

Air handling unit model:

VERSO-CF-5000-V-HCW-R1-F7/M5-C5-X

TECHNICAL SPECIFICATION

Typology	NRVU
	BVU
Type of HRS	Plate heat exchanger

Air handling unit data

RLT class			
		Supply	Exhaust
Nominal flow rate	[m³/h]	4093	4093
	[m³/s]	1.14	1.14
Nominal external pressure	[Pa]	177	229
Face velocity at design flow rate	[m/s]	2.27	
SFPv	[kW/m³/s]	1.47	
The thermal efficiency of HRS	[%]	82	

Calculation data

		Winter	Summer
Design outdoor temperature	[°C]	-23	26
Outdoor relative humidity	[%]	82	50
Indoor temperature	[°C]	20	22
Indoor relative humidity	[%]	55	55
Atmosphere pressure	[Pa]	101325	
Air density	[kg/m³]	1.2	

Electrical data

Number of electrical input	1
AHU	
Electrical connection	~400V / 50Hz / 3-phase / 5x1.5mm² / 8.3A

COMMISSION REGULATION (EU) No 1253 (ecodesign requirements)

		Value	2018
The thermal efficiency of HRS, η_{nrvu} (EN308)	[%]	82	≥ 73
Internal specific fan power, SFPint	[W/m³/s]	832	≤ 1211



Type of drive - variable speed	Installed	Necessary
Thermal by-pass facility	Exist	Necessary
Warning - filter is clogged	Exist	Necessary
Unit conformity assessment		Complies

Int. pressure drop of ventilation components (ΔP_s , int)	[Pa]	532
Int. pressure drop of non-ventilation components (ΔP_s , add)	[Pa]	38
Effective electric power input of the fans (clean filter)	[kW]	1.67

Basic construction STANDART3

Panels from two galvanized steel sheets, filled with thermal and sound insulation

fire-resistant min. wool ($\lambda=0,036$ W/mK).

AHU painted C3 class, RAL 7035.

Indoor unit.

When filters get dirty, unit control panel gives notice to change the filters.

Dirty filters cause increased energy consumption, which decreases performance and energy efficiency of the unit, so it is very important to change the filters regularly.

AHU shall operate with variable speed drive.

www.komfovent.com

Verso manual version: V2-19-01

Control manual version: C5.1-16-07

Thermal insulation class	T3
Thermal bridging class	TB2
Casing strenght	D1 (M)
Filter bypass leakage	F9 (M)
Casing air leakage	L1(R)

Casing air leakage (Model Box, EN 1886)

-400 Pa (L1)	[dm ³ /(s·m ²)]	0.05
+700 Pa (L1)	[dm ³ /(s·m ²)]	0.09

Maximum external leakage rate at - 400 Pa (R)	[%]	< 1
Maximum external leakage rate at + 400 Pa (R)	[%]	< 1
Maximum internal leakage rate	[%]	1.5

AHU configuration

Panels thickness	[mm]	45
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Unit weight

Weight (netto)	[kg]	680
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ACOUSTIC DATA

Sound power level L _w	to the air ducts				to surrounding
	Supply air volume [dB]		Exhaust air volume [dB]		[dB]
F[Hz]	Inlet	Outlet	Inlet	Outlet	
63	52.4	61.7	53.0	61.5	55.2
125	51.3	63.2	52.1	63.3	54.4
250	53.3	69.6	54.1	68.8	55.5
500	53.5	67.9	54.3	67.6	43.6
1000	50.9	70.4	51.9	70.1	43.2
2000	47.1	65.7	48.4	65.4	37.2
4000	44.3	63.9	46.3	63.8	29.0
8000	40.1	59.5	43.4	59.3	23.2
dB(A)	56	74	57	73	50

Plate heat exchanger

REK+81-1140-26

Atmosphere pressure	[Pa]	101325
Plates		AL

Heat recovery class (EN13053)

Efficiency bonus (E), (EU 1253) 281

		Winter		Summer	
		Supply	Exhaust	Supply	Exhaust
Temp. efficiency wet	[%]	92.0		82.3	
Temp. efficiency dry	[%]	82.4		82.6	
Capacity	[kW]	54.3		4.6	
Air volume	[m³/h]	4093	4093	4093	4093
Inlet temperature	[°C]	-23	20	26	22
Relat. humidity	[%]	82	55	50	55
Outlet air temp.	[°C]	16.6	-5.4	22.7	25.3
Relat. humidity	[%]	4.1	97.0	61.0	45.0
Pressure drop (standard)	[Pa]	192	226	192	192
Velocity	[m/s]	1.8	1.6	1.8	1.8
Condensation	[kg/h]		-27.1		0.0

Note: The power and efficiency of the plate heat exchanger are given without defrosting. During the defrosting the designed air temperature may not be assured. Defrosting time depends on specific operating parameters (temperature, humidity, air volume)

SUPPLY AIR VOLUME

Air filter

Filter correction (F), (EU 1253)	0
Type	Panel air filter
Energy efficiency class	
Air velocity class (EN13053)	V5

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Filter class		F7
Filter class (EN ISO 16890)		ePM1 55%
Dimensions bxxhxl	[mm]	650×450×92
Quantity of filters		2
Pressure drop (clean filter)	[Pa]	69
Velocity in the AHU filter section	[m/s]	2.27

Water air heater

HW-G10-04R-1129-0540-140-1×17C-26F-M2-C20-IS1-XX-1×R1¼/1×R1¼-150

		Winter	Summer
Capacity	[kW]	35.4	1.0
Standard air volume	[m³/h]	4093	4093
Velocity	[m/s]	1.69	1.89
Pressure drop	[Pa]	38	38
Inlet temperature	[°C]	-5.8	22.7
Inlet rel. humidity	[%]	4	61
Outlet air temperature	[°C]	20.0	22.0
Outlet rel. humidity	[%]	1	64
Absolute humidity	[g/kg]	0.09	10.56
Fluid		Water	
Inlet temperature	[°C]	80	7
Outlet temperature	[°C]	60	12
Flow rate	[dm³/h]	1555	171
Pressure drop	[kPa]	2.05	1.00
Etilenglycol by volume	[%]	0	0

Technical specification

Tubes		Copper
Plates		Aluminium
Volume	[m³]	0.0077
Useful space	[m²]	49.05
Fin pitch	[mm]	2.6
Rows		4
Circuits		17
Connection in	["]	1×R1¼
Connection out	["]	1×R1¼
L	[mm]	140
B	[mm]	1266
H	[mm]	580
Restrictions		
Max. hydraulic pressure	[bar]	15

Max. fluid temperature	[°C]	100
Fan EC		
Type		RH40C-ZID.DC.CR
Wheel diameter	[mm]	400
Air volume	[m³/h]	4093
Built-in loss	[Pa]	4
Static pressure	[Pa]	480
Speed	[1/min]	1697
Max. speed	[1/min]	2400
K-value		154
Motor efficiency class		IE4 (Super Premium)
Motor power	[kW]	2.40
Input current at 400V 50 Hz	[A]	3.9
Electric power to motor (clean filters)	[kW]	0.85
Total fan efficiency	[%]	68.59
Static fan efficiency	[%]	64.2

EXHAUST AIR VOLUME

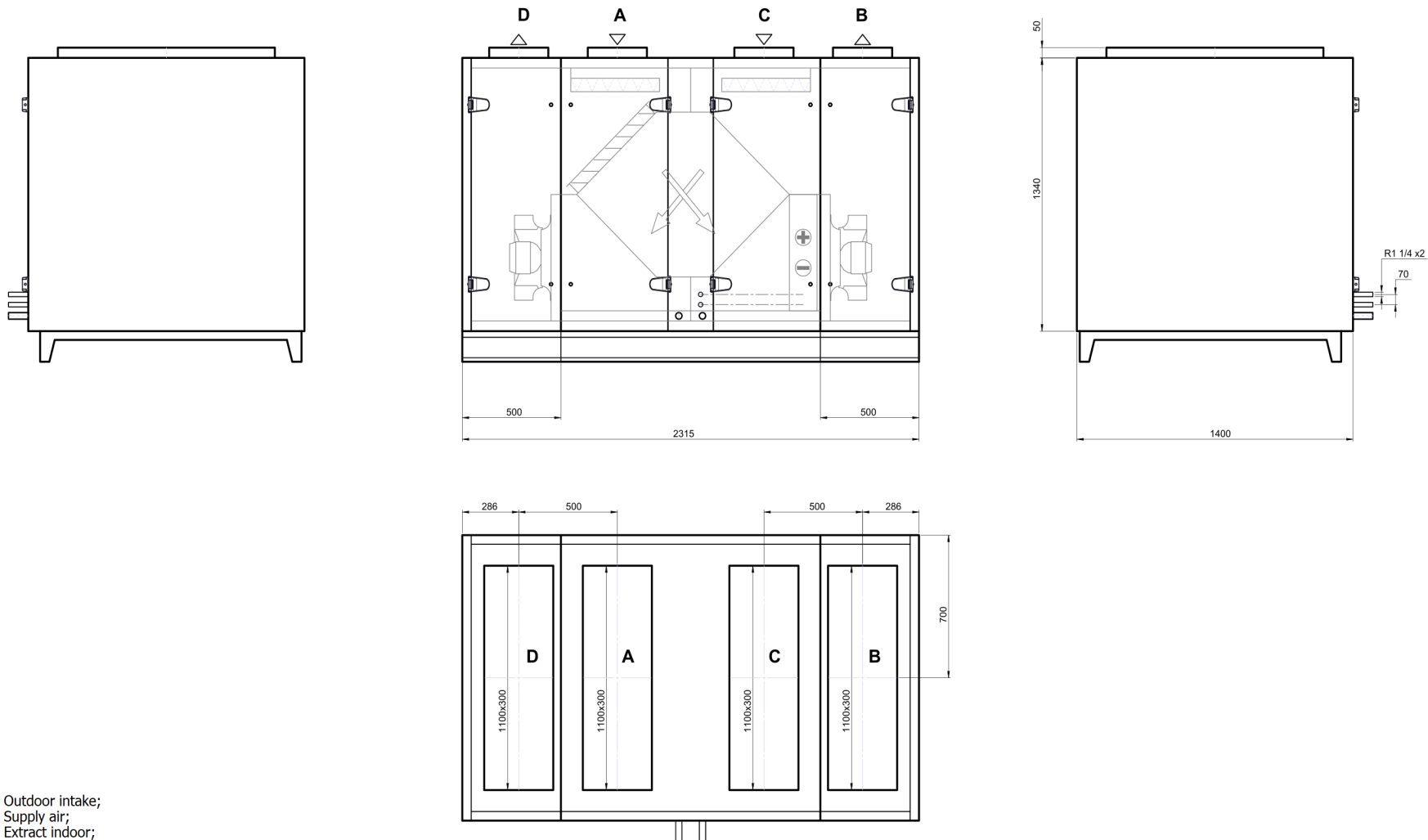
Air filter		
Filter correction (F), (EU 1253)		0
Type	Panel air filter	
Energy efficiency class		
Air velocity class (EN13053)		V5
Filter class		M5
Filter class (EN ISO 16890)		ePM10 50%
Dimensions bxxhxl	[mm]	650×450×92
Quantity of filters		2
Pressure drop (clean filter)	[Pa]	41
Velocity in the AHU filter section	[m/s]	2.27
Fan EC		
Designed for wet conditions		
Type		RH40C-ZID.DC.CR
Wheel diameter	[mm]	400
Air volume	[m³/h]	4093
Built-in loss	[Pa]	0
Static pressure	[Pa]	459
Speed	[1/min]	1675
Max. speed	[1/min]	2400
K-value		154

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Motor efficiency class		IE4 (Super Premium)
Motor power	[kW]	2.40
Input current at 400V 50 Hz	[A]	3.9
Electric power to motor (clean filters)		[kW] 0.82
Total fan efficiency	[%]	68.46
Static fan efficiency	[%]	63.64

We reserve the rights to change technical data of the products in the process of their improvement without advance notice. Validity period of presented data - 1 month



A - Outdoor intake;
 B - Supply air;
 C - Extract indoor;
 D - Exhaust air;
 CB - Control box;