

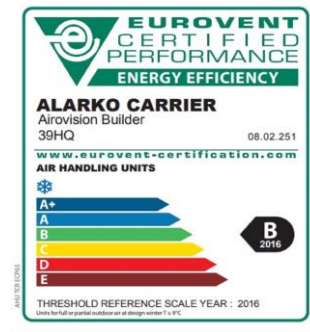
Technical Specification

Project name :	Airovision Builder version: E1.13 (12-4-2022)(R086)/A
Quotation no. : 6.2 AHU Technical Guide / 018	Eurovent identification number: 08.02.251

GENERAL DATA

Customer reference	6.2.1 17500 PHE 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 3130
(Radiated casework SWL)	dB(A) 72
ErP identification code	NRVU / BVU

Eurovent energy classification



SFP _e		kJ/m ³	2.67	SFP _v		kJ/m ³	2.49
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Calculations conform to the Regulation for bidirectional ventilation unit (BVU) for delivery after 01.01.2018

Ecodesign 1253/2014 2018 BVU after 01.01.2018

Intermediate calculations

E (HR Bonus) (Pa)	24
F (Filter correction) (Pa)	0
SFP int_limit (W/(m ³ /s))	824.0
SFP int supply air (W/(m ³ /s))	424.7
SFP int extract air (W/(m ³ /s))	372.3
SFP int (W/(m ³ /s))	797.0

Supply air unit data

Airflow (m ³ /s)	4.86
Static pressure (Pa)	979
p fan (kW)	7.21
n fan (%)	66.0
Fine Filter	Yes
dp Fine filter (Pa)	74
nt nrvu (%)	74
dp HRS (Pa)	206

Extract air unit data

Airflow (m ³ /s)	4.86
Static pressure (Pa)	759
p fan (kW)	5.79
n fan (%)	63.8
Medium Filter	Yes
dp Medium filter (Pa)	21
nt nrvu (%)	74
dp HRS (Pa)	217

Check

Fan is selected with VSD	Passed
Heat recovery	Passed
Thermal by-pass facility	Passed
SFP int	Passed
Filters equipped with pressure gauge	Passed
Total check	Passed

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	Internal sheet		Galvanised 0.80mm
Insulation	60 mm Glasswool 23 kg/m ³	External sheet		PUR-PA painted galvanized steel 0.80mm
Unit velocity	m/s 1.92	Profile		Steel
SFP _e	kJ/m ³ 1.19	SFP _v	kJ/m ³	1.12

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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	70	73	75	78	70	81
	dB	63	67	74	85	78	75	68	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		
SFPe	kJ/m ³ 1.48		kJ/m ³	1.37

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	55	66	66	64	62	54	49	68
	dB	62	72	78	92	85	82	77	93

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	1378	62	417	
2	2178	1378	578	62	143	
3	2178	1378	578	62	199	
4	2178	2818	2818	62	1247	28
5	2178	1378	2658	62	689	
6	2178	1378	-382	62	44	
7	2178	1378	1378	62	387	

EXHAUST COMPONENTS

INLET

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		

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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	M5	Filter casing material	Galvanised
Eurovent Efficiency Class	NA		
ISO 16890 Class	ISO ePM10 50		
Design pressure drop	Mean pd		
Initial pressure drop	Pa	66	
Mean pressure drop	Pa	116	
Final pressure drop	Pa	166	
Filter length	mm	48	

Filters			
592x592	Qty	4	437x592
592x287	Qty	2	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		
Air volume	m³/s	2 x 2.43	Installed motor power kW 5.25
External static pressure	Pa	392	Motor Run
Internal static pressure	Pa	360	Motor efficiency class IE4
Static pressure ISP+ESP	Pa	752	Motor nominal speed rpm 2600
System effect	Pa	7	Voltage V 380-480
Extra static pressure	Pa	0	Current A 8.0
Total static pressure	Pa	759	Abs. motor power incl. F.I. kW 2.89
Dynamic pressure	Pa	74	Control Signal (0-10V) V 7.18
Total pressure	Pa	833	Fan bulkhead material Galvanised
Fan speed	rpm	2134	
Max fan speed	rpm	2600	
Efficiency (total)	%	69	
Fan shaft power	kW	2.89	

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	37	61	68	71	74	76	80	72
	Outlet dB	42	64	69	77	89	84	82	76

FAN EXTRAS
Inlet cone measuring points

ACCESS			
Access type	Door	Access side	Left

EXTRAS
2 x Measuring nipple, 6mm

2 x Fanwall terminal box

RECUPERATOR			
Winter conditions			
Exhaust air on	°C/%RH	22.0 / 40	Exhaust pressure drop Pa 206
Exhaust air off	°C/%RH	7.1 / 100	
Summer conditions			
Exhaust air on	°C/%RH	27.0 / 47	Exhaust pressure drop Pa 206
Exhaust air off	°C/%RH	34.7 / 30	Exhaust eliminator type Plastic

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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	Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 12
Access side		None	Provided with:		
Opening Position		Bottom	Opening product		None
Number of Recirc openings		1	Damper		Internal, Opposed blades, Aluminium
Recirc opening, w x h	mm	2080 x 480	Number of Dampers		1
Pressure drop	Pa	44	Damper Code		DMP1818x0318-110-162-2-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	2080 x 1280	Damper Code		DMP1978x1178-200-162-7-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		DMP1978x1178-200-162-7-D1Y2-0
			Number of Drive shafts (Total) x Torque for one shaft	Nm	1 x 12

EXTRAS (SUPPLY)
1 x Coupling rod for dampers

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			
ACCESS					
Access type		Hatch	Access side		Right

EXTRAS
1 x Pressure gauge wall mounted, Magnehelic 2000

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EMPTY SECTION

Pressure drop Pa 0

RECUPERATOR

Recuperator Model SV-170/AL/2035/BSK216

Winter conditions			Bypass type		Side bypass
			Bypass damper		Included
Recuperator material		Aluminium			
Supply air on	°C/%RH	2.5 / 62	Supply total efficiency	%	80
Supply air off	°C/%RH	18.1 / 22	Supply pressure drop	Pa	206
Total duty	kW	92.10	Dry efficiency at equal airflow	%	74
Summer conditions					
Supply air on	°C/%RH	37.5 / 30	Supply total efficiency	%	73
Supply air off	°C/%RH	29.8 / 46	Supply pressure drop	Pa	206
Total duty	kW	46.10			

EXTRAS

1 x Syphone

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

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CHILLED WATER COIL				Number of coils		1
Coil Code	P25-10AR-5R-46T-1853A-2.0PA-47NC-Cu	0.36/Al 0.10-2 1/2"				
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

HOT WATER COIL				Number of coils		1
Coil Code	P25-10AR-2R-46T-1853A-2.0PA-35NC-Cu	0.36/Al 0.10-2 1/2"				
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						
Air volume	m ³ /s	4.86	Humidifier supplier		Condair	
Moisture addition	kg/h	81	Number of steam lances		2	
Air on db	°C	25.0	Steam lance length	mm	1800	
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				

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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		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	580		Motor nominal speed	rpm	2600			
Static pressure ISP+ESP	Pa	972		Voltage	V	380-480			
System effect	Pa	7		Current	A	8.0			
Extra static pressure	Pa	0		Abs. motor power incl. F.I.	kW	3.61			
Total static pressure	Pa	979		Control Signal (0-10V)	V	7.79			
Dynamic pressure	Pa	74		Fan bulkhead material		Galvanised			
Total pressure	Pa	1053							
Fan speed	rpm	2285							
Max fan speed	rpm	2600							
Efficiency (total)	%	70							
Fan shaft power	kW	3.61							

(Fan sound data SWL)	Hz	63	125	250	500	1k	2k	4k	8k
Total	Inlet dB	39	60	71	72	76	77	79	74
	Outlet dB	43	62	72	78	92	85	82	77

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	2080 x 1280							
Pressure drop	Pa	2							