



SUMMARY FAN DATA SHEET

Nuaire, Western Industrial Estate, Caerphilly, CF83 1NA, United Kingdom. email:info@nuaire.co.uk

UK Commercial enquiries T:029 2085 8200 UK Residential enquiries T:029 2085 8500 International enquiries T:+44.29 2085 8497

Whilst the information given on this data sheet is fan specific, it is in summary and reference to the product selection catalogue and installation & maintenance documents is recommended.

This data sheet produced on 25 Nov 2024 12:40 using software version 5.8.4595.0

Project: 21/03956/COM

SANDILANDS PRIMARY SCHOOL (SCHOOL REBUIL

Location: Extract fan unit

Technical Data

SQF - Squif Single In-line Fans

Fan Code: **SQFA44ES**
Installation Manual Links: 671175

Required duty: 1.06 m³/s at 695 Pa
Actual duty: 1.11 m³/s at 762 Pa
Actual at required flow: 1.06 m³/s at 771 Pa

When speed controlled to required duty (95.52%):

Fan Input Power: **1.633 kW**
Motor Input Power: **2.015 kW**
Specific Fan Power: **1.9 W/(l/s)**
Velocity at required duty: 1.893 m/s
Fan Total Efficiency: 45%

At full speed:

Fan Input Power: 1.874 kW
Maximum Fan Input Power: 2.17 kW
Motor Input Power: 2.303 kW
Specific Fan Power: 2.1 W/(l/s)
Fan Total Efficiency: 41%

Maximum Fan Speed: 4 pole, 1,450 RPM
Electrical Supply: 400V, 3 Phase, 50 Hz
Nominal Motor Rating: 2.2 kW
Motor current (flc): 4.58 A
Motor starting current (sc): 4.58 A
Motor Efficiency: IE3 / Premium Efficiency

Max. operating temp: 90°C
Weight: 100 kg
Starting currents are nominal for D.O.L. starting.

Sound Data

Acoustic performance to ISO 13347 and AMCA 300.

Noise calculated speed controlled to required duty (95.52%)

Sound Power Levels re 1 pWatts (Hz):

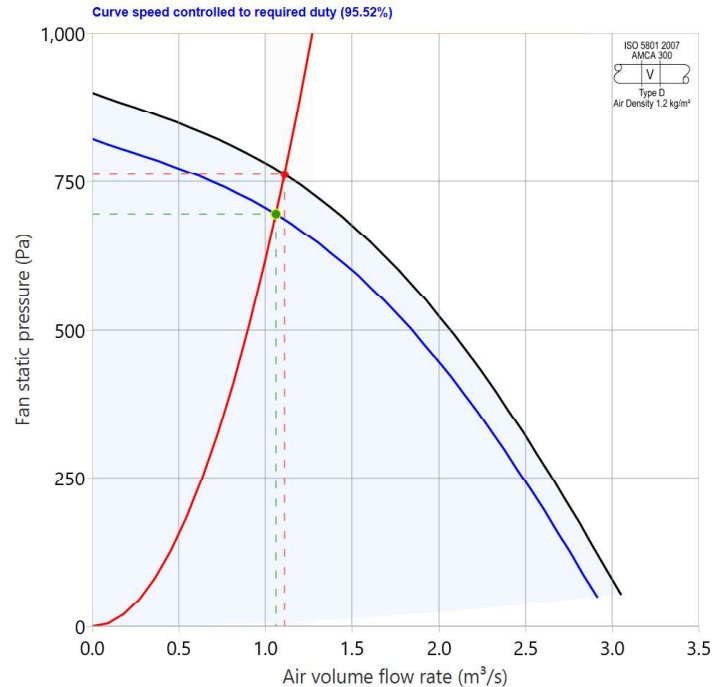
Hz	63	125	250	500	1k	2k	4k	8k	dBA
Induct Inlet	82	92	88	81	76	79	79	70	
Induct Outlet	83	86	85	86	80	81	81	67	
Breakout	78	83	80	77	67	68	64	46	57
For 100% speed:	+1	+1	+1	+1	+1	+1	+1	+1	

dBA is spherical at 3 metres. For hemi-spherical add 3 dBA.

Values shown are for inlet Lw, outlet Lw sound power & breakout levels for: Installation Type D: ducted inlet, ducted outlet. Ratings include the effects of duct end correction.

Please note that the noise data stated on this data sheet for the unit and/or silencer is tested in accordance with UK, European and International industry laboratory standards. However onsite conditions may vary and we would recommend that this information is verified by an acoustic specialist in order to ensure its suitability for the intended application.

Performance Chart



Additional Notes

Selected Ancillaries

1 x NAV5 Anti-vibration mounting kit
2 x SQFF4 Square flexible connector double flanged

Specification

In-line centrifugal fan suitable for both vertical & horizontal mounting. The unit casing shall be heavy gauge galvanised steel. The fans shall be of high efficiency backward curved centrifugal design, manufactured in galvanised steel. Fans shall be direct drive with IE2 high efficiency motors to BS5000 as standard, where appropriate. The unit motor shall be positioned outside the ventilation airflow path. The unit shall be capable of continuous operation at 90°C.

Unit fitted with full Ecosmart controls, BMS interfaces and commissioning controls. Ecosmart fans incorporate (in a convenient separate enclosure) a control package providing full Ecosmart functionality. The fan shall have the following energy saving functions integrally mounted within the fan unit on a purpose made PCB, all components pre-wired by the manufacturer: integral maximum and minimum speed adjustment/setting; integral adjustable run on timer; integral BMS interfaces, 0-10v and volt free failure indication.

NAV5

Resilient rubber anti-vibration mountings, supplied as a set of 4.

SQFF4

Double flanged flexible connector manufactured from flame proof material. Heat resistant to 400°C with excellent resistance to chemicals, ozone, oil and grease. The connector is air-tight, waterproof and tested to BS476 Part 7.



SUMMARY FAN DATA SHEET

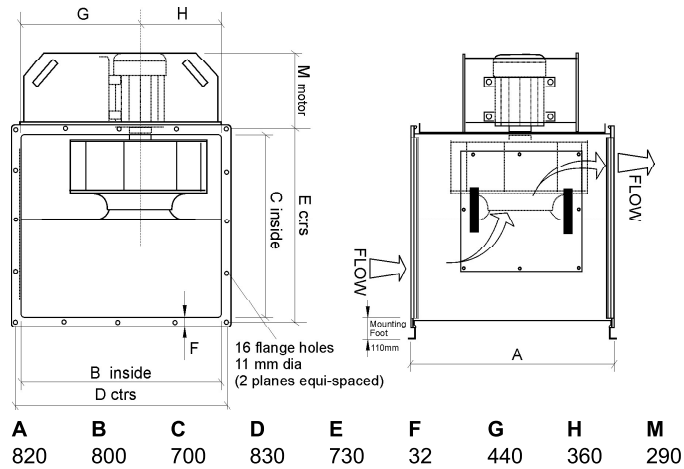
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Fan Dimensions



kg

100.0

Length: Width: Height:

820 830 1020

Drawing is for dimensional purposes only. Dimensions in mm.

Please see selected ancillaries section for additional dimensions for any requested additional ancillaries.



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Attached documents

Additional file

TECHNICAL SPECIFICATION SHEET

File: Q3033143-01-0

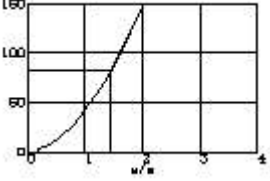
PROJECT DETAILS			
Date	Project no	Project Reference	Unit No
13 Nov 2024	3033143	21/03956/COM SANDILANDS	Q3033143-01-0
Customer	Rev date	Unit Reference	Unit Model
	13 Nov 2024	Supply	Non-standard
Supply Air Flow	Supply External Static	Extract Air Flow	Extract External Static
.900 m³/s	350 Pa	0.000 m³/s	0 Pa

UNIT CONSTRUCTION			
Panel Thickness	Panel Insulation	Aluminium frame work	Frame Coating
30mm Thick (Nom.) Double Skinned	Rockwool 23mm (1000x600) RW3 Semi Rigid Slab	30mm Pentapost Corner Extrusion	Natural Finish
Panel external Sheet	Panel internal Sheet	Base frame	Unit Location
Magnelis (0.9mm) DX51D+ZM310 - 5110094 (BS EN 10346:2015)	Magnelis (0.9mm) DX51D+ZM310 - 5110094 (BS EN 10346:2015)	100x50x1.5 Fabricated Base	Internal
Access side	Unit Model	Roof type	Leakage Class
Right	Non-standard /	None	Class B L2
Thermal Bridging	Thermal Transmittance	Deflection Class	Environment
TB4	T4	D2M	Standard

SECTION WEIGHTS AND DIMENSIONS - (NOT including transport packaging and pallets)				
Section No	Length	Width	Height	Weight
A	2705 mm	1000 mm	1100 mm	490 kg

OVERALL UNIT DIMENSIONS			
Length	Width	Height	Total Weight
2705 mm	1000 mm	1100 mm	490 kg

001 DAMPER/FLEX.CONN/LOUVRE							
Flow	Dimensions	Model	Air vel.	Damper	Spigot connection	Louvre	Actuator
0.9000 m3/s	540 x 540 mm	165	3.09 m/s	Yes	No	No	No

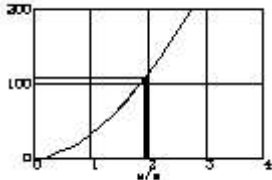
002 FILTERS								
Stage #	Air Volume	class	Type	Model	Media	Qty.Size 1	Qty.Size 2	Length mm
1	0.9000 m3/s	G4	Panel	EnergySaver M7	Intrepid	1x495x495	1x292x495	50
1						Qty.Size 3	Qty.Size 4	
Clean	Final	Average						
14 Pa	150 Pa	82 Pa						
								

002 Accessories	
● Magnehelic pressure guage 0-500Pa surface mounted	

002 REMOVABLE PANEL	
Dimensions	Type
170 x 940 mm	Removable panel

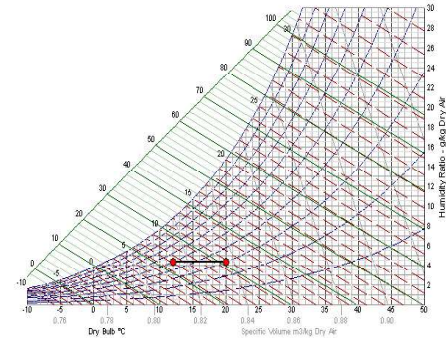
003 COIL											
Flow	Qty	Model						Rows	Fin Spacing	Face Area	
0.9000 m3/s	1	LW-5/8-15-9-12-700(2)-H-RHS LIDAF-Cu 0.41/Al/Galv-1" Screwed BSP-28mm'Y'+4mm Cap-No Elims-AHU mounted-o/a 842H 885W 423D -MaxW.P.x6-T.P.x17						9	2.12mm (12/inch)	700 x 762	
Air side	DB	WB	RH	Total Load	Sensible Load	Face velocity	Pressure Drop	Psychrometric Chart © CC31 Barometric Pressure 101.325 kPa			
On	-4.0 °C	-	-	18.40 kW	18.40 kW	1.69 m/s	67 Pa				
Off	12.9 °C	-	-								
Water	Temp.	Water flow		Water P.D.	Glycol Type	Glycol Percentage	Connection Size				
In	17.3 °C	1 x 0.28 L/s		52.0 kPa	None	0 %	1" x 1off				
Out	1.6 °C						1" x 1off				
Circuits	Duty Margin		Fin Material		Tube Material	Treatment Type	Case Material	.			
2	20%		Aluminium		5/8"	Copper	Galvanised	-			

003 COIL PANEL									
Dimensions					Type				
543 x 940 mm					Coil Panel				

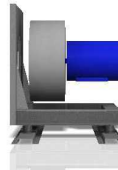
004 FILTERS								
Stage #	Air Volume	class	Type	Model	Media	Qty.Size 1	Qty.Size 2	Length mm
1	0.9000 m3/s	F7	Bag	CP7 Bag	synthetic	1x592x492	1x592x289	600
1						Qty.Size 3	Qty.Size 4	
Clean	Final	Average						
64 Pa	150 Pa	107 Pa						
								

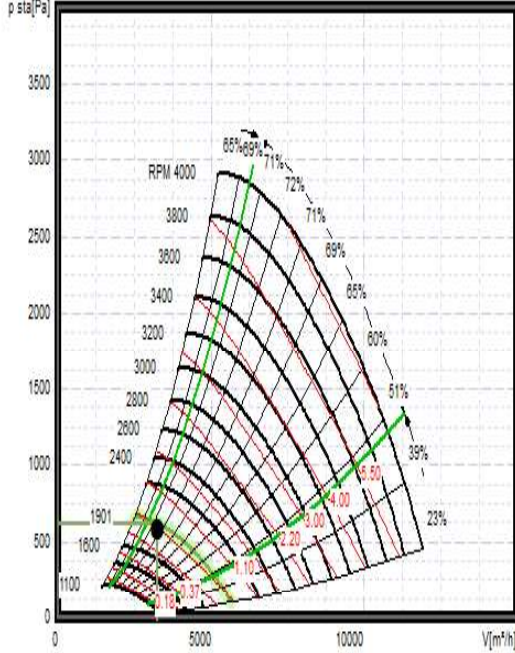
004 Accessories									
• Magnehelic pressure guage 0-500Pa surface mounted									

004 HINGED ACCESS DOOR									
Dimensions					Type				
500 x 940 mm					Hinged door				

005 COIL											
Flow	Qty	Model						Rows	Fin Spacing	Face Area	
0.9000 m3/s	1	LW-5/8-15-2-5-700(2)-H-RHS LIDAF-Cu 0.41/Al/Galv-1" Screwed BSP-28mm'Y'+4mm Cap-No Elims-AHU mounted-o/a 842H 885W 157D -MaxW.P.x6-T.P.x17						2	5.08mm (5/inch)	700 x 762	
Air side	DB	WB	RH	Total Load	Sensible Load	Face velocity	Pressure Drop	Psychrometric Chart @CCSI Barometric Pressure 101.325 kPa 			
On	12.0 °C	-	-	8.72 kW	8.72 kW	1.69 m/s	8 Pa				
Off	20.0 °C	-	-								
Water	Temp.	Water flow		Water P.D.	Glycol Type	Glycol Percentage	Connection Size				
In	43.0 °C	1 x 0.30 L/s		13.0 kPa	None	0 %	1" x 1off				
Out	36.0 °C						1" x 1off				
Circuits	Duty Margin		Fin Material		Tube Material	Treatment Type	Case Material	-			
2	20%		Aluminium		5/8"	Copper	Galvanised				

005 COIL PANEL	
Dimensions	Type
277 x 940 mm	Coil Panel

006 PLENUM FAN									
Volume per Fan		Ext Static		Fan Make		Motor Make			
.900 m3/s		350 Pa		Comefri					
Configuration		Unit static		Fan Type		Motor Poles			
Free Outlet		271 Pa		NPA355-IE3-0110-4P-3		4			
Outlet Velocity		Fan Static Pressure		Fan Blade Type		Motor Nom. speed			
1.0 m/s		621 Pa		Backward Curve		1425 rpm			
		Static Efficiency		Fan Speed		Motor Size			
		69.3 %		1901 rpm		W1.10x19Ø			
THIS FAN SECTION CONTAINS 1 FAN									
		Fan 1		Fan 2		Total			
Power Input		0.81 kW		-		0.81 kW			
Power		1.10 kW		-		1.10 kW			
FLC		2.42 A		-		2.42 A			
Volts/Ph/Hz		380/3/50		-		-			
Inverter Freq		VSD		AV Mount Type					
				Comefri Spring					
66.70		Inverter		AVM Code		MSO1-B Green	MSO1-B Green	MSO1-B Green	MSO1-B Green
				AVM Colour		Green	Green	Green	Green
Frequency		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
Inlet		67	66	79	75	68	65	64	60
Outlet		77	72	79	76	75	74	67	62



The graph plots static pressure (p sta [Pa]) on the y-axis (0 to 3500) against volume flow (V [m³/h]) on the x-axis (0 to 10000). It features performance curves for RPM 4000, 3800, 3600, 3400, 3200, 3000, 2800, 2600, 2400, 2200, 2000, 1800, and 1600. Efficiency lines are marked at 23%, 39%, 51%, 60%, 66%, 71%, 72%, and 89%. A specific operating point is highlighted at approximately 1901 RPM and 1100 m³/h, with corresponding pressure and efficiency values indicated by dashed lines.

Description									
SWL Inside the Inlet Duct (dB)									
SWL Inside the Outlet Duct (dB)									

006 Accessories	
IP66 Metal terminal box fitted	

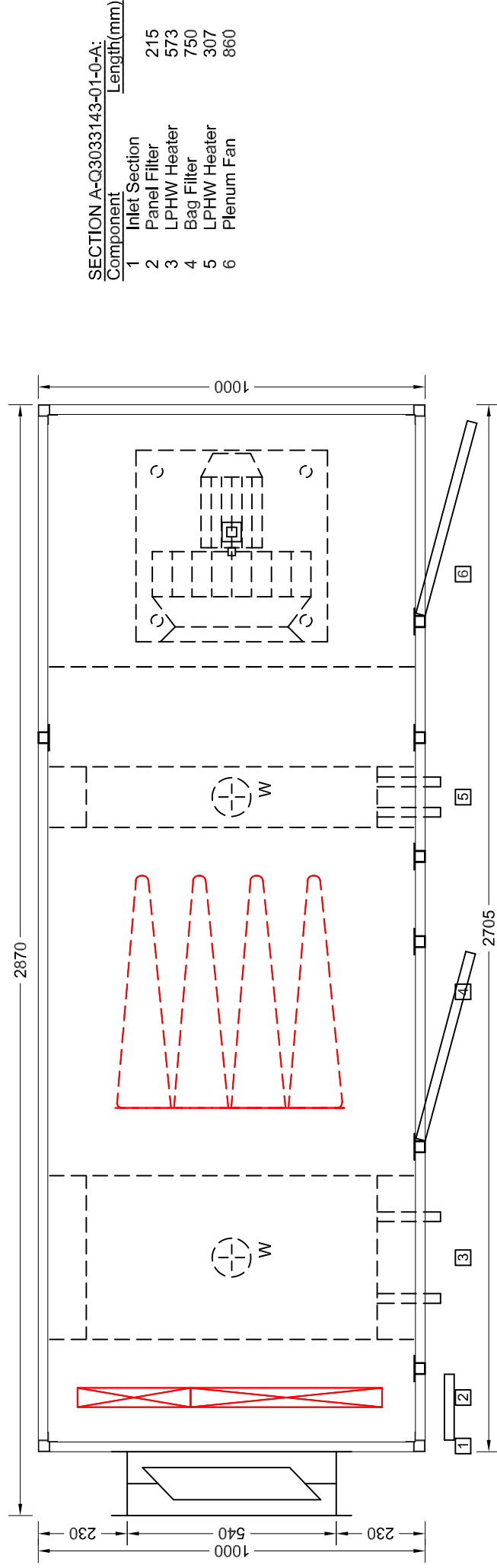
006 HINGED ACCESS DOOR	
Dimensions	Type
515 x 940 mm	Hinged door

AHU ACOUSTIC DATA SUPPLY SECTION									
Freq	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Total A Weighted Sound Power Level (dB re 1pW)	Description
	59	69	62	59	48	44	30	64	Unit Induct Inlet A Weighted Sound Power Level (dB re 1pW)
	72	79	76	75	74	67	62	80	Unit Induct Outlet A Weighted Sound Power Level (dB re 1pW)
	61	62	46	46	48	40	29	56	Unit Casing Radiated A Weighted Sound Power Level (dB re 1pW)
								38	Non-Weighted dB level @ 3m

AHU SPECIFIC FAN POWER			
Supply Fan		Extract Fan	
Filter Conditions	Clean	Filter Conditions	
Absorbed Power	0.66 Kw	Absorbed Power	Kw
Drive Efficiency	100%	Drive Efficiency	NaN%
Invertor Efficiency	100%	Invertor Efficiency	NaN%
Motor Efficiency	84%	Motor Efficiency	NaN%
Air Volume	.9m ³ /s	Air Volume	m ³ /s
AHU SFP	0.8 Kw/m ³ /s		

Please note: Overall height dimensions are for the unit only. Please allow up to 300mm additional for transport packaging.

Supply:
Size: Non-standard
Airflow: 0.9000 m3/s
E.S.P.: 350 Pa
Unit Wgt: 489.58 kg



PLAN DECK

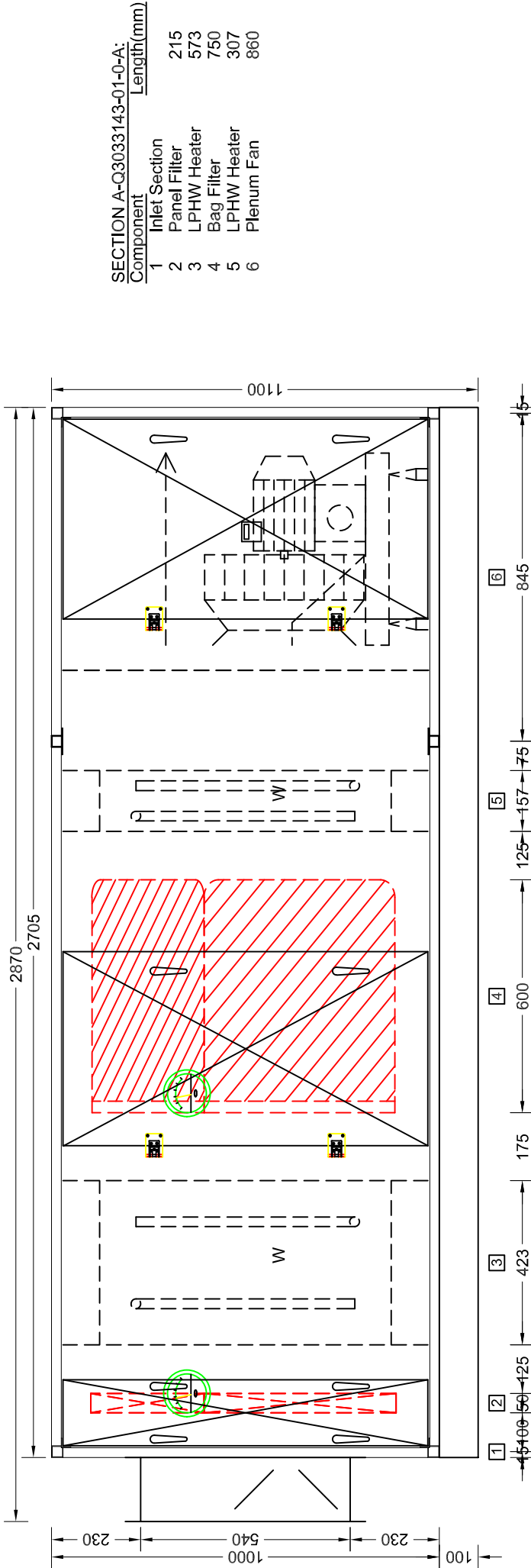
NOTES:

- 1) Please refer to the Installation & Maintenance manual and the Nuairre website www.nuairre.co.uk for further information.
- 2) Please note that double deck sections of AHU's will leave Nuairre already assembled where possible.
- 3) While the overall unit and section dimensions are accurate, the component and access locations are for illustration purposes only and may vary along the length of the unit. *Please contact Nuairre if you require more detailed information.*

 Nuairé Western Industrial Estate Caerphilly CF83 1NA United Kingdom www.nuaire.co.uk (+44) 2920 858 200	AHU No.	1	Quantity	1	Please Note: This drawing must be signed and returned with the official order for manufacturing to be scheduled. Nuaire will then advise delivery detail with order acknowledgement. Approval refers to CAD drawing only and not any other images.	Arrangement Approval Date: _____ Signature: _____ Name (please print): _____
	Unit:	Q3033143-01-0				
	Location:	Supply				
	Model	Non-standard /				
All dimensions are in mm Do Not Scale						
This Drawing is Property of NUAIRE and should not be reproduced in any form					Initial	Date
					Selected	
					Approved	

Please note: Overall height dimensions are for the unit only. Please allow up to 300mm additional for transport packaging.

Supply: Non-standard
Size: 0.9000 m3/s
Airflow: 350 Pa
E.S.P.: 489.58 kg
Unit Wgt: 489.58 kg



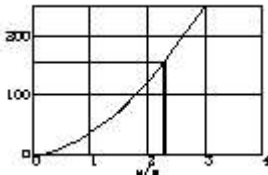
ELEVATION

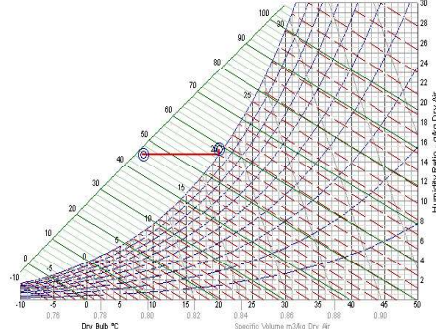
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	Nuaire Western Industrial Estate Caerphilly CF83 1NA United Kingdom www.nuair.co.uk (+44) 2920 858 200				AHU No.	1	Quantity	1	This Drawing is property of NuAIRE and should not be reproduced in any form		All dimensions are in mm Do Not Scale		Please Note: This drawing must be signed and returned with the official order for manufacturing to be scheduled. Nuair will then advise delivery detail with order acknowledgement. Approval refers to CAD drawing only and not any other images.	<u>Arrangement Approval</u>	
	Unit:	Q3033143-01-0			Initial		Date		Date:	Signature:					
	Location:	Supply			Selected				Name (please print):						
	Model	Non-standard /			Approved										

TECHNICAL SPECIFICATION SHEET

File: Q3033143-02-0

PROJECT DETAILS								
Date	Project no	Project Reference	Unit No					
13 Nov 2024	3033143	21/03956/COM SANDILANDS	Q3033143-02-0					
Customer	Rev date	Unit Reference	Unit Model					
	13 Nov 2024	Extract						
Supply Air Flow	Supply External Static	Extract Air Flow	Extract External Static					
.000 m ³ /s	Pa	1.060 m ³ /s	350 Pa					
UNIT CONSTRUCTION								
Panel Thickness	Panel Insulation	Aluminium frame work	Frame Coating					
30mm Thick (Nom.) Double Skinned	Rockwool 23mm (1000x600) RW3 Semi Rigid Slab	30mm Pentapost Corner Extrusion	Natural Finish					
Panel external Sheet	Panel internal Sheet	Base frame	Unit Location					
Magnelis (0.9mm) DX51D+ZM310 - 5110094 (BS EN 10346:2015)	Magnelis (0.9mm) DX51D+ZM310 - 5110094 (BS EN 10346:2015)	100x50x1.5 Fabricated Base	Internal					
Access side	Unit Model	Roof type	Leakage Class					
Right	/ Non-standard	None	Class B L2					
Thermal Bridging	Thermal Transmittance	Deflection Class	Environment					
TB4	T4	D2M	Standard					
SECTION WEIGHTS AND DIMENSIONS - (NOT including transport packaging and pallets)								
Section No	Length	Width	Height	Weight				
A	1268 mm	1000 mm	1100 mm	291 kg				
OVERALL UNIT DIMENSIONS								
Length	Width	Height	Total Weight					
1268 mm	1000 mm	1100 mm	291 kg					
001 FILTERS								
Stage #	Air Volume	class	Type	Model	Media	Qty.Size 1	Qty.Size 2	Length mm
1	1.0600 m ³ /s	M6 / Carbon	Bag	RPC Companct	Carbon	1x592x492	1x592x287	300
1						Qty.Size 3	Qty.Size 4	
Clean	Final	Average						
60 Pa	250 Pa	155 Pa						
								
001 Accessories								
● Magnehelic pressure guage 0-500Pa surface mounted								
001 HINGED ACCESS DOOR								
Dimensions	Type							
420 x 940 mm	Hinged door							

002 COIL										
Flow	Qty	Model						Rows	Fin Spacing	Face Area
1.0600 m3/s	1	CW-1/2-22-15-11-700(5)-H-RHS LIDAF-Cu 0.35/Al/Galv-1" Screwed BSP-28mm'Y'+4mm Cap-No Elims-AHU + d/tray-o/a 803H 885W 493D -MaxW.P.x6-T.P.x17-DrainSize=3/4"						15	2.31mm (11/inch)	700 x 698
Air side	DB	WB	RH	Total Load	Sensible Load	Face Velocity	Pressure Drop	Psychrometric Chart (°C/°F) Barometric Pressure 101.325 kPa 		
On	20.0 °C	20.4 °C	103.3 %	18.40 kW	14.72 kW	2.17 m/s	181 Pa			
Off	8.3 °C	7.7 °C	92.7 %							
Water	Temp	Water Flow		Water P.D.	Glycol Type	Glycol Percentage	Connection Size			
In	1.6 °C	1 x 0.29 L/s		34 kPa	Ethylene glycol	20 %	1" x 1off			
Out	17.3 °C						1" x 1off			
Circuits	Duty Margin		Fin Material		Tube Material	Treatment Type	Case Material			
5	20%		Aluminium		1/2"	Copper	Galvanised			

002 COIL PANEL	
Dimensions	Type
758 x 940 mm	Coil Panel

002 DRAIN PAN	
Material	Drain size
Galvanised Steel	940 mm

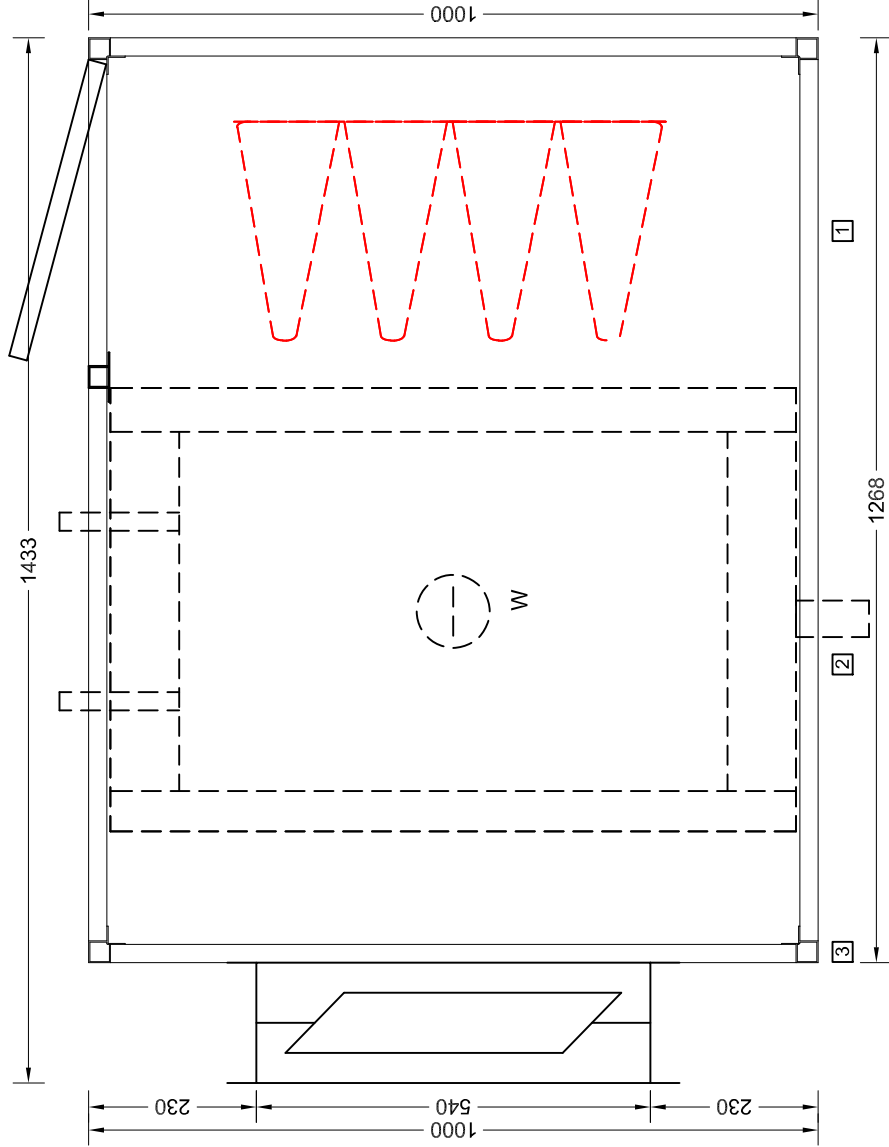
003 DAMPER/FLEX.CONN/LOUVRE							
Flow	Dimensions	Model	Air vel.	Damper	Spigot connection	Louvre	Actuator
1.0600 m3/s	540 x 540 mm	165	3.64 m/s	Yes	No	No	No

AHU SPECIFIC FAN POWER			
Supply Fan		Extract Fan	
Filter Conditions		Filter Conditions	
Absorbed Power	Kw	Absorbed Power	Kw
Drive Efficiency	NaN%	Drive Efficiency	NaN%
Invertor Efficiency	NaN%	Invertor Efficiency	NaN%
Motor Efficiency	NaN%	Motor Efficiency	NaN%
Air Volume	m ³ /s	Air Volume	1.06m ³ /s
AHU SFP	NaN Kw/m ³ /s		

Please note: Overall height dimensions are for the unit only. Please allow up to 300mm additional for transport packaging.

Exhaust:
Size: Non-standard
Airflow: 1.0600 m3/s
E.S.P.: 350 Pa
Unit Wgt: 290.64 kg

SECTION A-Q3033143-02-0-A:		
Component	Length(mm)	
1 Bag Filter	465	
2 CW Coil	803	
3 Outlet Section		



PLAN DECK

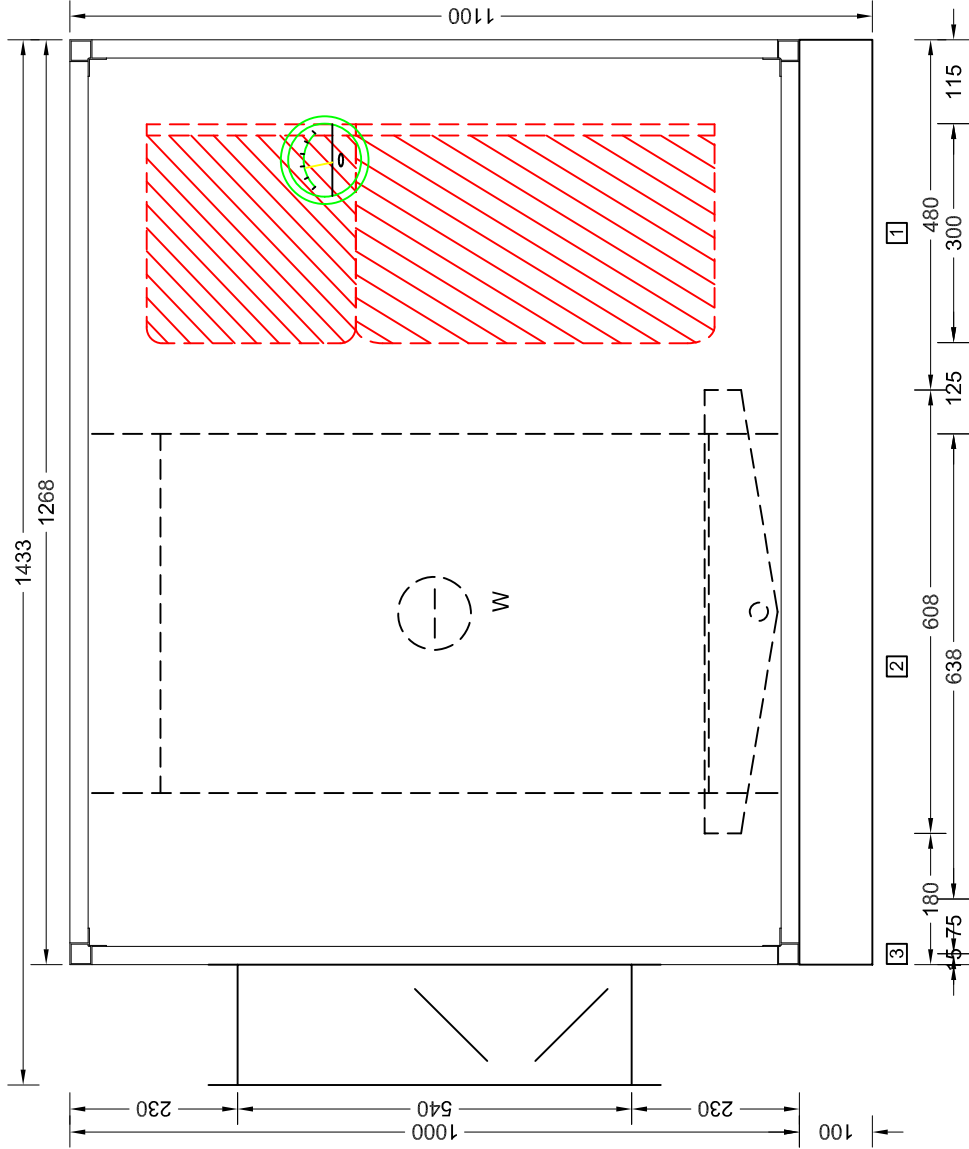
- NOTES:
- 1) Please refer to the Installation & Maintenance manual and the Nuaira website www.nuaira.co.uk for further information.
 - 2) Please note that double deck sections of AHU's will leave Nuaira already assembled where possible.
 - 3) While the overall unit and section dimensions are accurate, the component and access locations are for illustration purposes only and may vary along the length of the unit. Please contact Nuaira if you require more detailed information.

 Nuaire Western Industrial Estate Caerphilly CF83 1NA United Kingdom www.nuaira.co.uk (+44) 2920 858 200	AHU No.		2	Quantity	1	This Drawing is property of NUAIRE and should not be reproduced in any form. All dimensions are in mm. Do Not Scale		Please Note: This drawing must be signed and returned with the official order for manufacturing to be scheduled. Nuairé will then advise delivery detail with order acknowledgement. Approval refers to CAD drawing only and not any other images.		<u>Arrangement Approval</u> Date: _____ Signature: _____ Name (please print): _____			
	Unit:		Q3033143-02-0			Initial						Date	
	Location:		Extract			Selected							
	Model		/ Non-standard			Approved							

Please note: Overall height dimensions are for the unit only. Please allow up to 300mm additional for transport packaging.

Exhaust:
Size: Non-standard
Airflow: 1.0600 m3/s
E.S.P.: 350 Pa
Unit Wgt: 290.64 kg

SECTION A-Q3033143-02-0-A:	
Component	Length(mm)
1 Bag Filter	465
2 CW Coil	803
3 Outlet Section	



ELEVATION

NOTES:
1) Please refer to the Installation & Maintenance manual and the Nuair website www.nuair.co.uk for further information.
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	Unit:	Q3033143-02-0			Initial	Date	Signature:		Date:		Signature:	
	Location:	Extract			Selected	Approved	Name (please print):		Name (please print):		Name (please print):	
	Model	/ Non-standard										