

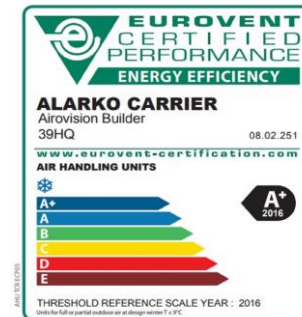
Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
Quotation no. : 6.5 AHU Technical Guide / 016	Eurovent identification number: 08.02.251

GENERAL DATA

Customer reference	6.5.1 RHW 35000 14.16
Number off	1
Location	External (flat roof)
Delivery	In sections
AHU finish	Outside in standard colour (RAL 7035)
Product	Air handling unit
AHU configuration	Side by side (opposite)
Pallet option	Excluded
Lifting Beam	Included
Total weight (each)	kg 4575
(Radiated casework SWL)	dB(A) 72
ErP identification code	NRVU / BVU

Eurovent energy classification



SFPe	kJ/m ³	2.47	SFPv	kJ/m ³	2.31
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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))	854.0
SFP int supply air (W/(m ³ /s))	347.2
SFP int extract air (W/(m ³ /s))	267.5
SFP int (W/(m ³ /s))	614.6

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)	67
nt nrvu (%)	75
dp HRS (Pa)	161

Extract air unit data

Airflow (m ³ /s)	9.72
Static pressure (Pa)	693
p fan (kW)	10.06
n fan (%)	66.9
Medium Filter	Yes
dp Medium filter (Pa)	18
nt nrvu (%)	75
dp HRS (Pa)	161

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 14.16	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 1.75	Profile		Steel
SFPe	kJ/m ³ 1.04	SFPv	kJ/m ³	0.96

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	65	67	71	72	75	64	78
	dB	60	65	75	77	73	74	62	80

SUPPLY DATA

Glasswool 23 kg/m ³ Type	39HQ 14.16	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 1.75			
SFPe	kJ/m ³ 1.43	SFPv	kJ/m ³	1.35

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	2338	2658	1538	62	690	30
2	2338	2658	1378	62	365	
3	2338	2658	1378	62	484	
4	4676	3298	578	62	1088	
5	2338	2658	1489	62	1098	
6	2338	2658	960	62	284	
7	2338	2658	849	62	564	

EXHAUST COMPONENTS

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INLET					
Opening Position		Full face		Provided with:	
Number of openings		1		Opening product	Duct spigot
Opening, width x height	mm	2240 x 2560			
Pressure drop	Pa	2			

FILTER					
Filter type		Panel (Synthetic)		Withdrawal method	Side
Test method		EN 779 / ISO 16890		Filter frame material	Galvanised
EN 779 Class		M5		Filter casing material	Galvanised
Eurovent Efficiency Class		NA			
ISO 16890 Class		ISO ePM10 50			
Design pressure drop		Mean pd			
Initial pressure drop	Pa	60			
Mean pressure drop	Pa	110			
Final pressure drop	Pa	160			
Filter length	mm	48			

Filters					
592x592	Qty	12		592x287	Qty 4

ACCESS					
Access type		Door		Access side	Right

EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

INLET PLENUM					
Air pressure drop	Pa	0			

FAN					
Fan type		K3G560PC0405			
Fan arrangement		Fan Wall - 2B1			Installed motor power
Air volume	m³/s	3 x 3.24			kW 5.00
External static pressure	Pa	392			Motor Run
Internal static pressure	Pa	295			Motor efficiency class IE4
Static pressure ISP+ESP	Pa	687			Motor nominal speed rpm 1760
System effect	Pa	6			Voltage V 380-480
Extra static pressure	Pa	0			Current A 7.7
Total static pressure	Pa	693			Abs. motor power incl. F.I. kW 3.35
Dynamic pressure	Pa	55			Control Signal (0-10V) V 7.24
Total pressure	Pa	748			Fan bulkhead material Galvanised
Fan speed	rpm	1523			
Max fan speed	rpm	1760			
Efficiency (total)	%	71			
Fan shaft power	kW	3.35			

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	37	60	66	68	72	73	77	66
	Outlet dB	45	62	67	78	81	78	80	70

FAN EXTRAS
Inlet cone measuring points

ACCESS					
Access type		Door		Access side	Right

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	161
Exhaust air off	°C/%RH	7.4 / 99			
Summer conditions					
Exhaust air on	°C/%RH	27.0 / 47	Exhaust pressure drop	Pa	161
Exhaust air off	°C/%RH	34.9 / 30			

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	2240 x 2560	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	2	Number of Dampers		1
Actuator type		External	Damper Code		DMP2138x2458-200-162-16-D2Y2-0
Actuator Side		Right			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	2 x 14
Opening Position		Left side	Provided with:		
Number of Recirc openings		1	Opening product		None
Recirc opening, w x h	mm	960 x 2560	Damper		Internal, Opposed blades, Aluminium
Pressure drop	Pa	21	Number of Dampers		1
Actuator type		Internal	Damper Code		DMP0698x2402-110-162-16-D2Y1-0
Actuator Side		Air inlet side			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	2 x 7
Opening Position		Full face	Provided with:		
Number of openings		1	Opening product		None
Fresh air opening, w x h	mm	2240 x 2560	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	2	Number of Dampers		1
Actuator type		External	Damper Code		DMP2138x2458-200-162-16-D2Y2-0
Actuator Side		Right			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	2 x 14
Mixing ratio, winter (recirculation air/supply air) in %	%	0			

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	54			
Mean pressure drop	Pa	79			
Final pressure drop	Pa	104			
Filter length	mm	48			

Filters

592x592	Qty	12	592x287	Qty	4
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EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

ANY COMPONENT				
Pressure drop	Pa	0		

HEAT WHEEL				
Rotor Model ST1-LL-SV-2955-PR-K3-E1-0,W3155,H3155				
Rotor type	Condensation		Rotor frame material	Aluzinc
Rotor material	Aluminium		Rotor purging sector	Excluded
Rotor situation	Build-in		Delivery requirement	Single section
Component mountings	Galvanised		Rotor Motor Type	Gear Motor-Constant Speed
Winter conditions				
Supply air on	°C/%RH	2.5 / 62	Supply pressure drop	Pa 161
Supply air off	°C/%RH	17.1 / 23		
Supply dry efficiency	%	75	Supply latent efficiency	% 0
Supply dry effectiveness	%	75	Supply latent effectiveness	% 0
Total duty	kW	172.70		
Summer conditions				
Supply air on	°C/%RH	37.5 / 30	Supply pressure drop	Pa 161
Supply air off	°C/%RH	29.6 / 46		
Supply dry efficiency	%	75	Supply latent efficiency	% 0
Supply dry effectiveness	%	75	Supply latent effectiveness	% 0
Total duty	kW	95.70	Dry efficiency at equal airflow	% 75

EXTRAS
1 x Syphone

FILTER				
Filter type	Bag (Glassfibre)		Withdrawal method	Side
Test method	EN 779 / ISO 16890		Filter frame material	Galvanised
EN 779 Class	F7		Filter casing material	Galvanised
Eurovent Efficiency Class	D			
ISO 16890 Class	ISO ePM1 50			
Design pressure drop	Mean pd			
Initial pressure drop	Pa	105		
Mean pressure drop	Pa	155		
Final pressure drop	Pa	205		
Filter length	mm	360		

Filters				
592x592	Qty	12	287x592	Qty 4

ACCESS				
Access type	Door		Access side	Right

EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

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CHILLED WATER COIL				Number of coils		1
Coil Code	P40-16AR-5R-61T-1943A-2.0PA-35NC-Cu		0.41/Al 0.13-4"			
Air volume	m³/s	9.72	Fluid	100%	Water	
Duty	kW	231.87	Fluid flow rate	l/s	11.04	
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	12.5	Fluid content	l	147.15	
Air off wb/RH	°C/%	12.0/95	Fluid pressure drop	kPa	38	
Sensible duty	kW	169.17				
Air pressure drop coil (Dry)	Pa	77	Air pressure drop elim.	Pa	10	
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	2.0				
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	1.4	Syphon Type	Negative		
Coil Weight	kg	391.75	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	244/110/106/106	

EXTRAS
1 x Syphone

HOT WATER COIL				Number of coils		1
Coil Code	P40-16AR-2R-61T-1943A-2.0PA-29NC-Cu		0.41/Al 0.13-4"			
Air volume	m³/s	9.72	Fluid	100%	Water	
Duty	kW	198.33	Fluid flow rate	l/s	9.58	
Air on db	°C	10.0	Fluid on	°C	45.0	
Air off db	°C	27.0	Fluid off	°C	40.0	
Air pressure drop	Pa	26	Fluid content	l	87.75	
			Fluid pressure drop	kPa	17	
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	2.0	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	250/110/100/100	
Coil Weight	kg	217.38				

EXTRAS
1 x Syphone

STEAM HUMIDIFIER						
Air volume	m³/s	9.72	Humidifier supplier	Condair		
Moisture addition	kg/h	163	Number of steam lances	4		
Air on db	°C	25.0	Steam lance length	mm	1800	
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					

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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

FAN

Fan type		K3G450PB2405							
Fan arrangement		Fan Wall - 2x2		Installed motor power	kW	5.25			
Air volume	m ³ /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	7.68			
Dynamic pressure	Pa	74							
Total pressure	Pa	1013		Fan bulkhead material		Galvanised			
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:					
Number of openings		1		Opening product		Duct spigot			
Opening, width x height	mm	2240 x 2560							
Pressure drop	Pa	2							