

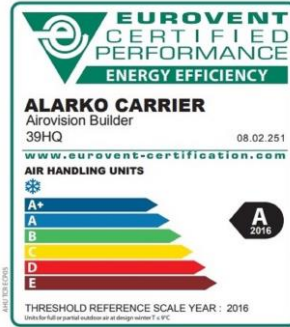
Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
Quotation no. : 6.3 AHU Technical Guide / 024	Eurovent identification number: 08.02.251

GENERAL DATA

Customer reference	6.3.1 35000 RHW 17.12
Number off	1
Location	External (flat roof)
Delivery	In sections
AHU finish	Outside in standard colour (RAL 7035)
Product	Air handling unit
AHU configuration	Double deck (opposite)
Pallet option	Excluded
Lifting Beam	Included
Total weight (each)	kg 4317
(Radiated casework SWL)	dB(A) 72
ErP identification code	NRVU / BVU

Eurovent energy classification



SFPe	kJ/m ³	2.51	SFPv	kJ/m ³	2.36
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Calculations conform to the Regulation for bidirectional ventilation unit (BVU) for delivery after 01.01.2018
Remarks are needed to be solved to comply with the Regulation.

Ecodesign 1253/2014 2018 BVU after 01.01.2018

Intermediate calculations

E (HR Bonus) (Pa)	54
F (Filter correction) (Pa)	0
SFP int_limit (W/(m ³ /s))	854.4
SFP int supply air (W/(m ³ /s))	365.8
SFP int extract air (W/(m ³ /s))	282.9
SFP int (W/(m ³ /s))	648.6

Supply air unit data

Airflow (m ³ /s)	9.72
Static pressure (Pa)	939
p fan (kW)	13.91
n fan (%)	65.7
Fine Filter	Yes
dp Fine filter (Pa)	76
nt nrvu (%)	75
dp HRS (Pa)	164

Extract air unit data

Airflow (m ³ /s)	9.72
Static pressure (Pa)	706
p fan (kW)	10.46
n fan (%)	65.6
Medium Filter	Yes
dp Medium filter (Pa)	21
nt nrvu (%)	75
dp HRS (Pa)	164

Check

Fan is selected with VSD	Passed
Heat recovery	Passed
Thermal by-pass facility	Warning
SFP int	Passed
Filters equipped with pressure gauge	Passed

Total check

Passed

Remark
To comply with Regulation EU No 1253 you need to equip the heat wheel with a rotor controller.

ACCESS DATA

Handle type	L-Handle	Pressure guard at positive pressure doors	Included
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EXHAUST DATA

Type	39HQ 17.12	Air volume	m ³ /s	9.72
Casing construction	GP080 60 mm	Internal sheet		Galvanised 0.80mm
Insulation	Glasswool 23 kg/m ³	External sheet		PUR-PA painted galvanized steel 0.80mm
Unit velocity	m/s 1.93	Profile		Steel
SFPe	kJ/m ³ 1.08	SFPv	kJ/m ³	1.00

Mechanical performance according EN1886	Model box	D1	L1 (-400Pa)	L1 (+400Pa)	L1 (+700Pa)	F9	T2	TB2	
	Real Unit		L2 (-400Pa)	L2 (+400Pa)	L2 (+700Pa)				

(Sound data exhaust SWL)	Hz	125	250	500	1k	2k	4k	8k	dB(A)
	dB	59	66	66	72	72	77	63	80
	dB	59	66	71	75	73	75	61	80

SUPPLY DATA

Glasswool 23 kg/m ³ Type	39HQ 17.12	Air volume	m ³ /s	9.72
Casing construction	GP080 60 mm	Internal sheet		Galvanised 0.80mm
Design outdoor temperature	°C 9.0	External sheet		PUR-PA painted galvanized steel 0.80mm
Design outdoor temperature (summer)	°C 37.5	Insulation		Glasswool 23 kg/m ³
Design outdoor dew point (summer)	°C 16.8	Profile		Steel
Unit velocity	m/s 1.93	SFPv	kJ/m ³	1.35
SFPe	kJ/m ³ 1.43			

Mechanical performance according EN1886	Model box	D1	L1 (-400Pa)	L1 (+400Pa)	L1 (+700Pa)	F9	T2	TB2	
	Real Unit		L2 (-400Pa)	L2 (+400Pa)	L2 (+700Pa)				

(Sound data supply SWL)	Hz	125	250	500	1k	2k	4k	8k	dB(A)
	dB	53	63	63	60	57	48	41	64
	dB	62	72	78	92	85	82	77	93

In direction of airflow, the unit comprises:

DELIVERY SECTION(S)

Section	Width (mm)	Height (mm)	Length (mm)	Baseframe (mm)	Weight (kg)	Weight (Lifting Beam) (kg)
1	2818	2018	529	62	195	
2	2818	2018	849	62	492	
3	2818	2018	738	62	247	
4	2818	2018	738	62	360	
5	3138	1969	738	-	-	
	3138	2191	738	62	1196	
6	2818	2018	1649	62	1017	36
7	2818	2018	960	62	275	
8	2818	2018	849	62	530	

EXHAUST COMPONENTS

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INLET			
Opening Position		Full face	Provided with:
Number of openings		1	Opening product
Opening, width x height	mm	2720 x 1920	Duct spigot
Pressure drop	Pa	2	

FILTER			
Filter type		Panel (Synthetic)	Withdrawal method
Test method		EN 779 / ISO 16890	Filter frame material
EN 779 Class		M5	Filter casing material
Eurovent Efficiency Class		NA	Side
ISO 16890 Class		ISO ePM10 50	Galvanised
Design pressure drop		Mean pd	Galvanised
Initial pressure drop	Pa	68	
Mean pressure drop	Pa	118	
Final pressure drop	Pa	168	
Filter length	mm	48	

Filters			
592x592	Qty	9	437x592 Qty 3
592x287	Qty	3	

EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

INLET PLENUM			
Air pressure drop	Pa	0	

FAN			
Fan type		K3G500PA2375	Installed motor power
Fan arrangement		Fan Wall - 2x2	kW
Air volume	m ³ /s	4 x 2.43	3.45
External static pressure	Pa	392	Motor
Internal static pressure	Pa	307	Run
Static pressure ISP+ESP	Pa	699	Motor efficiency class
System effect	Pa	6	IE4
Extra static pressure	Pa	0	Motor nominal speed
Total static pressure	Pa	706	rpm
Dynamic pressure	Pa	48	1910
Total pressure	Pa	754	Voltage
Fan speed	rpm	1720	V
Max fan speed	rpm	1910	380-480
Efficiency (total)	%	69	Current
Fan shaft power	kW	2.62	A
			Abs. motor power incl. F.I.
			kW
			2.62
			Control Signal (0-10V)
			V
			7.84
			Fan bulkhead material
			Galvanised

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	38	60	67	67	73	73	79	65
	Outlet dB	42	61	68	74	79	78	81	69

FAN EXTRAS
Inlet cone measuring points

ACCESS			
Access type		Door	Access side
			Left

EXTRAS
2 x Measuring nipple, 6mm

3 x Fanwall terminal box

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HEAT WHEEL					
Rotor situation		Build-in			
Winter conditions					
Exhaust air on	°C/%RH	22.0 / 40	Exhaust pressure drop	Pa	164
Exhaust air off	°C/%RH	7.5 / 95			
Summer conditions					
Exhaust air on	°C/%RH	27.0 / 50	Exhaust pressure drop	Pa	164
Exhaust air off	°C/%RH	34.5 / 33			

SUPPLY COMPONENTS

DOUBLE MIXING BOX					
Opening Position		Full face	Provided with:		
Number of exhaust openings		1	Opening product		None
Exhaust opening, w x h	mm	2720 x 1920	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	3	Number of Dampers		1
Actuator type		External	Damper Code		DMP2618x1818-200-162-12-D2Y2-0
Actuator Side		Left			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	2 x 22
Opening Position		Top	Provided with:		
Number of Recirc openings		1	Opening product		None
Recirc opening, w x h	mm	2720 x 640	Damper		Internal, Opposed blades, Aluminium
Pressure drop	Pa	43	Number of Dampers		1
Actuator type		External	Damper Code		DMP2458x0478-110-162-3-D1Y2-0
Actuator Side		Left			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 7
Opening Position		Full face	Provided with:		
Number of openings		1	Opening product		None
Fresh air opening, w x h	mm	2720 x 1920	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	3	Number of Dampers		1
Actuator type		External	Damper Code		DMP2618x1818-200-162-12-D2Y2-0
Actuator Side		Left			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	2 x 22
Mixing ratio, winter (recirculation air/supply air) in %	%	0			
EXTRAS (SUPPLY)					
1 x Coupling rod for dampers					

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FILTER

Filter type		Panel (Synthetic)	Withdrawal method	Side
Test method		EN 779 / ISO 16890	Filter frame material	Galvanised
EN 779 Class		G4	Filter casing material	Galvanised
Eurovent Efficiency Class		NA		
ISO 16890 Class		ISO Coarse 60		
Design pressure drop		Mean pd		
Initial pressure drop	Pa	62		
Mean pressure drop	Pa	87		
Final pressure drop	Pa	112		
Filter length	mm	48		

Filters

592x592	Qty	9	437x592	Qty	3
592x287	Qty	3			

EXTRAS

1 x Pressure gauge wall mounted, Magnehelic 2000

EMPTY SECTION

Pressure drop	Pa	0
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HEAT WHEEL

Rotor Model RRS-P-E18 2995/2995-2835

Rotor type		Condensation	Rotor frame material	Galvanised
Rotor material		Aluminium	Rotor purging sector	Excluded
Rotor situation		Build-in	Delivery requirement	Supply/Exhaust Split Half Moon
Component mountings		Galvanised	Rotor Motor Type	Gear Motor-Ready to connect Micromax
Winter conditions				
Supply air on	°C/%RH	2.5 / 62	Supply pressure drop	Pa 164
Supply air off	°C/%RH	17.1 / 27		
Supply dry efficiency	%	75	Supply latent efficiency	% 11
Supply dry effectiveness	%	75	Supply latent effectiveness	% 11
Total duty	kW	183.39		
Summer conditions				
Supply air on	°C/%RH	37.5 / 30	Supply pressure drop	Pa 164
Supply air off	°C/%RH	30.0 / 45		
Supply dry efficiency	%	71	Supply latent efficiency	% 0
Supply dry effectiveness	%	71	Supply latent effectiveness	% 0
Total duty	kW	88.94	Dry efficiency at equal airflow	% 75
Housing coated		No		

EXTRAS

1 x Syphone



Date: 19/6/2022



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FILTER

Filter type	Bag (Synthetic)	Withdrawal method	Side
Test method	EN 779 / ISO 16890	Filter frame material	Galvanised
EN 779 Class	F7	Filter casing material	Galvanised
Eurovent Efficiency Class	E		
ISO 16890 Class	ISO ePM1 50		
Design pressure drop	Mean pd		
Initial pressure drop	Pa	80	
Mean pressure drop	Pa	130	
Final pressure drop	Pa	180	
Filter length	mm	500	

Filters

592x592	Qty	9	437x592	Qty	3
287x592	Qty	3			

ACCESS

Access type	Door	Access side	Right
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EXTRAS

1 x Pressure gauge wall mounted, Magnehelic 2000

CHILLED WATER COIL

Coil Code	P40-16AR-5R-45T-2423A-2.0PA-33NC-Cu	Number of coils	1		
Air volume	m ³ /s	0.41/Al 0.13-4"	Fluid	100%	Water
Duty	kW	219.71	Fluid flow rate	l/s	10.46
Air on db	°C	27.0	Fluid on	°C	7.0
Air on wb/RH	°C/%	19.0/47	Fluid off	°C	12.0
Air off db	°C	13.0	Fluid content	l	125.56
Air off wb/RH	°C/%	12.4/94	Fluid pressure drop	kPa	35
Sensible duty	kW	163.33			
Air pressure drop coil (Dry)	Pa	86	Air pressure drop elim.	Pa	12
Tubes/fins/connections	Cu / Al / Fe		Connection type		Threaded (Right)
Coil frame	Galvanised		Connection size		4"
Tube thickness	mm	0.41	Fin spacing	mm	2.0
Tube Diameter	mm	14.1872	Fin thickness	mm	0.13
Face velocity	m/s	2.2			
Eliminator	Plastic – side withdrawal		Eliminator frame		Galvanised
Drainpan type	Recessed (sloped)		Drainpan material		Stainless steel 304
Drain pipes on drainpan	1		Intermediate drainpan		No
Condensed Water	l/min	1.2	Syphon Type		Negative
Coil Weight	kg	350.28	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	244/110/106/106

EXTRAS

1 x Syphone

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HOT WATER COIL			Number of coils		
Coil Code	P40-16AR-2R-45T-2448A-2.0PA-25NC-Cu 0.41/AI 0.13-3"		1		
Air volume	m ³ /s	9.72	Fluid	100%	Water
Duty	kW	175.00	Fluid flow rate	l/s	8.46
Air on db	°C	10.0	Fluid on	°C	45.0
Air off db	°C	25.0	Fluid off	°C	40.0
Air pressure drop	Pa	29	Fluid content	l	57.70
			Fluid pressure drop	kPa	16
Tubes/fins/connections	Cu / AI / Fe		Connection type	Threaded (Right)	
Coil frame	Galvanised		Connection size	3"	
Tube thickness	mm	0.41	Fin spacing	mm	2.0
Tube Diameter	mm	14.1872	Fin thickness	mm	0.13
Face velocity	m/s	2.2	Xin/Yin/Xout/Yout	mm/mm/	198/98/92/92
				mm/mm	
Coil Weight	kg	171.19			

EXTRAS
1 x Syphone

STEAM HUMIDIFIER			Humidifier supplier		
Air volume	m ³ /s	9.72	Conclair		
Moisture addition	kg/h	163	Number of steam lances	4	
Air on db	°C	25.0	Steam lance length	mm	2300
Air on moisture content	g/kg	2.8			
Air on rh	%	32			
Air off db	°C	25.7			
Air off moisture content	g/kg	6.6			
Air off rh	%	32			
Steam boiler type 1		EL180	Power each	kW	4 x 33.8
Max steam capacity, each	kg/h	180	Current each	A	4 x 48.7
Number off		1	Voltage	V	3x400V, 50/60Hz
Boiler weight, each	kg	120			
Section length	mm	960	Drainpan material	Stainless steel 304	
Drainpan		Included			

Note: Electric boilers will be delivered separately (not mounted on the unit). Boiler weights not included in unit weights.

ACCESS				
Access type	Door	Access side	Right	

EXTRAS
1 x Syphone

ANY COMPONENT		
Pressure drop	Pa	0

INLET PLENUM		
Air pressure drop	Pa	0

ACCESS				
Access type	Door	Access side	Right	



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FAN									
Fan type		K3G450PB2405							
Fan arrangement		Fan Wall - 2x2		Installed motor power	kW	5.25			
Air volume	m³/s	4 x 2.43		Motor		Run			
External static pressure	Pa	392		Motor efficiency class		IE4			
Internal static pressure	Pa	540		Motor nominal speed	rpm	2600			
Static pressure ISP+ESP	Pa	932		Voltage	V	380-480			
System effect	Pa	7		Current	A	8.0			
Extra static pressure	Pa	0		Abs. motor power incl. F.I.	kW	3.48			
Total static pressure	Pa	939		Control Signal (0-10V)	V	7.69			
Dynamic pressure	Pa	74		Fan bulkhead material		Galvanised			
Total pressure	Pa	1014							
Fan speed	rpm	2258							
Max fan speed	rpm	2600							
Efficiency (total)	%	70							
Fan shaft power	kW	3.48							
(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	39	60	70	72	76	77	79	74
	Outlet dB	43	62	72	78	92	85	82	77
FAN EXTRAS									
Inlet cone measuring points									
ACCESS									
Access type		Door		Access side		Right			
EXTRAS									
2 x Measuring nipple, 6mm									
4 x Fanwall terminal box									
OUTLET									
Opening Position		Full face		Provided with:		Duct spigot			
Number of openings		1		Opening product					
Opening, width x height	mm	2720 x 1920							
Pressure drop	Pa	2							