

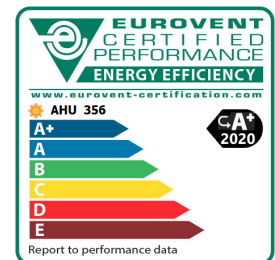
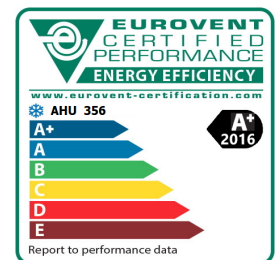
Stranka: Energetske rešitve  
Projekt: TechHUB Ki medetaža pisarne  
Kontaktna oseba: Miha

Model:

**VERSO-R-2000-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]	1290	1140
	[m³/s]	0,36	0,32
Nazivni zunanji tlak	[Pa]	300	300
Hitrost dotoka pri na rtovani stopnji pretoka	[m/s]	1,81	
SFPv	[kW/m³/s]	1,59	
The thermal efficiency of HRS	[%]	82	
Calculation data			
		Zima	Poletje
Design outdoor temperature	[°C]	-13	32
Outdoor relative humidity	[%]	90	40
Indoor temperature	[°C]	20	24
Indoor relative humidity	[%]	40	55
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 ~230V / 50Hz / 1-phase / 3x1,5mm<sup>2</sup> /6,3A

**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)	82	73
Internal specific fan power, SFP <sub>int</sub>	594	1322
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 prezra evalnih elementov ( $P_s$ , int)	[Pa]	330
Notranji padec tlaka neprezra evalnih elementov ( $P_s$ , add)	[Pa]	19
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**

VERSO-R-2000-F-W/DHCW-R1-F7/M5-C5-SL/A

Datum: 15.09.2024

Debelina panela	[mm]	50
<b>Teža klimata</b>		
Teža (neto)	[kg]	280

## 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	69,0	75,6	67,1	74,4	52,8	44,7
125	67,9	76,8	66,0	75,7	53,4	45,3
250	68,8	76,1	66,6	75,5	56,9	43,6
500	65,9	73,0	63,5	72,2	50,5	38,6
1000	60,5	69,0	58,2	68,1	40,7	31,2
2000	57,7	64,6	55,3	64,2	23,8	12,5
4000	53,2	60,5	50,4	60,2	19,9	9,7
8000	45,9	53,3	42,6	54,0	17,5	7,3
dB(A)	67	75	65	74	51	39

### Rotacijski toplotni izmenjevalec

**RR-AL-1000×120-SL-O-SN(1100×1100×420)-PN-A1-Z**

Frekven nik	[kW]	0,096
Kondenzacija		
Designed for dry conditions		
The velocity is too low, the result may be unreliable.		

Preme	[mm]	1000×120
Višina vala	[mm]	1,4
Gostota	[kg/m³]	1,2
Heat recovery class (EN13053)		H1
Efficiency bonus (E), (EU 1253)		273

		Zima		Poletje	
		Vtok	Odtok	Vtok	Odtok
Izkoristek temperature	[%]	75,8		75,8	
Izkoristek vlage	[%]	48,1		0	
Tla ni padec	[Pa]	43	38	43	38
Hitrost	[m/s]	0,93	0,82	0,93	0,82
Standardni zra ni pretok	[m³/h]	1290	1140	1290	1140

### Zajem

Temperatura	[°C]	-13	20	32	24
Relativna vlaga	[%]	90	40	40	55

VERSO-R-2000-F-W/DHCW-R1-F7/M5-C5-SL/A

Datum: 15.09.2024

Absolutna vlaga	[g/kg]	1,10	5,82	11,96	10,29
Enthalpy	[kJ/kg]	-10,34	34,89	62,81	50,32

**Izpuh**

Temperatura	[°C]	12,0	-8,3	25,9	30,9
Relativna vlaga	[%]	39	95	58	37
Absolutna vlaga	[g/kg]	3,37	1,78	11,96	10,29
Enthalpy	[kJ/kg]	20,60	-3,92	56,57	57,36

**Povratek energije**

Sensible heat	[kW]	10,9		-2,7	
Latent heat	[kW]	2,4		0,0	
Total heat	[kW]	13,3		-2,7	
Recovery of moisture	[g/kg]	2,3	-4,0	0,0	0,0
OACF		1,07		1,07	

**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]	560x420x96
Število filtrov		1
Tla ni padec (nov filter)	[Pa]	43
Priporo eni max tla ni padec (EN 13779 2007)	[Pa]	190
Velocity in the AHU filter section	[m/s]	1,81

**Vodni grelec zraka DHCW-355**

HW-G10-03R-0473-0510-150-1x05C-24F-M1-C40-IS1-XX-1xR½/1xR½-150			
		Zima	Poletje
Kapaciteta	[kW]	9,5	2,7
Standardni zra ni pretok	[m³/h]	1290	1290
Hitrost	[m/s]	1,38	1,52
Tla ni padec	[Pa]	19	20
Temperatura zajema	[°C]	0,0	25,9
Rel. vlaga zajema	[%]	39	59
Outlet air temperature	[°C]	22,0	20,0

Rel. vlaga izpuha	[%]	0	81
Absolutna vlaga	[g/kg]	0,00	11,89

Medij		Voda	
Temperatura zajema	[°C]	45	9
Temperatura izpuha	[°C]	40	14
Notranji volumen	[dm³/h]	1776	512
Tla ni padec	[kPa]	43,83	4,58
Etilenglikol volumen	[%]	30	30

### Tehni na specifikacija

Cevi		Baker
Plates		Aluminij
Volumen	[m³]	0,0024
Koristni prostor	[m²]	15,69
Razdalja med lamelami	[mm]	2,4
Rows		3
Circuits		5
Povezava vtoka	["]	1×R½
Povezava iztoka	["]	1×R½
L	[mm]	150
B	[mm]	590
H	[mm]	590
Omejitve		
Max hidravli ni tlak	[bar]	21
Max temperatura medija	[°C]	130

### Ventilator EC

Premier kolesa	[mm]	280
Zra ni pretok	[m³/h]	1290
Built-in loss	[Pa]	130
Stati ni tlak	[Pa]	516
Hitrost	[1/min]	2308
Max. speed	[1/min]	2900

Motor efficiency class		IE4 (Super Premium)
Motor power	[kW]	0,66
Input current	[A]	1,5

Electric power to motor (clean filters)	[kW]	0,33
SFPv	[kW/m³/s]	0,92
Total fan efficiency	[%]	57,7
Static fan efficiency	[%]	56,03

## PRETOK ODTO NEGA ZRAKA

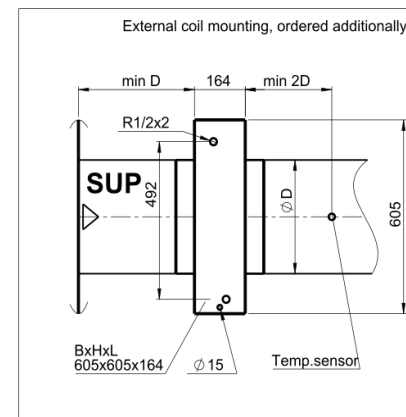
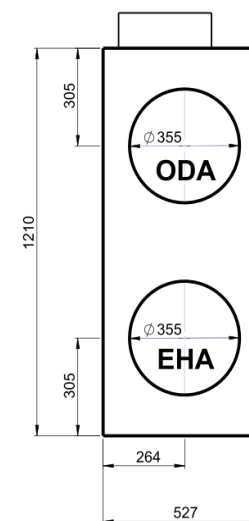
### Filter zraka

Filter correction (F), (EU 1253)		0
Tip	Panel air filter	
Energy efficiency class		
Air velocity class (EN13053)		V1
Razred filtra:		M5
Razred filtra (EN ISO 16890)		ePM10 50%
Dimenzije bxhxl	[mm]	560×420×96
Število filtrov		1
Tla ni padec (nov filter)	[Pa]	23
Priporo eni max tla ni padec (EN 13779 2007)	[Pa]	170
Velocity in the AHU filter section	[m/s]	1,60

### Ventilator EC

Premier kolesa	[mm]	280
Zra ni pretok	[m³/h]	1140
Built-in loss	[Pa]	53
Stati ni tlak	[Pa]	414
Hitrost	[1/min]	2063
Max. speed	[1/min]	2900
Motor efficiency class		IE4 (Super Premium)
Motor power	[kW]	0,66
Input current	[A]	1,1
Electric power to motor (clean filters)	[kW]	0,24
SFPv	[kW/m³/s]	0,76
Total fan efficiency	[%]	55,95
Static fan efficiency	[%]	54,63

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



7 / 7