

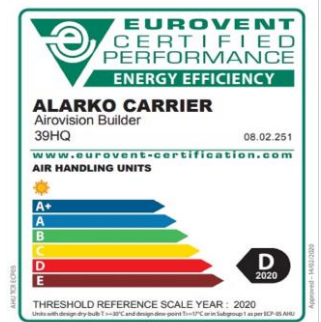
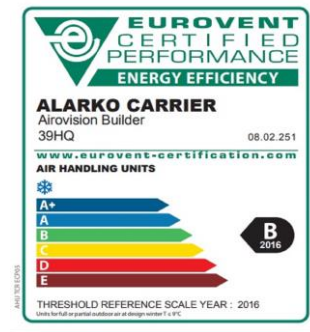
Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
Quotation no. : 6.3 AHU Technical Guide / 022	Eurovent identification number: 08.02.251

GENERAL DATA

Customer reference	6.3.1 30000 RHW 21.08
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 3757
(Radiated casework SWL)	dB(A) 68
ErP identification code	NRVU / BVU

Eurovent energy classification



SFPe	kJ/m ³	2.59	SFPv	kJ/m ³	2.44
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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)	3
F (Filter correction) (Pa)	0
SFP int_limit (W/(m ³ /s))	803.0
SFP int_supply air (W/(m ³ /s))	410.0
SFP int_extract air (W/(m ³ /s))	330.3
SFP int (W/(m ³ /s))	740.3

Supply air unit data

Airflow (m ³ /s)	8.33
Static pressure (Pa)	973
p fan (kW)	12.25
n fan (%)	66.2
Fine Filter	Yes
dp Fine filter (Pa)	75
nt nrvu (%)	73
dp HRS (Pa)	196

Extract air unit data

Airflow (m ³ /s)	8.33
Static pressure (Pa)	738
p fan (kW)	9.35
n fan (%)	65.8
Medium Filter	Yes
dp Medium filter (Pa)	21
nt nrvu (%)	73
dp HRS (Pa)	196

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 21.08	Air volume	m ³ /s	8.33
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 2.02	Profile		Steel
SFPe	kJ/m ³ 1.12	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	62	67	68	73	74	82	66	84
	dB	62	66	73	84	76	79	64	86

SUPPLY DATA

Glasswool 23 kg/m ³ Type	39HQ 21.08	Air volume	m ³ /s	8.33
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 2.02	SFPv	kJ/m ³	1.39
SFPe	kJ/m ³ 1.47			

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	57	63	61	59	57	52	37	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	3458	1378	578	62	196	
2	3458	1378	1058	62	553	
3	3458	1378	578	62	201	
4	3458	1378	578	62	301	
5	3458	2818	578	62	637	
6	3458	1378	1698	62	931	23
7	3458	1378	578	62	220	
8	3458	1378	578	62	150	
9	3458	1378	1058	62	563	

EXHAUST COMPONENTS

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INLET			
Opening Position		Full face	
Number of openings		1	Provided with:
Opening, width x height	mm	3360 x 1280	Opening product
Pressure drop	Pa	2	Duct spigot

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	67	
Mean pressure drop	Pa	117	
Final pressure drop	Pa	167	
Filter length	mm	48	

Filters			
592x592	Qty	10	592x287
			Qty 2

EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

INLET PLENUM			
Air pressure drop	Pa	0	

FAN			
Fan type		K3G500PB3305	
Fan arrangement		Fan Wall - 1x3	
Air volume	m ³ /s	3 x 2.78	
External static pressure	Pa	392	Installed motor power kW
Internal static pressure	Pa	340	5.70
Static pressure ISP+ESP	Pa	732	Motor Run
System effect	Pa	6	Motor efficiency class
Extra static pressure	Pa	0	IE4
Total static pressure	Pa	738	Motor nominal speed rpm
Dynamic pressure	Pa	63	2250
Total pressure	Pa	801	Voltage V
Fan speed	rpm	1838	380-480
Max fan speed	rpm	2250	Current A
Efficiency (total)	%	70	9.0
Fan shaft power	kW	3.12	Abs. motor power incl. F.I. kW
			3.12
			Control Signal (0-10V) V
			6.96
			Fan bulkhead material
			Galvanised

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	37	63	68	69	74	75	84	68
	Outlet dB	42	64	68	76	88	81	85	72

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	196
Exhaust air off	°C/%RH	8.2 / 92			
Summer conditions					
Exhaust air on	°C/%RH	27.0 / 50	Exhaust pressure drop	Pa	196
Exhaust air off	°C/%RH	34.9 / 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	3360 x 1280	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	3	Number of Dampers		1
Actuator type		External	Damper Code		DMP3258x1178-200-162-7-D1Y2-0
Actuator Side		Left	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 12
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	3360 x 480	Number of Dampers		1
Pressure drop	Pa	45	Damper Code		DMP3098x0318-110-162-2-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	3360 x 1280	Damper Code		DMP3258x1178-200-162-7-D1Y2-0
Pressure drop	Pa	3	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 12
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		DMP3258x1178-200-162-7-D1Y2-0
			Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 12
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	61			
Mean pressure drop	Pa	86			
Final pressure drop	Pa	111			
Filter length	mm	48			
Filters					
592x592	Qty	10	592x287	Qty	2

EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

EMPTY SECTION					
Pressure drop	Pa	0			

HEAT WHEEL					
Rotor Model EA2515x2515-2465V-018-2D000-7AP0-A					
Rotor type		Condensation	Rotor frame material		Galvanised
Rotor material		Aluminium	Rotor purging sector		Excluded
Rotor situation		Build-in	Delivery requirement		Single section
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	196
Supply air off	°C/%RH	16.8 / 25	Supply latent efficiency	%	5
Supply dry efficiency	%	73	Supply latent effectiveness	%	10
Supply dry effectiveness	%	75			
Total duty	kW	149.02			
Summer conditions					
Supply air on	°C/%RH	37.5 / 30	Supply pressure drop	Pa	196
Supply air off	°C/%RH	29.6 / 47	Supply latent efficiency	%	0
Supply dry efficiency	%	76	Supply latent effectiveness	%	0
Supply dry effectiveness	%	71	Dry efficiency at equal airflow	%	73
Total duty	kW	81.68			

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	79			
Mean pressure drop	Pa	129			
Final pressure drop	Pa	179			
Filter length	mm	500			
Filters					
592x592	Qty	10	287x592	Qty	2
ACCESS					
Access type		Door	Access side		Right
EXTRAS					
1 x Pressure gauge wall mounted, Magnehelic 2000					

CHILLED WATER COIL					
Coil Code		P40-16AR-5R-30T-3063A-2.0PA-27NC-Cu	Number of coils		1
Air volume	m ³ /s	8.33	Fluid	100%	Water
Duty	kW	188.32	Fluid flow rate	l/s	8.97
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	98.72
Air off wb/RH	°C/%	12.4/94	Fluid pressure drop	kPa	38
Sensible duty	kW	140.00			
Air pressure drop coil (Dry)	Pa	89	Air pressure drop elim.	Pa	12
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	2.2			
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	1.1	Syphon Type		Negative
Coil Weight	kg	300.09	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	244/90/106/106
EXTRAS					
1 x Syphone					

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HOT WATER COIL			Number of coils		1
Coil Code	P40-16AR-2R-30T-3088A-2.0PA-21NC-Cu 0.41/AI 0.13-3"		Fluid	100%	Water
Air volume	m ³ /s	8.33	Fluid flow rate	l/s	7.25
Duty	kW	150.00	Fluid on	°C	45.0
Air on db	°C	10.0	Fluid off	°C	40.0
Air off db	°C	25.0	Fluid content	l	44.43
Air pressure drop	Pa	29	Fluid pressure drop	kPa	14
Tubes/fins/connections	Cu / AI / 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	2.2	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	198/78/92/92
Coil Weight	kg	148.92			

EXTRAS
1 x Syphone

STEAM HUMIDIFIER			Humidifier supplier		Condair
Air volume	m ³ /s	8.33	Number of steam lances	4	
Moisture addition	kg/h	140	Steam lance length	mm	2500
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		EL152	Power each	kW	4 x 28.5
Max steam capacity, each	kg/h	152	Current each	A	4 x 41.1
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 side		Right
Access type	Door				

EXTRAS
1 x Syphone

ANY COMPONENT		
Pressure drop	Pa	0

INLET PLENUM		
Air pressure drop	Pa	0

ACCESS			Access side		Right
Access type	Door				

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FAN

Fan type	K3G500PB3305			Installed motor power	kW	5.70
Fan arrangement	Fan Wall - 1x3			Motor		Run
Air volume	m ³ /s	3 x 2.78		Motor efficiency class		IE4
External static pressure	Pa	392		Motor nominal speed	rpm	2250
Internal static pressure	Pa	575		Voltage	V	380-480
Static pressure ISP+ESP	Pa	967		Current	A	9.0
System effect	Pa	6		Abs. motor power incl. F.I.	kW	4.08
Extra static pressure	Pa	0		Control Signal (0-10V)	V	7.75
Total static pressure	Pa	973		Fan bulkhead material		Galvanised
Dynamic pressure	Pa	63				
Total pressure	Pa	1036				
Fan speed	rpm	1994				
Max fan speed	rpm	2250				
Efficiency (total)	%	70				
Fan shaft power	kW	4.08				

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	40	64	70	70	75	77	83	70
	Outlet dB	44	64	70	77	87	83	84	74

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	3360 x 1280			
Pressure drop	Pa	2			