

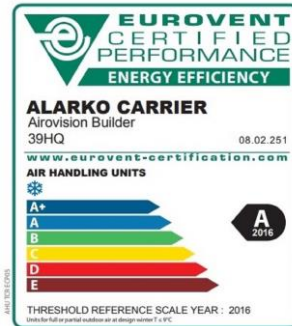
Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
Quotation no. : 6.3 AHU Technical Guide / 016	Eurovent identification number: 08.02.251

GENERAL DATA

Customer reference	6.3.1 17500 RHW 13.08
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 2515
(Radiated casework SWL)	dB(A) 68
ErP identification code	NRVU / BVU

Eurovent energy classification



SFPe	kJ/m ³	2.55	SFPv	kJ/m ³	2.35
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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)	28
F (Filter correction) (Pa)	0
SFP int_limit (W/(m ³ /s))	827.8
SFP int supply air (W/(m ³ /s))	372.9
SFP int extract air (W/(m ³ /s))	305.9
SFP int (W/(m ³ /s))	678.8

Supply air unit data

Airflow (m ³ /s)	4.86
Static pressure (Pa)	945
p fan (kW)	6.92
n fan (%)	66.4
Fine Filter	Yes
dp Fine filter (Pa)	74
nt nrvu (%)	74
dp HRS (Pa)	173

Extract air unit data

Airflow (m ³ /s)	4.86
Static pressure (Pa)	714
p fan (kW)	5.48
n fan (%)	63.4
Medium Filter	Yes
dp Medium filter (Pa)	21
nt nrvu (%)	74
dp HRS (Pa)	173

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 13.08	Air volume	m ³ /s	4.86
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 1.92	Profile		Steel
SFPe	kJ/m ³ 1.13	SFPv	kJ/m ³	1.06

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	60	67	69	73	74	78	70	81
	dB	62	67	73	84	79	76	67	86

SUPPLY DATA

Glasswool 23 kg/m ³ Type	39HQ 13.08	Air volume	m ³ /s	4.86
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 1.92	SFPv	kJ/m ³	1.29
SFPe	kJ/m ³ 1.42			

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	62	60	59	56	48	35	63
	dB	63	69	76	88	82	81	72	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	2178	1378	529	62	131	
2	2178	1378	849	62	316	
3	2178	1378	578	62	137	
4	2178	1378	578	62	205	
5	2338	1329	738	-	-	
	2338	1551	738	62	662	
6	2178	1378	1649	62	523	28
7	2178	1378	960	62	198	
8	2178	1378	1009	62	339	

EXHAUST COMPONENTS

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INLET			
Opening Position		Full face	Provided with:
Number of openings		1	Opening product
Opening, width x height	mm	2080 x 1280	Duct spigot
Pressure drop	Pa	2	

FILTER			
Filter type		Panel (Synthetic)	Withdrawal method
Test method		EN 779 / ISO 16890	Filter frame material
EN 779 Class		M5	Filter casing material
Eurovent Efficiency Class		NA	Side
ISO 16890 Class		ISO ePM10 50	Galvanised
Design pressure drop		Mean pd	Galvanised
Initial pressure drop	Pa	66	
Mean pressure drop	Pa	116	
Final pressure drop	Pa	166	
Filter length	mm	48	

Filters			
592x592	Qty	4	437x592 Qty 2
592x287	Qty	2	

EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

INLET PLENUM			
Air pressure drop	Pa	0	

FAN			
Fan type		K3G450PB2405	
Fan arrangement		Fan Wall - 1x2	Installed motor power kW 5.25
Air volume	m ³ /s	2 x 2.43	Motor Run
External static pressure	Pa	392	Motor efficiency class IE4
Internal static pressure	Pa	315	Motor nominal speed rpm 2600
Static pressure ISP+ESP	Pa	707	Voltage V 380-480
System effect	Pa	7	Current A 8.0
Extra static pressure	Pa	0	Abs. motor power incl. F.I. kW 2.74
Total static pressure	Pa	714	Control Signal (0-10V) V 7.06
Dynamic pressure	Pa	74	
Total pressure	Pa	789	Fan bulkhead material Galvanised
Fan speed	rpm	2104	
Max fan speed	rpm	2600	
Efficiency (total)	%	69	
Fan shaft power	kW	2.74	

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	37	61	68	70	74	75	80	72
	Outlet dB	41	64	69	76	88	84	82	75

FAN EXTRAS
Inlet cone measuring points

ACCESS			
Access type		Door	Access side Left

EXTRAS
2 x Measuring nipple, 6mm 2 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	173
Exhaust air off	°C/%RH	7.7 / 95			
Summer conditions					
Exhaust air on	°C/%RH	27.0 / 50	Exhaust pressure drop	Pa	173
Exhaust air off	°C/%RH	34.4 / 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 1280	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	3	Number of Dampers		1
Actuator type		External	Damper Code		DMP1978x1178-200-162-7-D1Y2-0
Actuator Side		Left			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 12
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	44	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 1280	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	3	Number of Dampers		1
Actuator type		External	Damper Code		DMP1978x1178-200-162-7-D1Y2-0
Actuator Side		Left			
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 12
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	60		
Mean pressure drop	Pa	85		
Final pressure drop	Pa	110		
Filter length	mm	48		

Filters

592x592	Qty	4	437x592	Qty	2
592x287	Qty	2			

EXTRAS

1 x Pressure gauge wall mounted, Magnehelic 2000

EMPTY SECTION

Pressure drop	Pa	0
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HEAT WHEEL

Rotor Model RRS-P-E18 2115/2195-1955

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 173
Supply air off	°C/%RH	16.9 / 27		
Supply dry efficiency	%	74	Supply latent efficiency	% 10
Supply dry effectiveness	%	74	Supply latent effectiveness	% 10
Total duty	kW	90.41		
Summer conditions				
Supply air on	°C/%RH	37.5 / 30	Supply pressure drop	Pa 173
Supply air off	°C/%RH	30.1 / 45		
Supply dry efficiency	%	70	Supply latent efficiency	% 0
Supply dry effectiveness	%	70	Supply latent effectiveness	% 0
Total duty	kW	43.92	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	78			
Mean pressure drop	Pa	128			
Final pressure drop	Pa	178			
Filter length	mm	500			
Filters					
592x592	Qty	4	437x592	Qty	2
287x592	Qty	2			
ACCESS					
Access type		Door		Access side	Right
EXTRAS					
1 x Pressure gauge wall mounted, Magnehelic 2000					

CHILLED WATER COIL					
Coil Code	P25-10AR-5R-46T-1853A-2.0PA-47NC-Cu		Number of coils		1
Air volume	m ³ /s	4.86	Fluid	100%	Water
Duty	kW	109.85	Fluid flow rate	l/s	5.23
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	40.13
Air off wb/RH	°C/%	12.4/94	Fluid pressure drop	kPa	35
Sensible duty	kW	81.67			
Air pressure drop coil (Dry)	Pa	87	Air pressure drop elim.	Pa	12
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	2.2			
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	0.6	Syphon Type		Negative
Coil Weight	kg	116.98	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	177/71/89/89
EXTRAS					
1 x Syphone					

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HOT WATER COIL			Number of coils		
Coil Code	P25-10AR-2R-46T-1853A-2.0PA-35NC-Cu	0.36/Al 0.10-2 1/2"			1
Air volume	m ³ /s	4.86	Fluid	100%	Water
Duty	kW	87.50	Fluid flow rate	l/s	4.23
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	28	Fluid content	l	22.22
			Fluid pressure drop	kPa	17
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	2.2	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	175/71/89/89
Coil Weight	kg	67.06			

EXTRAS
1 x Syphone

STEAM HUMIDIFIER			Humidifier supplier		
Air volume	m ³ /s	4.86	Number of steam lances	2	
Moisture addition	kg/h	81	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	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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FAN									
Fan type		K3G500PB3305							
Fan arrangement		Fan Wall - 1x2			Installed motor power	kW	5.70		
Air volume	m³/s	2 x 2.43			Motor		Run		
External static pressure	Pa	392			Motor efficiency class		IE4		
Internal static pressure	Pa	546			Motor nominal speed	rpm	2250		
Static pressure ISP+ESP	Pa	938			Voltage	V	380-480		
System effect	Pa	7			Current	A	9.0		
Extra static pressure	Pa	0			Abs. motor power incl. F.I.	kW	3.46		
Total static pressure	Pa	945			Control Signal (0-10V)	V	7.21		
Dynamic pressure	Pa	48			Fan bulkhead material		Galvanised		
Total pressure	Pa	993							
Fan speed	rpm	1884							
Max fan speed	rpm	2250							
Efficiency (total)	%	69							
Fan shaft power	kW	3.46							
(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	40	63	69	69	75	76	79	68
	Outlet dB	43	63	69	76	88	82	81	72
FAN EXTRAS									
Inlet cone measuring points									
ACCESS									
Access type		Door			Access side		Right		
EXTRAS									
2 x Measuring nipple, 6mm					2 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 1280							
Pressure drop	Pa	2							