

DESIGN AND ACCESS STATEMENT
INCLUDING HERITAGE STATEMENT

FOR

REMOVAL OF THE EXISTING, AGED, DISFUNCTIONAL, AIR HANDLING UNITS AND REPLACEMENT
WITH NEW AIR HANDLING UNITS OF THE SAME AIR FLOW VOLUME REQUIREMENTS AND
SERVING SAME AREAS

AT

WHATLEY MANOR HOTEL AND SPA, TWATLEY, MALMESBURY, SN16 0RB

1957.21 – AHU - D&A

09. 04. 2026 – ISSUED FOR CLIENT'S COMMENT

30. 04. 2026 – ISSUED FOR PLANNING APPROVAL AND LISTED BUILDING CONSENT

INTRODUCTION

MLDE have been appointed by Mr. Christian de Coulon of Whatley Manor Hotel and Spa to prepare the required documentation and submit an application for Planning Approval and Listed Building Consent for the replacement of four existing, dysfunctional Air Handling Units with four new Air Handling Units of the same required airflow volumes and serving the same areas and replacement of the fifth AHU with new ventilator and centrifugal duct fan in sound insulated casing.

SIGNIFICANCE OF BUILDING and HERITAGE STATEMENT

The NPPF defines the Significance as "The value of a Heritage Asset to this and future generations because of its Heritage Interest. The interest may be architectural, or historic. Significance derives not only from heritage asset's physical presence, but also from its setting" and as such it will be discussed here.

Whatley Manor is an architecturally Significant Grade II Listed Building situated in Brokenborough Parish on the north of the Wiltshire Council and it is Listed under Historic England Entry Number: 1023196.

The building was once a country house, but it is now a hotel. It developed around a C18, farmhouse core, built in coursed rubble and U shaped in plan. The building was extensively extended and altered in 1920s by Septimus Warwick of London, appointed by H C Cox, the owner at the time. Coursed rubble stones and stone dressing to fenestration were introduced to original parts of farmhouse and new parts were built in squared rubble with flush dressed stone quoins, stone chimney stacks and stone tiled roofs. The two and three light, leaded wooden casements and stone mullioned casements with leaded lights are typical for this early C20 period of the development.

The interiors have a number of significant features from this period, particularly in its two drawing rooms with very high quality panelling and Palladian style door sets and a very elegant staircase. Some original Jacobean panels are present in the interior. These panels pre-date even the oldest parts of the building significantly and it can only be concluded that they were brought in from another property.

The original building was arranged around a courtyard approximately orientated Northwest/Southeast. The Northwest end was a main residential part of the original house whilst the Southeast corner consisted of converted stabling running along three sides of adjoining "Stable Yard". Converted stabling originally included a small kitchen adjacent to the dining room of the main building.

The main block of the building, containing older parts of the original farm house, is situated at the centre of the South end protruding substantially forward from the Southwest elevation in relation to the West block. The block is two story high with an attic space. Two chimneys are positioned centrally on the ridge line, one is of dressed stone and the other of rubble, in two steps and with chimney pot. The ridge line drops slightly in height to the South end and the cross gable protrudes forward slightly. There are C19 bay windows on the ground floor, all are mullioned casements in simple dressed stone surrounds, squared and not keyed to the rest of the wall. Two storey bay was added to protruding part of elevation in early C21 renovation when Whatley Manor was again extensively refurbished, added to and altered to create a high quality hotel and spa complex.

The new restaurant on the ground floor, kitchen and accommodation wing were built to the east side of the entrance courtyard in the early C21 redevelopment/refurbishment project. It was designed to reflect the existing group on the Northwest side in terms of scale, character and massing. The original kitchen was removed during this period and a new Orangery was added.

On one side of the Stable Yard, stable buildings were refurbished and converted into offices. At the same time the Health Spa has been built in the position of the former orchard. It is a contemporary building with grass roof. The Spa area incorporates a few smaller parts of refurbished stables on the other side of the stable yard, on the side of carpark and towards gardens, but is mostly built in the early C21. Within the basement of the C21 part of the Spa building is a Plantroom serving the hotel and SPA. External entrance to the Plantroom is through the adjacent external service shaft, situated on south-east part of the building.

The impression of this high quality hotel is one of a conglomeration of buildings developed over many years to form a harmonious entity. In reality, the majority of the buildings have developed either in early C20 or early C21.

EXISTING AHUs AND PROPOSED REPLACEMENT WORKS

Existing AHUs are situated in the basement Plantroom area with three extract cowls placed in the adjacent external service shaft close to the greenhouses in which the gardeners of the hotel nurture the plants and not far away from the other service areas of the hotel, containing generators, sheds, storage area and to the south of the shaft, the sewage treatment plant.

Nearest part of the neighbouring property is situated some 75.5m away whilst the nearest windows of a hotel bedroom are in plan terms some 37.5m away, but on the first floor and separated by the entire SPA and Swimming pool areas, which rise over the service shaft.

The existing Air Handling Units which are subject of this application serve Pool Hall, Changing Room, SPA Lounge/Bar, Tepidarium and Plantroom itself. The AHUs have been installed during 2002 refurbishment of the hotel when the pool and SPA extension was added. They have served the proposed areas for 24 years and have now reached the end of their serviceable life thus need to be replaced.

Therefore, it is proposed that all five of existing AHUs are removed and replaced with four new AHU by IV Produkt and a new ventilator and centrifugal duct fan in sound insulated casing by Blauberg. The ventilator will be installed within the Plantroom itself replacing the small fifth AHU which currently serves the Plantroom. Technical details of all items proposed for installation are enclosed in Appendix B of this document.

The SPA refurbishment will also be taking place in 2027 as consented under PL/2026/00130 however, the needs of the refurbished SPA in terms of the areas that need to be served by AHU and the required air flow volumes will remain the same.

E3, the project M&E Engineers have reviewed the information held by Whatley Manor Hotel for the existing AHUs and unfortunately none of the available documentation includes noise data. Therefore, the Applicant has appointed Ion Acoustics to carry out noise assessment of the impact of new AHU end extract plant, starting with a baseline noise survey to determine the existing noise levels, particularly background sound levels.

mark lovell design engineers

This was then used to determine plant noise emissions limits in line with BS414:2014, taking note of Wiltshire Council's standard guidance.

Acoustic Report A2440 R01 by Ion Acoustics is included within this Planning Submission, demonstrating that the proposed plant will be quieter than the existing plant and therefore there is no significant noise impact on the scheme.

In visual terms three cowls will be visible over the shaft wall and the weld mesh grating, looking very similar to the existing. The angles in which some cowls will be turned will vary a little from the existing in order to ensure that no cowl elements protrude over existing shaft wall and that the access area to the existing lift remains the same.

TEMPORARY WORKS

In order to enable removal of the existing AHUs and installation of the new ones as part of the existing Plantroom Elevation the basement level of the service shaft will need to be temporarily removed and reinstated as detailed in our document 1957.21-AHU-Scheme 1. The entire Plantroom and service shaft are C21 blockwork and cement board below the steel floor beams. Therefore the steel beams are a logical point from which to temporarily remove the basement level elevation and reinstate it upon the completion of the work with the alterations required to suit new size of penetrations required to connect the cowls with the units in the basement.

RELEVANT PLANNING POLICY CONTEXT AND EVALUATION AGAINST RELEVANT POLICIES

National Planning Policy Framework (NPPF)
National Planning Practice Guidance (NPPG)
Wiltshire Council's Core Strategy

The proposal entails virtually like for like replacement of the existing AHUs which have reached the end of their serviceable life, situated in basement and an external service shaft of the C21 SPA area. Therefore, items such as the Principle of development, Impact on the character and appearance of the area, Impact on amenity of neighbouring property, Impact of the Proposal on the Significance of the Historic Asset, Impact on flooding, Impact on parking provision and highway safety have already been established for last 24 years.

Impact on Ecology is also not applicable on this application, due to its location and nature of the existing development.

The Impact on noise is relevant and the proposal would improve the existing impact of noise as described in the Acoustic Report A2440 R01 by Ion Acoustics.

The proposal would enable Whatley Manor to continue to provide this high quality amenity to the local community and the guests, which is clearly highly desirable and of Public Benefit.

CONCLUSION

Whatley Manor is an architecturally Significant building within the category of Grade II Listed Buildings, situated in Brokenborough Parish on the north of Wiltshire Council.

The Hotel has a Health SPA facility and it's M&E services are situated in the Plantroom and the adjacent, external Service Shaft all built in the position of the former orchard in the early C21 redevelopment/refurbishment project.

The existing SPA has provided a unique leisure offer to all the hotel guests and local users for twenty four years and differentiated itself within the leisure market as a cutting edge experience.

It is proposed that four of existing AHUs, serving Pool Hall, Changing Room, SPA Lounge/Bar and Tepidarium are removed and replaced with four new AHUs by IV Produkt and that the fifth, small AHU serving the Plantroom is replaced with a new ventilator and centrifugal duct fan in sound insulated casing by Blauberg. The new AHUs will be serving the same areas and have the same required air flow volumes, they will be quieter than the existing plant and therefore will not have significant noise impact on the scheme.

It is considered that the replacement of existing AHUs is in line with the guidance given in NPPF. The Applicant hopes that the proposal will gain approval of the Local Planning Authority.

APPENDIX A

PHOTOGRAPHS



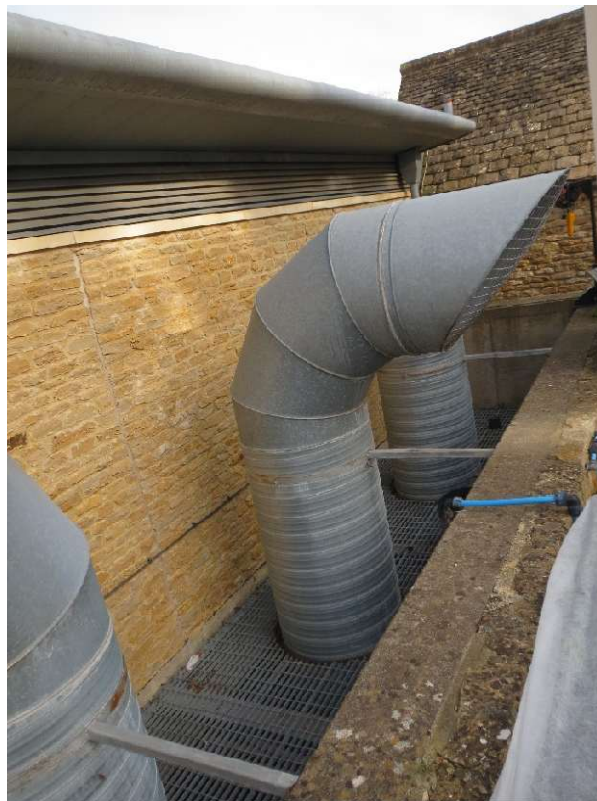
PH01



PH02



PH03



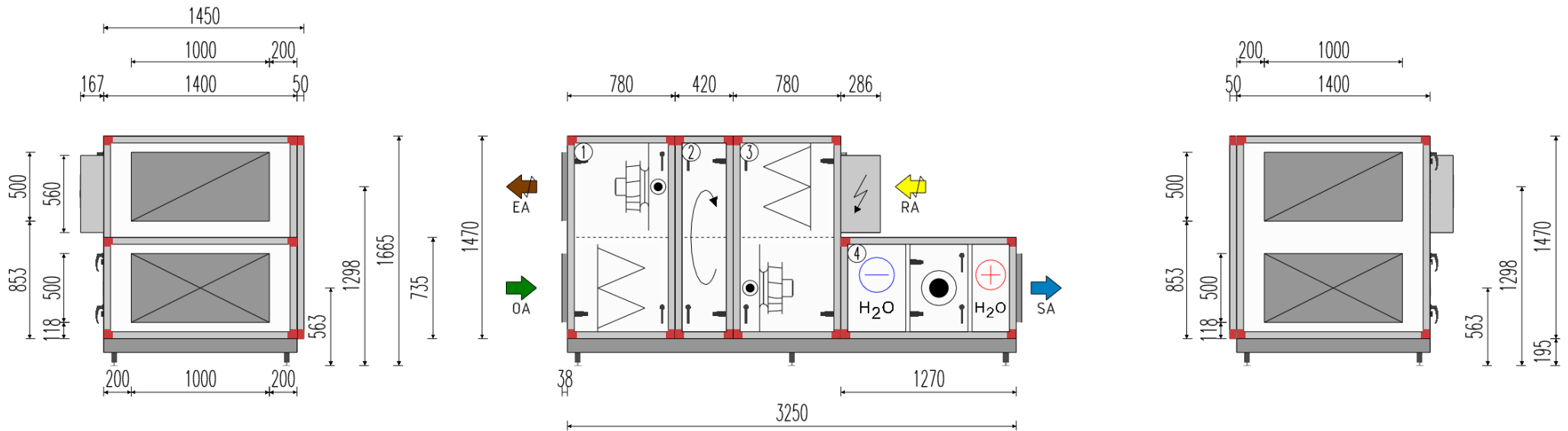
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APPENDIX B

Technical Details of proposed AHU and Ventilator

Total for AHU

Width	1450 mm	1) 208 kg
Height	1665 mm	2) 167 kg
Length	3250 mm	3) 202 kg
Weight	839 kg	4) 222 kg



Note! Consider the required space needed to open inspection doors and for plumbing. Additional space for pipes water coil 100 mm. Access door with largest radius 730 mm is in module 1;3. Additional space for handle inspectiondoor 60 mm. Additional space for connection frame 40 mm.



Envistar Flex

Dimension drawing

Project name

Whatley Manor Hotel

Name of AHU

AHU1 Lounge Bar

Size

190 1.50/1.50 m³/s

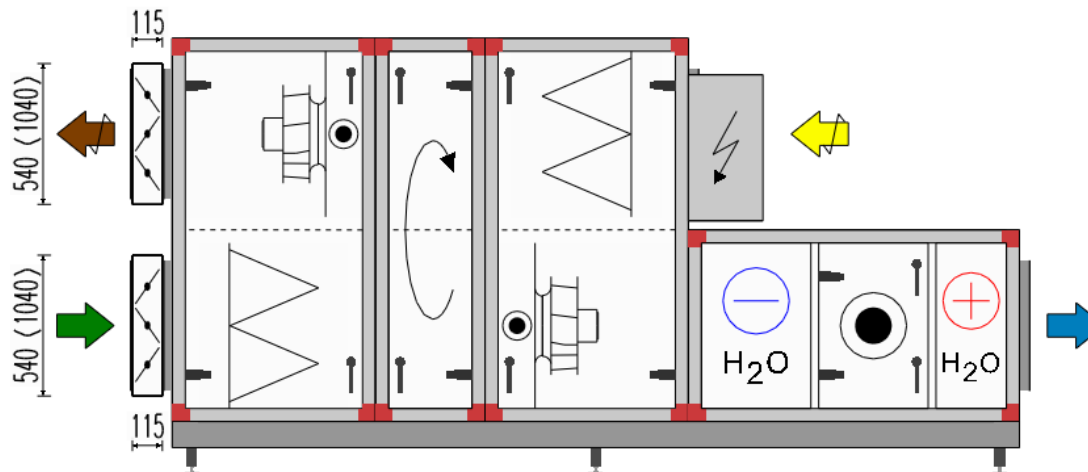


Total for AHU

Width 1450 mm
Height 1665 mm
Length 3250 mm
Weight 839 kg

Duct accessories

Damper 9 kg



Connection size: AHU 1000x500 mm.

Our reference: Darren Fereday (07854) 887063

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Calculated in version 305.28.3.0

Project name	Whatley Manor Hotel
Name of AHU	AHU1 Lounge Bar
Size	190 1.50/1.50 m³/s

Specific fan power

Output	Total for AHU	2.20	kW/(m³/s)
	Ecodesign 2018-Approved		

Dimension and weight

Width	1,450	mm
Height	1,665	mm
Length	3,250	mm
Weight	839	kg

Design winter outdoor temperature	-4.0	°C
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CASING MODEL, EN1886

AN-50

BASIC DATA

		<i>Supply air</i>	<i>Extract air</i>	
Input	Flow	1.50	1.50	m³/s
	External pressure drop	464	407	Pa
	Distribution of external pressure drop			
	Outdoor air/Supply air Extract air/Exhaust air	(0/464)	(407/0)	Pa
Output	Cross sectional velocity	1.80	1.80	m/s
	Damper	5	5	Pa
	Filter F7/ePM1-60% / M5/ePM10-60%	112	87	Pa
	Initial pressure drop	(62)	(37)	Pa
	Final press. drop	(162)	(137)	Pa
	Rotary heat exchanger	120	127	Pa
	Air cooler water (dry coil)	185		Pa
	Air heater, liquid	23		Pa
	Built-in losses	36	36	Pa
	Total internal pressure	481	255	Pa

Fans

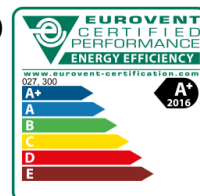
		<i>Supply air</i>	<i>Extract air</i>	
Output	Total static pressure	945	662	Pa
	Fan rpm	2,343	2,089	r/m
	Total efficiency	69.0	68.4	%
	Fan power at dim press	2.06	1.46	kW
	Fan power clean filter	1.95	1.35	kW
	Motor output Power	2.50	2.50	kW
	Motor current at 400V, 3-fase	4.0	4.0	A
	Max. rpm	2,500	2,500	r/m
	Capacity reserve	18	42	%
	Temperature increase	1.14	0.81	°C
	SFPint	307	293	W/(m³/s)
	Fan type	EC400ZBLU-G1	EC400ZBLU-G1	
	K-factor for air flow measuring	20.00	20.00	
	Weight fan unit	27	27	kg
	Maximum air temperature in the event of fire 60 mins	+70°C	+70°C	
	See fan curve for rotation speed (rpm)			



Envistar Flex

Technical data

2 (4)



Project name
Name of AHU
Size

Whatley Manor Hotel
AHU1 Lounge Bar
190 1.50/1.50 m³/s

Sound data (sound power EN13053)

Frequency band	63	125	250	500	1k	2k	4k	8k	Total		
Supply air:											
To surroundings	67	69	63	52	47	44	39	31	dB	58	dB(A)
Outdoor air	65	68	67	67	58	54	44	38	dB	66	dB(A)
Supply air	71	76	81	77	74	70	64	61	dB	79	dB(A)
Extract air:											
To surroundings	65	70	56	49	44	41	36	29	dB	56	dB(A)
Extract air	66	68	66	63	55	51	42	37	dB	63	dB(A)
Exhaust air	70	79	77	78	76	72	67	65	dB	80	dB(A)
Total:											
To surroundings	69	73	64	54	49	46	41	33	dB	60	dB(A)

ROTARY HEAT EXCHANGER

Rotor variant		R30-25-N	
Rotor diameter		D1	
Winter	Input	Design outdoor temperature	-4.0 °C
		RH outdoor air	95 %
		Return air temperature	21.0 °C
		RH return air	60 %
Output		Supply air temp. after exchanger	16.1 °C
		Temperature efficiency dry (EN308)	80.6 %
		Temperature efficiency dry at balanced flows 80.6%	
		Exhaust air temperature	1.0 °C
Summer	Input	Design outdoor temperature	30.2 °C
		RH outdoor air	40 %
		Return air temperature	24.0 °C
		RH return air	60 %
Output		Supply air temp. after exchanger	25.2 °C
		Relative humidity supply air	53.1 %
		Temperature efficiency dry (EN308)	80.6 %

Project name	Whatley Manor Hotel
Name of AHU	AHU1 Lounge Bar
Size	190 1.50/1.50 m³/s

AIR HEATER, LIQUID

Input	Air temperature in	16.1	°C
	Requested air temp out	25.0	°C
Output	Liquid temp in	50.0	°C
	Liquid temp out requested	40.0	°C
	Air temperature out	25.0	°C
	Air speed	2.33	m/s
	Heating power	16.1	kW
	Liquid flow	0.31	l/s
	Pressure drop liquid	29.8	kPa
	Power variant	01	
	Fin pitch	2.0	mm
	Tube connection	25	
	Internal volume	4	l
	Primary side with 2-way valve		
	Liquid temp in	50.0	°C
	Liquid temp out	37.6	°C
	Liquid flow	0.31	l/s
	Primary side with 3-way valve		
	Liquid temp in	50.0	°C
	Liquid temp out	40.0	°C
	Liquid flow	0.38	l/s

AIR COOLER WATER

Input	Air temperature in	25.2	°C
	Relative humidity in	53	%
	Temperature out requested	12.0	°C
	Liquid temp in	8.0	°C
Output	Liquid temp out requested	14.0	°C
	Temperature out obtained	12.0	°C
	Relative humidity out	99	%
	Air speed	2.35	m/s
	Liquid temp out	15.5	°C
	Liquid flow	1.08	l/s
	Liquid velocity	0.7	m/s
	Pressure drop liquid	12.2	kPa
	Power variant	08	
	Obtained cooling power	33.5	kW
	Cooling power incl cooling recovery	42.4	kW
	Condensation	15.5	l/h
	Pipe connection side	Access side	
	Coupling	Long	
	Fin pitch	2.0	mm
	Tube connection	32	
	Internal volume	23	l



Envistar Flex

Technical data

4 (4)



Project name
Name of AHU
Size

Whatley Manor Hotel
AHU1 Lounge Bar
190 1.50/1.50 m³/s

RECOMMENDED FUSE

AHU

16A Type C 3x400V+N

Project name Whatley Manor Hotel
Name of AHU AHU1 Lounge Bar
Size 190 1.50/1.50 m³/s

COMMISSION REGULATION (EU) No 1253/2014



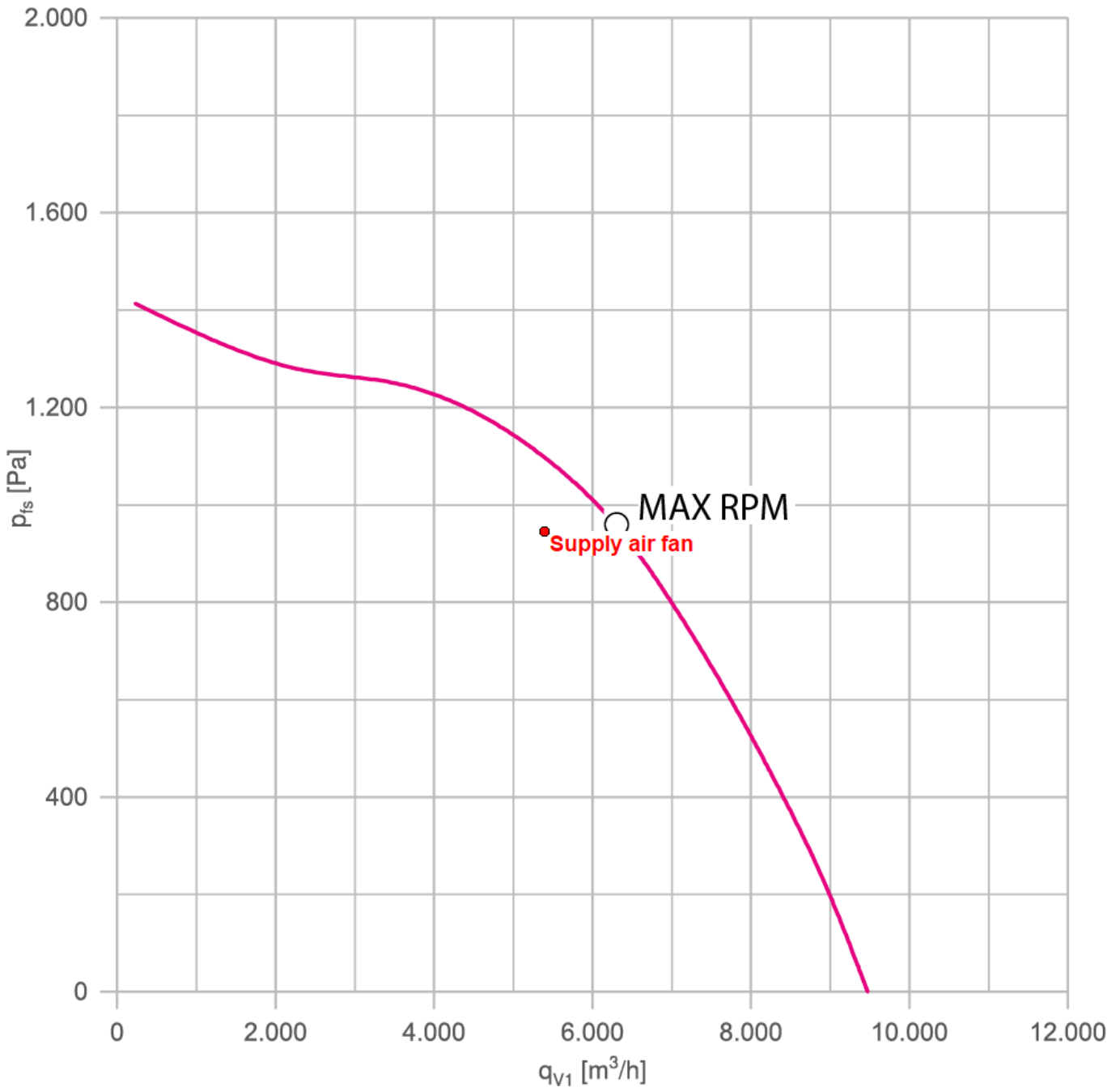
Ecodesign

Type of unit	NRVU-BVU	
Fan drive	VSD	
Thermal efficiency dry	80.6	%
Min efficiency 2018	73	%
SFPint	600	W/(m³/s)
Efficiency bonus HRS 2018	228	W/(m³/s)
Max SFPint 2018	1103	W/(m³/s)
Ecodesign 2018	Yes	
Casing Leakage class	L1(M)/L2(R)	
EATR	3.59	%
OACF	1.023	
Energy class filter ePM1-60%	A	
Energy class filter ePM1-50%	B	
Energy class filter ePM1-70%	C	
Energy class filter ePM1-85%	C	
Energy class filter ePM2.5-50%	E	
Energy class filter ePM10-60%	E	
Eurovent Energy Efficiency class	A+	
f_{s-pref}	0.83	
Reference city	Bristol	-2.1°C
SFP _E (Design load conditions filter, dry coils & heat exchanger)	2.35	kW/(m³/s)

Project name
Name of AHU
Size

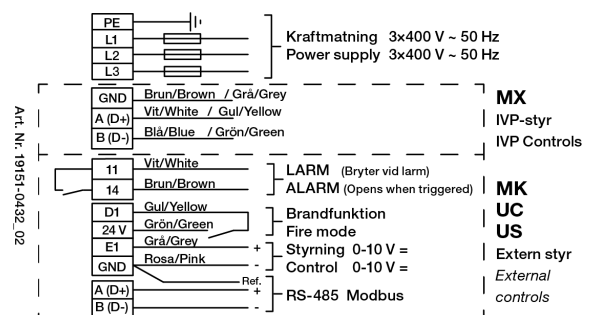
Whatley Manor Hotel
AHU1 Lounge Bar
190 1.50/1.50 m³/s

Operating point per fan. 1 of 1 supply air.



Supply air

Flow 1.50 m³/s
Total static pressure 945 Pa
Fan rpm 2343 r/m
Motor output Power 2.50 kW
Max. rpm 2500 r/m
Fan type EC400ZBLU-G1
K-factor for air flow measuring 20.00

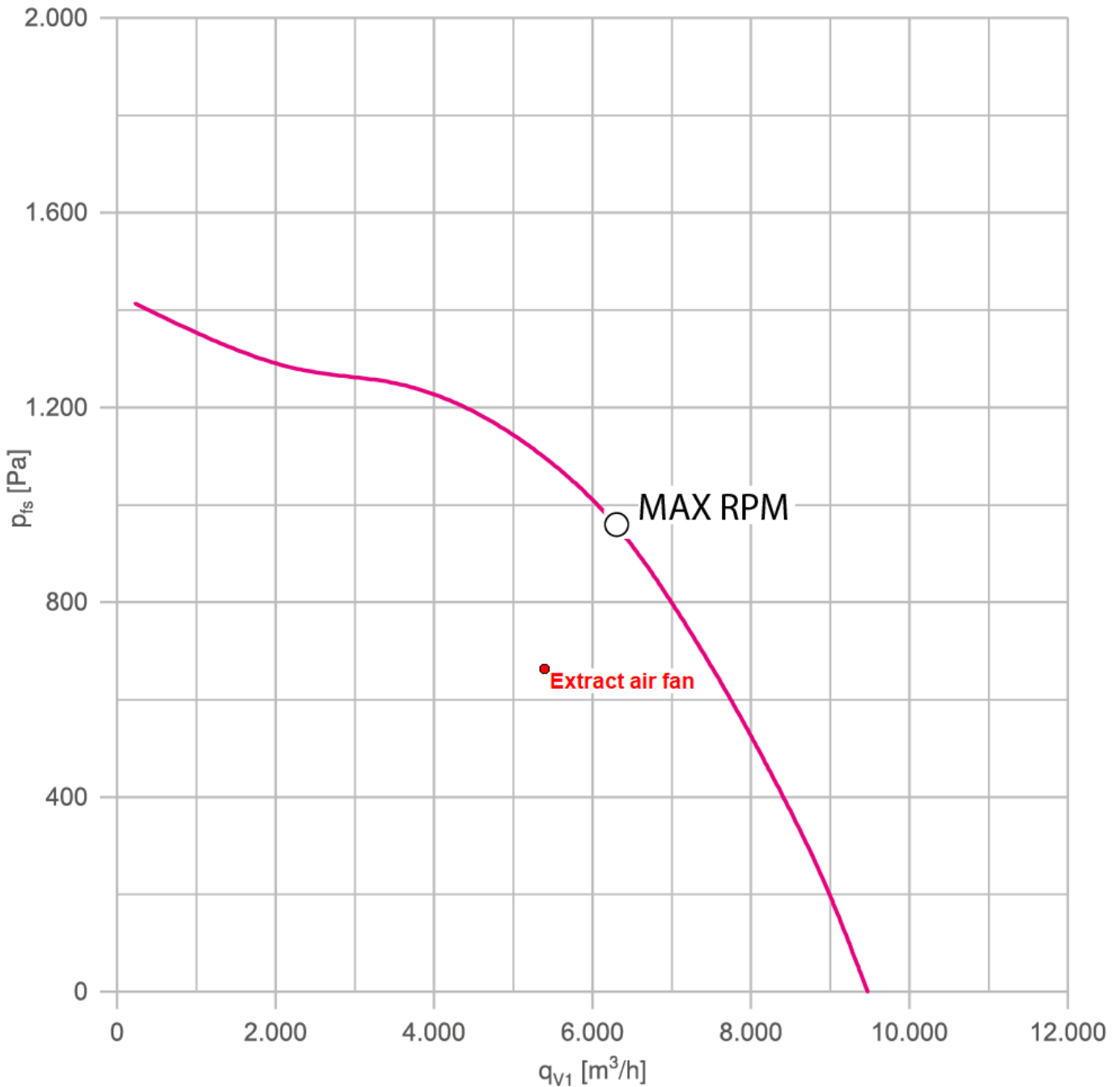


INKOPPLING / WIRING
Ziehl 3x400 V - DC, DG

Project name
Name of AHU
Size

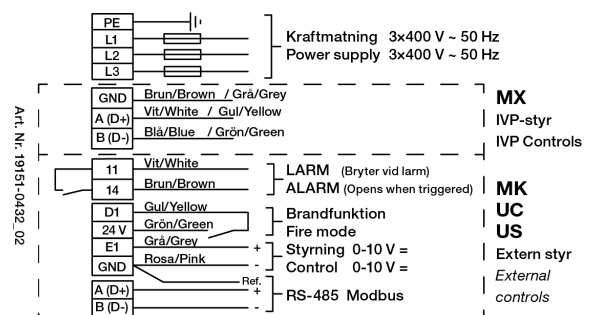
Whatley Manor Hotel
AHU1 Lounge Bar
190 1.50/1.50 m³/s

Operating point per fan. 1 of 1 extract air.



Extract air

Flow 1.50 m³/s
Total static pressure 662 Pa
Fan rpm 2089 r/m
Motor output Power 2.50 kW
Max. rpm 2500 r/m
Fan type EC400ZBLU-G1
K-factor for air flow measuring 20.00



INKOPPLING / WIRING
Ziehl 3x400 V - DC, DG



Envistar Flex

Dimension drawing

Project name

Whatley Manor Hotel

Name of AHU

AHU2 Changing Rooms rev 220126

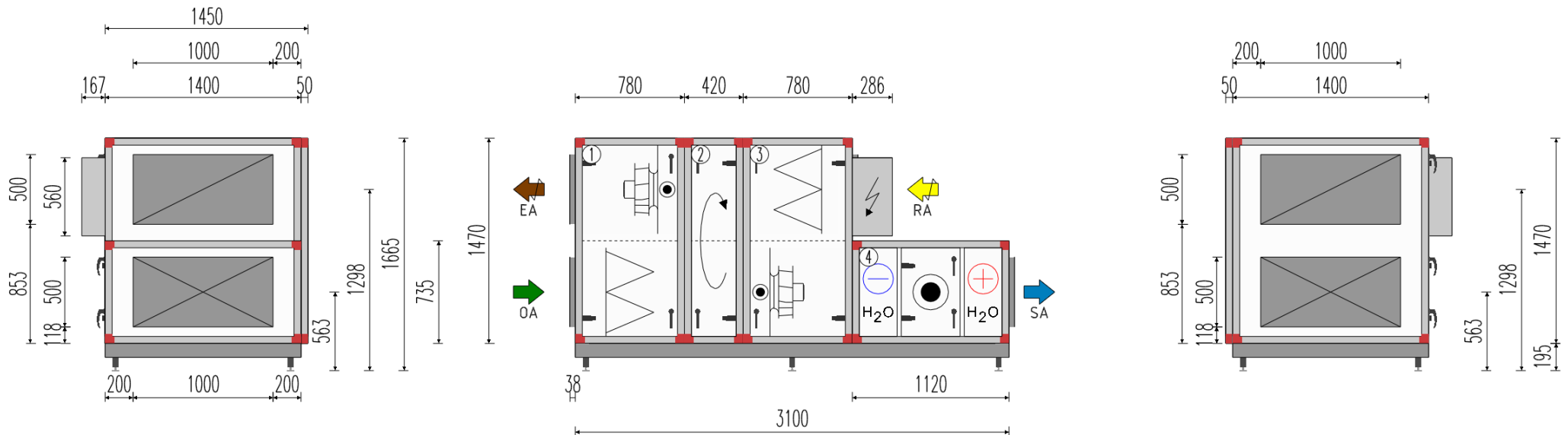
Size

190 1.57/1.57 m³/s



Total for AHU

Width	1450 mm	1) 208 kg
Height	1665 mm	2) 166 kg
Length	3100 mm	3) 202 kg
Weight	796 kg	4) 180 kg



Note! Consider the required space needed to open inspection doors and for plumbing. Additional space for pipes water coil 100 mm. Access door with largest radius 730 mm is in module 1;3. Additional space for handle inspection door 60 mm. Additional space for connection frame 40 mm.

Our reference: Darren Fereday (07854) 887063

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Calculated in version 305.28.3.0



Air handling with the focus on LCC

Envistar Flex

Dimension drawing

Project name

Whatley Manor Hotel

Name of AHU

AHU2 Changing Rooms rev 220126

Size

190 1.57/1.57 m³/s

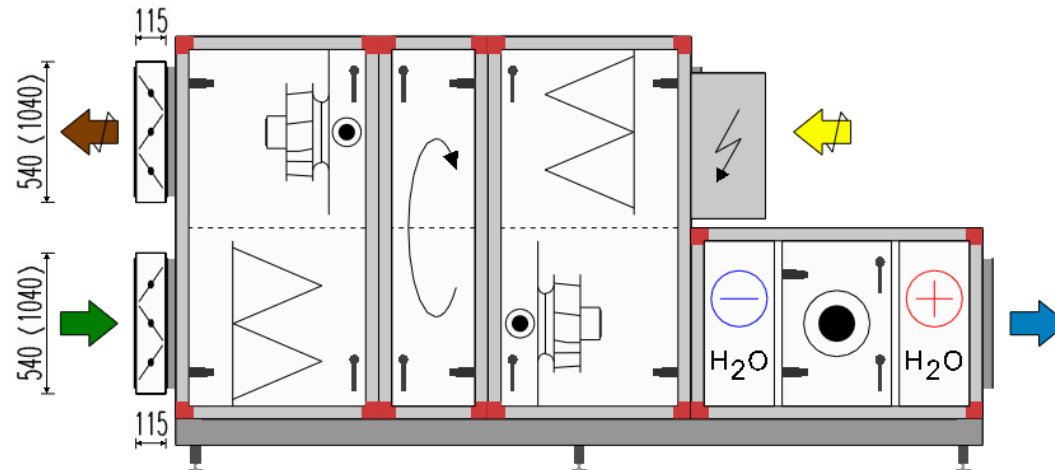


Total for AHU

Width 1450 mm
Height 1665 mm
Length 3100 mm
Weight 796 kg

Duct accessories

Damper 9 kg



Connection size: AHU 1000x500 mm.

Our reference: Darren Fereday (07854) 887063

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IV Produkt Designer G3 Version 305.28.3.0 11/25/2025

Calculated in version 305.28.3.0

Project name
Name of AHU
Size

Whatley Manor Hotel
AHU2 Changing Rooms rev 220126
190 1.57/1.57 m³/s

Specific fan power

Output	Total for AHU	1.90	kW/(m³/s)
	Ecodesign 2018-Approved		

Dimension and weight

Width	1,450	mm
Height	1,665	mm
Length	3,100	mm
Weight	796	kg

Design winter outdoor temperature

-4.0 °C

CASING MODEL, EN1886

AN-50

BASIC DATA

		Supply air	Extract air	
Input	Flow	1.57	1.57	m³/s
	External pressure drop	250	468	Pa
	Distribution of external pressure drop			
	Outdoor air/Supply air Extract air/Exhaust air	(0/250)	(468/0)	Pa
Output	Cross sectional velocity	1.88	1.88	m/s
	Damper	5	5	Pa
	Filter F7/ePM1-60% / M5/ePM10-60%	116	89	Pa
	Initial pressure drop	(66)	(39)	Pa
	Final press. drop	(166)	(139)	Pa
	Rotary heat exchanger	126	133	Pa
	Air cooler water (dry coil)	101		Pa
	Air heater, liquid	25		Pa
	Built-in losses	38	38	Pa
	Total internal pressure	411	265	Pa

Fans

		Supply air	Extract air	
Output	Total static pressure	661	733	Pa
	Fan rpm	2,130	2,193	r/m
	Total efficiency	68.1	68.5	%
	Fan power at dim press	1.53	1.69	kW
	Fan power clean filter	1.41	1.57	kW
	Motor output Power	2.50	2.50	kW
	Motor current at 400V, 3-fase	4.0	4.0	A
	Max. rpm	2,500	2,500	r/m
	Capacity reserve	38	33	%
	Temperature increase	0.81	0.90	°C
	SFPint	325	306	W/(m³/s)
	Fan type	EC400ZBLU-G1	EC400ZBLU-G1	
	K-factor for air flow measuring	20.00	20.00	
	Weight fan unit	27	27	kg
	Maximum air temperature in the event of fire 60 mins	+70°C	+70°C	
	See fan curve for rotation speed (rpm)			

Project name
Name of AHU
Size

Whatley Manor Hotel
AHU2 Changing Rooms rev 220126
190 1.57/1.57 m³/s

Sound data (sound power EN13053)

Frequency band	63	125	250	500	1k	2k	4k	8k	Total		
Supply air:	/										
To surroundings	67	70	57	50	45	41	37	31	dB	56	dB(A)
Outdoor air	68	69	66	64	56	51	43	39	dB	64	dB(A)
Supply air	71	77	75	75	72	67	62	61	dB	77	dB(A)
Extract air:											
To surroundings	66	69	59	50	45	42	37	31	dB	56	dB(A)
Extract air	66	67	66	65	57	52	44	39	dB	65	dB(A)
Exhaust air	71	78	80	79	77	73	68	67	dB	82	dB(A)
Total:											
To surroundings	70	73	61	53	48	45	40	34	dB	59	dB(A)

ROTARY HEAT EXCHANGER

	Rotor variant	R3E-25-E	
	Rotor diameter	D1	
Winter			
Input	Design outdoor temperature	-4.0	°C
	RH outdoor air	95	%
	Return air temperature	23.0	°C
	RH return air	55	%
Output	Supply air temp. after exchanger	17.6	°C
	Temperature efficiency dry (EN308)	80.0	%
	Temperature efficiency dry at balanced flows 80.0%		
	Exhaust air temperature	1.5	°C
Summer			
Input	Design outdoor temperature	30.2	°C
	RH outdoor air	40	%
	Return air temperature	24.0	°C
	RH return air	60	%
Output	Supply air temp. after exchanger	25.2	°C
	Relative humidity supply air	53.0	%
	Temperature efficiency dry (EN308)	80.0	%

Project name	Whatley Manor Hotel
Name of AHU	AHU2 Changing Rooms rev 220126
Size	190 1.57/1.57 m³/s

AIR HEATER, LIQUID

Input	Air temperature in	17.6	°C
	Requested air temp out	23.0	°C
	Liquid temp in	50.0	°C
	Liquid temp out requested	40.0	°C
Output	Air temperature out	23.0	°C
	Air speed	2.43	m/s
	Heating power	10.2	kW
	Liquid flow	0.12	l/s
	Pressure drop liquid	5.1	kPa
	Power variant	01	
	Fin pitch	2.0	mm
	Tube connection	25	
	Internal volume	4	l
	Primary side with 2-way valve		
	Liquid temp in	50.0	°C
	Liquid temp out	28.8	°C
	Liquid flow	0.12	l/s
	Primary side with 3-way valve		
	Liquid temp in	50.0	°C
	Liquid temp out	40.0	°C
	Liquid flow	0.25	l/s

AIR COOLER WATER

Input	Air temperature in	25.2	°C
	Relative humidity in	53	%
	Temperature out requested	16.0	°C
	Liquid temp in	8.0	°C
Output	Liquid temp out requested	14.0	°C
	Temperature out obtained	16.0	°C
	Relative humidity out	85	%
	Air speed	2.48	m/s
	Liquid temp out	16.7	°C
	Liquid flow	0.62	l/s
	Liquid velocity	0.6	m/s
	Pressure drop liquid	7.3	kPa
	Power variant	04	
	Obtained cooling power	22.6	kW
	Cooling power incl cooling recovery	31.8	kW
	Condensation	8.0	l/h
	Pipe connection side	Access side	
	Coupling	Long	
	Fin pitch	2.0	mm
	Tube connection	32	
	Internal volume	12	l



Envistar Flex

Technical data

4 (4)



Project name
Name of AHU
Size

Whatley Manor Hotel
AHU2 Changing Rooms rev 220126
190 1.57/1.57 m³/s

RECOMMENDED FUSE

AHU

16A Type C 3x400V+N

Project name
Name of AHU
Size

Whatley Manor Hotel
AHU2 Changing Rooms rev 220126
190 1.57/1.57 m³/s

COMMISSION REGULATION (EU) No 1253/2014



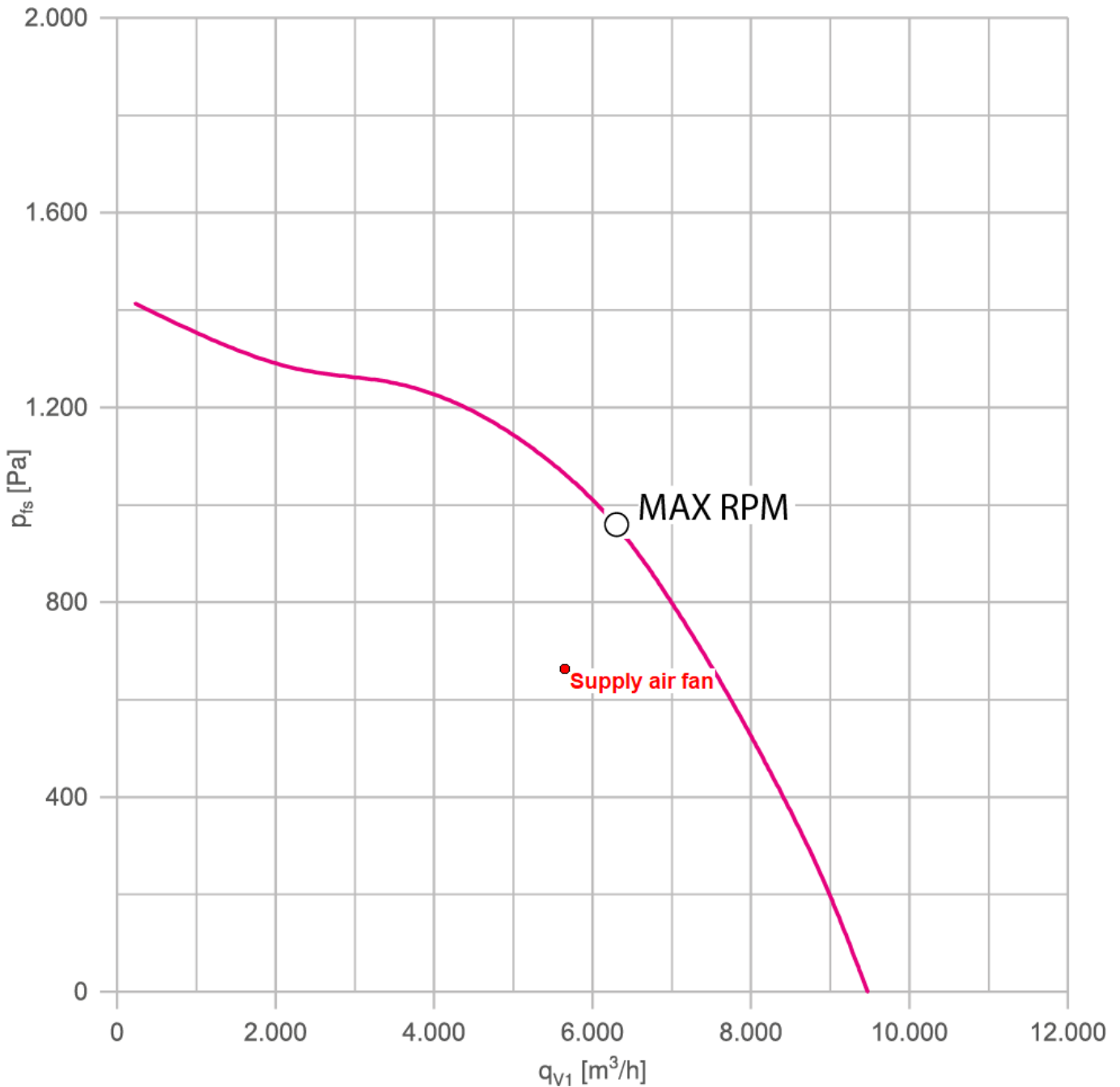
Ecodesign

Type of unit	NRVU-BVU	
Fan drive	VSD	
Thermal efficiency dry	80.0	%
Min efficiency 2018	73	%
SFP _{int}	631	W/(m ³ /s)
Efficiency bonus HRS 2018	210	W/(m ³ /s)
Max SFP _{int} 2018	1075	W/(m ³ /s)
Ecodesign 2018	Yes	
Casing Leakage class	L1(M)/L2(R)	
EATR	3.43	%
OACF	1.024	
Energy class filter ePM1-60%	A	
Energy class filter ePM1-50%	B	
Energy class filter ePM1-70%	C	
Energy class filter ePM1-85%	C	
Energy class filter ePM2.5-50%	E	
Energy class filter ePM10-60%	E	
Eurovent Energy Efficiency class	A+	
f_{s-pref}	0.84	
Reference city	Bristol	-2.1°C
SFP _E (Design load conditions filter, dry coils & heat exchanger)	2.05	kW/(m ³ /s)

Project name
Name of AHU
Size

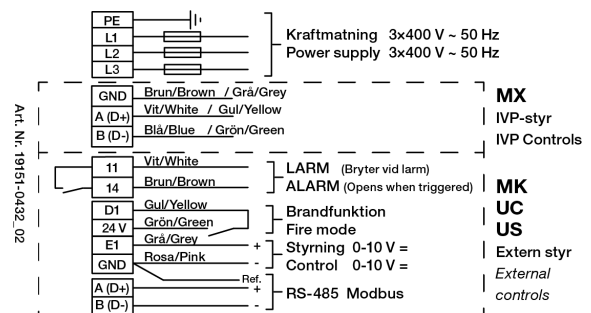
Whatley Manor Hotel
AHU2 Changing Rooms rev 220126
190 1.57/1.57 m³/s

Operating point per fan. 1 of 1 supply air.



Supply air

Flow 1.57 m³/s
Total static pressure 661 Pa
Fan rpm 2130 r/m
Motor output Power 2.50 kW
Max. rpm 2500 r/m
Fan type EC400ZBLU-G1
K-factor for air flow measuring 20.00

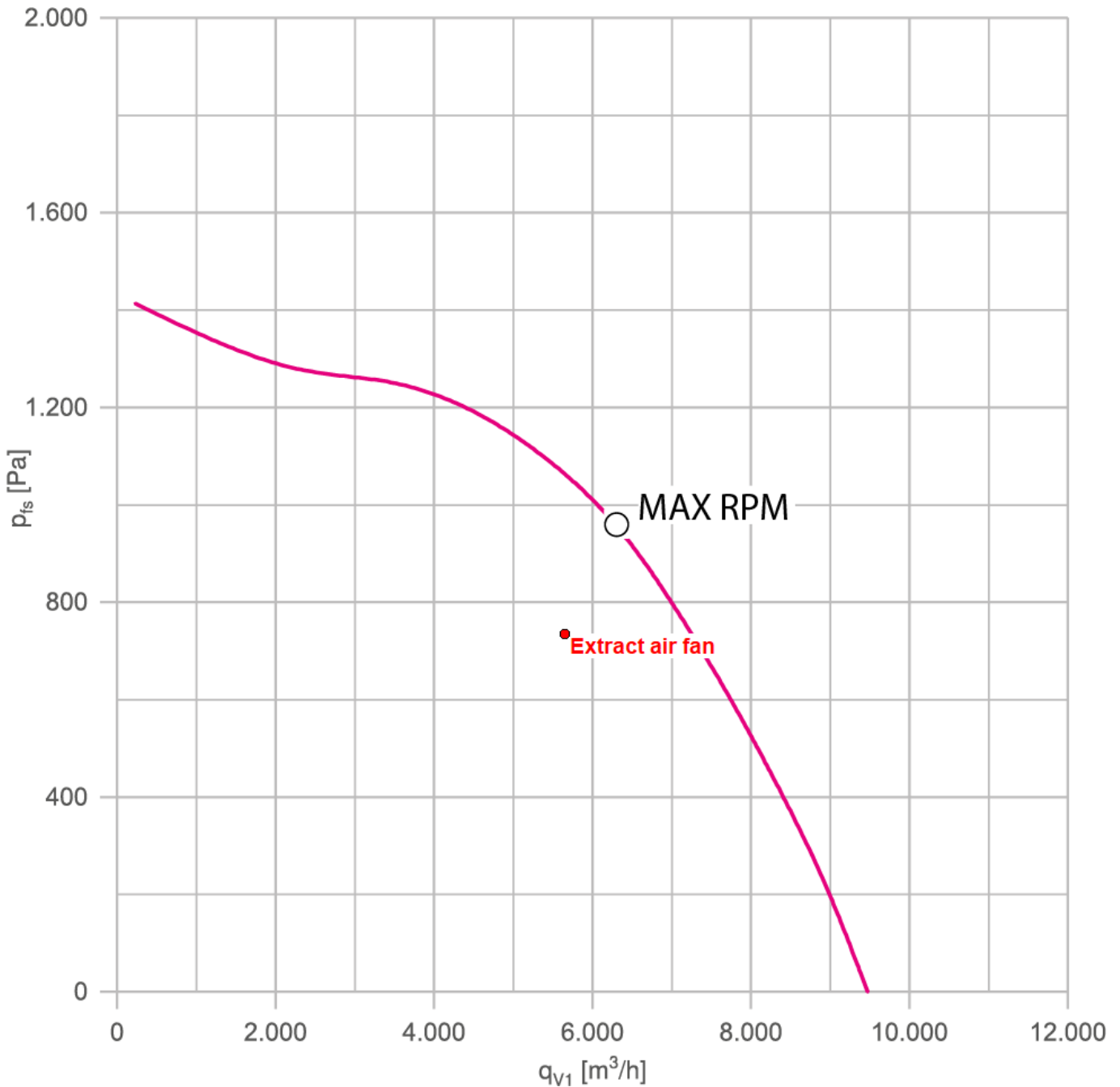


INKOPPLING / WIRING
Ziehl 3x400 V - DC, DG

Project name
Name of AHU
Size

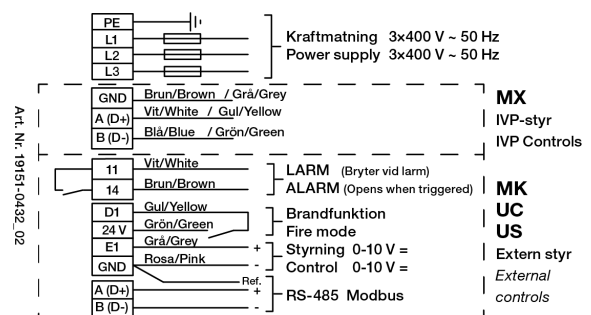
Whatley Manor Hotel
AHU2 Changing Rooms rev 220126
190 1.57/1.57 m³/s

Operating point per fan. 1 of 1 extract air.



Extract air

Flow 1.57 m³/s
Total static pressure 733 Pa
Fan rpm 2193 r/m
Motor output Power 2.50 kW
Max. rpm 2500 r/m
Fan type EC400ZBLU-G1
K-factor for air flow measuring 20.00



INKOPPLING / WIRING
Ziehl 3x400 V - DC, DG

Project name

TQS-DIM

Name of AHU

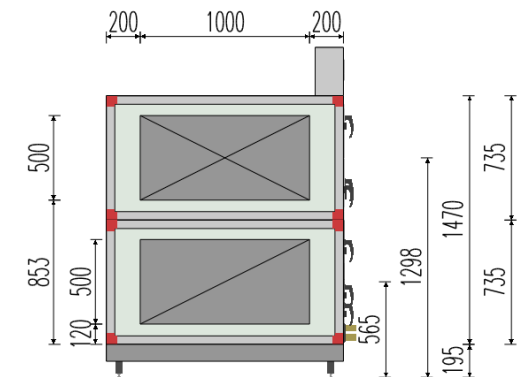
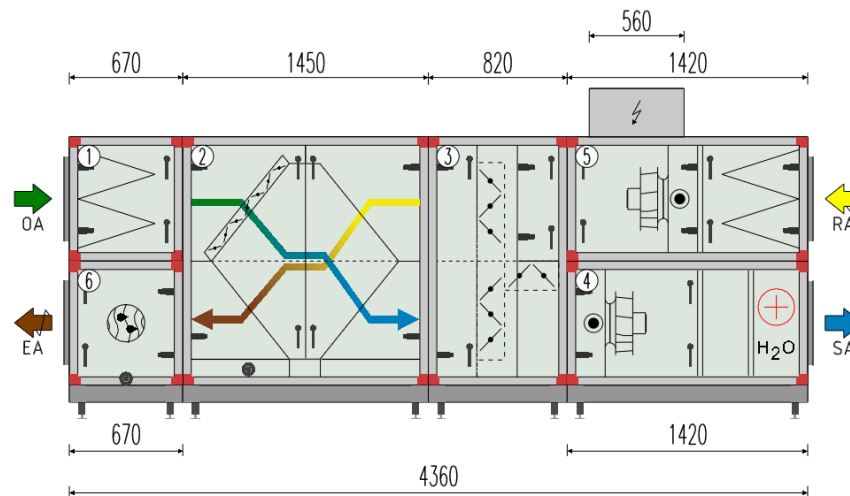
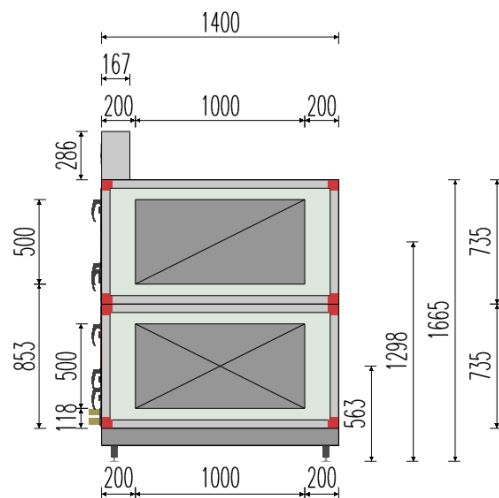
AHU3 P HALL - 260115

Size

190 1,62/1,70 m³/s

Total for AHU

Width	1400 mm	1) 80 kg	5) 181 kg
Height	1665 mm	2) 337 kg	6) 108 kg
Length	4360 mm	3) 153 kg	
Weight	1158 kg	4) 219 kg	



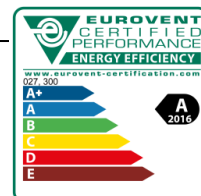
OBS, aggregatet levereras i tvåplansutförande.

Note! Consider the required space needed to open inspection doors and for plumbing. Additional space for pipes water coil 100 mm. Access door with largest radius 770 mm is in module 4;5;6. Additional space for handle inspectiondoor 60 mm. Additional space for connection frame 40 mm. Green colored unit parts delivered with ThermoLine casing in class T2.



FlexoPool

Material specification detailed



Project name TQS-DIM
Name of AHU AHU3 P HALL - 260115
Size 190 1,62/1,70 m³/s

Handing side R=Right, L=Left

Product	Product code	Quantity
FlexoPool	PXA-01-B-190-00	1
Support	BSF-A2-A10-1-00-1400-10-1450	1
Support	BSF-A2-A10-1-00-1400-10-1420	1
Supply air		
1 Module section	EMM-190-20-PA	1
Casing Thermoline		
Casing model PA-50-1 T2/TB3		
Configuration H		
Connection gable inlet	EMMT-01-190-PA	1
Connection frame large inlet 1000x500 mm	EMMT-02-190-1	1
Filter fitting	MIE-FB-190-20-PA-ST	1
Set of filters	ELEF-190-PM01-50-00-52	1
Bag filter F7/ePM1-50%		
2x592x592 L=520-10P		
U-tube manometer	MIET-FB-01	1
2 Counter-flow heat exchanger	EXM-190-PA-BL-1-0-H-01	1
Casing Thermoline		
Casing model PA-50-1 T2/TB3		
Configuration H		
Counter-flow heat exchanger incl damper Epoxy treated	EXMM-190-E-NP-RE1-00	1
Damper motor kit	EXMD-190-BYP-11-BL-1-00	1
+ FlexoPool version		1
3 Mixing section	EBC-190-PA-U	1
Casing Thermoline		
Casing model PA-50-1 T2/TB3		
Configuration H-1		
Damper 3x1000x300, 3x2,5Nm		
Inspection window	EMMT-11	2
Light fitting	EMMT-07	1
Support	EBCS-01-190-0820-10-00	1
4 Module section	EMM-190-45-PA	1
Casing Thermoline		
Casing model PA-50-1 T2/TB3		
Configuration H		
Fan fitting	MIE-FF-190-25-PA-0401-P	1
Direct driven fan section	ELFF-040Z-ECA2-0250-2-F-M	1
EC-motor with integrated revolution control 2,50 kW Ziehl		
Inspection window	EMMT-11	1
Light fitting	EMMT-07	1
Empty section	MIE-TD-190-10-PA	1
Coil fitting	MIE-CL-190-10-PA	1

Project name TQS-DIM
Name of AHU AHU3 P HALL - 260115
Size 190 1,62/1,70 m³/s

Product	Product code	Quantity
Air heater, liquid	ELEV-190-04-X -X LD=2.5 VV=4	1
Tillägg specialbatteri		
Connection gable outlet	EMMT-01-190-PA	1
Connection frame large outlet 1000x500 mm	EMMT-02-190-1	1
Over-pressure stop	EMMT-30-01-0	1
Extract air		
5 Module section	EMM-190-45-PA	1
Casing Thermoline		
Casing model PA-50-1 T2/TB3		
Configuration V		
Connection gable inlet	EMMT-01-190-PA	1
Connection frame large inlet 1000x500 mm	EMMT-02-190-1	1
Filter fitting	MIE-FB-190-20-PA-ST	1
Set of filters	ELEF-190-PM10-60-00-52	1
Bag filter M5/ePM10-60%		
2x592x592 L=520-6P		
U-tube manometer	MIET-FB-01	1
Fan fitting	MIE-FF-190-25-PA-0401-P	1
Direct driven fan section	ELFF-040Z-ECA2-0250-2-F-M	1
EC-motor with integrated revolution control 2,50 kW Ziehl		
Inspection window	EMMT-11	1
Light fitting	EMMT-07	1
Over-pressure stop	EMMT-30-01-0	1
6 Exhaust air section for Pool unit	EAD-190-20-PA-01	1
Casing Thermoline		
Casing model PA-50-1 T2/TB3		
Configuration N-V		
Connection frame large outlet 1000x500 mm	EMMT-02-190-1	1
Over-pressure stop	EMMT-30-01-0	1
Support	EADS-01-190-0670-10-00	1
Controls cabinet	FCAB-EMM-TF-T	1
Control equipment	PCX-C2-Z3101A0-10-MX	1
Electrical Connection in extract air	ENFK-3101-02-B0-00	1
Electrical Connection in supply air	ENFK-3101-02-B0-00	1
Heat exchanger	STX-M2-10-04-MX	1
Energy Watch	EWA-01	1
Hand-held terminal with touch-display	HMI-TOU	1
Hand-held terminal with standard cable approx. 2 m		
Return air control	STA-04	1
Air flow control SF/EF	STB-06-M12	1
Water heating immersion detector	STD-02	1
Immersion sensor		
Control valve incl. actuator for heating coil	STD-03-2V-50-4000	1

**FlexoPool***Material specification detailed*

Project name TQS-DIM
Name of AHU AHU3 P HALL - 260115
Size 190 1,62/1,70 m³/s

Product	Product code	Quantity
2-way valve, DN50, Kvs 40,0		
Pressure guard, Filter, SA, EA	STG-01-M12	1
Fan control at fire	STH-F1D-10	1
Stop		
Fire detection temperature supply air via	STH-D1T-10	1
Internal supply air sensor		
Fire detection temperature extract air via	STH-D1T-20	1
Internal extract air sensor		
Modbus TCP/IP and RTU are included as standard		1
Simpler web with flow image is included as standard TCP/IP		1
IV Produkt Cloud	STI-07-0	1
Configured for self-registration		

Aggregatet levereras som standard i separata 2-plansdelar.

Varje leveransdel levereras på stativ.

När aggregatet levereras med styrutrustning är varje leveransdel elkopplad och utrustad med snabbkopplingar.

Reglerkomponenter för placering i kanal, lokal eller utomhus bipackas separat. Inkoppling av dessa komponenter ingår ej.

Automatiskskåpet är monterat på fläktadel tilluft.

Drifttagningssupport ingår i leveransen då styrutrustningen är levererad av IV Produkt.

Project name	TQS-DIM
Name of AHU	AHU3 P HALL - 260115
Size	190 1,62/1,70 m³/s

The system's Specific Fan Power (SFP) calculation is based on clean filters. When using rotor heat recovery, the rotor cleaning air flow, and any pressure reducing damper is included.

Specific fan power

Output	Total for AHU	1,78	kW/(m³/s)
	Ecodesign 2018-Approved		

Dimension and weight

Width	1 400	mm
Height	1 665	mm
Length	4 360	mm
Weight	1 158	kg

Design winter outdoor temperature

-4,0 °C

CASING MODEL, EN1886

AA-50, PA-50-1

BASIC DATA

		Supply air	Extract air	
Input	Flow	1,62	1,70	m³/s
	External pressure drop	250	250	Pa
	Distribution of external pressure drop			
	Outdoor air/Supply air Extract air/Exhaust air	(50/200)	(200/50)	Pa
Output	Cross sectional velocity	1,94	2,04	m/s
	Set of filters F7/ePM1-50% / M5/ePM10-60%	110	94	Pa
	Initial pressure drop	(60)	(44)	Pa
	Final press. drop	(160)	(144)	Pa
	Counter-flow heat exchanger	197	214	Pa
	Defrosting damper	16		Pa
	Mixing section	6	7	Pa
	Air heater, liquid	95		Pa
	Built-in losses	40	43	Pa
	Total internal pressure	464	358	Pa

Project name	TQS-DIM
Name of AHU	AHU3 P HALL - 260115
Size	190 1,62/1,70 m³/s

Fans		Supply air	Extract air	
Output	Total static pressure	714	608	Pa
	Fan rpm	2 207	2 171	r/m
	Total efficiency	68,1	66,1	%
	Fan power at dim press	1,70	1,57	kW
	Fan power clean filter	1,58	1,44	kW
	Motor output Power	2,50	2,50	kW
	Motor current at 400V, 3-fase	4,0	4,0	A
	Max. rpm	2 500	2 500	r/m
	Capacity reserve	31	35	%
	Temperature increase	0,87	0,77	°C
	SFPint	438	459	W/(m³/s)
	Fan type	EC400ZBLU-G1	EC400ZBLU-G1	
	K-factor for air flow measuring	20,00	20,00	
	Weight fan unit	27	27	kg
	Maximum air temperature in the event of fire 60 mins	+70°C	+70°C	
See fan curve for rotation speed (rpm)				

Sound data (sound power EN13053)

Frequency band	63	125	250	500	1k	2k	4k	8k		Total	
Supply air:										/	
To surroundings	67	69	59	51	45	42	38	32	dB	56	dB(A)
Outdoor air	63	64	64	64	54	47	35	30	dB	63	dB(A)
Supply air	72	78	79	79	75	71	66	65	dB	80	dB(A)
Extract air:											
To surroundings	70	71	59	50	45	42	38	34	dB	57	dB(A)
Extract air	74	74	71	69	60	57	51	50	dB	69	dB(A)
Exhaust air	69	73	74	74	70	63	54	52	dB	75	dB(A)
Total:											
To surroundings	72	73	62	54	48	45	41	36	dB	60	dB(A)

COUNTER-FLOW HEAT EXCHANGER

	Exchanger type	NP	
Winter	Input		
	Outdoor airflow	0,66	m³/s
	Exhaust airflow	0,74	m³/s
	Design outdoor temperature	-4,0	°C
	RH outdoor air	98	%
Output	Return air temperature	36,0	°C
	RH return air	50	%
	Supply air temp. after exchanger	30,5	°C
	Supply air temperature after exchanger when defrosting	30,3	°C
	Exhaust air temperature	18,3	°C
	Temperature efficiency - Design Outdoor Temp	85,9	%
	Temperature efficiency dry at balanced flows 75,8%		
	Temperature efficiency wet	88,8	%

Project name TQS-DIM
Name of AHU AHU3 P HALL - 260115
Size 190 1,62/1,70 m³/s

AIR HEATER, LIQUID

Input	Air temperature in	20,0	°C
	Requested air temp out	50,0	°C
Output	Liquid temp in	60,0	°C
	Liquid temp out requested	53,0	°C
	Air temperature out	49,9	°C
	Air speed	2,64	m/s
	Heating power	58,7	kW
	Liquid flow	3,17	l/s
	Pressure drop liquid	19,8	kPa
	Power variant	04-X	
	Water passes	4	
	Fin pitch	2,5	mm
	Tube connection	50	
	Primary side with 2-way valve		
	Liquid temp in	60,0	°C
	Liquid temp out	55,6	°C
	Liquid flow	3,17	l/s
	Primary side with 3-way valve		
	Liquid temp in	60,0	°C
	Liquid temp out	53,0	°C
	Liquid flow	2,01	l/s

RECOMMENDED FUSE

AHU 16A Type C 3x400V+N

Project name TQS-DIM
Name of AHU AHU3 P HALL - 260115
Size 190 1,62/1,70 m³/s

COMMISSION REGULATION (EU) No 1253/2014

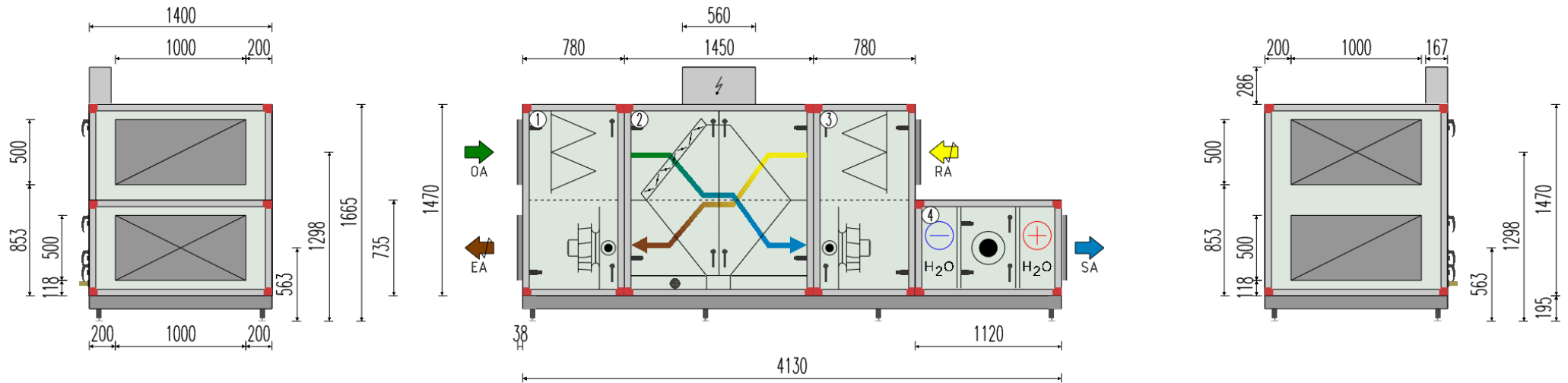


Ecodesign

Type of unit	NRVU-BVU	
Fan drive	VSD	
Thermal efficiency dry	75,8	%
Min efficiency 2018	73	%
SFPint	897	W/(m³/s)
Efficiency bonus HRS 2018	84	W/(m³/s)
Max SFPint 2018	941	W/(m³/s)
Ecodesign 2018	Yes	
Casing Leakage class	L1(M)/L2(R)	
EATR	<0,5	%
OACF	<1,005	
Energy class filter ePM1-60%	A	
Energy class filter ePM1-50%	B	
Energy class filter ePM1-70%	C	
Energy class filter ePM1-85%	C	
Energy class filter ePM2.5-50%	E	
Energy class filter ePM10-60%	E	
Eurovent Energy Efficiency class	A	
f_{s-pref}	0,92	
Reference city	Bristol	-2,1°C

Total for AHU

Width	1400 mm	1) 197 kg
Height	1665 mm	2) 337 kg
Length	4130 mm	3) 191 kg
Weight	951 kg	4) 171 kg



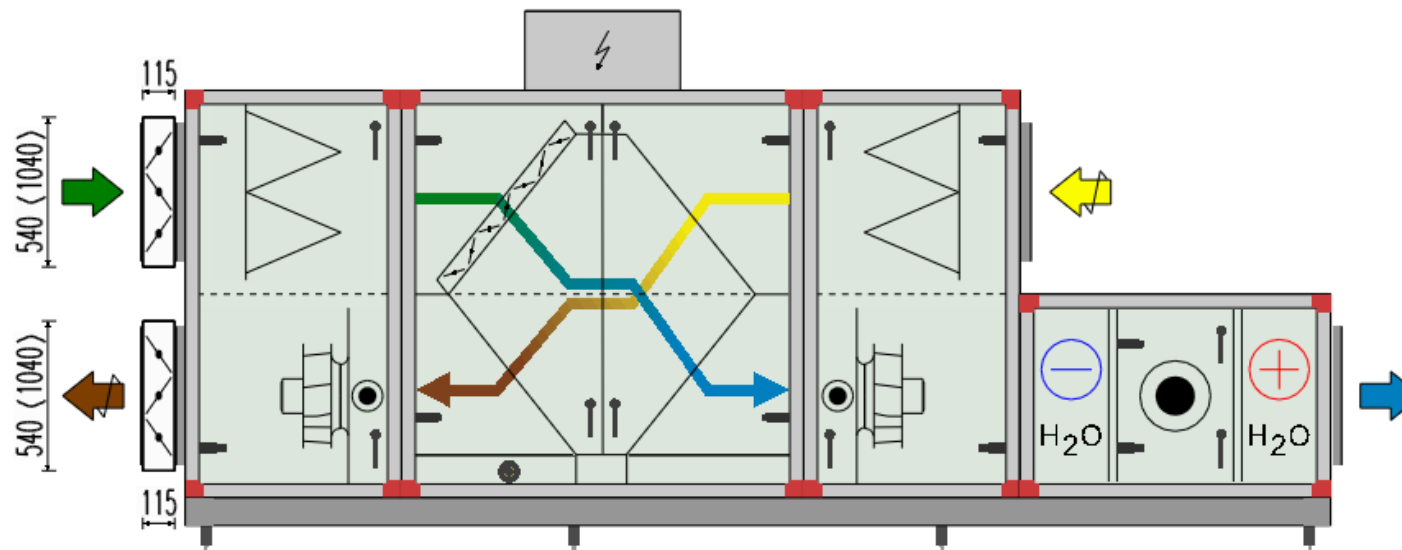
Note! Consider the required space needed to open inspection doors and for plumbing. Additional space for pipes water coil 100 mm. Access door with largest radius 730 mm is in module 1;3. Additional space for handle inspection door 60 mm. Additional space for connection frame 40 mm. Green colored unit parts delivered with ThermoLine casing in class T2.

Total for AHU

Width	1400 mm
Height	1665 mm
Length	4130 mm
Weight	951 kg

Duct accessories

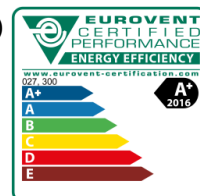
Damper	9 kg
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Connection size: AHU 1000x500 mm.

Our reference: Darren Fereday (07854) 887063

2/25/2026 11:23:41 AM



Project name	Whatley Manor Hotel
Name of AHU	AHU4 Tepidarium rev 231225
Size	190 0.83/0.83 m³/s

The system's Specific Fan Power (SFP) calculation is based on clean filters. When using rotor heat recovery, the rotor cleaning air flow, and any pressure reducing damper is included.

Specific fan power

Output	Total for AHU	1.81	kW/(m³/s)
	Ecodesign 2018-Approved		

Dimension and weight

Width	1,400	mm
Height	1,665	mm
Length	4,130	mm
Weight	951	kg

Design winter outdoor temperature

-4.0 °C

CASING MODEL, EN1886

PN-50

BASIC DATA

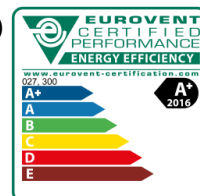
		Supply air	Extract air	
Input	Flow	0.83	0.83	m³/s
	External pressure drop	450	450	Pa
	Distribution of external pressure drop			
Output	Outdoor air/Supply air Extract air/Exhaust air	(0/450)	(450/0)	Pa
	Cross sectional velocity	1.00	1.00	m/s
	Damper	1	1	Pa
	Filter F7/ePM1-50% / M5/ePM10-60%	75	67	Pa
	Initial pressure drop	(25)	(17)	Pa
	Final press. drop	(125)	(117)	Pa
	Counter-flow heat exchanger	72	72	Pa
	Defrosting damper	6		Pa
	Air cooler water (dry coil)	18		Pa
	Air heater, liquid	15		Pa
	Built-in losses	11	11	Pa
	Total internal pressure	198	151	Pa



Envistar Flex

Technical data

2 (4)



Project name
Name of AHU
Size

Whatley Manor Hotel
AHU4 Tepidarium rev 231225
190 0.83/0.83 m³/s

Fans

		Supply air	Extract air	
Output	Total static pressure	648	601	Pa
	Fan rpm	2,104	2,043	r/m
	Total efficiency	63.7	64.0	%
	Fan power at dim press	0.85	0.79	kW
	Fan power clean filter	0.78	0.72	kW
	Motor output Power	1.35	1.35	kW
	Motor current at 230V, 1-fase	6.1	6.1	A
	Max. rpm	2,490	2,490	r/m
	Capacity reserve	40	45	%
	Temperature increase	0.85	0.79	°C
	SFPint	169	157	W/(m³/s)
	Fan type	EC355ZBLU-G1	EC355ZBLU-G1	
	K-factor for air flow measuring	25.71	25.71	
	Weight fan unit	16	16	kg
	Maximum air temperature in the event of fire 60 mins	+70°C	+70°C	
	See fan curve for rotation speed (rpm)			

Sound data (sound power EN13053)

Frequency band	63	125	250	500	1k	2k	4k	8k		Total	
Supply air:										/	
To surroundings	61	71	54	44	39	38	33	24	dB	56	dB(A)
Outdoor air	56	65	58	58	48	41	28	19	dB	57	dB(A)
Supply air	65	78	70	68	66	64	58	54	dB	72	dB(A)
Extract air:											
To surroundings	60	69	52	43	38	37	32	23	dB	54	dB(A)
Extract air	55	64	57	57	47	40	27	18	dB	56	dB(A)
Exhaust air	65	78	71	71	70	68	63	59	dB	75	dB(A)
Total:											
To surroundings	64	73	56	47	42	41	36	27	dB	58	dB(A)

Project name	Whatley Manor Hotel
Name of AHU	AHU4 Tepidarium rev 231225
Size	190 0.83/0.83 m³/s

COUNTER-FLOW HEAT EXCHANGER

	Exchanger type	NP	
Winter			
Input	Design outdoor temperature	-4.0	°C
	RH outdoor air	95	%
	Return air temperature	28.0	°C
	RH return air	40	%
Output	Supply air temp. after exchanger	21.7	°C
	Supply air temperature after exchanger when defrosting	12.3	°C
	Exhaust air temperature	8.1	°C
	Temperature efficiency dry (EN308)	80.2	%
	Temperature efficiency dry at balanced flows 80.2%		
	Temperature efficiency wet	84.9	%
Summer			
Input	Design outdoor temperature	30.2	°C
	RH outdoor air	40	%
	Return air temperature	30.0	°C
	RH return air	40	%
Output	Supply air temp. after exchanger	30.0	°C

AIR HEATER, LIQUID

Input	Air temperature in	12.3	°C
	Requested air temp out	30.0	°C
	Liquid temp in	50.0	°C
	Liquid temp out requested	40.0	°C
Output	Air temperature out	30.0	°C
	Air speed	1.29	m/s
	Heating power	17.8	kW
	Liquid flow	0.32	l/s
	Pressure drop liquid	4.4	kPa
	Power variant	02	
	Fin pitch	2.5	mm
	Tube connection	25	
	Internal volume	6	l
	Primary side with 2-way valve		
	Liquid temp in	50.0	°C
	Liquid temp out	36.6	°C
	Liquid flow	0.32	l/s
	Primary side with 3-way valve		
	Liquid temp in	50.0	°C
	Liquid temp out	40.0	°C
	Liquid flow	0.43	l/s



Envistar Flex

Technical data

4 (4)



Project name
Name of AHU
Size

Whatley Manor Hotel
AHU4 Tepidarium rev 231225
190 0.83/0.83 m³/s

AIR COOLER WATER

Input	Air temperature in	30.0	°C
	Relative humidity in	40	%
	Temperature out requested	18.0	°C
	Liquid temp in	6.0	°C
	Liquid temp out requested	12.0	°C
Output	Temperature out obtained	18.0	°C
	Relative humidity out	79	%
	Air speed	1.35	m/s
	Liquid temp out	14.8	°C
	Liquid flow	0.37	l/s
	Liquid velocity	0.6	m/s
	Pressure drop liquid	5.4	kPa
	Power variant	02	
	Obtained cooling power	13.8	kW
	Cooling power incl cooling recovery	14.0	kW
	Condensation	2.5	l/h
	Pipe connection side	Access side	
	Coupling	Long	
	Fin pitch	2.0	mm
	Tube connection	25	
	Internal volume	6	l

RECOMMENDED FUSE

AHU 10A Type C 3x400V+N

Project name Whatley Manor Hotel
Name of AHU AHU4 Tepidarium rev 231225
Size 190 0.83/0.83 m³/s

COMMISSION REGULATION (EU) No 1253/2014



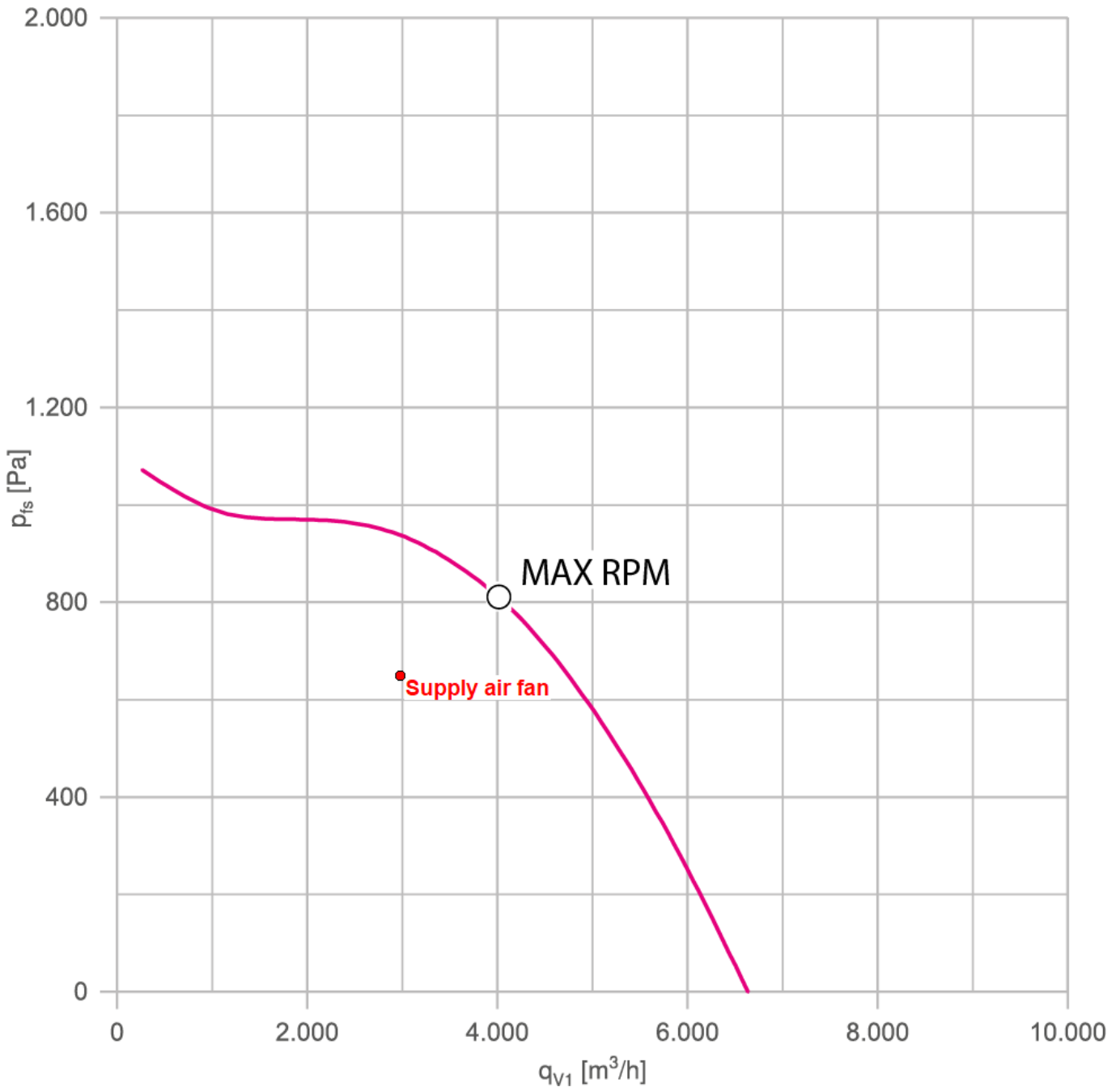
Ecodesign

Type of unit	NRVU-BVU	
Fan drive	VSD	
Thermal efficiency dry	80.2	%
Min efficiency 2018	73	%
SFPint	325	W/(m³/s)
Efficiency bonus HRS 2018	216	W/(m³/s)
Max SFPint 2018	1192	W/(m³/s)
Ecodesign 2018	Yes	
Casing Leakage class	L1(M)/L2(R)	
EATR	<0.5	%
OACF	<1.005	
Energy class filter ePM1-60%	A	
Energy class filter ePM1-50%	B	
Energy class filter ePM1-70%	C	
Energy class filter ePM1-85%	C	
Energy class filter ePM2.5-50%	E	
Energy class filter ePM10-60%	E	
Eurovent Energy Efficiency class	A+	
f_{s-pref}	0.66	
Reference city	Bristol	-2.1°C
SFP _E (Design load conditions filter, dry coils & heat exchanger)	1.98	kW/(m³/s)

Project name
Name of AHU
Size

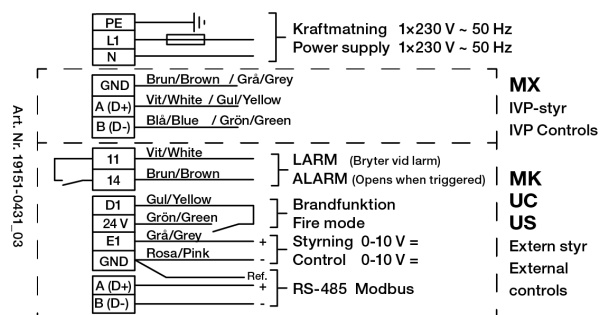
Whatley Manor Hotel
AHU4 Tepidarium rev 231225
190 0.83/0.83 m³/s

Operating point per fan. 1 of 1 supply air.



Supply air

Flow 0.83 m³/s
Total static pressure 648 Pa
Fan rpm 2104 r/m
Motor output Power 1.35 kW
Max. rpm 2490 r/m
Fan type EC355ZBLU-G1
K-factor for air flow measuring 25.71

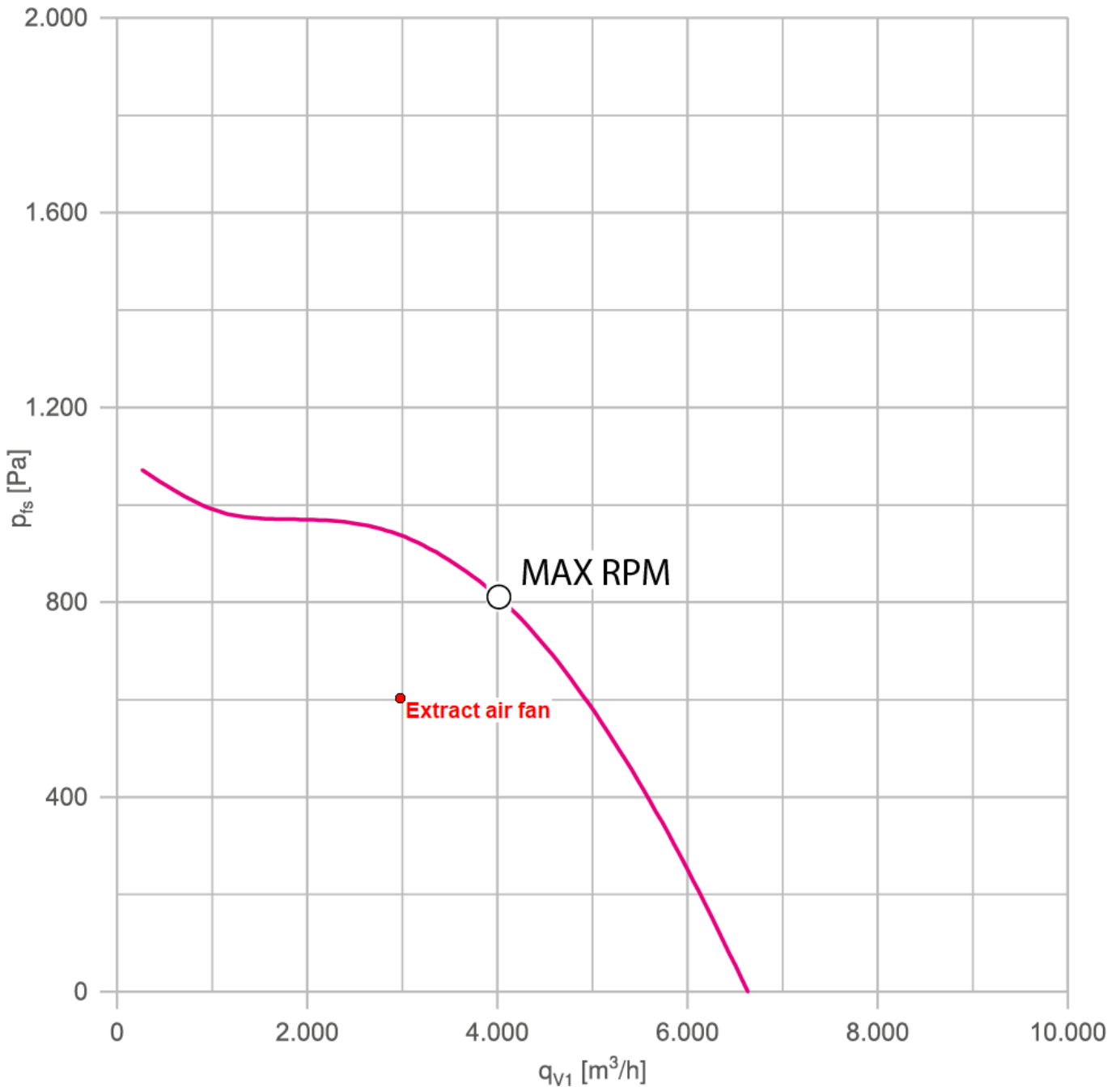


INKOPPLING / WIRING
Ziehl 1x230 V - ZID/DC

Project name
Name of AHU
Size

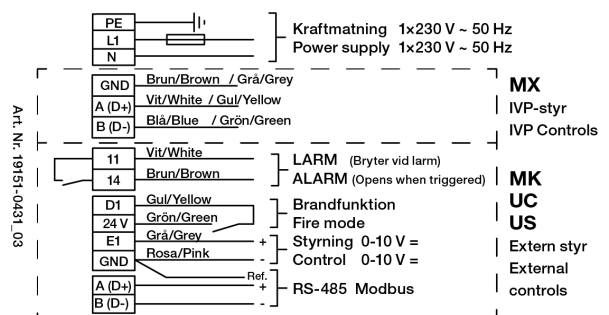
Whatley Manor Hotel
AHU4 Tepidarium rev 231225
190 0.83/0.83 m³/s

Operating point per fan. 1 of 1 extract air.



Extract air

Flow 0.83 m³/s
Total static pressure 601 Pa
Fan rpm 2043 r/m
Motor output Power 1.35 kW
Max. rpm 2490 r/m
Fan type EC355ZBLU-G1
K-factor for air flow measuring 25.71



INKOPPLING / WIRING
Ziehl 1x230 V - ZID/DC



CENTRIFUGAL DUCT FAN IN SOUND INSULATED CASING



ISO-RB

EN

USER'S MANUAL

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This user's manual is a main operating document intended for technical, maintenance, and operating staff.

The manual contains information about purpose, technical details, operating principle, design, and installation of the ISO-RB unit and all its modifications.

Technical and maintenance staff must have theoretical and practical training in the field of ventilation systems and should be able to work in accordance with workplace safety rules as well as construction norms and standards applicable in the territory of the country.

The information in this user's manual is correct at the time of the document's preparation.

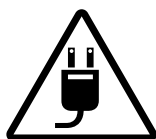
The Company reserves the right to modify the technical characteristics, design, or configuration of its products at any time in order to incorporate the latest technological developments.

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SAFETY REQUIREMENTS

- Please read the user's manual carefully prior to installing and operating the unit.
- All user's manual requirements as well as the provisions of all the applicable local and national construction, electrical, and technical norms and standards must be observed when installing and operating the unit.
- The warnings contained in the user's manual must be considered most seriously since they contain vital personal safety information.
- Failure to follow the rules and safety precautions noted in this user's manual may result in an injury or unit damage.
- After a careful reading of the manual, keep it for the entire service life of the unit.
- While transferring the unit control, the user's manual must be turned over to the receiving operator.

UNIT INSTALLATION AND OPERATION SAFETY PRECAUTIONS



- Disconnect the unit from power mains prior to any installation operations.



- Unpack the unit with care.



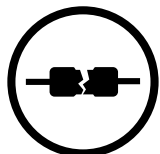
- The unit must be grounded!



- While installing the unit, follow the safety regulations specific to the use of electric tools.



- Do not change the power cable length at your own discretion. Do not bend the power cable. Avoid damaging the power cable. Do not put any foreign objects on the power cable.



- Do not use damaged equipment or cables when connecting the unit to power mains.



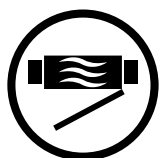
- Do not touch the unit controls with wet hands. Do not carry out the installation and maintenance operations with wet hands.



- Do not allow children to operate the unit.



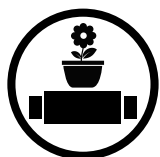
- Do not store any explosive or highly flammable substances in close proximity to the unit.



- Do not open the unit during operation.



- Do not block the air duct when the unit is switched on.



- Do not sit on the unit and avoid placing foreign objects on it.



- Do not lay the power cable of the unit in close proximity to heating equipment.



- Do not operate the unit outside the temperature range stated in the user's manual. Do not operate the unit in aggressive or explosive environments.



- Do not wash the unit with water. Protect the electric parts of the unit against ingress of water.



- Disconnect the unit from power mains prior to any technical maintenance.



- When the unit generates unusual sounds, odour, or emits smoke, disconnect it from power supply and contact the Seller.



- Do not direct the air flow produced by the unit towards open flame or ignition sources.



- In case of continuous operation of the unit, periodically check the security of mounting.



- Use the unit only for its intended purpose.



**THE PRODUCT MUST BE DISPOSED SEPARATELY AT THE END OF ITS SERVICE LIFE.
DO NOT DISPOSE THE UNIT AS UNSORTED MUNICIPAL WASTE.**

PURPOSE



THE UNIT SHOULD NOT BE OPERATED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, MENTAL, OR SENSORY CAPACITIES, OR THOSE WITHOUT THE APPROPRIATE TRAINING.

THE UNIT MUST BE INSTALLED AND CONNECTED ONLY BY PROPERLY QUALIFIED PERSONNEL AFTER THE APPROPRIATE BRIEFING.

THE CHOICE OF UNIT INSTALLATION LOCATION MUST PREVENT UNAUTHORIZED ACCESS BY UNATTENDED CHILDREN.

Due to the ability to save heating energy by means of energy recovery, the unit is an important element of energy-efficient premises. The unit is a component part and is not designed for stand-alone operation.

The unit is designed to ensure mechanical air exchange in houses, offices, hotels, cafés, conference halls, and other utility and public spaces as well as to recover the heat energy contained in the air extracted from the premises to warm up the filtered stream of supply air. The unit is rated for continuous operation. Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favorable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).

Relative humidity of transported air must not exceed +20 °C at an ambient humidity of 80 %.

DELIVERY SET

NAME

NUMBER

Fan

1 pc.

User's manual

1 pc.

Packing box

1 pc.

DESIGNATION KEY

Designation example: **ISO-RB 150 L W1**

Series

Centrifugal duct fan in sound insulated casing

Spigot connecting diameter [mm]

100; 150; 200

Motor type

— asynchronous

EC — electronically commutated

Motor options

max — high-powered motor

L — low-noise and low-power motor

Connection options

— remote terminal box

W — power cord with the IEC C14 connector

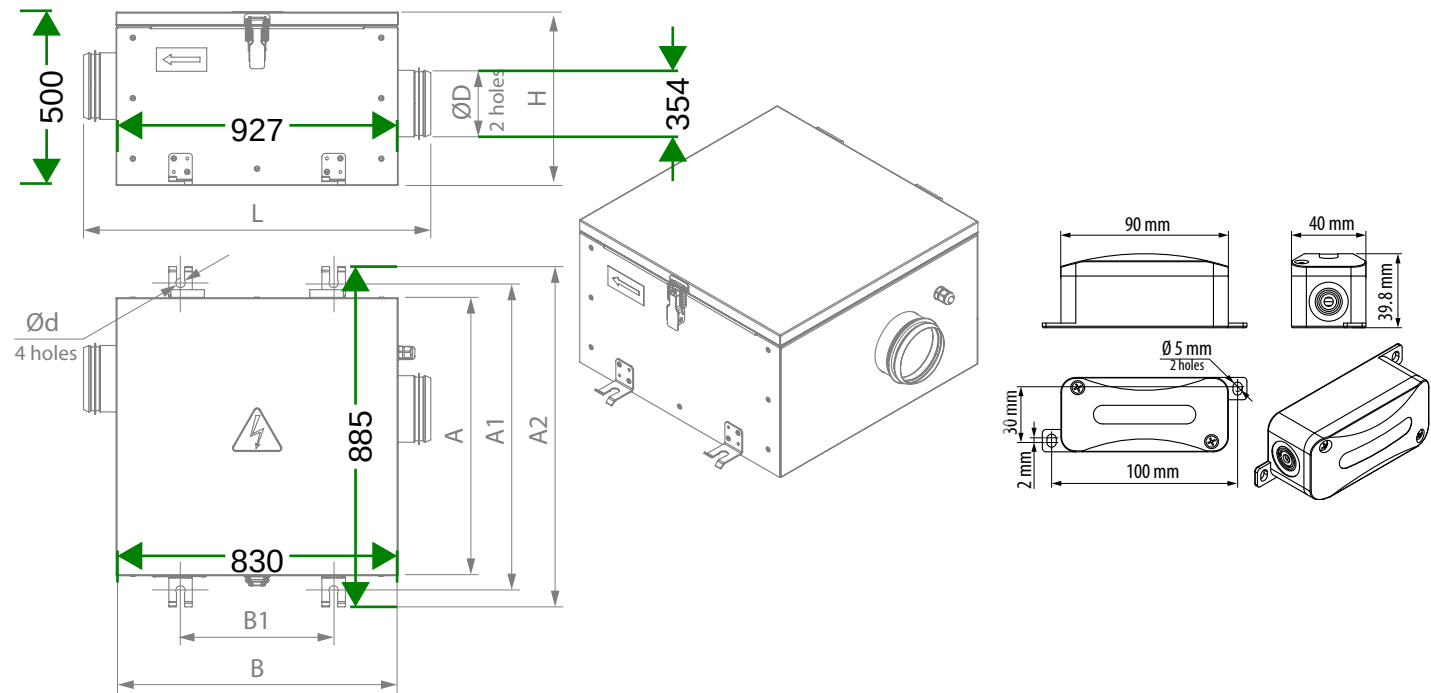
W1 — power cord with a plug

W2 — power cord with a British plug

TECHNICAL DATA

The unit is rated as a Class I electrical appliance.

	ISO-RB 100	ISO-RB 125	ISO-RB 125 max	ISO-RB 150	ISO-RB 160	ISO-RB 200	ISO-RB 250	ISO-RB 315 max	ISO-RB 355	ISO-RB 400	ISO-RB 450 L	ISO-RB 500 (Δ)	ISO-RB 500 (Y)
Unit voltage [V/50 (60) Hz]	1~ 230	1~ 230	1~ 230	1~ 230	1~ 230	1~ 230	1~ 230	3~ 400	1~ 230	1~ 230	1~ 230	3~230	3~400
Power [W]	58	61	88	84	86	164	320	654	202	349	473	730	780
Current [A]	0.25	0.28	0.37	0.37	0.38	0.71	1.40	1.10	0.89	2.00	2.35	2.82	1.60
Maximum air flow [m³/h]	285	330	484	485	500	770	1515	2710	2235	2860	2760	7000	6720
RPM [min ⁻¹]	2530	2560	2670	2620	2670	2580	2615	2600	1330	1380	1350	980	948
Sound pressure level at 3 m distance [dBA]	34	35	40	38	38	42	45	48	48	48	48	56	54
Transported air temperature [°C]	-25+55	-25+55	-25+55	-25+55	-25+55	-25+55	-25+55	-25+55	-25+55	-25+55	-25+55	-25+55	-25+55
Ingress protection rating	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4	IPX4
SEC class	C	C	C	C	C	C	-	-	-	-	-	-	-



Overall and connecting dimensions of the fan [mm]

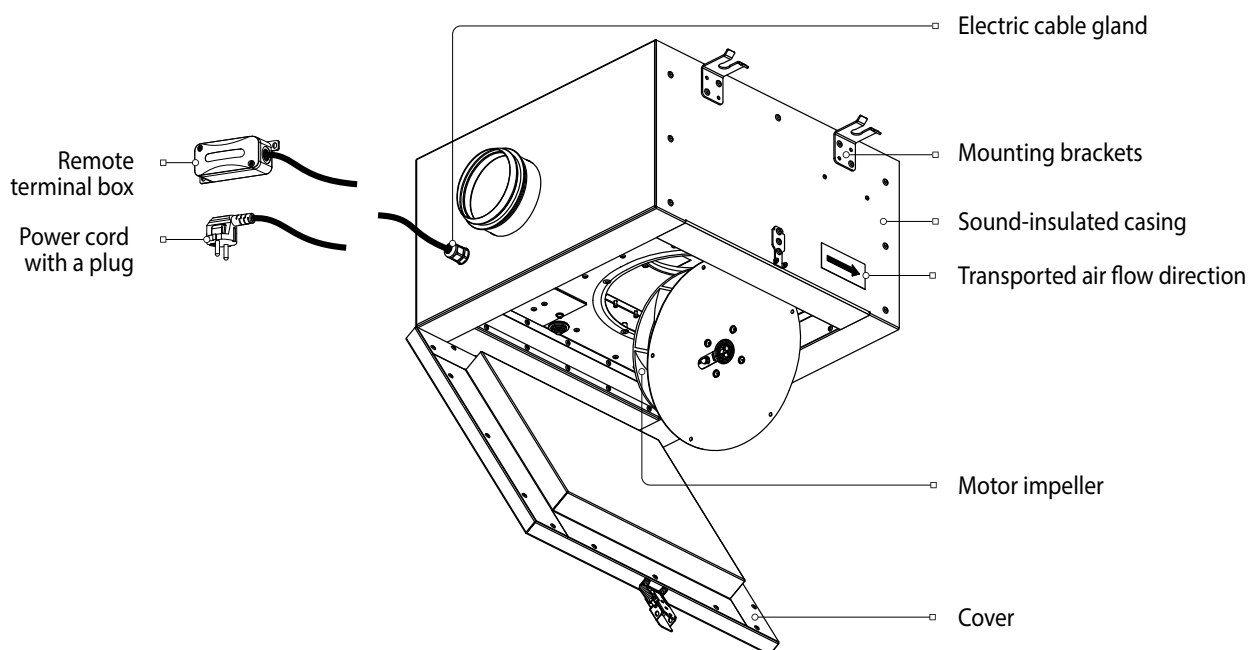
	D	H	L	A	A1	A2	B	B1	d	Weight [kg]
ISO-RB 355	354	500	927	804	857	885	830	641		58
ISO-RB 355	354	500	927	804	857	885	830	641		58

UNIT DESIGN AND OPERATING PRINCIPLE

The fan casing is made of aluzinc. For easy installation and operation, the top cover of the fan is secured with a special lock. The casing is heat- and sound-insulated with a 50 mm layer of non-flammable mineral wool. To ensure better noise absorption, the inner surface of the insulation is made of a perforated metal sheet. The round connecting spigots are rubber sealed.

The fan is equipped with an asynchronous motor with an external rotor and an impeller with backward curved blades. The motor with ball bearings with specially selected grease ensures low-noise, maintenance-free operation of the fan. The fan with a three-phase motor has an integrated overheating protection with an automatic restart.

Duct fans are intended for mounting to round air ducts. The fans are installed between the air ducts. In case the fan is mounted on flexible joints, attach the fan to a structural unit by means of supports, suspension links or brackets (purchased separately). The fan may be installed in any position in consideration of the air flow direction (as indicated by the arrow on the fan casing).



INSTALLATION AND CONNECTION



WHILE INSTALLING THE UNIT ENSURE CONVENIENT ACCESS FOR SUBSEQUENT MAINTENANCE AND REPAIR.



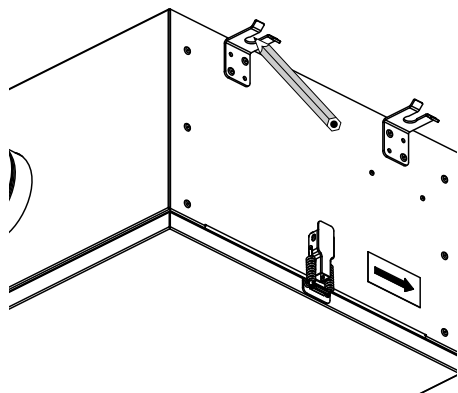
**THE UNIT MUST BE MOUNTED ON A PLANE SURFACE.
MOUNTING OF THE UNIT TO AN UNEVEN SURFACE CAN LEAD TO THE UNIT CASING DISTORTION AND OPERATION DISTURBANCE.**

- Before installing the fan, make sure the casing has no visible damages and check the integrity of power supply wires. The fan casing must not contain any foreign objects which can damage the impeller blades.
- Make sure the impeller rotates freely without touching the flange and the casing.
- Mount the fan in such a way that the arrow on the fan casing matches the air flow direction in the system.
- The casing has mounting brackets to facilitate the fan installation.
- The fan may be installed in any position in consideration of the air flow direction (as indicated by the arrow on the fan casing).
- To attain the best performance of the fan and to minimize turbulence-induced air pressure losses while mounting, connect the straight air duct section to the fan spigots on both sides of the fan. The minimum straight air duct length is equal to 1 air duct diameter on the intake side and 3 air duct diameters on the exhaust side. No filters or any other similar devices are allowed to be installed in these sections.

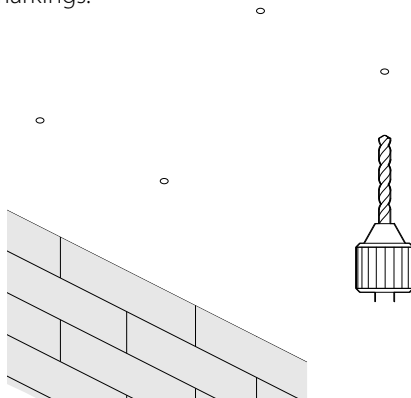
Fan and remote terminal box installation sequence

- Before installation, lay the wires and cables necessary to connect the fan to the mains.
- Minimal distance from the fan casing to the wall is 300 mm.
- Fasteners for fan mounting are not included in the delivery set and should be ordered separately.
- While choosing fasteners consider the material of the mounting surface as well as the weight of the unit, refer to the "Technical data" section. Fasteners for unit mounting should be selected by the service technician.

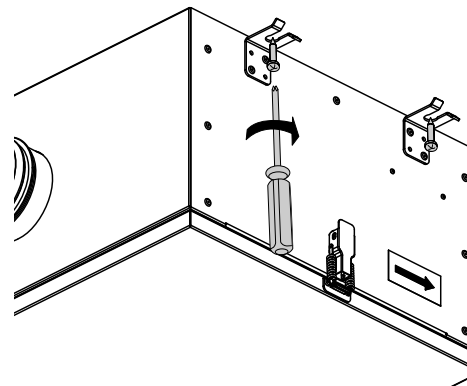
1. Mark the holes for mounting the fan.



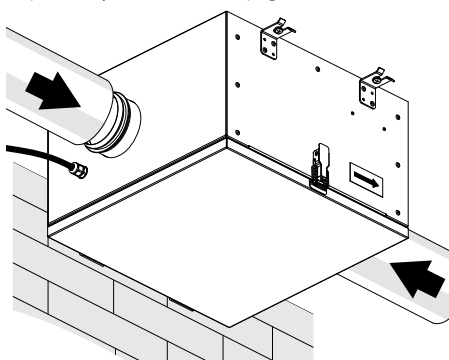
2. Drill the holes according to the markings.



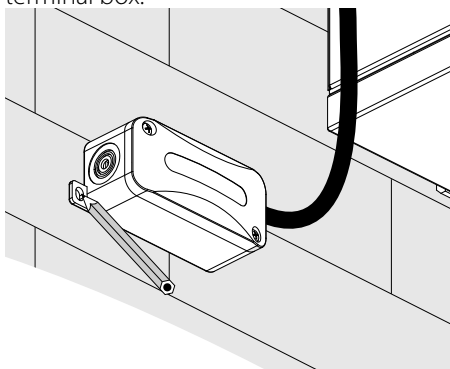
3. Fix the fan to the mounting surface.



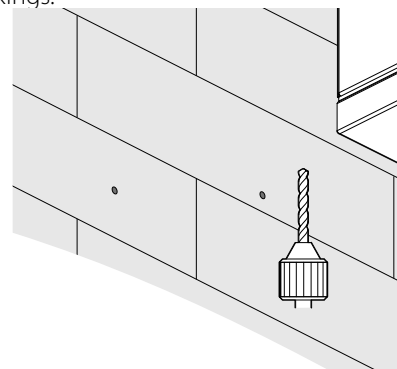
4. Connect the air ducts (purchased separately) to the fan spigots.



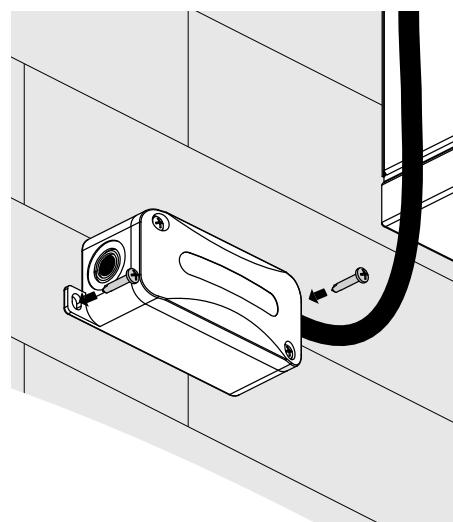
5. Mark the holes for mounting the terminal box.



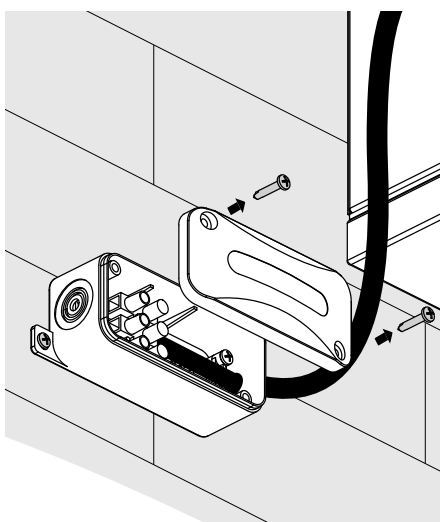
6. Drill the holes according to the markings.



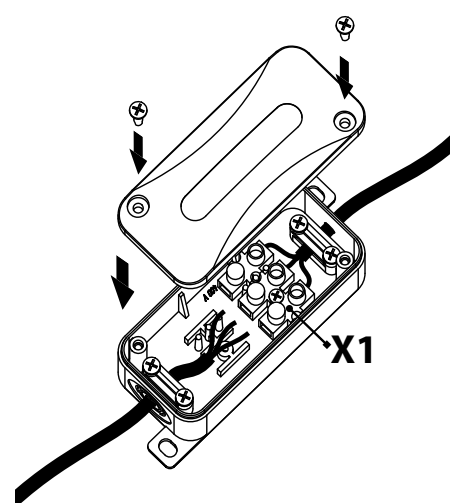
7. Fix the remote terminal box to the mounting surface.



8. Unscrew the terminal box cover.



9. Make the electrical connections in compliance with the wiring diagram. Re-assemble the terminal box in the reverse order.



CONNECTION TO POWER MAINS



DISCONNECT THE UNIT FROM POWER MAINS PRIOR TO ANY OPERATIONS.
THE UNIT MUST BE CONNECTED TO POWER MAINS BY A QUALIFIED ELECTRICIAN.
THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE SHOWN
ON THE RATING PLATE.

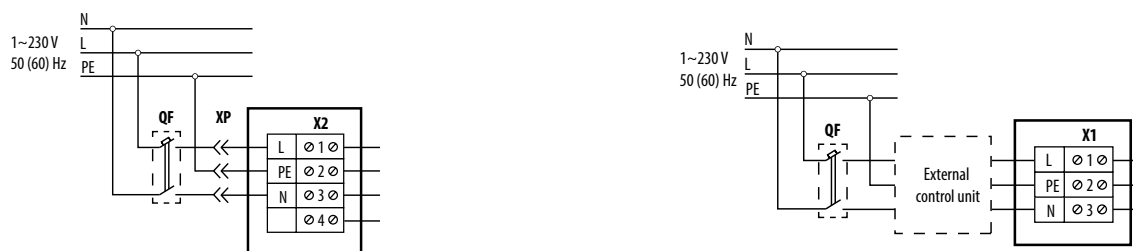
- The unit is rated for connection to 1~230 V/50(60) Hz or 3~400 V/50(60) Hz power mains.
- The unit must be connected to power mains using insulated electric conductors (cables, wires). The actual wire cross section selection must be based on the maximum load current, maximum conductor temperature depending on the wire type, insulation, length and installation method.
- The external power input must be equipped with an automatic circuit breaker built into the stationary wiring to open the electric circuit in case of overload or short-circuit. The circuit breaker installation place must provide quick access for emergency shutdown of the unit. The trip current of the automatic circuit breaker **QF** must exceed the maximum current consumption of the unit (refer to the technical data table). The recommended trip current of the circuit breaker is the next current in the standard trip current row following the maximum current of the connected unit. The automatic circuit breaker is not included in the delivery set.

Connection of the fan to power mains and to additional external control units is carried out in the remote control box. The same regulator device can be used for connecting several fans simultaneously provided that their combined capacity and working current remain within the nominal parameters of the regulator. External control units are purchased separately (shown in dotted lines in the diagram).

Wiring diagrams

The fan is connected to power mains by means of the power cord with a plug (**XP**) or in the remote terminal box (**X1**).

ISO-RB 100, ISO-RB 125, ISO-RB 125 max, ISO-RB 150, ISO-RB 160, ISO-RB 200, ISO-RB 250, ISO-RB 355

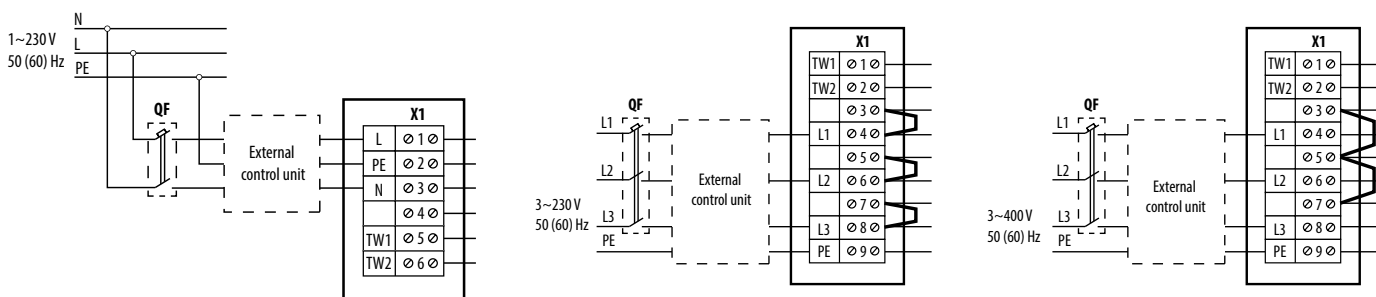


The fan is connected to power mains by means of the power cable only in a remote terminal box (**X1**)

ISO-RB 400, ISO-RB 450 L

ISO-RB 500

ISO-RB 315 max, ISO-RB 500



CONTROL

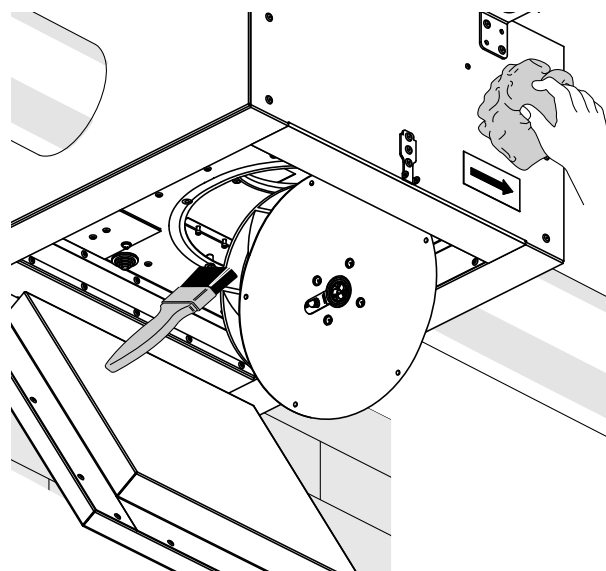
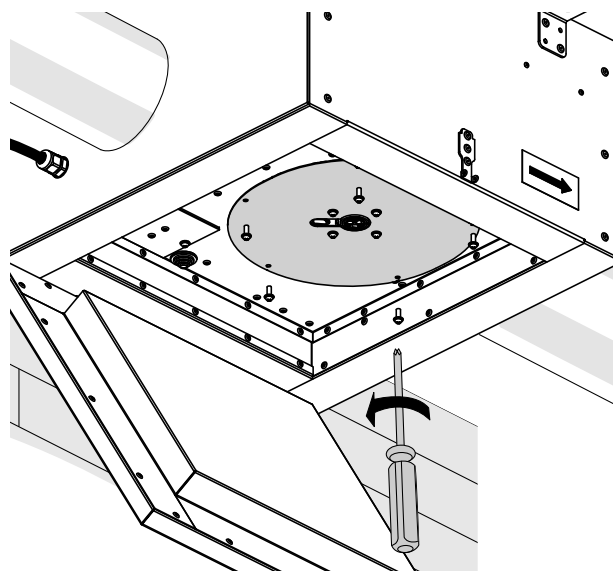
The fan moves the air at a constant speed without possibility of regulation.
 Additional external control units (purchased separately) can be connected to the fan for speed control.

TECHNICAL MAINTENANCE



DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE ANY MAINTENANCE OPERATIONS!

The technical maintenance includes periodic cleaning of the surfaces from accumulated dust and dirt. The impeller blades require thorough cleaning once in 6 months. Clean the blades with a soft brush or a vacuum cleaner. While cleaning the fan be careful not to displace the impeller counter weights. Protect the electric motor against ingress of liquid.



TROUBLESHOOTING

PROBLEM	POSSIBLE REASONS	TROUBLESHOOTING
The fan does not start.	No power supply.	Make sure that the unit is properly connected to the power mains and make any corrections, if necessary.
Low air flow.	The ventilation system is soiled or damaged.	Make sure the air ducts are clean and intact. Clean them if necessary.
Noise, vibration.	The fan impeller is soiled.	Clean the impellers.
	The screw connection is loose.	Tighten the fastening screws.

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range from +5 °C to + 40 °C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapours and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit must be transported only in the working position.
- Avoid sharp blows, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures allow the unit to warm up at room temperature for at least 3-4 hours.

MANUFACTURER'S WARRANTY

The product is in compliance with EU norms and standards on low voltage guidelines and electromagnetic compatibility. We hereby declare that the product complies with the provisions of Electromagnetic Council Directive 2014/30/EU, Low Voltage Directive 2014/35/EU and CE-marking Directive 93/68/EEC. This certificate is issued following test carried out on samples of the product referred to above. The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user's observance of the transportation, storage, installation, and operation regulations. Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation, the user is entitled to get all the faults eliminated by the manufacturer by means of warranty repair at the factory free of charge. The warranty repair includes work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:

- routine technical maintenance
- unit installation/dismantling
- unit setup

To benefit from warranty repair, the user must provide the unit, the user's manual with the purchase date stamp, and the payment paperwork certifying the purchase. The unit model must comply with the one stated in the user's manual. Contact the Seller for warranty service.

The manufacturer's warranty does not apply to the following cases:

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismantled by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packaging and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- Violation of the unit installation regulations by the user.
- Violation of the unit control regulations by the user.
- Unit connection to power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- Violation of the unit transportation regulations by the user.
- Violation of the unit storage regulations by the user.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment paperwork certifying the unit purchase.



FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.



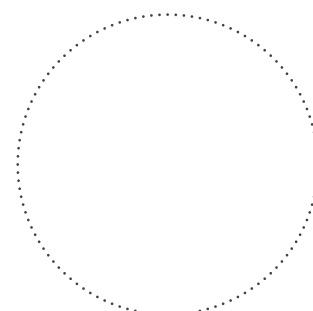
USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.

CERTIFICATE OF ACCEPTANCE

Unit Type	Centrifugal duct fan in sound insulated casing
Model	ISO-RB _____
Serial Number	
Manufacture Date	
Quality Inspector's Stamp	

SELLER INFORMATION

Seller	
Address	
Phone Number	
E-mail	
Purchase Date	
This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.	
Customer's Signature	

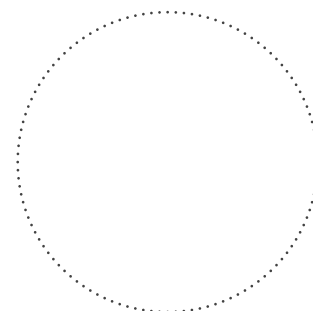


Seller's Stamp

INSTALLATION CERTIFICATE

The ISO-RB _____ unit has been connected to power mains pursuant to the requirements stated in the present user's manual.

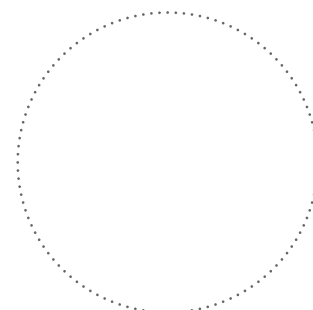
Seller		
Address		
Phone Number		
Installation Technician's Full Name		
Installation Date:		Signature:
The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.		
Signature:		



Installation Company Stamp

WARRANTY CARD

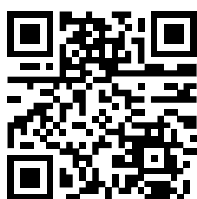
Unit Type	Centrifugal duct fan in sound insulated casing
Model	ISO-RB _____
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	



Seller's Stamp



BLAUBERG
Ventilatoren



www.blaubergventilatoren.de
B143-1EN-01