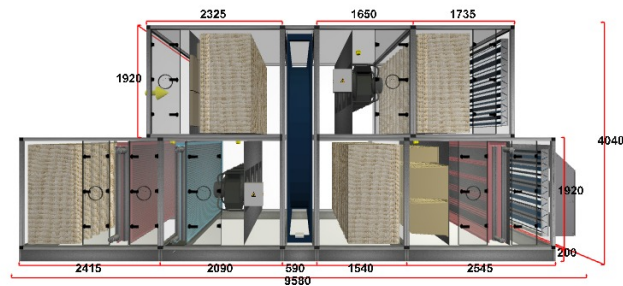


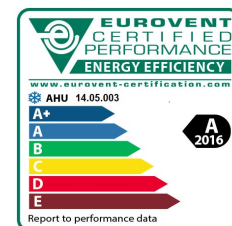


Project 025544 - RBS Spinningfields Manchester
Unit AHU 08-01

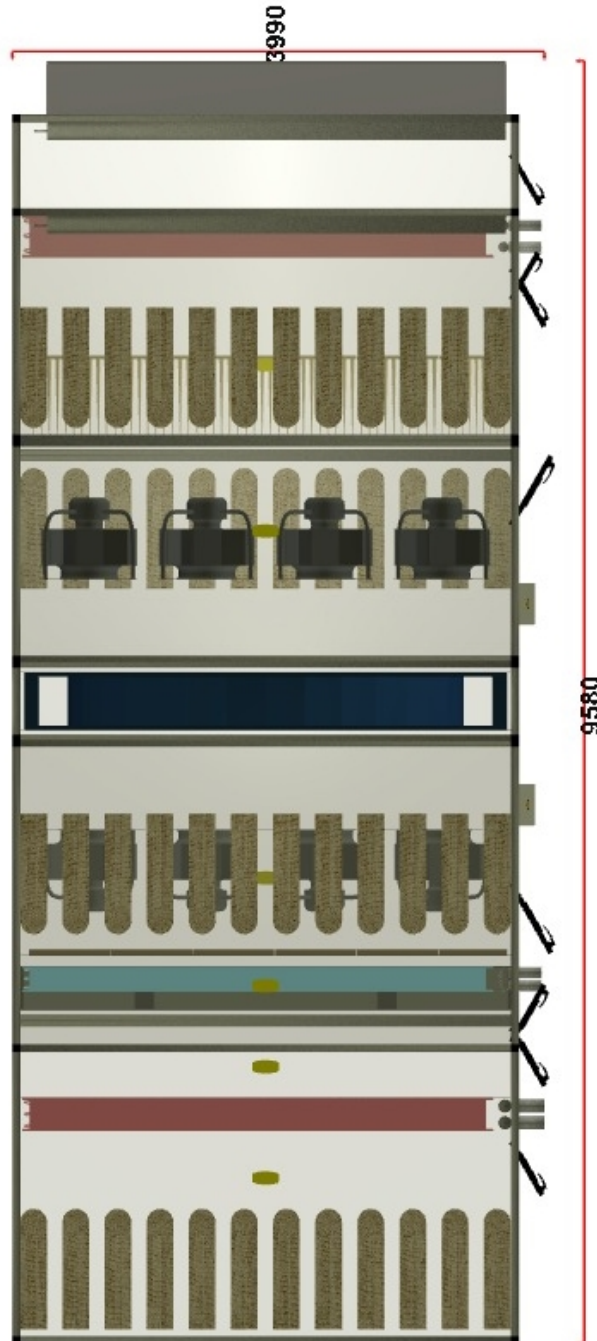


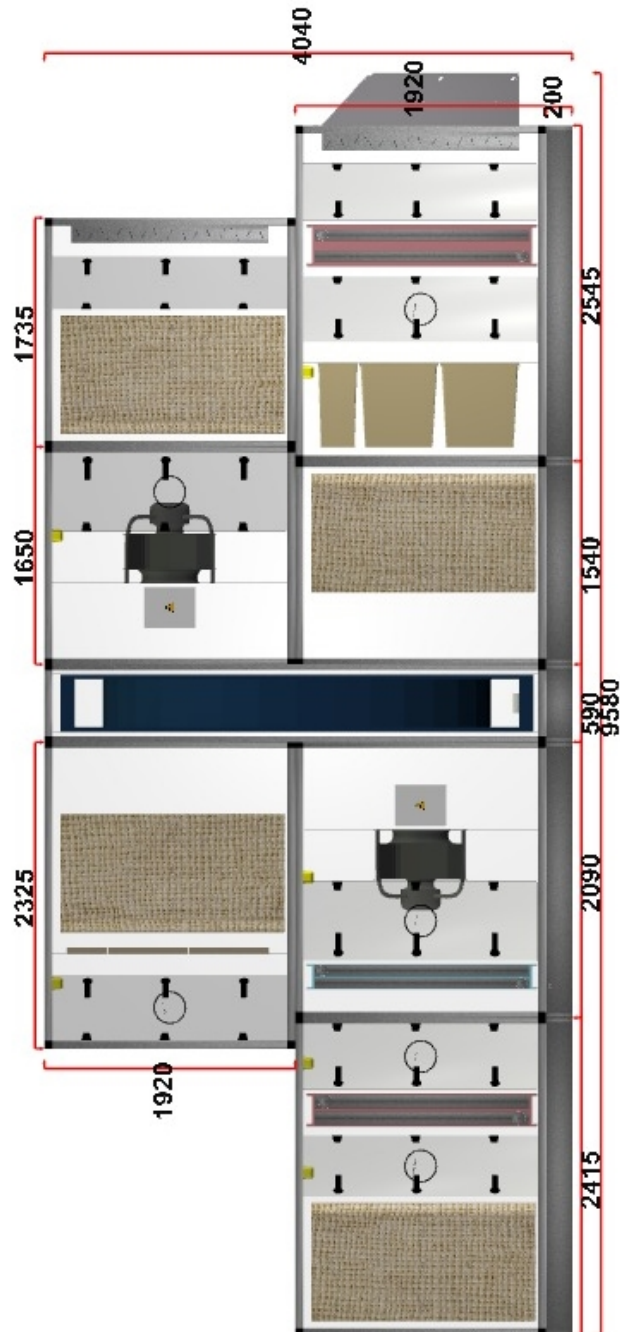
Unit Data

Range / Series	D-AHU PROFESSIONAL
Model	1920 X 3800
Panel • Insulation	62 mm • Mineral Wool
Model Box Ref.	Sound ThermiC° S2
Panel Inner Skin	Aluzinc 1.0 mm
Panel Outer Skin	Precoated 1.0 mm
Internal Parts	Aluzinc
Profile	Aluminium Anodized Thermal Break
AHU Base	200mm Galvanized
Flat Roof	Yes
Supply Width • Height	3800 mm • 1920 mm
Return Width • Height	3800 mm • 1920 mm
Length Overall	9580 mm
Weight	10244 Kg
Connection Side • Door	Left • Left
Supply Air Flow	12.43 m ³ /s
External Pressure Drop	375 Pa
Return Air Flow	12.43 m ³ /s
External Pressure Drop	375 Pa
Air Density • Altitude	1.18 Kg/m ³ • 200 m a.s.l.
Total Supply Filters Eff. ePM1•ePM2.5•ePM10	62 % • 70 % • 91 %
Specific fan power efficiency rating:	
SFPv (clean filters)	2012 W/(m ³ /s)
SFPe (medium filters)	2171 W/(m ³ /s)
ERP Compliant	ERP 2018









Mechanical Characteristic (EN1886]

Casing Strength
D1(M)

Casing Leakage
L1(M)/L1(M)

Thermal Transmit
T2(M)

Thermal bridging
TB2(M)

EN 13053

Supply Power
Class (EN13053)
P1

Supply Velocity
Class(EN13053)
V3

Return Power
Class (EN13053)
P1

Return Velocity
Class(EN13053)
V3

Heat Recovery
Class(EN13053)
H2

1) Damper Supply

Pressure Drop	57 Pa
Material	Aluminium
Mounting	Internal • Left
External Connection	Rain Hood
Dimensions (HxW)	1510x3440 mm
Torque	30 Nm

2) Empty Section Supply

Length	430 mm
--------	--------

3) Coil Heating Water Supply

Geometry

Model	Cu-Al-FeZn P3012LAC 8R-56T-3420A 112C 3
Geometry • Rows	P3012 • 8
Frame	Galvanized
Tube Material • Thickness	Copper • 0.35 mm
Fin Material • Space	Bare • ----
Header Material	Copper
Connections (Diam) • Type • Side	80 mm (3) • Threaded • Left
Total Capacity	151.4 kW

Heating Air Side

Air Flow • Velocity	12.43 m ³ /s • 2.16 m/s
Temp. Dry Bulb In • Out	-5 °C • 5 °C
Temp. Wet Bulb In • Out	-5.4 °C • 0.8 °C
Relative Humidity In • Out	90 % • 43 %
Pressure Drop Dry	24 Pa

Heating Fluid Side

Flow	7.25 l/s
Temperature In • Out	45 °C • 40 °C
Fluid Velocity • Volume	0.71 m/s • 169.3 dm ³
Pressure Drop	18 kPa

Calculated in Dry Condition

4) Filter Supply

Mounting	Front
Air Velocity	2.36 m/s
Pressure Drop Design	Medium
Filter Class	ePM1 60%(F7)
Filter Energy Classification	A
Filter Name	DriPak NX
Material	Synthetic
Area	105.3 m ²
Dimensions	10x(592x592x640) 2x(490x592x640) 5x(592x287x640)
Efficiency ePM1 • ePM2.5 • ePM10	62 % • 70 % • 91 %
Clean Pressure Drop	53 Pa
Medium Pressure Drop	103 Pa
Dirty Pressure Drop	153 Pa

5) Attenuator Supply

Splitter Number	12x200
Splitters Length	900 mm
Material	TISSUE Galvanized
Pressure Drop	17 Pa
SPL Average Attenuation	31 dB
63 Hz	4 dB
125 Hz	6 dB
250 Hz	15 dB
500 Hz	21 dB
1000 Hz	28 dB
2000 Hz	26 dB
4000 Hz	15 dB
8000 Hz	9 dB

6) Empty Section Supply

Length	450 mm
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7) Recuperator Heat Wheel Supply

Part Number	SE3-LL-SV-3420-PR-V1-C1-5-W3620-H3620-SX-SHM
Type	Enthalpy • Variable Speed
Diameter	3420 mm
Dry Efficiency (EN308)	75.3 %
Energy Class (EN13053)	H2 • 72.9 %
Motor Consumption	0.4 kW

WINTER

Power	270.6 kW
Thermal Efficiency	75.6 %
Dry Efficiency (Eurovent)	75.6 %
Supply	
Flow Rate	12.43 m ³ /s
Standard • Actual Pressure Drop	158 Pa • 149 Pa
Temp. Dry Bulb Outdoor • Supply	5 °C • 17.9 °C
Relative Humidity Outdoor • Supply	41 % • 34 %
Temp. Wet Bulb Outdoor • Supply	0.6 °C • 9.9 °C
Return	
Flow Rate	12.43 m ³ /s
Standard • Actual Pressure Drop	158 Pa • 159 Pa
Temp. Dry Bulb Extract • Exhaust	22 °C • 9.1 °C
Relative Humidity Extract • Exhaust	50 % • 80 %
Temp. Wet Bulb Extract • Exhaust	15.3 °C • 7.4 °C

SUMMER

Power	-88.8 kW
Thermal Efficiency	73.2 %
Dry Efficiency (Eurovent)	73.2 %
Humidity Efficiency (Eurovent)	29.5 %
Supply	
Flow Rate	12.43 m ³ /s
Standard • Actual Pressure Drop	158 Pa • 165 Pa
Temp. Dry Bulb Outdoor • Supply	32 °C • 27.6 °C
Relative Humidity Outdoor • Supply	42 % • 52 %
Temp. Wet Bulb Outdoor • Supply	21.9 °C • 20.2 °C
Return	
Flow Rate	12.43 m ³ /s
Standard • Actual Pressure Drop	158 Pa • 161 Pa
Temp. Dry Bulb Extract • Exhaust	26 °C • 30.4 °C
Relative Humidity Extract • Exhaust	50 % • 41 %
Temp. Wet Bulb Extract • Exhaust	18.6 °C • 20.5 °C

Assumed that the system effect was considered in the design.

8) Empty Section Supply

Length	250 mm
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9) Fan Supply

Model	GR56I-ZID.GQ.CR
Type	EC Centrifugal Fan Including Electrical Panel & Main Switch
Material	Composite
Quantity	4x(Fan Array)
External Static Pressure	375 Pa
Internal Static Pressure	464 Pa
Total Static Pressure	839 Pa
Dynamic Pressure	27 Pa
Flow Design	12.43 m ³ /s

K Factor	355
Rotation Speed Work • Max	1636 RPM • 1860 RPM
Efficiency (Reg327/2011)	73 %
Efficiency	70.7 %
Electrical Power Input	4x3.69 kW
Power Class • PMREF (EN13053)	P1 • 19.62 kW
SFPv Class • SFPv (EN13053)	SFP3 • 1099 W/(m ³ /s)

Motor Data

Efficiency Class	IE5
Power • Nominal Current	5.2 kW • 8.2 A
Electrical Connection	3Ph-380-480V

Fan system effect is taken into account in the fan performances

10) Coil Cooling Water Supply

Geometry

Model	Cu-ALMG 2.5-Inox304 P40AR 2R-42T-3420A-2.0pa 42C 3
Geometry • Rows	P40 • 2
Frame	SS304
Tube Material • Thickness	Copper • 0.4 mm
Fin Material • Space	Al Mg 0.2 mm • 2 mm
Header Material	Copper
Connections (Diam) • Type • Side	80 mm (3) • Threaded • Left
Sensible Capacity	183.1 kW
Total Capacity	212.8 kW

Cooling Air Side

Air Flow • Velocity	12.43 m ³ /s • 2.16 m/s
Temp. Dry Bulb In • Out	32 °C • 20 °C
Temp. Wet Bulb In • Out	22.1 °C • 17.8 °C
Relative Humidity In • Out	42 % • 81 %
Pressure Drop Dry • Wet	43 Pa • 55 Pa

Cooling Fluid Side

Flow	8.45 l/s
Temperature In • Out	6 °C • 12 °C
Fluid Velocity • Volume	1.05 m/s • 79.3 dm ³
Pressure Drop	17 kPa

Calculated in Wet Condition

11) Empty Section Supply

Length	500 mm
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12) Coil Heating Water Supply

Geometry

Model	Cu-ALMG 2.5-FeZn P40AC 2R-42T-3420A-4.0pa 42C 4
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Geometry • Rows	P40 • 2
Frame	Galvanized
Tube Material • Thickness	Copper • 0.4 mm
Fin Material • Space	Al Mg 0.2 mm • 4 mm
Header Material	Copper
Connections (Diam) • Type • Side	100 mm (4) • Threaded • Left
Total Capacity	196.7 kW

Heating Air Side

Air Flow • Velocity	12.43 m ³ /s • 2.16 m/s
Temp. Dry Bulb In • Out	5 °C • 18 °C
Temp. Wet Bulb In • Out	0.7 °C • 7.6 °C
Relative Humidity In • Out	41 % • 17 %
Pressure Drop Dry	26 Pa

Heating Fluid Side

Flow	9.42 l/s
Temperature In • Out	45 °C • 40 °C
Fluid Velocity • Volume	1.18 m/s • 89 dm ³
Pressure Drop	12 kPa

Calculated in Dry Condition

13) Empty Section Supply

Length	460 mm
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14) Attenuator Supply

Splitter Number	12x200
Splitters Length	900 mm
Material	TISSUE Galvanized
Pressure Drop	17 Pa
SPL Average Attenuation	31 dB
63 Hz	4 dB
125 Hz	6 dB
250 Hz	15 dB
500 Hz	21 dB
1000 Hz	28 dB
2000 Hz	26 dB
4000 Hz	15 dB
8000 Hz	9 dB

15) Filter Return

Mounting	Front
Air Velocity	2.36 m/s
Pressure Drop Design	Medium
Filter Class	ePM10 60%(M5)
Filter Energy Classification	E
Filter Name	Ecopleat Green

Material	Synthetic
Area	89.3 m ²
Dimensions	10x(592x592x48) 2x(490x592x48) 5x(592x287x48)
Efficiency ePM1 • ePM2.5 • ePM10	15 % • 24 % • 64 %
Clean Pressure Drop	65 Pa
Medium Pressure Drop	115 Pa
Dirty Pressure Drop	165 Pa

16) Attenuator Return

Splitter Number	12x200
Splitters Length	900 mm
Material	TISSUE Galvanized
Pressure Drop	17 Pa
SPL Average Attenuation	31 dB
63 Hz	4 dB
125 Hz	6 dB
250 Hz	15 dB
500 Hz	21 dB
1000 Hz	28 dB
2000 Hz	26 dB
4000 Hz	15 dB
8000 Hz	9 dB

17) Empty Section Return

Length	450 mm
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18) Empty Section Return

Length	200 mm
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19) Fan Return

Model	GR56I-ZID.GQ.CR
Type	EC Centrifugal Fan Including Electrical Panel & Main Switch
Material	Composite
Quantity	4x(Fan Array)
External Static Pressure	375 Pa
Internal Static Pressure	317 Pa
Total Static Pressure	692 Pa
Dynamic Pressure	27 Pa
Flow Design	12.43 m ³ /s
K Factor	355
Rotation Speed Work • Max	1541 RPM • 1860 RPM
Efficiency (Reg327/2011)	73 %

Efficiency	70.3 %
Electrical Power Input	4x3.06 kW
Power Class • PMREF (EN13053)	P1 • 16.42 kW
SFPv Class • SFPv (EN13053)	SFP2 • 913 W/(m ³ /s)

Motor Data

Efficiency Class	IE5
Power • Nominal Current	5.2 kW • 8.2 A
Electrical Connection	3Ph-380-480V

Fan system effect is taken into account in the fan performances

20) Attenuator Return

Splitter Number	12x200
Splitters Length	900 mm
Material	TISSUE Galvanized
Pressure Drop	17 Pa
SPL Average Attenuation	31 dB
63 Hz	4 dB
125 Hz	6 dB
250 Hz	15 dB
500 Hz	21 dB
1000 Hz	28 dB
2000 Hz	26 dB
4000 Hz	15 dB
8000 Hz	9 dB

21) Empty Section Return

Length	400 mm
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22) Damper Return

Pressure Drop	7 Pa
Material	Aluminium
Mounting	Internal • Right
Dimensions (HxW)	1510x3440 mm
Torque	30 Nm

Section List

Num.	Height (mm)	Width (mm)	Length (mm)	Weight (Kg)	Transportable
1	2120	3800	2545	1678	Special Truck
2	2120	3800	1540	926	High Container or Truck
3	4040	3800	590	1298	Not assembled

4	2120	3800	2090	1441	High Container or Truck
5	2120	3800	2415	1505	Special Truck
6	1920	3800	2325	1080	Special Truck
7	1920	3800	1650	834	Container or Truck
8	1920	3800	1735	958	Container or Truck

Options List

Unit Options

Flat Roof
Pallet for Container
Barrier Bag (External Storage)

4) Filter Supply

Magnehelic 0-500 Pa
Light mounted wired to external switch (w/o bulb)
Port Hole

9) Fan Supply

Light mounted wired to external switch (w/o bulb)
Port Hole
Drive Screen

10) Coil Cooling Water Supply

DrainPan SS304

11) Empty Section Supply

Light mounted wired to external switch (w/o bulb)
Port Hole

13) Empty Section Supply

Light mounted wired to external switch (w/o bulb)
Port Hole

15) Filter Return

Light mounted wired to external switch (w/o bulb)
Port Hole

19) Fan Return

Light mounted wired to external switch (w/o bulb)
Port Hole
Drive Screen

Sound Report

Supply Sound Power (dB)	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	AVG dB (A)
Fan Inlet	78	83	79	77	75	72	69	69	80
Fan Outlet	81	89	84	86	83	81	77	73	89
Unit Inlet	71	73	58	49	37	35	44	52	59
Unit Outlet	76	81	67	61	51	50	58	61	68
Airborne	62	70	58	58	55	51	35	28	61
Pressure (1m) *	51	59	47	47	44	40	24	17	50

* Simple source in free field, spherical propagation

Return Sound Power (dB)	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	AVG dB (A)
Fan Inlet	80	83	80	77	74	71	68	69	80
Fan Outlet	83	89	84	86	83	79	76	72	88
Unit Inlet	75	76	63	54	44	42	51	58	63
Unit Outlet	79	83	69	65	55	53	61	63	71
Airborne	64	70	58	58	55	49	34	27	60
Pressure (1m) *	53	59	47	47	44	38	23	16	49

* Simple source in free field, spherical propagation

NRVU - Regulation (EU) No 1253/2014

Manufacturer's Name	Daikin Applied Europe S.p.a.
Serial Number	1026164
Typology (NRVU, UVU or BVU)*	NRVU BVU
Drive Type	Inverter (included on the electronic fan)
HRS Type	Other
HRS Thermal Efficiency (EN308)	75.3 %
Nominal NRVU Flow Rate	
<i>Supply</i>	12.43 m ³ /s
<i>Return</i>	12.43 m ³ /s
Effective Electric Power Input	
<i>Supply</i>	27.01 kW
SFP Internal	604 W/(m ³ /s)
Face Velocity at Flow Rate Design	
<i>Supply</i>	1.88 m/s
<i>Return</i>	1.88 m/s
Nominal Internal Pressure Drop	
<i>Supply</i>	202 Pa
<i>Return</i>	224 Pa
Nominal External Pressure Drop	
<i>Supply</i>	375 Pa
<i>Return</i>	375 Pa
Efficiency (Reg327/2011)	
<i>Supply</i>	73 %
<i>Return</i>	73 %
External Leakage (RU) +400Pa • -400Pa	0.82 % • 0.41 %
Maximum Internal Leakage	3 %
Summer Outdoor Conditions	32 °C • 42 %
Winter Outdoor Conditions	-5 °C • 90 %
Filter Energy Classification	A E
Filter Service Warning**	Displayed on HMI Controller (by others with ADN units)
Sound Power Level (LWA)	64
Pre-/Dis-assembly Instructions	https://www.daikinapplied.eu/ahu-instructions-for-pre-disassembly/

* In accordance with Commission Regulation (EU) No 1253/2014 of July 2014

** Clean/replace Filter(s) when maximum pressure drop is reached or when warning is displayed on HMI controller