

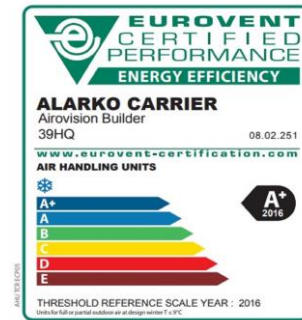
Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
Quotation no. : 6.5 AHU Technical Guide / 010	Eurovent identification number: 08.02.251

GENERAL DATA

Customer reference	6.5.1 RHW 12500 09.12
Number off	1
Location	External (flat roof)
Delivery	In sections
AHU finish	Outside in standard colour (RAL 7035)
Product	Air handling unit
AHU configuration	Side by side (opposite)
Pallet option	Excluded
Lifting Beam	Included
Total weight (each)	kg 2151
(Radiated casework SWL)	dB(A) 65
ErP identification code	NRVU / BVU

Eurovent energy classification



SFPe	kJ/m ³	2.45	SFPv	kJ/m ³	2.28
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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)	60
F (Filter correction) (Pa)	0
SFP int_limit (W/(m ³ /s))	860.0
SFP int_supply air (W/(m ³ /s))	333.1
SFP int_extract air (W/(m ³ /s))	259.0
SFP int (W/(m ³ /s))	592.1

Supply air unit data

Airflow (m ³ /s)	3.47
Static pressure (Pa)	835
p fan (kW)	4.89
n fan (%)	59.3
Fine Filter	Yes
dp Fine filter (Pa)	45
nt nrvu (%)	75
dp HRS (Pa)	152

Extract air unit data

Airflow (m ³ /s)	3.47
Static pressure (Pa)	652
p fan (kW)	3.61
n fan (%)	62.8
Medium Filter	Yes
dp Medium filter (Pa)	11
nt nrvu (%)	75
dp HRS (Pa)	152

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 09.12	Air volume	m³/s	3.47
Casing construction	GP080 60 mm	Internal sheet		Galvanised 0.80mm
Insulation	Glasswool 23 kg/m³	External sheet		PUR-PA painted galvanized steel 0.80mm
Unit velocity	m/s 1.32	Profile		Steel
SFPe	kJ/m³ 1.04	SFPv	kJ/m³	0.99

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	50	64	67	69	71	70	61	76
	dB	50	62	68	73	72	71	60	77

SUPPLY DATA

Glasswool 23 kg/m³ Type	39HQ 09.12	Air volume	m³/s	3.47
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/m³
Design outdoor dew point (summer)	°C 16.8	Profile		Steel
Unit velocity	m/s 1.32	SFPv	kJ/m³	1.29
SFPe	kJ/m³ 1.41			

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	45	62	63	56	55	49	42	63
	dB	51	68	73	80	81	84	78	88

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	1538	2018	1218	62	346	
2	1538	2018	1218	62	183	
3	1538	2018	1218	62	256	
4	3076	2018	578	62	410	
5	1538	2018	1489	62	529	21
6	1538	2018	960	62	201	
7	1538	2018	689	62	224	

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	1440 x 1920			
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	40			
Mean pressure drop	Pa	81			
Final pressure drop	Pa	121			
Filter length	mm	48			

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

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		K3G355PH4905			
Fan arrangement		Fan Wall - 2B1		Installed motor power	kW 1.90
Air volume	m³/s	3 x 1.16		Motor	Run
External static pressure	Pa	392		Motor efficiency class	IE4
Internal static pressure	Pa	255		Motor nominal speed	rpm 2870
Static pressure ISP+ESP	Pa	647		Voltage	V 380-480
System effect	Pa	5		Current	A 3.0
Extra static pressure	Pa	0		Abs. motor power incl. F.I.	kW 1.20
Total static pressure	Pa	652		Control Signal (0-10V)	V 7.05
Dynamic pressure	Pa	48			
Total pressure	Pa	700		Fan bulkhead material	Galvanised
Fan speed	rpm	2458			
Max fan speed	rpm	2870			
Efficiency (total)	%	66			
Fan shaft power	kW	1.20			

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	36	51	65	68	70	72	72	63
	Outlet dB	39	52	64	71	77	77	77	68

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	152
Exhaust air off	°C/%RH	7.4 / 99			
Summer conditions					
Exhaust air on	°C/%RH	27.0 / 47	Exhaust pressure drop	Pa	152
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	1440 x 1920	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	1	Number of Dampers		1
Actuator type		External	Damper Code		DMP1338x1818-200-162-12-D2Y1-0
Actuator Side		Right			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	2 x 11
Opening Position		Left side	Provided with:		
Number of Recirc openings		1	Opening product		None
Recirc opening, w x h	mm	800 x 1920	Damper		Internal, Opposed blades, Aluminium
Pressure drop	Pa	9	Number of Dampers		1
Actuator type		Internal	Damper Code		DMP0538x1762-110-162-12-D2Y1-0
Actuator Side		Air inlet side			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	2 x 11
Opening Position		Full face	Provided with:		
Number of openings		1	Opening product		None
Fresh air opening, w x h	mm	1440 x 1920	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	1	Number of Dampers		1
Actuator type		External	Damper Code		DMP1338x1818-200-162-12-D2Y1-0
Actuator Side		Right			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	2 x 11
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	36			
Mean pressure drop	Pa	61			
Final pressure drop	Pa	86			
Filter length	mm	48			
Filters					
592x592	Qty	3	437x592	Qty	3
592x287	Qty	3			



Date: 19/6/2022



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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-WV-1775-SM-K3-E1-0,W1875,H1875					
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	152
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	61.70			
Summer conditions					
Supply air on	°C/%RH	37.5 / 30	Supply pressure drop	Pa	152
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	34.20	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	71			
Mean pressure drop	Pa	121			
Final pressure drop	Pa	171			
Filter length	mm	360			
Filters					
592x592	Qty	3	437x592	Qty	3
287x592	Qty	3			
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	P25-10AR-5R-70T-1213A-2.0PA-42NC-Cu		0.36/AI 0.10-2 1/2"		
Air volume	m³/s	3.47	Fluid	100%	Water
Duty	kW	87.20	Fluid flow rate	l/s	4.15
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	12.0	Fluid content	l	46.01
Air off wb/RH	°C/%	11.6/95	Fluid pressure drop	kPa	39
Sensible duty	kW	62.50			
Air pressure drop coil (Dry)	Pa	53	Air pressure drop elim.	Pa	6
Tubes/fins/connections	Cu / Al / Fe		Connection type	Threaded (Right)	
Coil frame	Galvanised		Connection size	2 1/2"	
Tube thickness	mm	0.36	Fin spacing	mm	2.0
Tube Diameter	mm	9.2388	Fin thickness	mm	0.10
Face velocity	m/s	1.6			
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	0.5	Syphon Type	Negative	
Coil Weight	kg	127.52	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	177/91/89/89

EXTRAS
1 x Syphone

HOT WATER COIL			Number of coils		1
Coil Code	P25-10AR-2R-70T-1230A-2.0PA-35NC-Cu		0.36/AI 0.10-2"		
Air volume	m³/s	3.47	Fluid	100%	Water
Duty	kW	70.83	Fluid flow rate	l/s	3.42
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	15	Fluid content	l	22.11
			Fluid pressure drop	kPa	17
Tubes/fins/connections	Cu / Al / Fe		Connection type	Threaded (Right)	
Coil frame	Galvanised		Connection size	2"	
Tube thickness	mm	0.36	Fin spacing	mm	2.0
Tube Diameter	mm	9.2388	Fin thickness	mm	0.10
Face velocity	m/s	1.5	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	166/83/81/81
Coil Weight	kg	70.68			

EXTRAS
1 x Syphone

STEAM HUMIDIFIER					
Air volume	m³/s	3.47	Humidifier supplier	Condair	
Moisture addition	kg/h	58	Number of steam lances	2	
Air on db	°C	25.0	Steam lance length	mm	1200
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		EL60	Power each	kW	2 x 22.5
Max steam capacity, each	kg/h	60	Current each	A	2 x 32.5
Number off		1	Voltage	V	3x400V, 50/60Hz
Boiler weight, each	kg	80			
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		K3G310PH5807							
Fan arrangement		Fan Wall - 2B1	Installed motor power	kW	2.95				
Air volume	m ³ /s	3 x 1.16	Motor		Run				
External static pressure	Pa	392	Motor efficiency class		IE4				
Internal static pressure	Pa	435	Motor nominal speed	rpm	4000				
Static pressure ISP+ESP	Pa	827	Voltage	V	380-480				
System effect	Pa	8	Current	A	4.6				
Extra static pressure	Pa	0	Abs. motor power incl. F.I.	kW	1.63				
Total static pressure	Pa	835	Control Signal (0-10V)	V	7.13				
Dynamic pressure	Pa	76	Fan bulkhead material		Galvanised				
Total pressure	Pa	911							
Fan speed	rpm	3275							
Max fan speed	rpm	4000							
Efficiency (total)	%	64							
Fan shaft power	kW	1.63							

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	35	52	69	72	72	75	80	75
	Outlet dB	39	51	68	73	80	81	84	78

FAN EXTRAS
Inlet cone measuring points

ACCESS
Access type Door Access side Right

EXTRAS
2 x Measuring nipple, 6mm 3 x Fanwall terminal box

OUTLET

Opening Position		Full face	Provided with:	
Number of openings		1	Opening product	Duct spigot
Opening, width x height	mm	1440 x 1920		
Pressure drop	Pa	2		