Date: 19/6/2022

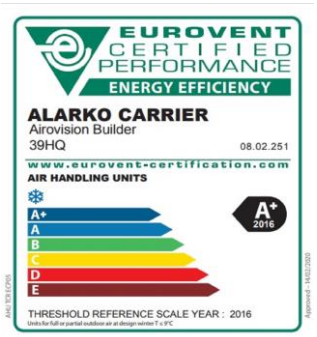
Technical Specification

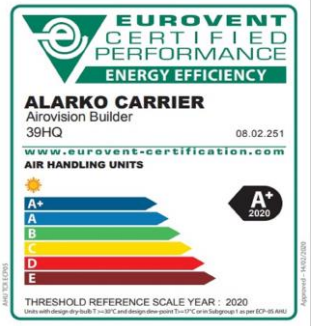
Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
Quotation no. : 6.5 AHU Technical Guide / 006	Eurovent identification number: 08.02.251

GENERAL DATA

Customer reference		6.5.1 RHW 4000 06.08
Number off		1
Location		External (flat roof)
Delivery		In sections
AHU finish		Outside in standard colour (RAL 7035)
Product		Air handling unit
AHU configuration		Side by side (opposite)
Pallet option		Excluded
Lifting Beam		Included
Total weight (each)	kg	1276
(Radiated casework SWL)	dB(A)	61
ErP identification code		NRVU / BVU

Eurovent energy classification





SFPe	kJ/m³	2.00	SFPv	kJ/m³	1.89

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		**Supply air unit data**		**Extract air unit data**	
E (HR Bonus) (Pa)	81	Airflow (m³/s)	1.11	Airflow (m³/s)	1.11
F (Filter correction) (Pa)	0	Static pressure (Pa)	690	Static pressure (Pa)	551
SFP int_limit (W/(m³/s))	1014.3	p fan (kW)	1.20	p fan (kW)	1.02
SFP int supply air (W/(m³/s))	175.9	n fan (%)	63.8	n fan (%)	60.3
SFP int extract air (W/(m³/s))	147.4	Fine Filter	Yes	Medium Filter	Yes
SFP int (W/(m³/s))	323.3	dp Fine filter (Pa)	29	dp Medium filter (Pa)	6
		nt nrvu (%)	76	nt nrvu (%)	76
		dp HRS (Pa)	83	dp HRS (Pa)	83

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 06.08	Air volume	m³/s	1.11
Casing construction		GP080 60 mm	Internal sheet		Galvanised 0.80mm
Insulation		Glasswool 23 kg/m³	External sheet		PUR-PA painted galvanized steel 0.80mm
Unit velocity	m/s	0.97	Profile		Steel
SFPe	kJ/m³	0.91	SFPv	kJ/m³	0.88

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	50	61	65	67	69	69	59	74
	dB	50	59	67	72	71	70	58	76

SUPPLY DATA

Glasswool 23 kg/m³Type		39HQ 06.08	Air volume	m³/s	1.11
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/m³
Design outdoor dew point (summer)	°C	16.8	Profile		Steel
Unit velocity	m/s	0.97			
SFPe	kJ/m³	1.08	SFPv	kJ/m³	1.01

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	45	58	59	54	51	41	29	59
	dB	52	64	71	77	77	77	67	82

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	1058	1378	1218	62	204	
2	1058	1378	1058	62	111	
3	1058	1378	1058	62	149	
4	2116	1378	578	62	231	
5	1058	1378	1329	62	301	15
6	1058	1378	960	62	139	
7	1058	1378	689	62	137	

EXHAUST COMPONENTS

Date: 19/6/2022

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INLET

Opening Position		Full face	Provided with:		
Number of openings		1	Opening product		Duct spigot
Opening, width x height	mm	960 x 1280			
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	26			
Mean pressure drop	Pa	53			
Final pressure drop	Pa	79			
Filter length	mm	48			

Filters

592x592	Qty	2	592x287	Qty	2

ACCESS

Access type		Door	Access side		Right

EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

INLET PLENUM

Air pressure drop	Pa	0

FAN

Fan type		K3G355PH4905			
Fan arrangement		Fan Wall - 1x1	Installed motor power	kW	1.90
Air volume	m³/s	1.11	Motor		Run
External static pressure	Pa	392	Motor efficiency class		IE4
Internal static pressure	Pa	155	Motor nominal speed	rpm	2870
Static pressure ISP+ESP	Pa	547	Voltage	V	380-480
System effect	Pa	4	Current	A	3.0
Extra static pressure	Pa	0	Abs. motor power incl. F.I.	kW	1.02
Total static pressure	Pa	551	Control Signal (0-10V)	V	6.62
Dynamic pressure	Pa	44			
Total pressure	Pa	595	Fan bulkhead material		Galvanised
Fan speed	rpm	2302			
Max fan speed	rpm	2870			
Efficiency (total)	%	64			
Fan shaft power	kW	1.02			

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	34	51	62	66	68	70	71	61
	Outlet dB	37	52	61	70	76	76	76	66

FAN EXTRAS
Inlet cone measuring points

ACCESS

Access type		Door	Access side		Right

EXTRAS

2 x Measuring nipple, 6mm	1 x Fanwall terminal box

Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
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HEAT WHEEL

Rotor situation		Build-in			
Winter conditions					
Exhaust air on	°C/%RH	22.0 / 40	Exhaust pressure drop	Pa	83
Exhaust air off	°C/%RH	7.2 / 99			
Summer conditions					
Exhaust air on	°C/%RH	27.0 / 47	Exhaust pressure drop	Pa	83
Exhaust air off	°C/%RH	34.9 / 30			

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	960 x 1280	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	1			
Actuator type		External	Number of Dampers		1
Actuator Side		Right	Damper Code		DMP0858x1178-200-162-7-D1Y1-0
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 6
Opening Position		Left side	Provided with:		
Number of Recirc openings		1	Opening product		None
Recirc opening, w x h	mm	640 x 1280	Damper		Internal, Opposed blades, Aluminium
Pressure drop	Pa	4			
Actuator type		Internal	Number of Dampers		1
Actuator Side		Air inlet side	Damper Code		DMP0378x1122-110-162-7-D1Y1-0
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	960 x 1280	Damper		External, Opposed blades, Aluminium
Pressure drop	Pa	1			
Actuator type		External	Number of Dampers		1
Actuator Side		Right	Damper Code		DMP0858x1178-200-162-7-D1Y1-0
Access side		None	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 6
Mixing ratio, winter (recirculation air/supply air) in %	%	0			

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	22			
Mean pressure drop	Pa	43			
Final pressure drop	Pa	65			
Filter length	mm	48			

Filters

592x592	Qty	2	592x287	Qty	2

Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
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EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

ANY COMPONENT

Pressure drop	Pa	0

HEAT WHEEL

Rotor Model ST1-NL-WV-1135-SM-K3-E1-0,W1235,H1235

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	83
Supply air off	°C/%RH	17.3 / 23			
Supply dry efficiency	%	76	Supply latent efficiency	%	0
Supply dry effectiveness	%	76	Supply latent effectiveness	%	0
Total duty	kW	20.00			
Summer conditions					
Supply air on	°C/%RH	37.5 / 30	Supply pressure drop	Pa	83
Supply air off	°C/%RH	29.6 / 46			
Supply dry efficiency	%	76	Supply latent efficiency	%	0
Supply dry effectiveness	%	76	Supply latent effectiveness	%	0
Total duty	kW	10.90	Dry efficiency at equal airflow	%	76

EXTRAS
1 x Syphone

FILTER

Filter type		Bag (Glassfibre)	Withdrawal method		Side
Test method		EN 779 / ISO 16890	Filter frame material		Galvanised
EN 779 Class		F7	Filter casing material		Galvanised
Eurovent Efficiency Class		D			
ISO 16890 Class		ISO ePM1 50			
Design pressure drop		Mean pd			
Initial pressure drop	Pa	46			
Mean pressure drop	Pa	92			
Final pressure drop	Pa	138			
Filter length	mm	360			

Filters

592x592	Qty	2	287x592	Qty	2

ACCESS

Access type	Door	Access side	Right

EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
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CHILLED WATER COIL

			Number of coils		1
Coil Code	P40-16AR-5R-30T-733A-2.0PA-6NC-Cu 0.41/Al 0.13-1 1/4"				
Air volume	m³/s	1.11	Fluid	100%	Water
Duty	kW	30.71	Fluid flow rate	l/s	1.46
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	11.0	Fluid content	l	22.58
Air off wb/RH	°C/%	10.7/97	Fluid pressure drop	kPa	38
Sensible duty	kW	21.33			
Air pressure drop coil (Dry)	Pa	38	Air pressure drop elim.	Pa	4
Tubes/fins/connections		Cu / Al / Fe	Connection type		Threaded (Right)
Coil frame		Galvanised	Connection size		1 1/4"
Tube thickness	mm	0.41	Fin spacing	mm	2.0
Tube Diameter	mm	14.1872	Fin thickness	mm	0.13
Face velocity	m/s	1.2			
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	0.2	Syphon Type		Negative
Coil Weight	kg	73.92	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	187/54/83/83

EXTRAS
1 x Syphone

HOT WATER COIL

			Number of coils		1
Coil Code	P25-10AR-2R-46T-768A-2.0PA-12NC-Cu 0.36/Al 0.10-1 1/4"				
Air volume	m³/s	1.11	Fluid	100%	Water
Duty	kW	22.67	Fluid flow rate	l/s	1.10
Air on db	°C	10.0	Fluid on	°C	45.0
Air off db	°C	27.0	Fluid off	°C	40.0
Air pressure drop	Pa	10	Fluid content	l	8.22
			Fluid pressure drop	kPa	17
Tubes/fins/connections		Cu / Al / Fe	Connection type		Threaded (Right)
Coil frame		Galvanised	Connection size		1 1/4"
Tube thickness	mm	0.36	Fin spacing	mm	2.0
Tube Diameter	mm	9.2388	Fin thickness	mm	0.10
Face velocity	m/s	1.2	Xin/Yin/Xout/Yout	mm/mm/ mm/mm	124/54/71/71
Coil Weight	kg	28.58			

EXTRAS
1 x Syphone

STEAM HUMIDIFIER

Air volume	m³/s	1.11	Humidifier supplier		Condair
Moisture addition	kg/h	19	Number of steam lances		1
Air on db	°C	25.0	Steam lance length	mm	800
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		EL24	Power each	kW	18.0
Max steam capacity, each	kg/h	24	Current each	A	26.0
Number off		1	Voltage	V	3x400V, 50/60Hz
Boiler weight, each	kg	40			
Section length	mm	960	Drainpan material		Stainless steel 304
Drainpan		Included			

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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

FAN

Fan type		K3G355PH4905		
Fan arrangement		Fan Wall - 1x1	Installed motor power	kW 1.90
Air volume	m^3/s	1.11	Motor	Run
External static pressure	Pa	392	Motor efficiency class	IE4
Internal static pressure	Pa	293	Motor nominal speed	rpm 2870
Static pressure ISP+ESP	Pa	685	Voltage	V 380-480
System effect	Pa	4	Current	A 3.0
Extra static pressure	Pa	0	Abs. motor power incl. F.I.	kW 1.20
Total static pressure	Pa	690	Control Signal (0-10V)	V 7.04
Dynamic pressure	Pa	44		
Total pressure	Pa	734	Fan bulkhead material	Galvanised
Fan speed	rpm	2456		
Max fan speed	rpm	2870		
Efficiency (total)	%	67		
Fan shaft power	kW	1.20		

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	38	52	65	68	70	71	72	62
	Outlet dB	40	52	64	71	77	77	77	67

FAN EXTRAS
Inlet cone measuring points

ACCESS

Access type	Door	Access side	Right

EXTRAS

1 x Fanwall terminal box	2 x Measuring nipple, 6mm

OUTLET

Opening Position		Full face	Provided with:	
Number of openings		1	Opening product	Duct spigot
Opening, width x height	mm	960 x 1280		
Pressure drop	Pa	2		