

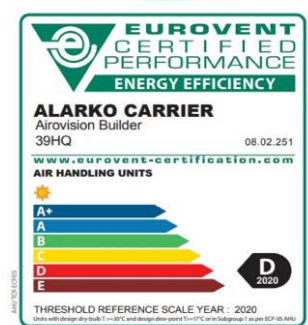
Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
Quotation no. : 6.3 AHU Technical Guide / 017	Eurovent identification number: 08.02.251

GENERAL DATA

Customer reference	6.3.1 20000 RHW 13.10
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 3002
(Radiated casework SWL)	dB(A) 64
ErP identification code	NRVU / BVU

Eurovent energy classification



SFPe	kJ/m³	2.46	SFPv	kJ/m³	2.27
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)	41
F (Filter correction) (Pa)	0
SFP int_limit (W/(m³/s))	840.6
SFP int supply air (W/(m³/s))	353.6
SFP int extract air (W/(m³/s))	295.7
SFP int (W/(m³/s))	649.3

Supply air unit data

Airflow (m³/s)	5.56
Static pressure (Pa)	904
p fan (kW)	7.51
n fan (%)	66.9
Fine Filter	Yes
dp Fine filter (Pa)	68
nt nrvu (%)	74
dp HRS (Pa)	169

Extract air unit data

Airflow (m³/s)	5.56
Static pressure (Pa)	702
p fan (kW)	6.17
n fan (%)	63.3
Medium Filter	Yes
dp Medium filter (Pa)	18
nt nrvu (%)	74
dp HRS (Pa)	169

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 13.10	Air volume	m³/s	5.56
Casing construction	GP080	Internal sheet		Galvanised 0.80mm
	60 mm			
Insulation	Glasswool 23 kg/m³	External sheet		PUR-PA painted galvanized steel 0.80mm
Unit velocity	m/s	Profile		Steel
SFPe	kJ/m³	SFPv	kJ/m³	1.05

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	57	66	71	73	74	74	69	79
	dB	56	66	74	79	78	75	66	83

SUPPLY DATA

Glasswool 23 kg/m³ Type	39HQ 13.10	Air volume	m³/s	5.56
Casing construction	GP080	Internal sheet		Galvanised 0.80mm
	60 mm			
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	1.75		
SFPe	kJ/m³	1.35	SFPv	kJ/m³
				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	56	60	58	58	55	42	33	61
	dB	64	68	77	82	79	77	71	85

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	1698	529	62	149	
2	2178	1698	849	62	407	
3	2178	1698	578	62	159	
4	2178	1698	578	62	239	
5	2498	1649	898	-	-	
	2498	1871	898	62	813	
6	2178	1698	1649	62	612	28
7	2178	1698	960	62	219	
8	2178	1698	1009	62	399	

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	2080 x 1600			
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	4	437x592	Qty	2
592x287	Qty	5			

EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

INLET PLENUM					
Air pressure drop	Pa	0			

FAN					
Fan type		K3G400PA2775			
Fan arrangement		Fan Wall - 1x3		Installed motor power	kW
Air volume	m³/s	3 x 1.85		Motor	3.35
External static pressure	Pa	392		Motor efficiency class	Run
Internal static pressure	Pa	303		Motor nominal speed	IE4
Static pressure ISP+ESP	Pa	695		Voltage	rpm
System effect	Pa	7		Current	2750
Extra static pressure	Pa	0		Abs. motor power incl. F.I.	V
Total static pressure	Pa	702		Control Signal (0-10V)	A
Dynamic pressure	Pa	68			5.2
Total pressure	Pa	770			kW
Fan speed	rpm	2327			2.06
Max fan speed	rpm	2750			V
Efficiency (total)	%	68			7.79
Fan shaft power	kW	2.06		Fan bulkhead material	Galvanised

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	40	58	67	72	74	75	76	71
	Outlet dB	42	58	68	77	83	83	81	74

FAN EXTRAS
Inlet cone measuring points

ACCESS					
Access type		Door		Access side	Left

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	169
Exhaust air off	°C/%RH	7.6 / 95			
Summer conditions					
Exhaust air on	°C/%RH	27.0 / 50	Exhaust pressure drop	Pa	169
Exhaust air off	°C/%RH	34.5 / 33			

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 1600	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	2	Number of Dampers		1
Actuator type		External	Damper Code		DMP1978x1498-200-162-9-D1Y2-0
Actuator Side		Left			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 15
Opening Position		Top	Provided with:		
Number of Recirc openings		1	Opening product		None
Recirc opening, w x h	mm	2080 x 480	Damper		Internal, Opposed blades, Aluminium
Pressure drop	Pa	58	Number of Dampers		1
Actuator type		External	Damper Code		DMP1818x0318-110-162-2-D1Y2-0
Actuator Side		Left			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 5
Opening Position		Full face	Provided with:		
Number of openings		1	Opening product		None
Fresh air opening, w x h	mm	2080 x 1600	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	2	Number of Dampers		1
Actuator type		External	Damper Code		DMP1978x1498-200-162-9-D1Y2-0
Actuator Side		Left			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 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	54			
Mean pressure drop	Pa	79			
Final pressure drop	Pa	104			
Filter length	mm	48			
Filters					
592x592	Qty	4	437x592	Qty	2
592x287	Qty	5			

EXTRAS

1 x Pressure gauge wall mounted, Magnehelic 2000

EMPTY SECTION					
Pressure drop	Pa	0			

HEAT WHEEL					
Rotor Model RRS-P-E18 2275/2355-2115					
Rotor type		Condensation	Rotor frame material		Galvanised
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-Ready to connect Micromax
Winter conditions					
Supply air on	°C/%RH	2.5 / 62	Supply pressure drop	Pa	169
Supply air off	°C/%RH	17.0 / 27			
Supply dry efficiency	%	74	Supply latent efficiency	%	10
Supply dry effectiveness	%	75	Supply latent effectiveness	%	10
Total duty	kW	104.03			
Summer conditions					
Supply air on	°C/%RH	37.5 / 30	Supply pressure drop	Pa	169
Supply air off	°C/%RH	30.1 / 45			
Supply dry efficiency	%	71	Supply latent efficiency	%	0
Supply dry effectiveness	%	71	Supply latent effectiveness	%	0
Total duty	kW	50.49	Dry efficiency at equal airflow	%	74
Housing coated		No			

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	4	437x592	Qty	2
287x592	Qty	2	592x287	Qty	3

ACCESS					
Access type		Door	Access side		Right
EXTRAS					
1 x Pressure gauge wall mounted, Magnehelic 2000					

CHILLED WATER COIL					
Coil Code	P25-10AR-5R-58T-1853A-2.0PA-58NC-Cu	Number of coils			1
Air volume	m³/s 5.56	Fluid	100%	Water	
Duty	kW 125.55	Fluid flow rate	l/s 5.98		
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 50.65		
Air off wb/RH	°C/% 12.4/94	Fluid pressure drop	kPa 38		
Sensible duty	kW 93.33				
Air pressure drop coil (Dry)	Pa 75	Air pressure drop elim.	Pa 10		
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 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 0.7	Syphon Type		Negative	
Coil Weight	kg 146.25	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	177/91/89/89	

EXTRAS					
1 x Syphone					

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HOT WATER COIL			Number of coils	1
Coil Code	P25-10AR-2R-58T-1853A-2.0PA-41NC-Cu		0.36/Al 0.10-2 1/2"	
Air volume	m³/s	5.56	Fluid	100% Water
Duty	kW	100.00	Fluid flow rate	l/s 4.83
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 28.07
			Fluid pressure drop	kPa 16
Tubes/finns/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	2.0	Xin/Yin/Xout/Yout	mm/mm/mm/mm 175/91/89/89
Coil Weight	kg	83.33		

EXTRAS

1 x Syphone

STEAM HUMIDIFIER			Humidifier supplier	Condair
Air volume	m³/s	5.56	Number of steam lances	3
Moisture addition	kg/h	93	Steam lance length	mm 1800
Air on db	°C	25.0		
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		EL105	Power each	kW 3 x 26.3
Max steam capacity, each	kg/h	105	Current each	A 3 x 37.9
Number off		1	Voltage	V 3x400V, 50/60Hz
Boiler weight, each	kg	120		
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
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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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FAN									
Fan type		K3G560PC0405							
Fan arrangement		Fan Wall - 1x2				Installed motor power		kW	5.00
Air volume	m³/s	2 x 2.78				Motor			Run
External static pressure	Pa	392				Motor efficiency class			IE4
Internal static pressure	Pa	507				Motor nominal speed		rpm	1760
Static pressure ISP+ESP	Pa	899				Voltage		V	380-480
System effect	Pa	4				Current		A	7.7
Extra static pressure	Pa	0				Abs. motor power incl. F.I.		kW	3.75
Total static pressure	Pa	904				Control Signal (0-10V)		V	7.58
Dynamic pressure	Pa	41				Fan bulkhead material Galvanised			
Total pressure	Pa	944							
Fan speed	rpm	1574							
Max fan speed	rpm	1760							
Efficiency (total)	%	69							
Fan shaft power	kW	3.75							
(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	39	63	67	67	74	75	73	66
	Outlet dB	46	64	68	77	82	79	77	71
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 1600							
Pressure drop	Pa	2							