

Stranka: Energetske rešitve

Projekt: TechUBi4.0

Naslov: Celica 3 in 4

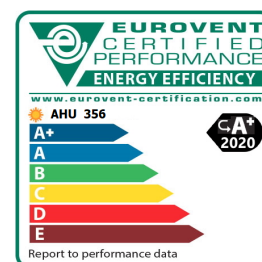
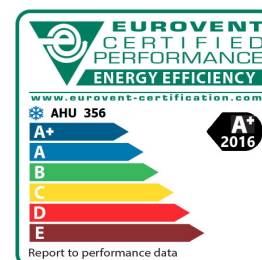
Kontaktna oseba: Rakuš R

Model:

**VERSO-R-1500-F-W/DHCW-R1-F7/M5-C5-SL/A**

## TEHNI NA SPECIFIKACIJA

Tipologija	NSPE		
	DPE		
Vrsta HRS	Rotacijski toplotni izmenjevalec		
Air handling unit data			
		Vtok	Odtok
Nominalna stopnja pretoka	[m³/h]	1060	1060
	[m³/s]	0,29	0,29
Nazivni zunanji tlak	[Pa]	250	250
Hitrost dotoka pri na rtovani stopnji pretoka	[m/s]	1,88	
SFPv	[kW/m³/s]	1,94	
The thermal efficiency of HRS	[%]	81	
Calculation data			
		Zima	Poletje
Design outdoor temperature	[°C]	-13	32
Outdoor relative humidity	[%]	90	45
Indoor temperature	[°C]	22	26
Indoor relative humidity	[%]	40	50
Atmosferski tlak	[Pa]	101325	
Gostota zraka	[kg/m³]	1,2	
Air handling unit location		Ljubljana,Slovenia	
Dry-bulb temperature (TdryS)	[°C]	31,9	
Wet-bulb temperature (TwetS)	[°C]	20,9	
Dew-point temperature (Tdw-pS)	[°C]	15,5	
Dry-bulb temperature (TdryW)	[°C]	-6,8	
Electrical data			
Number of electrical input		1	



**AHU**

 Electrical connection ~400V / 50Hz / 3-phase / 5x1,5mm<sup>2</sup> /3,5A

**Avtomatsko krmiljenje**

Tip	C5
Control panel	C5.1

**COMMISSION REGULATION (EU) No 1253 (ecodesign requirements)**

		Value	2018
The thermal efficiency of HRS, $\eta_{nrvu}$ (EN308)	[%]	81	73
Internal specific fan power, SFP <sub>int</sub>	[W/m <sup>3</sup> /s]	826	1296
Type of drive - variable speed		Installed	Necessary
Thermal by-pass facility		Exist	Necessary
Warning - filter is clogged		Exist	Necessary
Unit conformity assessment			Complies
Notranji padec tlaka prezraevalnih elementov ( $P_{s, int}$ )	[Pa]	372	
Notranji padec tlaka neprezraevalnih elementov ( $P_{s, add}$ )	[Pa]	35	
Effective electric power input of the fans (clean filter)	[kW]	0,57	

**Osnovna sestava STANDART4**

Paneli iz dveh pocinkanih ploevin, polnilo iz termo in zvo ne izolacije  
požarno odporna miner. volna (  $\lambda=0,036$  W/mK).

AHU painted C3 class, RAL 7035.

Indoor unit.

When filters gets 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.

Instructions: [www.komfovent.com/en/downloads](http://www.komfovent.com/en/downloads)

Thermal insulation class	T2
Thermal bridging class	TB2
Casing strength	D1 (M)
Filter bypass leakage	F9 (M)
Casing air leakage	L1(R)

**Casing air leakage (Model Box, EN 1886)**

-400 Pa (L1)	[dm <sup>3</sup> /(s·m <sup>2</sup> )]	0,02
+700 Pa (L1)	[dm <sup>3</sup> /(s·m <sup>2</sup> )]	0,21

Najveja stopnja zunanjega pušanja - 400 Pa (R)	[%]	< 1
Najveja stopnja zunanjega pušanja + 400 Pa (R)	[%]	< 1
Najveja stopnja notranjega pušanja ali prenos	[%]	2,5

**AHU configuration**

Debelina panela	[mm]	50
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**Teža klimata**

Teža (neto)	[kg]	195
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**GLASNOST**

Nivo zvo nega tlaka Lw	na kanale				v okolico	
	Pretok vto nega zraka [dB]		Pretok odto nega zraka [dB]		[dB]	
F[Hz]	Zajem	Izpuh	Zajem	Izpuh	Lw	Lp 3m
63	81,2	74,9	74,9	78,4	59,4	51,4
125	77,6	70,2	66,6	76,3	57,0	48,9
250	72,7	65,2	61,2	72,2	56,9	43,6
500	67,8	63,3	58,4	68,6	50,5	38,6
1000	60,3	59,5	52,1	64,7	41,2	31,7
2000	56,6	55,6	49,6	61,0	26,9	15,6
4000	52,3	48,4	45,0	53,5	22,4	12,1
8000	47,7	40,5	39,0	48,3	20,1	9,9
dB(A)	70	65	60	71	52	40

**Rotacijski toplotni izmenjevalec**
**RR-AL-800x120-SL-O-N**

Frekven nik	[kW]	0,096
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Kondenzacija

Designed for dry conditions

Preme	[mm]	800x120
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Višina vala	[mm]	1,4
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Gostota	[kg/m³]	1,2
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Heat recovery class (EN13053)

H1

Efficiency bonus (E), (EU 1253)

240

		Zima		Poletje	
		Vtok	Odtok	Vtok	Odtok
Izkoristek temperature	[%]	81,0		81,0	
Izkoristek vlage	[%]	53,7		0	
Tla ni padec	[Pa]	57	57	57	57
Hitrost	[m/s]	1,2	1,2	1,2	1,2
Standardni zra ni pretok	[m³/h]	1060	1060	1060	1060

**Zajem**

Temperatura	[°C]	-13	22	32	26
Relativna vlaga	[%]	90	40	45	50

VERSO-R-1500-F-W/DHCW-R1-F7/M5-C5-SL/A

Datum: 8. 07. 2024

Absolutna vlaga	[g/kg]	1,10	6,59	13,49	10,54
Enthalpy	[kJ/kg]	-10,34	38,88	66,72	53,02

**Izpuh**

Temperatura	[°C]	15,3	-6,3	27,1	30,9
Relativna vlaga	[%]	37	95	60	38
Absolutna vlaga	[g/kg]	4,05	2,10	13,49	10,54
Enthalpy	[kJ/kg]	25,68	-1,15	61,71	58,01

**Povratek energije**

Sensible heat	[kW]	10,1	-1,8		
Latent heat	[kW]	2,6	0,0		
Total heat	[kW]	12,7	1,8		
Recovery of moisture	[g/kg]	2,9	-4,5	0,0	0,0
OACF		1,08	1,08		

**PRETOK VTO NEGA ZRAKA**
**Filter zraka**

Filter correction (F), (EU 1253)		0
Tip	Panel air filter	
Energy efficiency class		
Air velocity class (EN13053)		V3
Razred filtra:		F7
Razred filtra (EN ISO 16890)		ePM1 60%
Dimenzije bxxhxl	[mm]	472x402x96
Število filtrov		1
Tla ni padec (nov filter)	[Pa]	46
Priporo eni max tla ni padec (EN 13779 2007)	[Pa]	180
Velocity in the AHU filter section	[m/s]	1,88

**Vodni grelec zraka DHCW-315**

HW-G20-03R-0420-0420-150-1x03C-24F-M1-C40-IS1-XX-1xR½/1xR½-150			
		Zima	Poletje
Kapaciteta	[kW]	7,8	2,3
Standardni zra ni pretok	[m³/h]	1060	1060
Hitrost	[m/s]	1,55	1,72
Tla ni padec	[Pa]	35	37
Temperatura zajema	[°C]	0,0	27,1
Rel. vlaga zajema	[%]	37	60
Outlet air temperature	[°C]	22,0	22,0

VERSO-R-1500-F-W/DHCW-R1-F7/M5-C5-SL/A

Datum: 8. 07. 2024

Rel. vlaga izpuha	[%]	0	78
Absolutna vlaga	[g/kg]	0,00	13,03
Medij		Voda	
Temperatura zajema	[°C]	45	9
Temperatura izpuha	[°C]	40	14
Notranji volumen	[dm³/h]	1358	393
Tla ni padec	[kPa]	21,51	2,16
Etilenglikol volumen	[%]	0	0

**Tehni na specifikacija**

Cevi		Baker
Plates		Aluminij
Volumen	[m³]	0,0030
Koristni prostor	[m²]	10,77
Razdalja med lamelami	[mm]	2,4
Rows		3
Circuits		3
Povezava vtoka	["]	1×R½
Povezava iztoka	["]	1×R½
L	[mm]	150
B	[mm]	537
H	[mm]	500
Omejitve		
Max hidravli ni tlak	[bar]	21
Max temperatura medija	[°C]	130

**Ventilator EC**

Premier kolesa	[mm]	315
Zra ni pretok	[m³/h]	1060
Built-in loss	[Pa]	123
Stati ni tlak	[Pa]	475
Hitrost	[1/min]	1989
Max. speed	[1/min]	2010

Motor efficiency class		IE4 (Super Premium)
Motor power	[kW]	0,37
Input current	[A]	1,4
Electric power to motor (clean filters)	[kW]	0,31
SFPv	[kW/m³/s]	1,06
Total fan efficiency	[%]	45,3
Static fan efficiency	[%]	45,12

## PRETOK ODTO NEGA ZRAKA

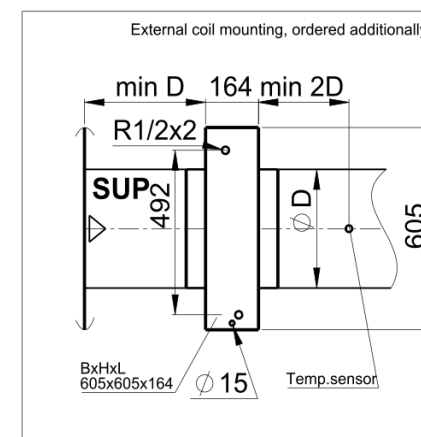
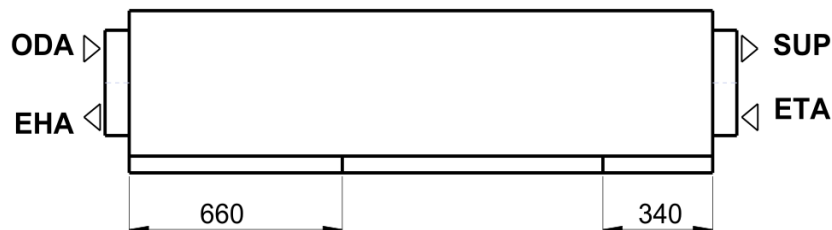
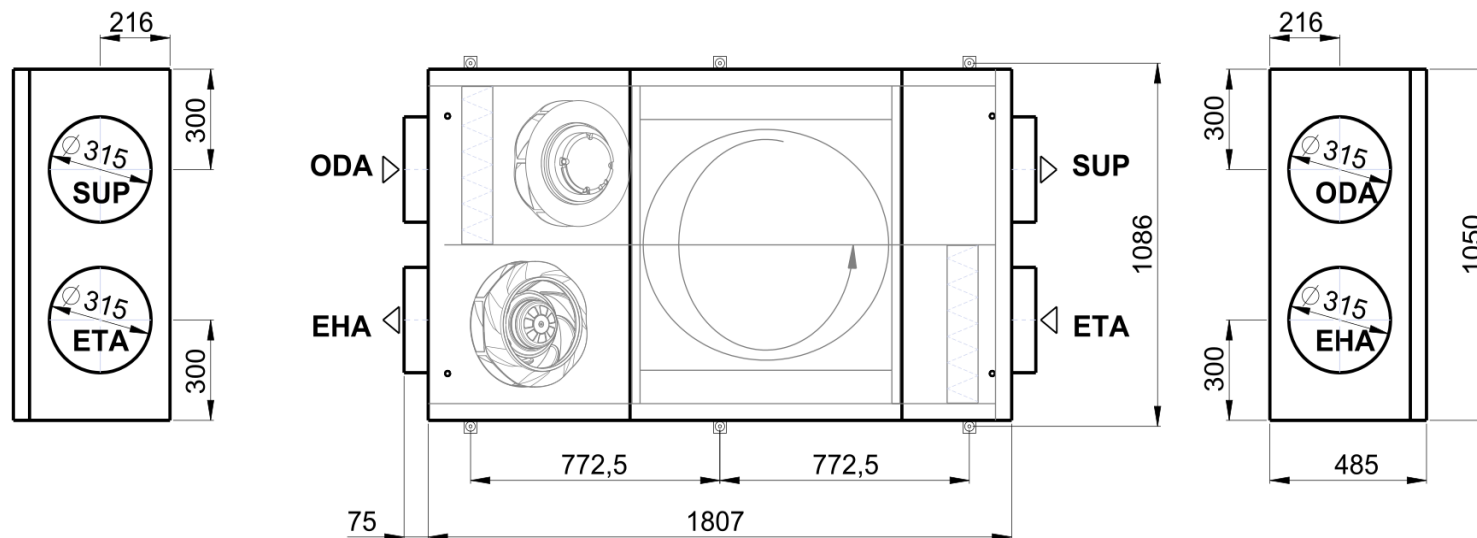
### Filter zraka

Filter correction (F), (EU 1253)		0
Tip	Panel air filter	
Energy efficiency class		
Air velocity class (EN13053)		V3
Razred filtra:		M5
Razred filtra (EN ISO 16890)		ePM10 50%
Dimenzije bxhxl	[mm]	472×402×96
Število filtrov		1
Tla ni padec (nov filter)	[Pa]	30
Priporo eni max tla ni padec (EN 13779 2007)	[Pa]	160
Velocity in the AHU filter section	[m/s]	1,88

### Ventilator EC

Premier kolesa	[mm]	315
Zra ni pretok	[m³/h]	1060
Built-in loss	[Pa]	60
Stati ni tlak	[Pa]	397
Hitrost	[1/min]	1837
Max. speed	[1/min]	2010
Motor efficiency class		IE4 (Super Premium)
Motor power	[kW]	0,37
Input current	[A]	1,1
Electric power to motor (clean filters)	[kW]	0,26
SFPv	[kW/m³/s]	0,88
Total fan efficiency	[%]	46,04
Static fan efficiency	[%]	44,96

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



ODA - Outdoor air;  
SUP - Supply air;  
ETA - Extract air;  
EHA - Exhaust air;  
CB - Control box;