

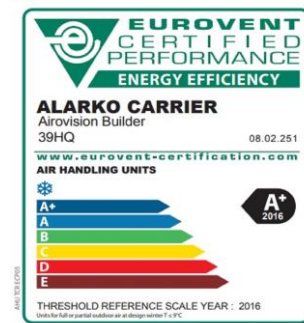
## Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
Quotation no. : 6.5 AHU Technical Guide / 014	Eurovent identification number: 08.02.251

### GENERAL DATA

Customer reference	6.5.1 RHW 25000 13.16
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 3723
(Radiated casework SWL)	dB(A) 69
ErP identification code	NRVU / BVU

### Eurovent energy classification



SFPe	kJ/m <sup>3</sup>	2.34	SFPv	kJ/m <sup>3</sup>	2.18
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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)	24
F (Filter correction) (Pa)	0
SFP int_limit (W/(m <sup>3</sup> /s))	824.0
SFP int supply air (W/(m <sup>3</sup> /s))	327.8
SFP int extract air (W/(m <sup>3</sup> /s))	273.0
SFP int (W/(m <sup>3</sup> /s))	600.8

#### Supply air unit data

Airflow (m <sup>3</sup> /s)	6.94
Static pressure (Pa)	859
p fan (kW)	9.11
n fan (%)	65.4
Fine Filter	Yes
dp Fine filter (Pa)	47
nt nrvu (%)	74
dp HRS (Pa)	167

#### Extract air unit data

Airflow (m <sup>3</sup> /s)	6.94
Static pressure (Pa)	671
p fan (kW)	7.14
n fan (%)	65.3
Medium Filter	Yes
dp Medium filter (Pa)	11
nt nrvu (%)	74
dp HRS (Pa)	167

#### 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 13.16	Air volume	m <sup>3</sup> /s	6.94
Casing construction	GP080 60 mm	Internal sheet		Galvanised 0.80mm
Insulation	Glasswool 23 kg/m <sup>3</sup>	External sheet		PUR-PA painted galvanized steel 0.80mm
Unit velocity	m/s 1.35	Profile		Steel
SFPe	kJ/m <sup>3</sup> 1.03	SFPv	kJ/m <sup>3</sup>	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	58	64	65	71	72	75	62	78
	dB	58	64	70	74	72	74	60	79

### SUPPLY DATA

Glasswool 23 kg/m <sup>3</sup> Type	39HQ 13.16	Air volume	m <sup>3</sup> /s	6.94
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 <sup>3</sup>
Design outdoor dew point (summer)	°C 16.8	Profile		Steel
Unit velocity	m/s 1.35			
SFPe	kJ/m <sup>3</sup> 1.31	SFPv	kJ/m <sup>3</sup>	1.22

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	62	62	58	56	47	38	63
	dB	62	70	77	89	84	81	75	91

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	2178	2658	1378	62	555	
2	2178	2658	1378	62	348	
3	2178	2658	1378	62	463	
4	4356	2658	578	62	643	
5	2178	2658	1489	62	1021	28
6	2178	2658	960	62	273	
7	2178	2658	849	62	417	

### EXHAUST COMPONENTS

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<b>INLET</b>					
Opening Position		Full face		Provided with:	
Number of openings		1		Opening product	Duct spigot
Opening, width x height	mm	2080 x 2560			
Pressure drop	Pa	2			

<b>FILTER</b>					
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	42			
Mean pressure drop	Pa	85			
Final pressure drop	Pa	127			
Filter length	mm	48			

<b>Filters</b>					
592x592	Qty	8	437x592	Qty	4
592x287	Qty	4			

<b>ACCESS</b>					
Access type		Door		Access side	Right

**EXTRAS**  
1 x Pressure gauge wall mounted, Magnehelic 2000

<b>INLET PLENUM</b>					
Air pressure drop	Pa	0			

<b>FAN</b>					
Fan type		K3G500PA2375			
Fan arrangement		Fan Wall - 2B1		Installed motor power	kW 3.45
Air volume	m <sup>3</sup> /s	3 x 2.31		Motor	Run
External static pressure	Pa	392		Motor efficiency class	IE4
Internal static pressure	Pa	275		Motor nominal speed	rpm 1910
Static pressure ISP+ESP	Pa	667		Voltage	V 380-480
System effect	Pa	4		Current	A 5.3
Extra static pressure	Pa	0		Abs. motor power incl. F.I.	kW 2.38
Total static pressure	Pa	671		Control Signal (0-10V)	V 7.52
Dynamic pressure	Pa	44			
Total pressure	Pa	715		Fan bulkhead material	Galvanised
Fan speed	rpm	1662			
Max fan speed	rpm	1910			
Efficiency (total)	%	69			
Fan shaft power	kW	2.38			

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	38	59	65	66	72	73	77	64
	Outlet dB	41	60	66	73	78	77	80	68

**FAN EXTRAS**  
Inlet cone measuring points

<b>ACCESS</b>					
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	167
Exhaust air off	°C/%RH	7.6 / 99			
Summer conditions					
Exhaust air on	°C/%RH	27.0 / 47	Exhaust pressure drop	Pa	167
Exhaust air off	°C/%RH	34.8 / 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	2080 x 2560	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	1	Number of Dampers		1
Actuator type		External	Damper Code		DMP1978x2458-200-162-16-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	11	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	2080 x 2560	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	1	Number of Dampers		1
Actuator type		External	Damper Code		DMP1978x2458-200-162-16-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	38			
Mean pressure drop	Pa	63			
Final pressure drop	Pa	88			
Filter length	mm	48			
<b>Filters</b>					
592x592	Qty	8	437x592	Qty	4
592x287	Qty	4			

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EXTRAS  
1 x Pressure gauge wall mounted, Magnehelic 2000

<b>ANY COMPONENT</b>			
Pressure drop	Pa	0	

<b>HEAT WHEEL</b>					
Rotor Model ST1-LL-WV-2415-SM-K3-E1-0,W2515,H2515					
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	167
Supply air off	°C/%RH	16.9 / 24	Supply latent efficiency	%	0
Supply dry efficiency	%	74	Supply latent effectiveness	%	0
Supply dry effectiveness	%	74			
Total duty	kW	121.70			
Summer conditions					
Supply air on	°C/%RH	37.5 / 30	Supply pressure drop	Pa	167
Supply air off	°C/%RH	29.7 / 46	Supply latent efficiency	%	0
Supply dry efficiency	%	74	Supply latent effectiveness	%	0
Supply dry effectiveness	%	74	Dry efficiency at equal airflow	%	74
Total duty	kW	67.50			

EXTRAS  
1 x Syphone

<b>FILTER</b>					
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	74			
Mean pressure drop	Pa	124			
Final pressure drop	Pa	174			
Filter length	mm	360			
<b>Filters</b>					
592x592	Qty	8	437x592	Qty	4
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-1783A-2.0PA-30NC-Cu		0.41/Al 0.13-4"			
Air volume	m³/s	6.94	Fluid	100%	Water	
Duty	kW	183.18	Fluid flow rate	l/s	8.72	
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	11.5	Fluid content	l	139.19	
Air off wb/RH	°C/%	11.2/96	Fluid pressure drop	kPa	38	
Sensible duty	kW	129.17				
Air pressure drop coil (Dry)	Pa	54	Air pressure drop elim.	Pa	6	
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	1.5				
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	367.21	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-1808A-2.0PA-23NC-Cu		0.41/Al 0.13-3"			
Air volume	m³/s	6.94	Fluid	100%	Water	
Duty	kW	141.67	Fluid flow rate	l/s	6.84	
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	18	Fluid content	l	65.77	
			Fluid pressure drop	kPa	16	
Tubes/fins/connections	Cu / Al / 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	1.5	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	198/98/92/92	
Coil Weight	kg	182.78				

EXTRAS  
1 x Syphone

STEAM HUMIDIFIER						
Air volume	m³/s	6.94	Humidifier supplier	Condair		
Moisture addition	kg/h	116	Number of steam lances	3		
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	EL120		Power each	kW	3 x 30.0	
Max steam capacity, each	kg/h	120	Current each	A	3 x 43.3	
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 - 2B1		Installed motor power	kW	5.25			
Air volume	m <sup>3</sup> /s	3 x 2.31		Motor		Run			
External static pressure	Pa	392		Motor efficiency class		IE4			
Internal static pressure	Pa	460		Motor nominal speed	rpm	2600			
Static pressure ISP+ESP	Pa	852		Voltage	V	380-480			
System effect	Pa	7		Current	A	8.0			
Extra static pressure	Pa	0		Abs. motor power incl. F.I.	kW	3.04			
Total static pressure	Pa	859		Control Signal (0-10V)	V	7.28			
Dynamic pressure	Pa	67		Fan bulkhead material		Galvanised			
Total pressure	Pa	926							
Fan speed	rpm	2156							
Max fan speed	rpm	2600							
Efficiency (total)	%	70							
Fan shaft power	kW	3.04							

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	39	60	69	71	74	76	78	71
	Outlet dB	42	62	70	77	89	84	81	75

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	2080 x 2560		
Pressure drop	Pa	2		