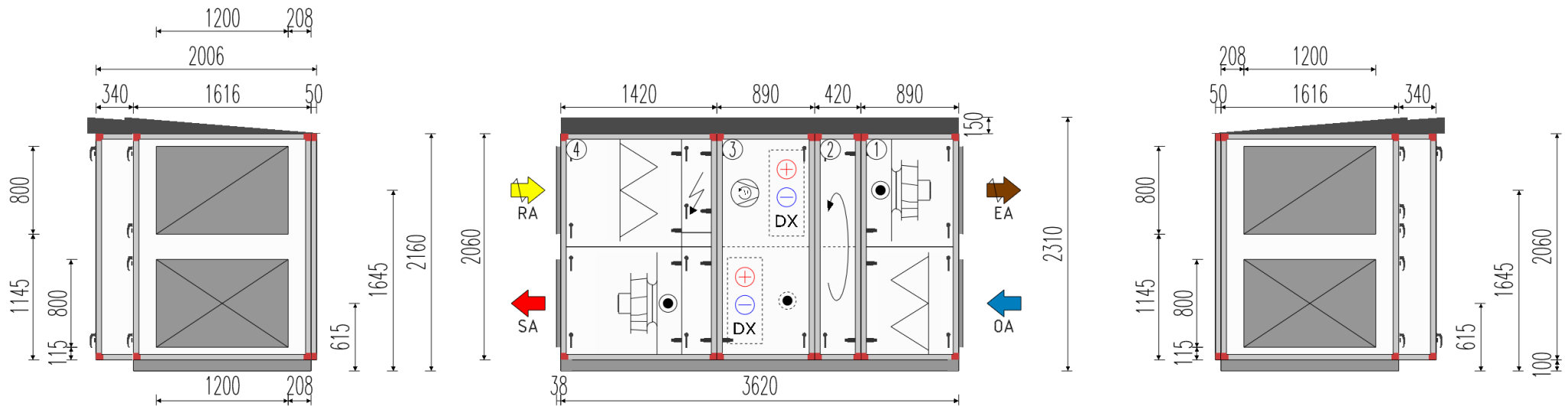


Total for AHU

Width	2166 mm	1) 301 kg
Height	2310 mm	2) 220 kg
Length	3620 mm	3) 397 kg
Weight	1424 kg	4) 386 kg



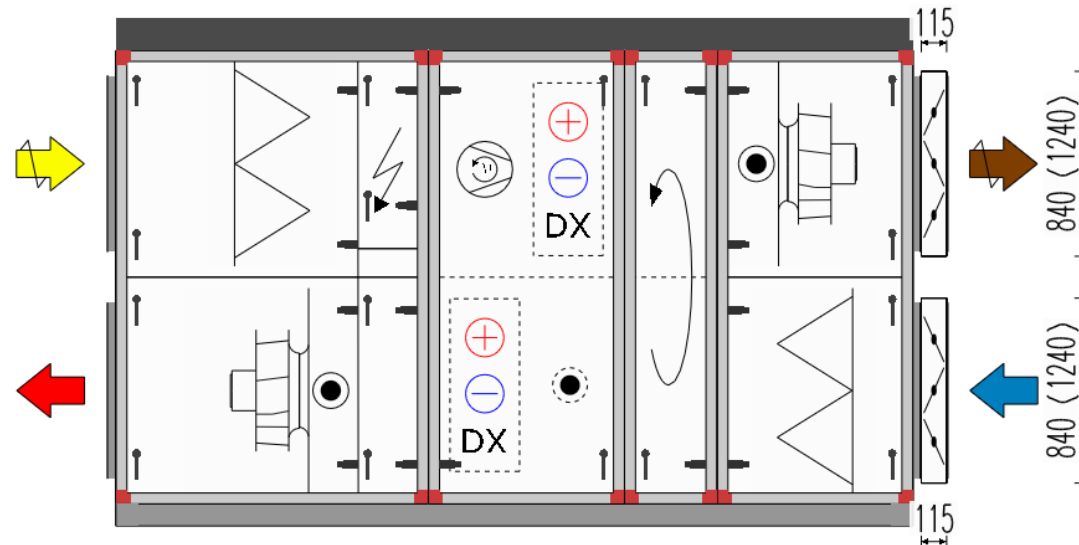
Note! Consider the required space needed to open inspection doors and for plumbing. Additional space for pipes water coil 100 mm. Outdoor version should be placed on a watertight roof on longitudinal base frames. Additional space for roof on outdoor unit max. 100mm (front and backside). If split unit is required, please contact IV Produkt for individual weights Water trap for outdoor version should be site-constructed and provided with heating cable. Not included in IV Produkt's delivery. Access door with largest radius 1070 mm is in module 4. Additional space for handle inspectiondoor 60 mm. Additional space for connection frame 40 mm.

Total for AHU

Width	2166 mm
Height	2310 mm
Length	3620 mm
Weight	1424 kg

Duct accessories

Damper	16 kg
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Connection size: AHU 1200x800 mm.

Our reference: SP

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Project	Spa at KSTH-R1
AHU	AHU/RF/01-No Attenuators-Integrated Heat
Size	360-1V 2.03/1.78 m³/s

Specific fan power

Output	Total for AHU	1.62	kW/(m³/s)
	Ecodesign 2018-Approved		

Dimension and weight

Width	2,166	mm
Height	2,310	mm
Length	3,620	mm
Weight	1,424	kg

Design winter outdoor temperature	-4.5	°C
--	------	----

CASING MODEL, EN1886

AA-50

BASIC DATA

		Supply air	Extract air	
Input	Flow	2.03	1.78	m³/s
	External pressure drop	360	320	Pa
	Distribution of external pressure drop			
Output	Outdoor air/Supply air Extract air/Exhaust air	(0/360)	(290/30)	Pa
	Cross sectional velocity	1.4	1.3	m/s
	Damper	2	2	Pa
	Filter F7/ePM1-50% / M5/ePM10-60%	79	63	Pa
	Initial pressure drop	(39)	(23)	Pa
	Final press. drop	(119)	(103)	Pa
	Rotary heat exch.	139	121	Pa
	Reversible heat-pump	45	32	Pa
	Built-in losses	14	11	Pa
	Total internal pressure	279	229	Pa

Fans

		Supply air	Extract air	
Output	Total static pressure	639	549	Pa
	Fan rpm	1,522	1,385	r/m
	Total efficiency	65.2	64.3	%
	Fan power at dim press	1.99	1.52	kW
	Fan power clean filter	1.87	1.41	kW
	Motor output Power	3.45	3.45	kW
	Motor current at 400V, 3-fase	5.3	5.3	A
	Max. rpm	1,910	1,910	r/m
	Capacity reserve	49	62	%
	Temperature increase	0.82	0.71	°C
	SFPint	296	242	W/(m³/s)
	Fan type	EC500R3G-G2	EC500R3G-G2	
	K-factor for air flow measuring	12.81	12.81	
	Maximum air temperature in the event of fire 60 mins	+70°C	+70°C	
	Weight fan unit	48	48	kg

Project	Spa at KSTH-R1
AHU	AHU/RF/01-No Attenuators-Integrated Heat
Size	360-1V 2.03/1.78 m³/s

Sound data (sound power EN13053)

Frequency band	63	125	250	500	1k	2k	4k	8k		Total	
Supply air:										/	
To surroundings	63	67	52	47	45	44	45	32	dB	54	dB(A)
Outdoor air	58	66	60	56	54	51	46	30	dB	60	dB(A)
Supply air	68	76	73	76	77	75	76	68	dB	82	dB(A)
Extract air:											
To surroundings	64	67	51	45	45	46	44	33	dB	54	dB(A)
Extract air	60	66	59	55	56	55	48	36	dB	61	dB(A)
Exhaust air	68	75	71	74	75	74	71	65	dB	80	dB(A)
Total:											
To surroundings	67	70	55	49	48	48	48	36	dB	57	dB(A)

REVERSIBLE HEAT-PUMP THERMOCOOLER HP

Output	Power variant	1V	
	Stepless control		
	No. compressors	1	st
	Refrigerant R410a circuit 1	10.1	kg
		21.09	CO ₂ e (tonnes)
	Min flow	0.85	m³/s
	Max. operating current (400V 3-phase)	23.0	A
	Electrical connection 3 x 400V+N, 50 Hz		

ROTARY HEAT EXCH.

Rotor variant	NE
Rotor diameter	D1

SUMMER CASE

Input	Design outdoor temperature	26.0	°C
	RH outdoor air	50	%
	Supply air temperature	23.0	°C
	Return air temperature	24.0	°C
	Change of humidity in room	0	g/kg
Output	Supply air temp after cooling coil	22.3	°C
	Supply air temp after fan	23.0	°C
	Cooling power	9.6	kW
	Usage rate compressor 14%		
	Available internal cooling load	2.4	kW
	Cooling factor (EER)	12.0	
	Power input	0.8	kW
	Evaporation water	0	l/h

Project	Spa at KSTH-R1
AHU	AHU/RF/01-No Attenuators-Integrated Heat
Size	360-1V 2.03/1.78 m ³ /s

WINTER CASE

Input	Design outdoor temperature	-4.5	°C
	RH outdoor air	100	%
	Requested supply air temp	19.0	°C
	Return air temperature	20.0	°C
	RH return air	30	%
Output	Supply air temperature after rotor	1.2	°C
	Supply air temperature after condenser	18.3	°C
	Supply air temp after fan	19.0	°C
	Exhaust air temperature	-3.4	°C
	Total heating power compressor+rotor	56.1	kW
	COP with compressor at design OAT	7.6	
	COP with compressor at 0°C	9.3	
	COP with compressor + rotor at design OAT	10.2	
	COP with compressor + rotor at 0°C	12.3	
	Power input to compressor	5.5	kW
	Dry Temperature efficiency for rotor (as per EN308)	75.6	%
	Total dry temperature efficiency at design OAT	84.3	%
	excl. compressor electricity (heating)		

RECOMMENDED FUSE

AHU	16A Type C 3x400V+N
Reversible heat-pump	25A Type C 3x400V+N

Project	Spa at KSTH-R1
AHU	AHU/RF/01-No Attenuators-Integrated Heat
Size	360-1V 2.03/1.78 m³/s

Handing side R=Right, L=Left

Product	Product code	Quantity
Outdoor	EMMT-04-360-50-2-04	1
Damper	EMT-01-360	1
1 Fan section	ENF-360-AA-089-00-0	1
Casing model AA-50		
Delivery configuration 21		
Connection kit	ENFT-01-360-AA-089-01-0	1
Filter supply air	ELEF-360-F7	1
F7/ePM1-50%		
2x592x592 L=520-10P, 2x592x287 L=520-10P, 1x287x592 L=520-5P		
U-tube manometer	MIET-FB-01	1
Fan extract air	ELFF-050E-EC01-0345-2-F-M	1
EC-motor with integrated revolution control 3.45 kW Ebm		
Fan fitting	ENFF-360-0501-P	1
Damper	EMT-01-360	1
Over-pressure stop	EMMT-30-01-0	1
2 Rotary heat exch.	EXR-360-AA-D1-NV-00	1
Casing model AA-50		
Delivery configuration N-V		
Rotor wheel	EXRR-360-NE-D1-00	1
Rotor operation	EXRD-360-D1-N-MX-0-00	1
3 Reversible heat-pump ThermoCooler HP	TCH-360-AA-1V-1-40-00	1
Casing model AA-50		
Delivery configuration N-V		
Cooling circuit	ACTR-02-1	10
Cooling tube kit	TCH-R-360-1V-0-N-V	1
Water trap	MIET-CL-04	2
4 Fan section	ENF-360-AA-142-01-0	1
Casing model AA-50		
Delivery configuration 31		
Connection kit	ENFT-01-360-AA-142-01-0	1
Fan supply air	ELFF-050E-EC01-0345-2-F-M	1
EC-motor with integrated revolution control 3.45 kW Ebm		
Fan fitting	ENFF-360-0501-P	1
Filter extract air	ELEF-360-M5	1
M5/ePM10-60%		
2x592x592 L=520-6P, 2x592x287 L=520-6P, 1x287x592 L=520-3P		
U-tube manometer	MIET-FB-01	1
Over-pressure stop	EMMT-30-01-0	1
Control equipment	MSUF-V310-R2-MX	1
El. connection	MSEK-360-14-R2-U-T-U-U	1



Envistar Flex

Material specification detailed

Project

Spa at KSTH-R1

AHU

AHU/RF/01-No Attenuators-Integrated Heat

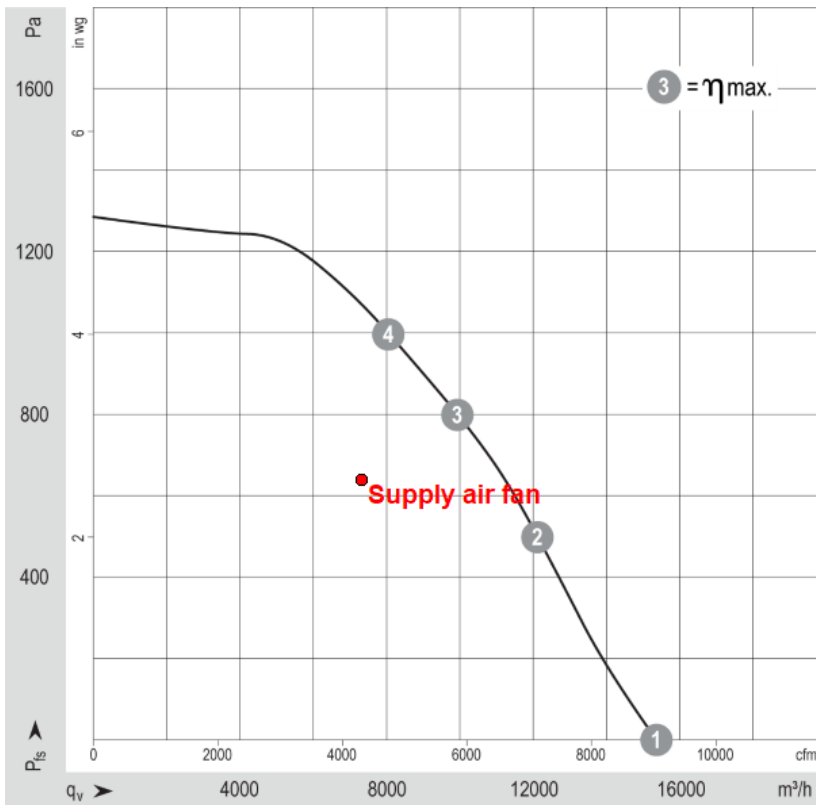
Size

360-1V 2.03/1.78 m³/s



Product	Product code	Quantity
Energy Watch	EWA-01	1
Hand-held terminal standard IP54	HMI-OUT-EN	1
ECO-2 Optimized energy control	STA-02	1
Air flow control SF/EF	STB-06-M	1
Outdoor air damper actuator ON/OFF spring return	STC-01-1	1
Exhaust air damper actuator ON/OFF, spring return	STC-02-1	1
Built-in ThermoCooler HP	STD-14-1	1
Pressure guard, Filter, SA, EA	STG-01-M	1
Fan control at fire	STH-04-1	1
Stop SF / EF		
Modbus TCP/IP and RTU RS485 included as standard		1
Web server in text format by TCP/IP standard		1
App IV Produkt AHU Controls Standard		1

Operating point per fan. 1 of 1 supply air.



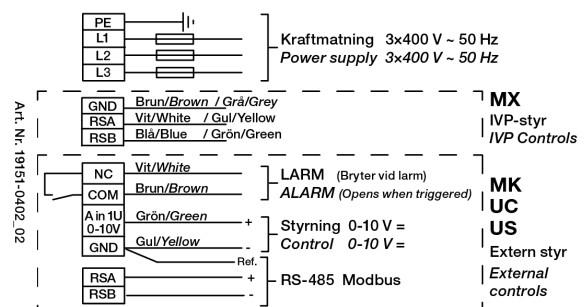
	n rpm	P _{ed} kW	I A	L _{WA} dB(A)
1	1910	1,98	3,09	102
2	1910	2,92	4,49	92
3	1910	3,38	5,19	86
4	1910	3,45	5,30	53

ELFF-050E-EC01-0345-2-F-0
R3G 500-PA23-71
3,45 kW

ebmpapst

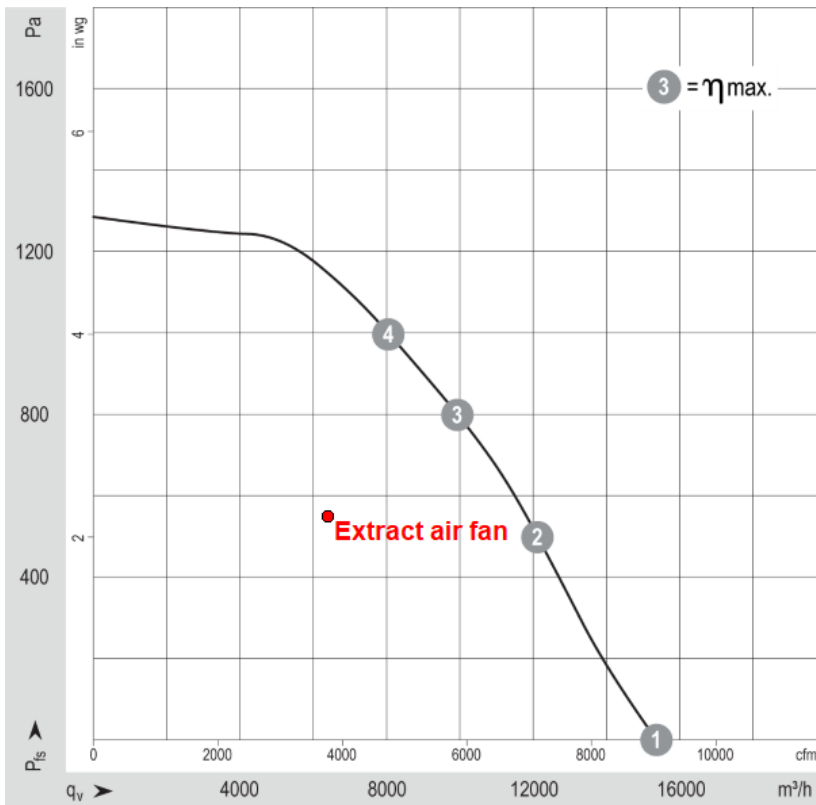
Supply air

Flow	2.03 m³/s
Total static pressure	639 Pa
Fan rpm	1522 r/m
Motor output Power	3.45 kW
Max. rpm	1910 r/m
Fan type	EC500R3G-G2
K-factor for air flow measuring	12.81



INKOPPLING / WIRING
EBM 3x400 V - P8, M3, M5

Operating point per fan. 1 of 1 extract air.



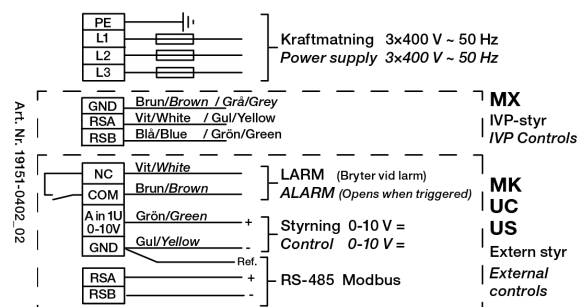
	n rpm	P _{ed} kW	I A	L _{WA} dB(A)
1	1910	1,98	3,09	102
2	1910	2,92	4,49	92
3	1910	3,38	5,19	86
4	1910	3,45	5,30	53

ELFF-050E-EC01-0345-2-F-0
R3G 500-PA23-71
3,45 kW

ebmpapst

Extract air

Flow	1.78 m³/s
Total static pressure	549 Pa
Fan rpm	1385 r/m
Motor output Power	3.45 kW
Max. rpm	1910 r/m
Fan type	EC500R3G-G2
K-factor for air flow measuring	12.81



INKOPPLING / WIRING
EBM 3x400 V - P8, M3, M5

Project

Spa at KSTH-R1

AHU

AHU/RF/01-No Attenuators-Integrated Heat

Size

360-1V 2.03/1.78 m³/s

COMMISSION REGULATION (EU) No 1253/2014



Ecodesign

Type of unit

NRVU-BVU

Fan drive

VSD

Thermal efficiency dry

%

80.5

Min efficiency 2018

%

73

SFPint

W/(m³/s)

537

Efficiency bonus HRS 2018

W/(m³/s)

225

Max SFPint 2018

W/(m³/s)

1025

Ecodesign 2018

Yes

External leakage

%

<1

Internal leakage

%

<1

Carry over without purge sector

%

<4

Carry over with purge sector*

%

<0.1

*Adjusted according to instructions

Energy class filter M5

E

Energy class filter M6

E

Energy class filter F7

A

Energy class filter F8

C

Energy class filter F9

C

Eurovent Energy Efficiency class

A+

f_{s-pref}

0.78