

MSC CM UK, 5 Roundwood Ave, Stockley Park, Uxbridge, UB11 1AF

Ref: 5231 M-TS02 – Rev O

Air Handling Units Specifications – South

30th June 2025

TECHNICAL SUBMITTAL

N° 5231 M – TS02 -REV 0

Contract: MSC CM UK, 5 Roundwood Ave, Stockley Park, Uxbridge, UB11 1AF
Job N°: 5231

To Main Contractor: **SWPlace**
Attention of:

Received by:

Submittal: Air Handling Units- South

Sign off/Approval required: Chris Pain

Date: 30/06/2025

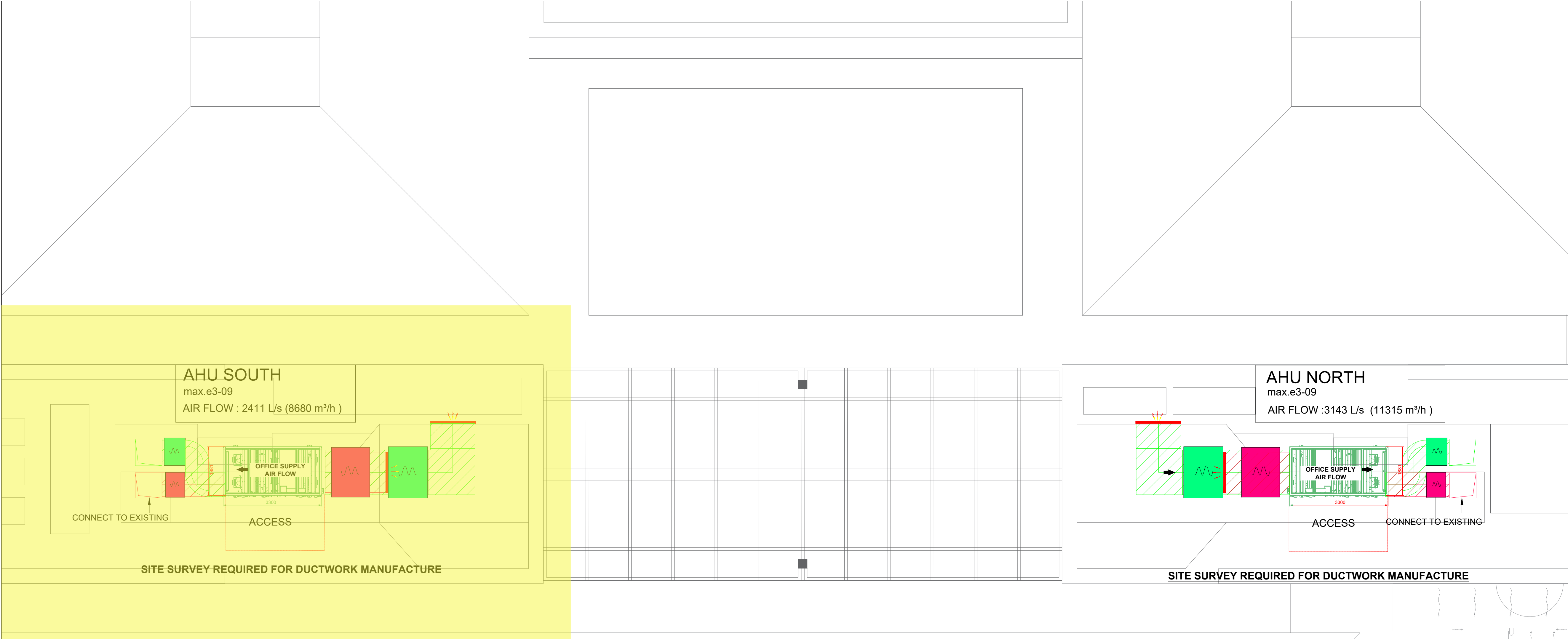
Status, Sign off and comments:

Air Handling Units- South	
Airflow	8680 m ³ /h
Total Cooling Capacity (Summer)	60.1 kW
Total Heating Capacity (Winter)	111.3 kW
Refrigerant	R407C
Fan Type	Plug Fan – EC Blue
Full Load Current	53.00 A
Voltage/Phase/Frequency	400 V / 3 ph / 50 Hz
Weight	1980 kg
SFP (Specific Fan Power), Total	1426 W/m ³ /s
ESP (External Static Pressure)	250 Pa
Filter Class (Supply/Return)	F6 / F7
Compressor COP	3.61
Compressor Quantity	2 pcs
Sound Pressure Level	72.5 dB(A)



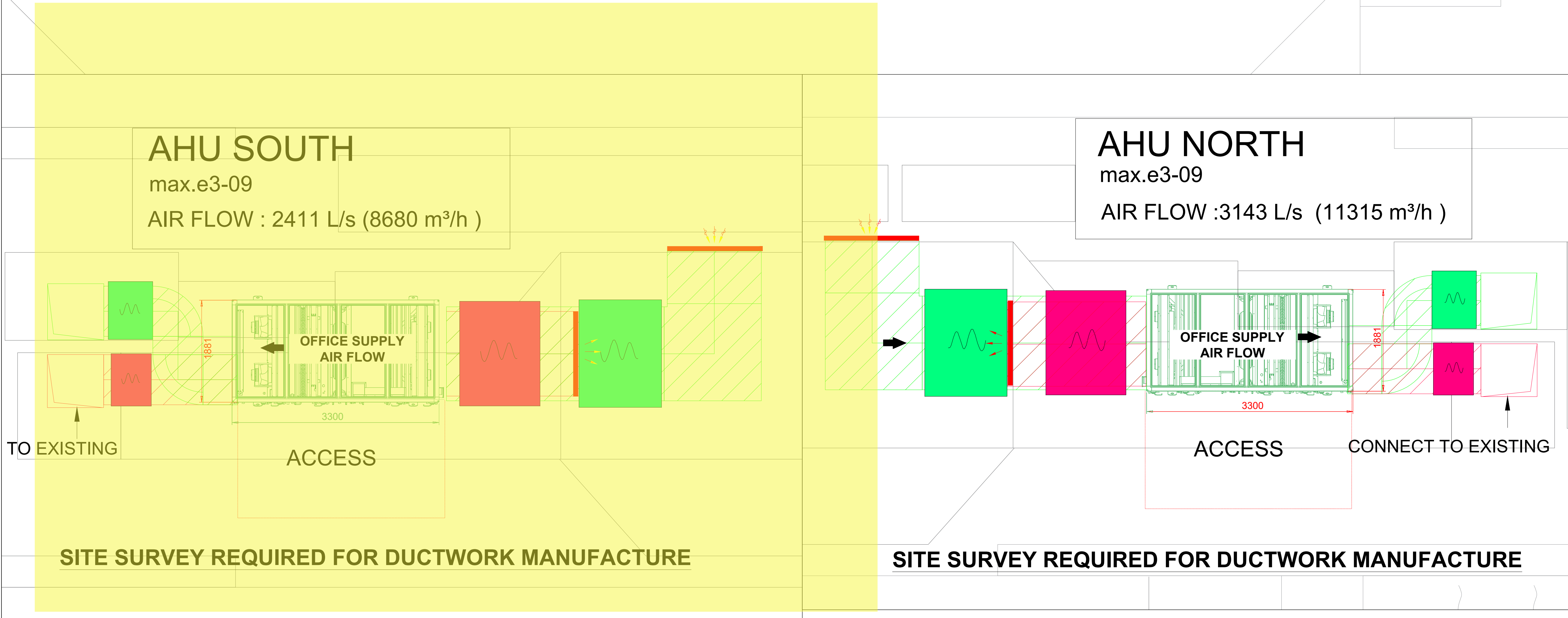
Providing the complete service for commercial or residential clients

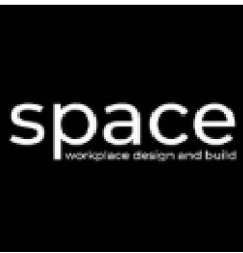
Atmosair Limited Unit 2, Apsley House, Apsley Road, New Malden, Surrey, KT3 3NJ, England



- HVAC LEGEND**
- VAM UNIT - HEAT EXCHANGER
 - DUCTED FAN COIL UNIT
 - CASSETTE TYPE FCU
 - WALL MOUNTED FCU
 - CONDENSER UNIT
 - BRANCH SELECTOR BOX
 - CT - CROSS TALK ATTENUATOR
 - REMOTE CONTROLLER
 - REFRIGERANT (SUPPLY / RETURN)
 - CONDENSATE

- MECHANICAL LEGEND**
- EXISTING
 - REMOVE
 - INSTALL / RE-INSTALL
 - STRIP OUT



0	ISSUED FOR APPROVAL	10.06.2025
Rev.	Description	Date
Drawing Status: ISSUED FOR APPROVAL		
 Unit 2, Apsley House, Apsley Road, New Malden, Surrey, KT3 3NJ Tel:- 020 8605 1370 Fax:- 0208 605 1375 Email: info@atmosair.co.uk Air Conditioning Heating, Plumbing, Design, Installation and Maintenance		
Client: 		
Project: MSC CM UK, 5 Roundwood Avenue Stockley Park, Uxbridge		
Title: MECHANICAL SERVICES ARRANGEMENT PLAN ROOF PLAN		
Drawn S.H.	Chd CP	Date 10.06.2025
Cad File: 5231-57-M01	Scale 1:75@ A1	
Drawing Number 5231-57-M07		Revision 0

Date :
Reference: South AHU
Issued by : Q01035

SUMMER

max.e3-09

GENERAL DATA

Supply Side

Exhaust Side

Airflow	8680	m ³ /h	8680	m ³ /h
Total Cooling Capacity	60.1	kW		
Specific Fan Power(SFP)-total for unit	1426	W/m ³ /s		
System EER	4.47			
Total power input / Installed	13.44 / 26.6	kW		
Refrigerant	R407C			
Unit power supply	400 V/3 ph/50 Hz			
Full load Current	53.00	A		
Sea level	0	m		

The system's Specific Fan Power (SFP_e) calculation is based on clean filter and acc. to EN13779

PRESSURE DROP

Supply Side

Exhaust Side

Filter	F7/F6 Microcell Rigid Filter			
Clean Filter	68	Pa	55	Pa
Dirty Filter for replacing	450	Pa	450	Pa
Working point pressure drop (clean filters)	68	Pa	55	Pa

Rotary Heat Exchanger	102	Pa	102	Pa
Evaporator	40	Pa		
Condenser			54	Pa

Total Internal Pressure Drops	210	Pa	211	Pa
External Static Pressure (ESP)	250	Pa	250	Pa

FILTERS

Class of filtration	F7		F6	
Total Filtration Area	46.5	m ²	46.5	m ²

ROTARY HEAT EXCHANGER

Incoming Temperature	32	°C		
Incoming Relative Humidity	38	%		
Incoming Temperature			23	°C
Incoming Relative Humidity			60	%
Recovered Heat(Total)	24	kW		
Temp. Eff.(Dry)\Hum. Eff.	75.0 % \ 72.9 %			
Outgoing Temperature	25.3	°C		
Outgoing Relative Humidity	53	%		
Outgoing Temperature			29.7	°C
Outgoing Relative Humidity			42	%
Mass Transfer Humidity	0	l/h	5.9	l/h
Temperature to frost	-	°C		

Date :
Reference: South AHU
Issued by : Q01035

THE MIXING BOX

	Supply Side	Exhaust Side
Inlet Temp. from Heat Recovery	- °C	- °C
Inlet Rel. Hum. from Heat Recovery	- %	- %
Inlet Temp. from Recirculation Damper	- °C	- °C
Inlet Rel. Hum. from Recirculation Damper	- %	- %
Outlet temperature	- °C	- °C
Outlet relative humidity	- %	- %
Fresh air percentage	100.0 %	

EVAPORATOR

Incoming Temperature	25.3 °C	Condensation Rate	11.4 l/h
Incoming Relative Humidity	53 %		
Outgoing Temperature	15.5 °C		
Outgoing Relative Humidity	87 %		
Cooling capacity	36.1 kW		

CONDENSER

Incoming Temperature	29.7 °C
Incoming Relative Humidity	42 %
Outgoing Temperature	45.9 °C
Outgoing Relative Humidity	18 %
Condensing capacity	46.2 kW

COMPRESSORS

Quantity	2 n°	Compressors COP	3.610
Power supply	400 V/3 ph/50 Hz	Operating Current	2 x 8.75 A
Power input	2 x 5.00 kW	Full load Current	2 x 14.50 A
Circuits	1	Locked rotor Current	2 x 66.00 A
		Partialization	100 %

FAN

Type:	Plug Fan - EC Blue		
Total Pressure		460 Pa	461 Pa
Fan speed		1872 rpm	1874 rpm
Fan Efficiency		64.1 %	65.1 %
(Static Eff. Impeller incl. motor and controller)			
Power absorbed at fan shaft		3 x 0.577 kW	3 x 0.569 kW
Motor Duty		3 x 2.5 kW	3 x 2.5 kW
Motor Efficiency	ErP conformity- 2015/EC controller integrated		
Full load Current		3 x 4-3,2 A	3 x 4-3,2 A
K-factor for air flow measuring		140	140
Power supply	400 V/3 ph/50 Hz		

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SOUND PRESSURE LEVEL (*)

Octavian centre frequency (Hz)

63	125	250	500	1000	2000	4000	8000
70.0	72.0	72.5	70.0	68.0	64.0	63.0	62.0

(*) Sound Pressure Level-dB(A),
measured at 1m. Distance from the unit in free field(without ducts)

SOUND POWER LEVEL dB(A)

63	125	250	500	1000	2000	4000	8000	SUM	
65.0	65.4	53.8	54.3	54.3	49.3	44.7	37.1	58.5	Supply Air Side - Supply
62.7	68.4	56.9	52.7	52.2	49.0	41.1	31.0	58.0	Supply Air Side - Fresh Air
65.4	67.7	56.9	55.4	54.5	48.7	45.6	40.5	59.0	Extract Air Side - Exhaust
60.5	69.8	58.2	51.7	50.6	47.2	41.5	34.5	58.0	Extract Air Side - Extract
62.1	56.1	58.3	56.9	55.6	48.1	42.2	35.0	59.0	Extract Air Side - Surroundings (**)

Sound Pressure Level is measured in acc. to ISO 5136-2003(with ducts)

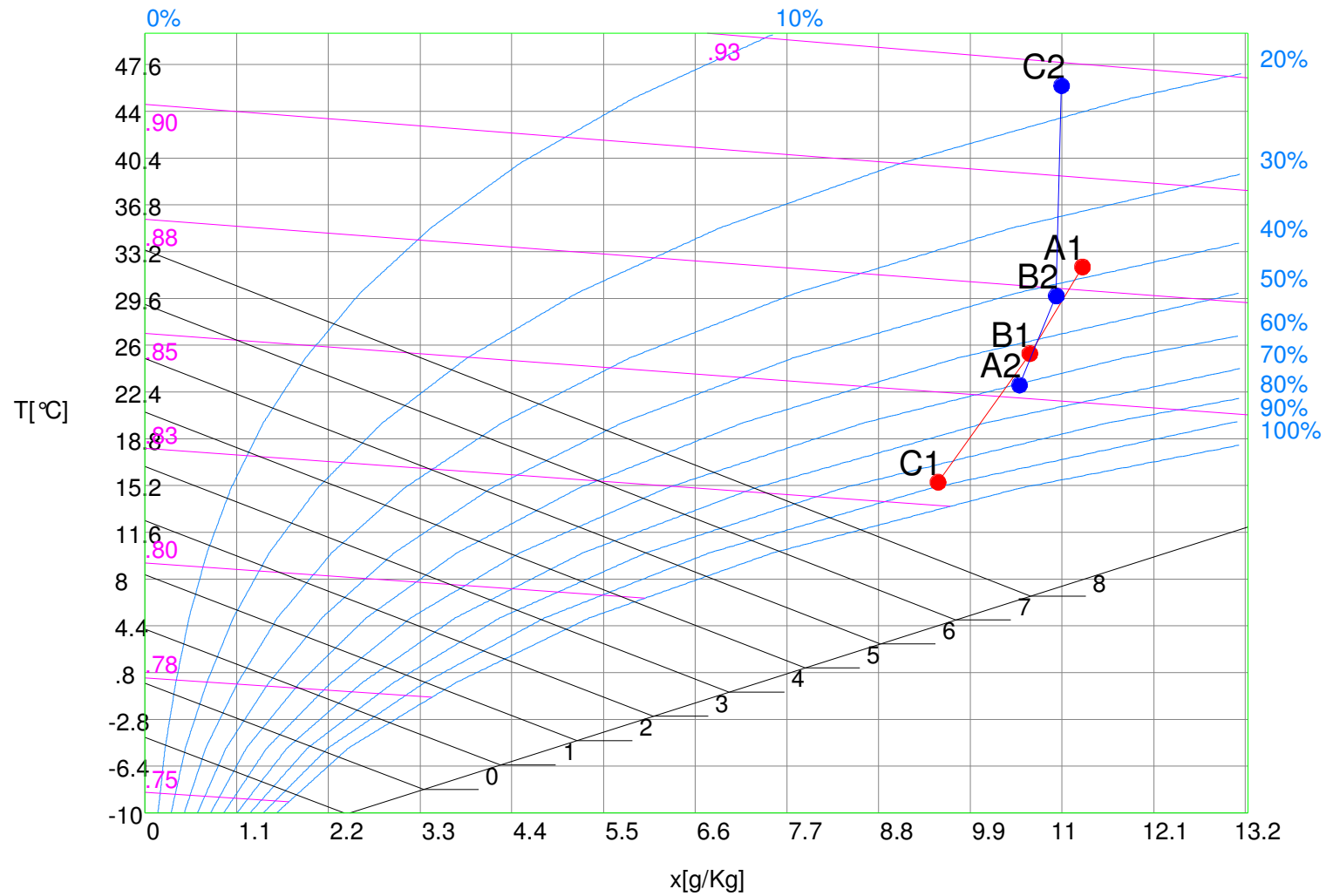
(**) Surroundings (by ISO 3744: 2006), measured at max.airflow of 11000 m³/h

Date :
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Issued by : Q01035

Damvent
to reach...and exceed

SUMMER

max.e3-09



Supply Side

A1 = 32°C / 38%
B1 = 25.3°C / 53.4%
C1 = 15.5°C / 87.4%

Exhaust Side

A2 = 23°C / 60%
B2 = 29.7°C / 42.4%
C2 = 45.9°C / 17.7%

Date :

Reference: South AHU

Issued by : Q01035

WINTER

max.e3-09

GENERAL DATA

Supply Side

Exhaust Side

Airflow	8680 m³/h	8680 m³/h
Total Heating Capacity	111.3 kW	
Specific Fan Power(SFP)-total for unit	1428 W/m³/s	
System COP	10.66	
Total power input / Installed	10.44 / 26.6 kW	
Refrigerant	R407C	
Unit power supply	400 V/3 ph/50 Hz	
Full load Current	53.00 A	
Sea level	0 m	

The system's Specific Fan Power (SFP_e) calculation is based on clean filter and acc. to EN13779

Pressure drop

Supply Side

Exhaust Side

Filter	F7/F6 Microcell Rigid Filter	
Clean Filter	68 Pa	55 Pa
Dirty Filter for replacing	450 Pa	450 Pa
Working point pressure drop (clean filters)	68 Pa	55 Pa

THE MIXING BOX	0 Pa	
Rotary Heat Exchanger	102 Pa	102 Pa
Evaporator		86 Pa
Condenser	29 Pa	
Total Internal Pressure Drops	199 Pa	243 Pa
External Static Pressure (ESP)	250 Pa	250 Pa

FILTERS

Class of filtration	F7	F6
Total Filtration Area	46.5 m²	46.5 m²

ROTARY HEAT EXCHANGER

Incoming Temperature	-5 °C	
Incoming Relative Humidity	100 %	
Incoming Temperature		22 °C
Incoming Relative Humidity		35 %
Recovered Heat(Total)	78.1 kW	
Temp. Eff.(Dry)\Hum. Eff.	75.0 % \ 75.1 %	
Outgoing Temperature	15.2 °C	
Outgoing Relative Humidity	46 %	
Outgoing Temperature		1.8 °C
Outgoing Relative Humidity		75 %
Mass Transfer Humidity	0 l/h	26.5 l/h
Temperature to frost	- °C	

THE MIXING BOX

	Supply Side	Exhaust Side
Inlet Temp. from Heat Recovery	- °C	- °C
Inlet Rel. Hum. from Heat Recovery	- %	- %
Inlet Temp. from Recirculation Damper	- °C	- °C
Inlet Rel. Hum. from Recirculation Damper	- %	- %
Outlet temperature	- °C	- °C
Outlet relative humidity	- %	- %
Fresh air percentage	100.0 %	

EVAPORATOR

Incoming Temperature	1.8 °C	Condensation Rate	8.2 l/h
Incoming Relative Humidity	75 %		
Outgoing Temperature	-4.8 °C		
Outgoing Relative Humidity	98 %		
Cooling capacity	26.2 kW		

CONDENSER

Incoming Temperature	15.2 °C
Incoming Relative Humidity	46 %
Outgoing Temperature	26.4 °C
Outgoing Relative Humidity	23 %
Condensing capacity	33.2 kW

COMPRESSORS

Quantity	2 n°	Compressors COP	4.740
Power supply	400 V/3 ph/50 Hz	Operating Current	2 x 6.37 A
Power input	2 x 3.50 kW	Full load Current	2 x 14.50 A
Circuits	1	Locked rotor Current	2 x 66.00 A
		Partialization	100 %

FAN

Type:	Plug Fan - EC Blue	Supply Side	Exhaust Side
Total Pressure		449 Pa	493 Pa
Fan speed		1854 rpm	1924 rpm
Fan Efficiency		65.0 %	66.8 %
(Static Eff. Impeller incl. motor and controller)			
Power absorbed at fan shaft		3 x 0.555 kW	3 x 0.593 kW
Motor Duty		3 x 2.5 kW	3 x 2.5 kW
Motor Efficiency	ErP conformity- 2015/EC controller integrated		
Full load Current		3 x 4-3,2 A	3 x 4-3,2 A
K-factor for air flow measuring		140	140
Power supply	400 V/3 ph/50 Hz		

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SOUND PRESSURE LEVEL (*)

Octavian centre frequency (Hz)

63 125 250 500 1000 2000 4000 8000

70.0 72.0 72.5 70.0 68.0 64.0 63.0 62.0

() Sound Pressure Level-dB(A),*

measured at 1m. Distance from the unit in free field(without ducts)

SOUND POWER LEVEL dB(A)

63 125 250 500 1000 2000 4000 8000 SUM

65.0 65.4 53.8 54.3 54.3 49.3 44.7 37.1 58.5 Supply Air Side - Supply

62.7 68.4 56.9 52.7 52.2 49.0 41.1 31.0 58.0 Supply Air Side - Fresh Air

65.4 67.7 56.9 55.4 54.5 48.7 45.6 40.5 59.0 Extract Air Side - Exhaust

60.5 69.8 58.2 51.7 50.6 47.2 41.5 34.5 58.0 Extract Air Side - Extract

62.1 56.1 58.3 56.9 55.6 48.1 42.2 35.0 59.0 Extract Air Side - Surroundings (**)

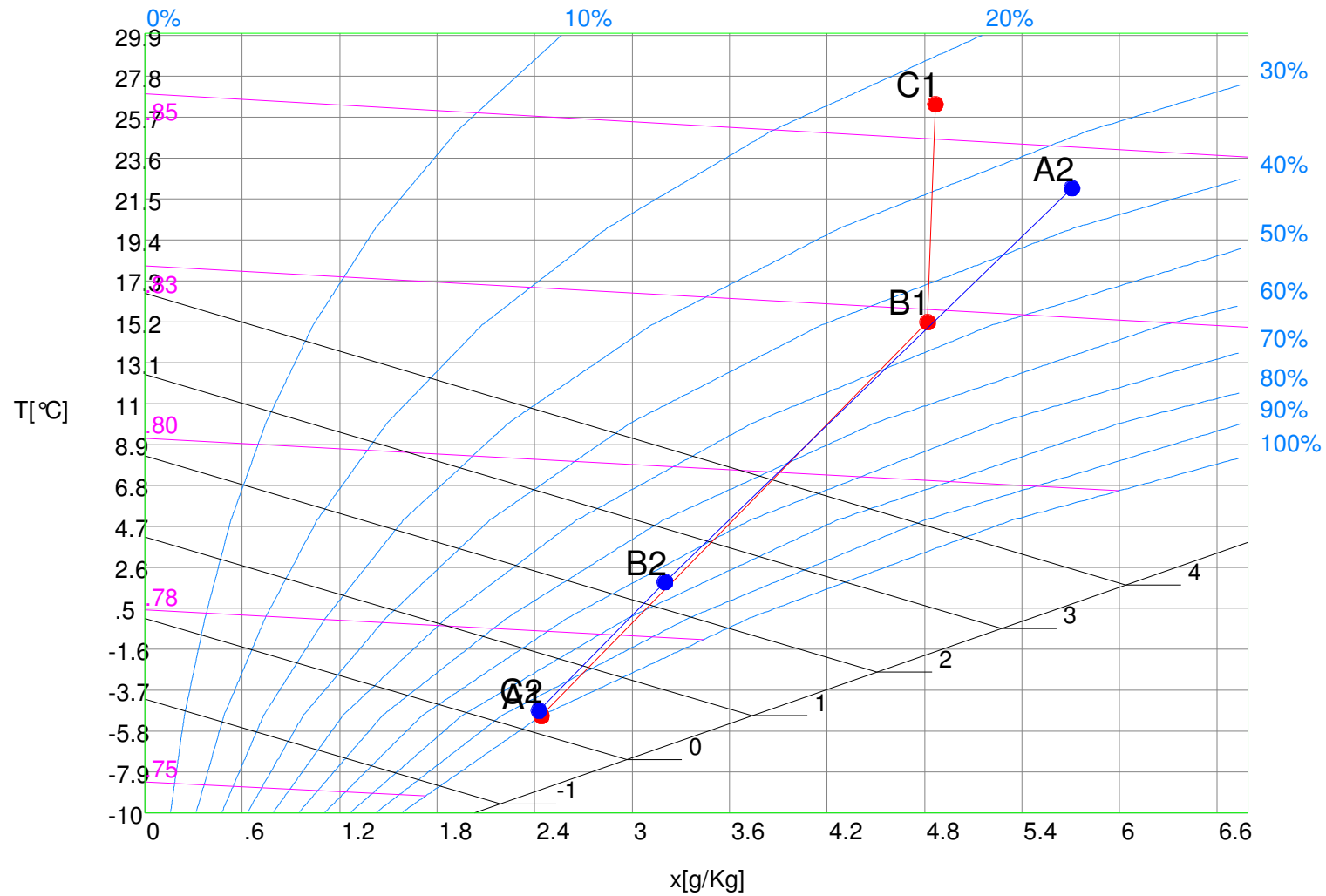
Sound Pressure Level is measured in acc. to ISO 5136-2003(with ducts)

*(**) Surroundings (by ISO 3744: 2006), measured at max.airflow of 11000 m³/h*

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WINTER

max.e3-09



Supply Side

A1 = -5°C / 100%
B1 = 15.2°C / 45.6%
C1 = 26.4°C / 23%

Exhaust Side

A2 = 22°C / 35%
B2 = 1.8°C / 74.6%
C2 = -4.8°C / 97.5%

