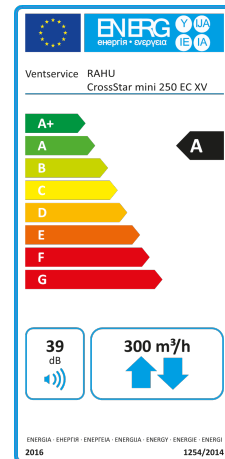


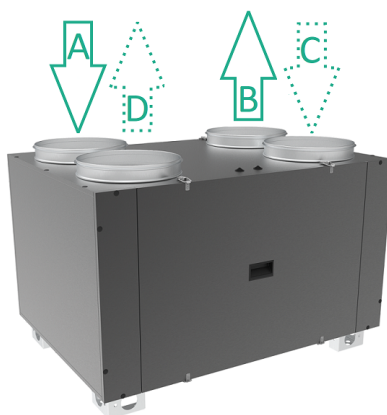
Date: **03-11-2025**
 Offer №: **230937**
 Prepared by: **Dan Musels**

About project: Sanistal
 Description: BVU air handling unit Aerostar PN1_1
 Customer: Sanistal
 Place: Riga, Latvia
 Prepared for: ICS



Model: CrossStar mini 250 EC XV

Supply air flow	300 m³/h	Supply external static pressure	150 Pa
Extract air flow	300 m³/h	Extract external static pressure	150 Pa
Air velocity in the supply section	1.46 m/s	Design winter temperature	-20 °C
		Air velocity in the extract section	1.46 m/s



* Air flows:
 A - Supply air intake from outside
 B - supply air into the room
 C - Intake of exhaust air from the room
 D - Exhaust air discharge to the street

Width	mm	560	Height	mm	485 + 85
Length	mm	750	Total weight	kg	70+1(Add. electric heater)

Nominal power input: 1.3 kW

AHU's dimensions, weight and divisions are approximate and will be optimized during the executive phase

STRUCTURAL FEATURES

Insulation	Mineral wool	Panel thickness	30 mm
Roof	Without roof	Internal panel	Galvanized steel
Service Side	Right	External panel	Painted galvanized steel RAL7024
Connection side	Right	Internal details	Galvanized steel
Duct connection	Ø 160 mm	Support legs 85 mm	

Additional options



Electrical Heater

REH 160-1,0/220 - L250

1 pc

Thu, January 22 17:00:38 2026
 Page 1 of 9
 BVU air handling unit
 Aerostar PN1_1

ICS PRO SIA - Unijas street 11a
 - Phone: +371 6735 0181 - Fax: -
 - E-mail: info@icspro.lv

Off.№ 786820
 Project ID: 230937
 Date 03-11-2025

Validity of the offer: 30 days

Aeroselect selection software
 version 2.0.4.24 (10-11-2024)

RAHU_CrossStar mini 250 EC XV_SE_300/300_150/150_RH_0_0_F7,M5_r7024_85_1

Synthetic / Metal. Filter

Type - Cassette filter, pleated synthetic / metal
Manufacturer: YGLA
F7(ISO ePM1 70%) N°1 498 x 134 x 48 mm
Area of filtration material 0.5 m²
Filter energy efficiency class D
Pressure drop on a clean filter 62 Pa
Estimated pressure drop across the filter 131 Pa
Pressure drop on dirty filter 200 Pa

Synthetic / Metal. Filter

Type - Cassette filter, pleated synthetic / metal
Manufacturer: YGLA
M5(ISO ePM10 50%) N°1 498 x 134 x 48 mm
Area of filtration material 0.5 m²
Filter energy efficiency class E
Pressure drop on a clean filter 44 Pa
Estimated pressure drop across the filter 122 Pa
Pressure drop on dirty filter 200 Pa

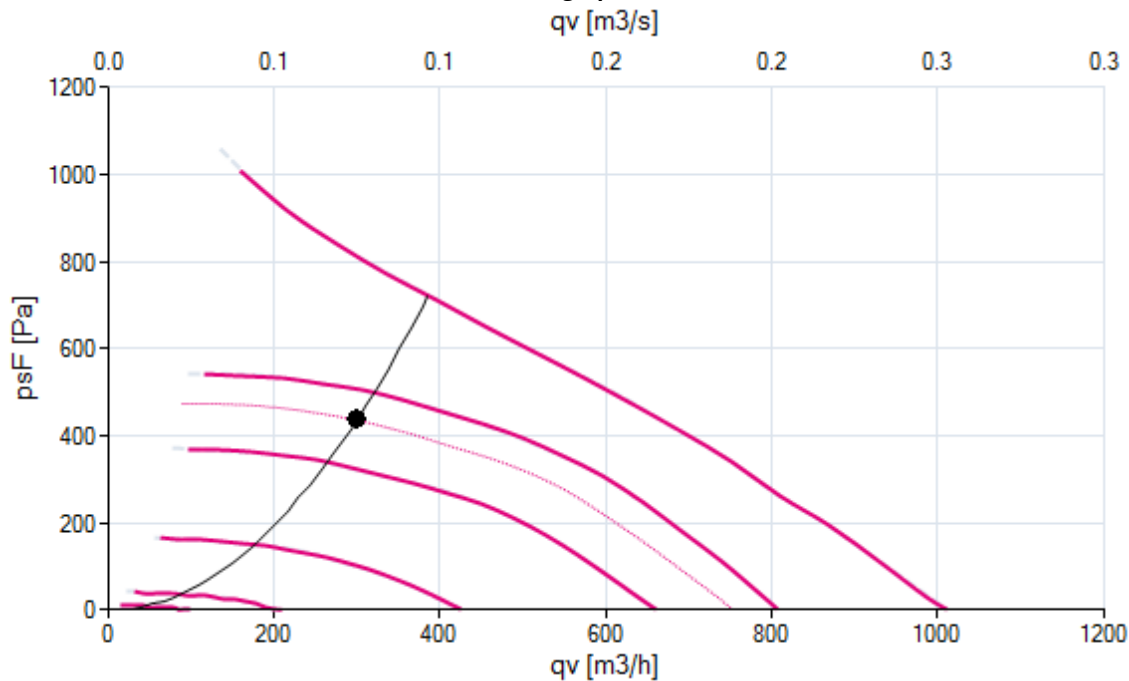
Rotary heat exchanger**N°1 RRS-P-E16-600/600-310**

Supply air flow	300 m ³ /h	Exhaust air flow	300 m ³ /h
Winter conditions			
Inlet air temperature	-20 °C	Inlet air temperature	22 °C
Inlet Relative Humidity	90 %	Inlet Relative Humidity	30 %
Outlet air temperature	13.96 °C	Outlet air temperature	-9.6 °C
Outlet air humidity	29.91 %	Outlet air humidity	95 %
Pressure drop	113 Pa	Exhaust pressure drop	150 Pa
External pressure drop (p air 1.2 kg / m3)	148 Pa	Discharge pressure drop (p air 1.2 kg / m3)	148 Pa
Air velocity	1.9 m/s	Air velocity	2.22 m/s
Recovery efficiency	4.02 kW	Dry efficiency	81/75 %
		Temperature efficiency	55/77 %
Dry Efficiency for balanced air volume (EN 308)	81.02 %		
Summer conditions			
Inlet air temperature	28 °C	Inlet air temperature	22 °C
Inlet Relative Humidity	50 %	Inlet Relative Humidity	51 %
Outlet air temperature	23.31 °C	Outlet air temperature	26.7 °C
Outlet air humidity	66.04 %	Outlet air humidity	38.48 %
Pressure drop	155 Pa	Exhaust pressure drop	150 Pa
External pressure drop (p air 1.2 kg / m3)	148 Pa	Discharge pressure drop (p air 1.2 kg / m3)	148 Pa
Air velocity	2.27 m/s	Air velocity	2.22 m/s
Recovery efficiency	0.48 kW	Dry efficiency	78/78 %
Summer humidity efficiency for balanced volume (EN 308)	0.13 %	Temperature efficiency	0/0 %
Engine: 2IK10GN-C/2GN20K (10W)			
Speed: 10 rpm			

Supply fan

FAN				ENGINE					
ZIEHL									
Fan type GR19V-4IP.Z8.AR - 178087				Power supply				EC MOTOR 0.17	kW
Size		190		Supply				1~ 230V 50Hz	
Air flow		300 m³/h		Motor type				EC	
External pressure drop		150 Pa		Insulation class				F	
Internal pressure drop		286 Pa		Protection class				IP54	
Total pressure		447 Pa		Motor efficiency				44.39	%
Total static pressure		436 Pa		Maximum fan speed				3930	rpm
Dynamic pressure		11 Pa		power consumption(summer)				0.09	kW
Fan speed		3253 rpm		power consumption(winter)				0.08	kW
Sound power level		75 dB(A)		Current at operating point				0.74	A
Operating voltage		230 V		Maximum current				1.7	A
SFP class		3/1028 W/m³/s							
ERP class		2015							
Sound level. octave band power (dB)									
F[Hz] - dB	General	63	125	250	500	1000	2000	4000	8000
Supply-Lw(A)6	75	43	51	63	67	70	71	64	57
Suction-Lw(A)5	69	42	50	61	62	64	63	59	54
Sound pressure at a distance of 1 m in dB (A) with hemispherical propagation - Tolerance +/- 4 dB									
F[Hz]	dB(A)	63	125	250	500	1000	2000	4000	8000
Supply	67	35	43	55	59	62	63	56	49
Suction	61	34	42	53	54	56	55	51	46
External	43	27	33	38	37	33	36	25	13

Fan graph

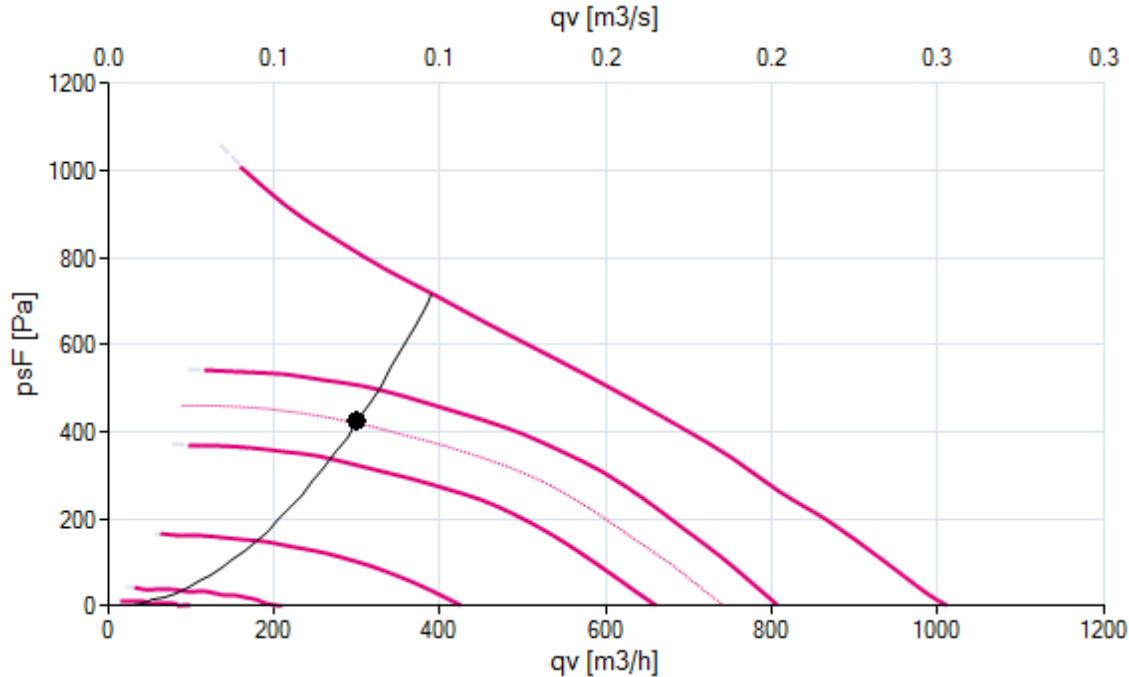


Fan system efficiency calculated according to fan performance
Fan speed control required

Exhaust fan

FAN				ENGINE					
ZIEHL									
Fan type GR19V-4IP.Z8.AR - 178087				Power supply				EC MOTOR 0.17	kW
Size		190		Supply				1~ 230V 50Hz	
Air flow		300 m³/h		Motor type				EC	
External pressure drop		150 Pa		Insulation class				F	
Internal pressure drop		272 Pa		Protection class				IP54	
Total pressure		433 Pa		Motor efficiency				44.69	%
Total static pressure		422 Pa		Maximum fan speed				3930	rpm
Dynamic pressure		11 Pa		power consumption(summer)				0.08	kW
Fan speed		3207 rpm		power consumption(winter)				0.08	kW
Sound power level		74.45 dB(A)		Current at operating point				0.72	A
Operating voltage		230 V		Maximum current				1.7	A
SFP class		3/990 W/m³/s							
ERP class		2015							
Sound level. octave band power (dB)									
F[Hz] - dB	General	63	125	250	500	1000	2000	4000	8000
Supply-Lw(A)6	74	43	50	62	66	69	70	63	57
Suction-Lw(A)5	69	42	49	60	61	63	63	58	53
Sound pressure at a distance of 1 m in dB (A) with hemispherical propagation - Tolerance +/- 4 dB									
F[Hz]	dB(A)	63	125	250	500	1000	2000	4000	8000
Supply	66	35	42	54	58	61	62	55	49
Suction	61	34	41	52	53	55	55	50	45
External	42	27	32	37	36	32	35	24	13

Fan graph



Fan system efficiency calculated according to fan performance
Fan speed control required

Additional sections

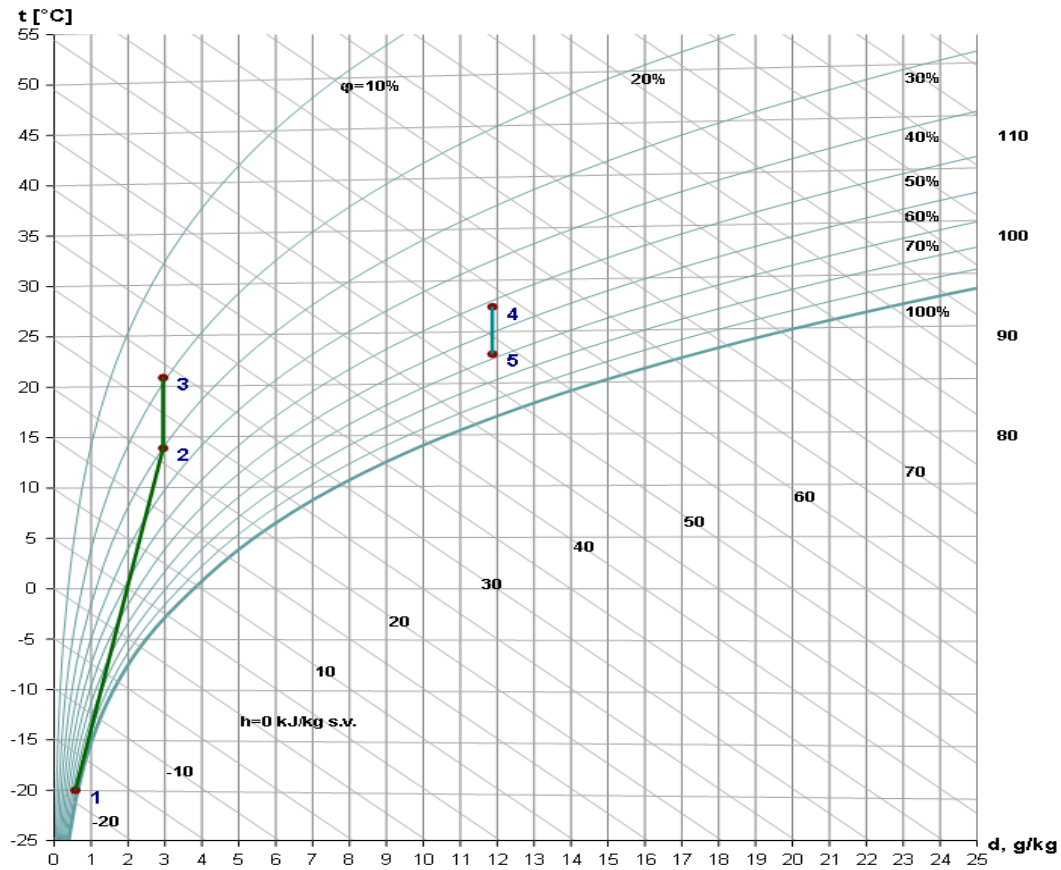
Electric heater

REH 160-1,0/220 - L250

Heat exchanger type	TEH-195 A 8,5/1,0 K230	Installed capacity	1 kW
Number of EI heaters	1	Power consumption (PWM)	0.71 kW
Number of steps	1(1)	Inlet temperature	13.96 °C
Power source	1 ~ 220 V 50 Hz	Inlet relative humidity	29.91 %
		Outlet temperature	20.96 °C
Air velocity in section	4,17 m/s	Outlet relative humidity	19.21 %
Section Dimensions 160/240.7/250 mm			

ACOUSTIC CHARACTERISTICS

Octave bands (Hz)	63	125	250	500	1000	2000	4000	8000	General level
Lw at S.A. Input [dB]	42	50	61	62	64	63	59	54	69
Lw at S.A. Output [dB]	43	51	63	67	70	71	64	57	75
Lw at E.A. Input [dB]	42	49	60	61	63	63	58	53	69
Lw at E.A. Output [dB]	43	50	62	66	69	70	63	57	74
Lw in the surroundings 5m	29	35	32	29	28	21	13	7	39



Winter			1	2	3
Temperature	t	°C	-20	13.96	20.96
Humidity	Φ	%	90	29.91	19.21
Moisture content	x	g/kg s.v.	0.57	2.95	2.95
Enthalpy	h	kJ/kg s.v.	-18.79	21.55	28.66
Air volume	Vs	m3/h	300	300	300

Summer			4	5
Temperature	t	°C	28	23.31
Humidity	Φ	%	50	66.04
Moisture content	x	g/kg s.v.	11.87	11.87
Enthalpy	h	kJ/kg s.v.	58.58	53.74
Air volume	Vs	m3/h	300	300

1	Outdoor air
2	After rotary heat exchanger
3	After electric heater
4	Outdoor air
5	After rotary heat exchanger

Brief unit characteristics		
Factory manufacturer	VENTSERVICE	
Unit model	CrossStar mini 250 EC XV	
Typology	NRVU BVU	
Type of HRS	Rotary	
Dry Efficiency for balanced air volume (EN 308)	81.02	
Nominal air flow [m3/s]	0.08	
Class of casing leakage at -400Pa		
Class of casing leakage at +400Pa		
Max. internal air leakage rate [%]	< 5	
FsPref (winter)	0.84	
FsPref (summer)	0.89	
Ashrae WMO reference	264225 (RIGA, LATVIA)	
SFP total [W/m³/s]	2018	
	Supply	Extract
Nominal air flow [m3/s]	0.08	0.08
Type of drive	Variable Speed Drive Installation	Variable Speed Drive Installation
Consumed electrical power [kW] winter / summer	0.08/0.09	0.08/0.08
Flow velocity [m/s]	1.46	1.46
Disposable pressure [Pa]	150	150
Internal dP of ventilation components [Pa] winter / summer	244/286	272/272
Fan static efficiency [%] winter / summer	41/40.4	44/44
Energy efficiency of filtration	D	E
Pressure drop across clean filters [Pa]	62	44
Internet address for disassembly instructions:		
Ecodesign	2018	

Total DLLs - 8 PCS
Roen Est 1.3.38
EBMpapst 3.0.3.275
Karyer 4.01.2021
Klingenburg(Rotor) 5.0.20, 07/2025
Recutech 7.2.0.13
Ziehl-abegg FANselect V 1.01 (241016) (1.24.10.16) AMCA V 1.03 September, 2021 RLT V 1.00 Dezember, 2021
Zern 1.0.0.0
Recuperator - 2.6.0.0