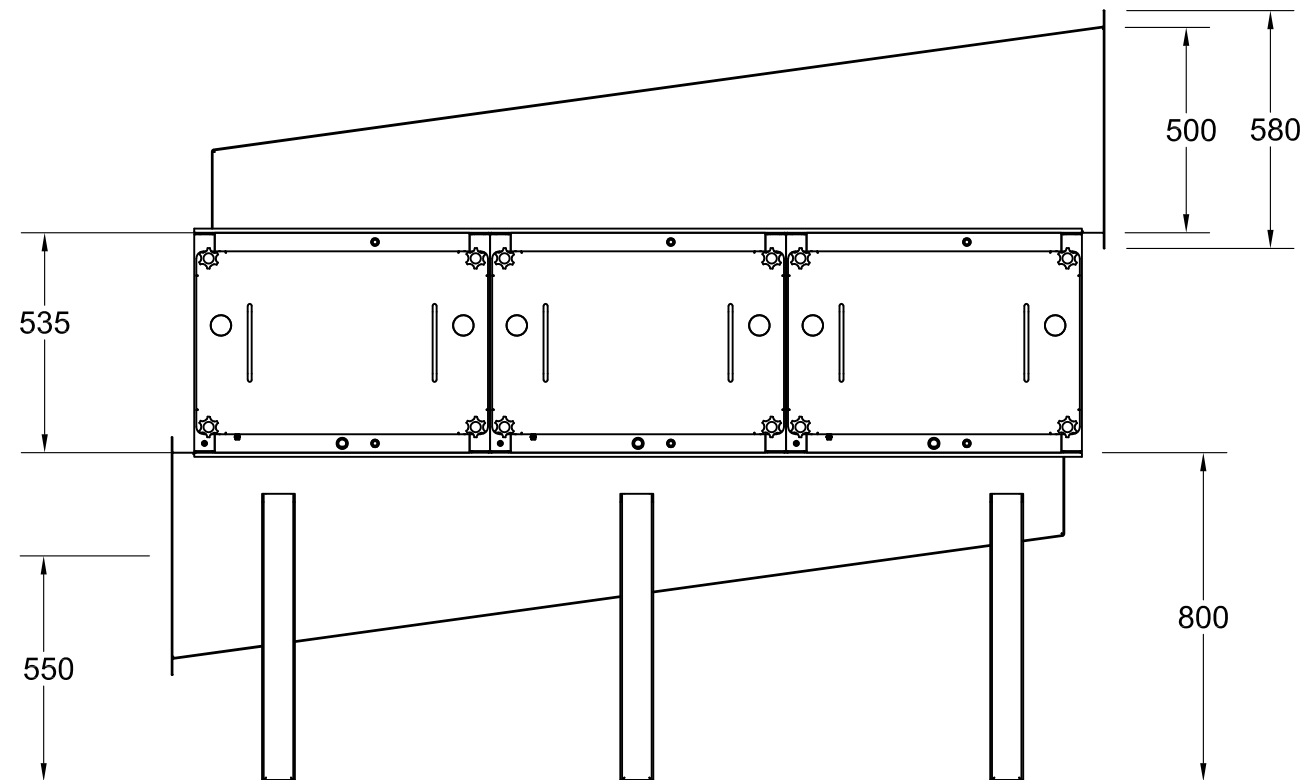
MATERIAL : 2.0MM MILD STEEL
FINISH : EPOXY COATED RAL9010

M&Y Ventilation Equipment Limited

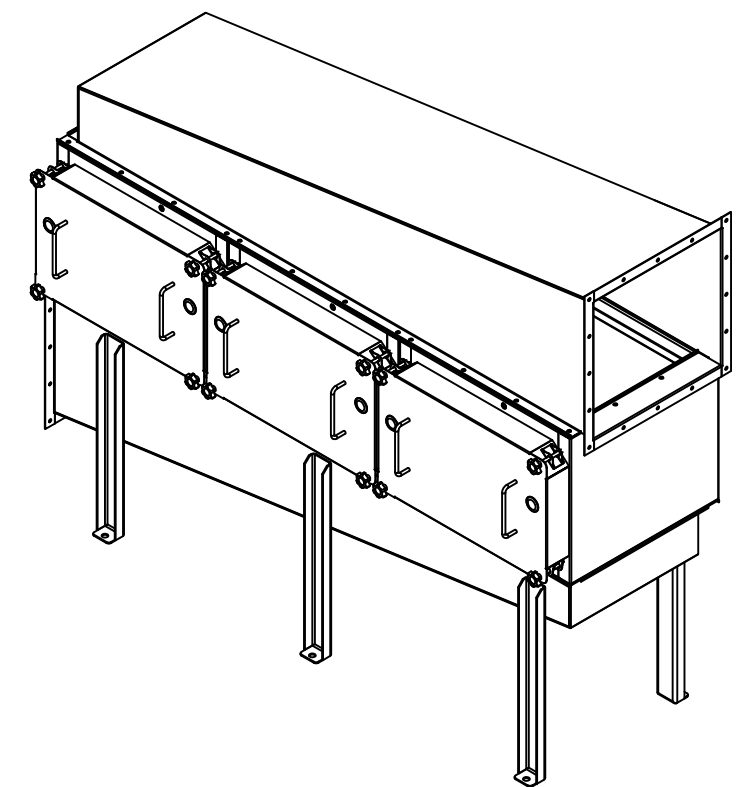
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Extract AHU - Royal Free Hospital 12th Floor



SAFECHANGE HOUSINGS TO FIT x 3
610 X 610 X 292 GASKET SEAL HEPA FILTER



MATERIAL : 2.0MM MILD STEEL
FINISH : EPOXY COATED RAL9010

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