

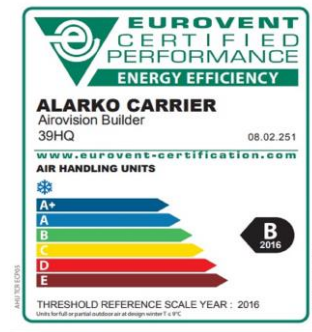
## Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
Quotation no. : 6.3 AHU Technical Guide / 025	Eurovent identification number: 08.02.251

### GENERAL DATA

Customer reference	6.3.1 40000 RHW 22.10
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 4897
(Radiated casework SWL)	dB(A) 68
ErP identification code	NRVU / BVU

### Eurovent energy classification



SFPe	kJ/m <sup>3</sup>	2.59	SFPv	kJ/m <sup>3</sup>	2.45
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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)	42
F (Filter correction) (Pa)	0
SFP int_limit (W/(m <sup>3</sup> /s))	842.0
SFP int supply air (W/(m <sup>3</sup> /s))	372.7
SFP int extract air (W/(m <sup>3</sup> /s))	306.4
SFP int (W/(m <sup>3</sup> /s))	679.0

#### Supply air unit data

Airflow (m <sup>3</sup> /s)	11.11
Static pressure (Pa)	957
p fan (kW)	16.07
n fan (%)	66.1
Fine Filter	Yes
dp Fine filter (Pa)	78
nt nrvu (%)	74
dp HRS (Pa)	168

#### Extract air unit data

Airflow (m <sup>3</sup> /s)	11.11
Static pressure (Pa)	713
p fan (kW)	12.75
n fan (%)	62.1
Medium Filter	Yes
dp Medium filter (Pa)	22
nt nrvu (%)	74
dp HRS (Pa)	168

#### 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 22.10	Air volume	m <sup>3</sup> /s	11.11
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 2.05	Profile		Steel
SFPe	kJ/m <sup>3</sup> 1.15	SFPv	kJ/m <sup>3</sup>	1.08

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	49	65	69	69	73	74	67	78
	dB	50	65	70	74	74	74	65	79

### SUPPLY DATA

Glasswool 23 kg/m <sup>3</sup> Type	39HQ 22.10	Air volume	m <sup>3</sup> /s	11.11
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 2.05	SFPv	kJ/m <sup>3</sup>	1.36
SFPe	kJ/m <sup>3</sup> 1.45			

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	56	63	61	59	57	52	36	64
	dB	64	70	77	87	83	84	74	90

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	3618	1698	578	62	231	
2	3618	1698	738	62	669	
3	3618	1698	738	62	262	
4	3618	1698	738	62	397	
5	3618	1649	578	-	-	
	3618	1871	578	62	1014	
6	3618	1698	1698	62	1149	23
7	3618	1698	578	62	243	
8	3618	1698	578	62	164	
9	3618	1698	1058	62	763	

### 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	3520 x 1600			
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	70			
Mean pressure drop	Pa	120			
Final pressure drop	Pa	170			
Filter length	mm	48			

<b>Filters</b>					
592x592	Qty	10	437x592	Qty	2
592x287	Qty	5	287x287	Qty	1

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

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

<b>FAN</b>					
Fan type		K3G355PH4905		Installed motor power	kW 1.90
Fan arrangement		Fan Wall - 2x4		Motor	Run
Air volume	m <sup>3</sup> /s	8 x 1.39		Motor efficiency class	IE4
External static pressure	Pa	392		Motor nominal speed	rpm 2870
Internal static pressure	Pa	314		Voltage	V 380-480
Static pressure ISP+ESP	Pa	706		Current	A 3.0
System effect	Pa	7		Abs. motor power incl. F.I.	kW 1.59
Extra static pressure	Pa	0		Control Signal (0-10V)	V 7.96
Total static pressure	Pa	713			
Dynamic pressure	Pa	68		Fan bulkhead material	Galvanised
Total pressure	Pa	781			
Fan speed	rpm	2732			
Max fan speed	rpm	2870			
Efficiency (total)	%	67			
Fan shaft power	kW	1.59			

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	34	50	66	70	70	74	76	69
	Outlet dB	37	52	67	73	78	79	80	73

**FAN EXTRAS**  
Inlet cone measuring points

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

**EXTRAS**  
2 x Measuring nipple, 6mm  
8 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	168
Exhaust air off	°C/%RH	7.5 / 99			
Summer conditions					
Exhaust air on	°C/%RH	27.0 / 50	Exhaust pressure drop	Pa	168
Exhaust air off	°C/%RH	34.8 / 32			

### 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	3520 x 1600	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	3	Number of Dampers		2
Actuator type		External	Damper Code		DMP1658x1498-200-162-9-D1Y2-0
Actuator Side		Left & Right			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	2 x 15
Opening Position		Top	Provided with:		
Number of Recirc openings		1	Opening product		None
Recirc opening, w x h	mm	3520 x 640	Damper		Internal, Opposed blades, Aluminium
Pressure drop	Pa	32	Number of Dampers		1
Actuator type		External	Damper Code		DMP3258x0478-110-162-3-D1Y2-0
Actuator Side		Left			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 6
Opening Position		Full face	Provided with:		
Number of openings		1	Opening product		None
Fresh air opening, w x h	mm	3520 x 1600	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	3	Number of Dampers		2
Actuator type		External	Damper Code		DMP1658x1498-200-162-9-D1Y2-0
Actuator Side		Left & Right			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	2 x 15
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	64		
Mean pressure drop	Pa	89		
Final pressure drop	Pa	114		
Filter length	mm	48		

### Filters

592x592	Qty	10	437x592	Qty	2
592x287	Qty	5	287x287	Qty	1

### EXTRAS

1 x Pressure gauge wall mounted, Magnehelic 2000

### EMPTY SECTION

Pressure drop	Pa	0
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### HEAT WHEEL

Rotor Model ST1-LL-SV-3115-PR-K3-A1-0,W3315,H3315,SHM

Rotor type		Condensation	Rotor frame material	Aluzinc
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-Constant Speed
Winter conditions				
Supply air on	°C/%RH	2.5 / 62	Supply pressure drop	Pa 168
Supply air off	°C/%RH	17.0 / 24	Supply latent efficiency	% 0
Supply dry efficiency	%	74	Supply latent effectiveness	% 0
Supply dry effectiveness	%	74		
Total duty	kW	196.00		
Summer conditions				
Supply air on	°C/%RH	37.5 / 30	Supply pressure drop	Pa 168
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	109.30		

### EXTRAS

1 x Syphone

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<b>FILTER</b>					
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	82			
Mean pressure drop	Pa	132			
Final pressure drop	Pa	182			
Filter length	mm	500			
<b>Filters</b>					
592x592	Qty	10	437x592	Qty	2
592x287	Qty	5	287x287	Qty	1
<b>ACCESS</b>					
Access type		Door	Access side		Right
<b>EXTRAS</b>					
1 x Pressure gauge wall mounted, Magnehelic 2000					

<b>CHILLED WATER COIL</b>					
Coil Code	P40-16AR-5R-37T-3223A-2.0PA-37NC-Cu		Number of coils		1
Air volume	m <sup>3</sup> /s	11.11	Fluid	100%	Water
Duty	kW	251.09	Fluid flow rate	l/s	11.96
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	126.73
Air off wb/RH	°C/%	12.4/94	Fluid pressure drop	kPa	38
Sensible duty	kW	186.67			
Air pressure drop coil (Dry)	Pa	92	Air pressure drop elim.	Pa	13
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	2.3			
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	383.35	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	244/110/106/106
<b>EXTRAS</b>					
1 x Syphone					

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HOT WATER COIL			Number of coils		
Coil Code	P40-16AR-2R-37T-3223A-2.0PA-26NC-Cu		0.41/AI 0.13-4"		1
Air volume	m <sup>3</sup> /s	11.11	Fluid	100%	Water
Duty	kW	200.00	Fluid flow rate	l/s	9.66
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	31	Fluid content	l	68.08
			Fluid pressure drop	kPa	16
Tubes/fins/connections	Cu / AI / 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	2.3	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	250/110/100/100
Coil Weight	kg	209.86			

EXTRAS  
1 x Syphone

STEAM HUMIDIFIER					
Air volume	m <sup>3</sup> /s	11.11	Humidifier supplier	Condair	
Moisture addition	kg/h	186	Number of steam lances	5	
Air on db	°C	25.0	Steam lance length	mm	2500
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			
Steam boiler type 2		EL90	Power each	kW	2 x 33.8
Max steam capacity, each	kg/h	90	Current each	A	2 x 48.7
Number off		1	Voltage	V	3x400V, 50/60Hz
Boiler weight, each	kg	80			
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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<b>FAN</b>									
Fan type		K3G500PB3305							
Fan arrangement		Fan Wall - 1x4			Installed motor power	kW	5.70		
Air volume	m <sup>3</sup> /s	4 x 2.78			Motor		Run		
External static pressure	Pa	392			Motor efficiency class		IE4		
Internal static pressure	Pa	558			Motor nominal speed	rpm	2250		
Static pressure ISP+ESP	Pa	950			Voltage	V	380-480		
System effect	Pa	6			Current	A	9.0		
Extra static pressure	Pa	0			Abs. motor power incl. F.I.	kW	4.02		
Total static pressure	Pa	957			Control Signal (0-10V)	V	7.70		
Dynamic pressure	Pa	63			Fan bulkhead material		Galvanised		
Total pressure	Pa	1020							
Fan speed	rpm	1984							
Max fan speed	rpm	2250							
Efficiency (total)	%	70							
Fan shaft power	kW	4.02							
(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	40	63	70	70	75	77	83	69
	Outlet dB	44	64	70	77	87	83	84	74
<b>FAN EXTRAS</b>									
Inlet cone measuring points									
<b>ACCESS</b>									
Access type		Door			Access side		Right		
<b>EXTRAS</b>									
2 x Measuring nipple, 6mm									
4 x Fanwall terminal box									
<b>OUTLET</b>									
Opening Position		Full face			Provided with:		Duct spigot		
Number of openings		1			Opening product				
Opening, width x height	mm	3520 x 1600							
Pressure drop	Pa	2							