

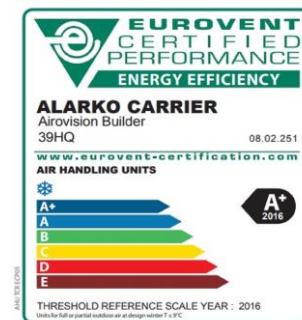
Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
Quotation no. : 6.3 AHU Technical Guide / 010	Eurovent identification number: 08.02.251

GENERAL DATA

Customer reference	6.3.1 10000 RHW 11.06
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 1704
(Radiated casework SWL)	dB(A) 62
ErP identification code	NRVU / BVU

Eurovent energy classification



SFPe	kJ/m ³	2.52	SFPv	kJ/m ³	2.29
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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)	30
F (Filter correction) (Pa)	0
SFP int_limit (W/(m ³ /s))	830.0
SFP int_supply air (W/(m ³ /s))	372.1
SFP int_extract air (W/(m ³ /s))	281.5
SFP int (W/(m ³ /s))	653.5

Supply air unit data

Airflow (m ³ /s)	2.78
Static pressure (Pa)	905
p fan (kW)	4.02
n fan (%)	62.6
Fine Filter	Yes
dp Fine filter (Pa)	68
nt nrvu (%)	74
dp HRS (Pa)	165

Extract air unit data

Airflow (m ³ /s)	2.78
Static pressure (Pa)	697
p fan (kW)	2.97
n fan (%)	65.1
Medium Filter	Yes
dp Medium filter (Pa)	18
nt nrvu (%)	74
dp HRS (Pa)	165

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 11.06	Air volume	m ³ /s	2.78
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 1.76	Profile		Steel
SFPe	kJ/m ³ 1.07	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	63	66	71	68	69	59	75
	dB	58	62	69	76	70	69	58	78

SUPPLY DATA

Glasswool 23 kg/m ³ Type	39HQ 11.06	Air volume	m ³ /s	2.78
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 1.76	SFPv	kJ/m ³	1.29
SFPe	kJ/m ³ 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	52	65	63	55	52	39	30	62
	dB	58	72	74	79	78	76	68	83

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	1858	1058	529	62	105	
2	1858	1058	849	62	223	
3	1858	1058	578	62	102	
4	1858	1058	578	62	155	
5	1858	2178	578	62	338	
6	1858	1058	1489	62	371	24
7	1858	1058	960	62	164	
8	1858	1058	689	62	242	

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	1760 x 960			
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	2	437x592	Qty	1
592x287	Qty	2	287x287	Qty	1

EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

INLET PLENUM					
Air pressure drop	Pa	0			

FAN					
Fan type		K3G400PI9205		Installed motor power	kW
Fan arrangement		Fan Wall - 1x2		Motor	Run
Air volume	m³/s	2 x 1.39		Motor efficiency class	IE4
External static pressure	Pa	392		Motor nominal speed	rpm
Internal static pressure	Pa	300		Voltage	V
Static pressure ISP+ESP	Pa	692		Current	A
System effect	Pa	5		Abs. motor power incl. F.I.	kW
Extra static pressure	Pa	0		Control Signal (0-10V)	V
Total static pressure	Pa	697			
Dynamic pressure	Pa	38		Fan bulkhead material	Galvanised
Total pressure	Pa	735			
Fan speed	rpm	2066			
Max fan speed	rpm	2450			
Efficiency (total)	%	68			
Fan shaft power	kW	1.49			

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	40	60	64	67	72	69	71	61
	Outlet dB	43	60	64	72	80	75	75	66

FAN EXTRAS
Inlet cone measuring points

ACCESS					
Access type		Door		Access side	Left

EXTRAS
2 x Measuring nipple, 6mm

1 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	165
Exhaust air off	°C/%RH	7.6 / 99			
Summer conditions					
Exhaust air on	°C/%RH	27.0 / 50	Exhaust pressure drop	Pa	165
Exhaust air off	°C/%RH	34.8 / 32			
Recirculation Damper		None			
Damper blade		-			
Damper material		-			
Damper code		-			
Damper qty.		-			
Damper torque	Nm	-			

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	1760 x 960	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	3	Number of Dampers		1
Actuator type		External	Damper Code		DMP1658x0858-200-162-5-D1Y2-0
Actuator Side		Left	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 9
Access side		None	Provided with:		
Opening Position		Top	Opening product		None
Number of Recirc openings		1	Damper		Internal, Opposed blades, Aluminium
Recirc opening, w x h	mm	1760 x 480	Number of Dampers		1
Pressure drop	Pa	21	Damper Code		DMP1498x0318-110-162-2-D1Y2-0
Actuator type		External	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 5
Actuator Side		Left	Provided with:		
Access side		None	Opening product		None
Opening Position		Full face	Damper		External, Opposed blades, Aluminium
Number of openings		1	Number of Dampers		1
Fresh air opening, w x h	mm	1760 x 960	Damper Code		DMP1658x0858-200-162-5-D1Y2-0
Pressure drop	Pa	3	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 9
Actuator type		External	Provided with:		
Actuator Side		Left	Opening product		None
Access side		None	Damper		External, Opposed blades, Aluminium
Mixing ratio, winter (recirculation air/supply air) in %	%	0	Number of Dampers		1
			Damper Code		DMP1658x0858-200-162-5-D1Y2-0
			Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 9
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	54			
Mean pressure drop	Pa	79			
Final pressure drop	Pa	104			
Filter length	mm	48			
Filters					
592x592	Qty	2	437x592	Qty	1
592x287	Qty	2	287x287	Qty	1

EXTRAS

1 x Pressure gauge wall mounted, Magnehelic 2000

EMPTY SECTION		
Pressure drop	Pa	0

HEAT WHEEL					
Rotor Model ST1-LL-WV-1535-SM-K3-A1-0,W1715,H1715					
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	165
Supply air off	°C/%RH	16.9 / 24			
Supply dry efficiency	%	74	Supply latent efficiency	%	0
Supply dry effectiveness	%	74	Supply latent effectiveness	%	0
Total duty	kW	48.70			
Summer conditions					
Supply air on	°C/%RH	37.5 / 30	Supply pressure drop	Pa	165
Supply air off	°C/%RH	29.7 / 46			
Supply dry efficiency	%	74	Supply latent efficiency	%	0
Supply dry effectiveness	%	74	Supply latent effectiveness	%	0
Total duty	kW	27.00	Dry efficiency at equal airflow	%	74

EXTRAS

1 x Syphone

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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	70			
Mean pressure drop	Pa	120			
Final pressure drop	Pa	170			
Filter length	mm	500			
Filters					
592x592	Qty	2	437x592	Qty	1
592x287	Qty	2	287x287	Qty	1
ACCESS					
Access type		Door	Access side		Right
EXTRAS					
1 x Pressure gauge wall mounted, Magnehelic 2000					

CHILLED WATER COIL					
Coil Code	P25-10AR-5R-34T-1550A-2.0PA-29NC-Cu		Number of coils		1
Air volume	m ³ /s	2.78	Fluid	100%	Water
Duty	kW	62.77	Fluid flow rate	l/s	2.99
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	23.28
Air off wb/RH	°C/%	12.4/94	Fluid pressure drop	kPa	33
Sensible duty	kW	46.67			
Air pressure drop coil (Dry)	Pa	77	Air pressure drop elim.	Pa	11
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	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	0.4	Syphon Type		Negative
Coil Weight	kg	75.86	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	190/63/81/81
EXTRAS					
1 x Syphone					

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HOT WATER COIL			Number of coils		
Coil Code	P25-10AR-2R-34T-1563A-2.0PA-24NC-Cu	0.36/Al 0.10-1 1/2"			1
Air volume	m³/s	2.78	Fluid	100%	Water
Duty	kW	50.00	Fluid flow rate	l/s	2.42
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	24	Fluid content	l	10.50
			Fluid pressure drop	kPa	12
Tubes/fins/connections	Cu / Al / Fe		Connection type	Threaded (Right)	
Coil frame	Galvanised		Connection size	1 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	2.0	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	143/57/75/75
Coil Weight	kg	38.28			

EXTRAS
1 x Syphone

STEAM HUMIDIFIER			Humidifier supplier		
Air volume	m³/s	2.78	Humidifier supplier	Condair	
Moisture addition	kg/h	47	Number of steam lances	2	
Air on db	°C	25.0	Steam lance length	mm	1500
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			

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

ACCESS		Door		Access side		Right	
Access type							

EXTRAS
1 x Syphone

ANY COMPONENT		
Pressure drop	Pa	0

INLET PLENUM		
Air pressure drop	Pa	0

ACCESS		Door		Access side		Right	
Access type							

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FAN									
Fan type		K3G355PH4905							
Fan arrangement		Fan Wall - 1x3			Installed motor power	kW	1.90		
Air volume	m ³ /s	3 x 0.93			Motor		Run		
External static pressure	Pa	392			Motor efficiency class		IE4		
Internal static pressure	Pa	506			Motor nominal speed	rpm	2870		
Static pressure ISP+ESP	Pa	899			Voltage	V	380-480		
System effect	Pa	6			Current	A	3.0		
Extra static pressure	Pa	0			Abs. motor power incl. F.I.	kW	1.34		
Total static pressure	Pa	905			Control Signal (0-10V)	V	7.32		
Dynamic pressure	Pa	30			Fan bulkhead material		Galvanised		
Total pressure	Pa	935							
Fan speed	rpm	2529							
Max fan speed	rpm	2870							
Efficiency (total)	%	64							
Fan shaft power	kW	1.34							
(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	42	59	72	72	71	72	70	63
	Outlet dB	45	58	72	74	79	78	76	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				
OUTLET									
Opening Position		Full face			Provided with:				
Number of openings		1			Opening product		Duct spigot		
Opening, width x height	mm	1760 x 960							
Pressure drop	Pa	2							