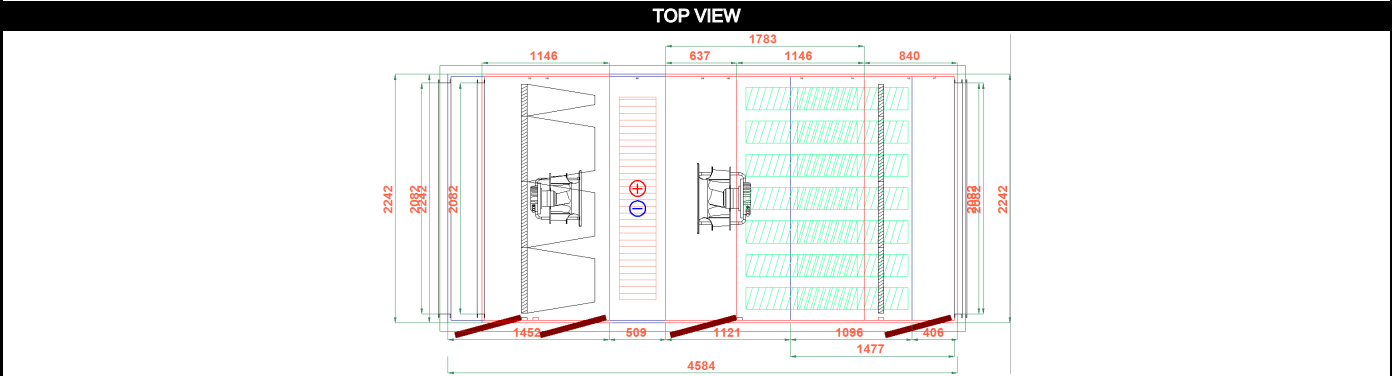
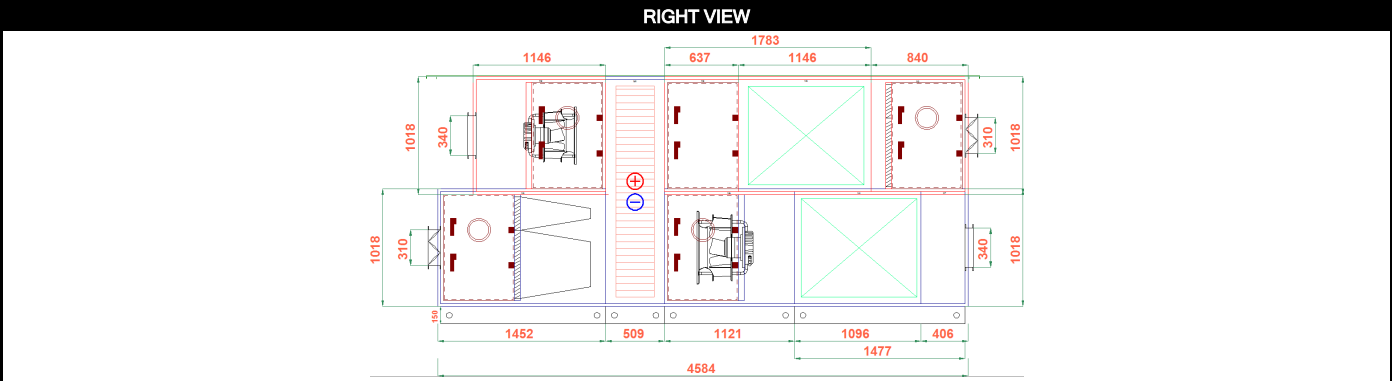




TECHNICAL DATA

Date	12/03/2018	Rev. Date	03/05/2018
Project No	2233	Proj.Trace No	32495
Project Name	HEAT ECOVERY UNIT-ECO		
AHU Name	AHU-3		
AHU Model	JUPITER 12 X 24		



GENERAL SPECIFICATIONS

Supply Air Flow 10,000 m³/h	Return Air Flow 10,000 m³/h	Frame 25 steel profile	Dimensions (mm) A2192 x H968
Supply Air Velocity 1.41 m/s	Return Air Velocity 1.41 m/s	Insulation Material Rockwool 70 kg/m³	Total Weight 0 kg
Coil Air Velocity	Air Density 1.3255 kg/m³	Insulation Thickness 50 mm	Base Height / Installation 150 mm / Outside
Design Outdoor Temp. -7.7 °C / 25.8 °C(Odense)	Mixing Ratio % 0.00	Outside Sheet Material 0.9 mm Painted Galvanize	Absorbed Power 6.37 kW
Total Heating Capacity	Total Cooling Capacity	Inside Sheet Material 0.9 mm Galvanize	Motor Power(Vant/Asp)
Specific Fan Power(SFP Total) 0.79 kW/(m³/s)	ErP Compliance 2016	ErP Code NRVU - BVU	Real Unit CAL Class -400 Pa L3
			Real Unit CAL Class +400 Pa L3

NOISE LEVEL

SOUND POWER LEVEL (dB)

LwA-tot

Frequency Hz	125	250	500	1000	2000	4000	8000		
Airborne Sound Power Level	59.5	57.0	56.7	53.8	54.0	49.2	48.9	59.0	dB(A)
Supply Air Outlet Induct Sound Power Level	71.6	65.0	70.4	71.9	67.6	76.8	68.3	78.8	dB(A)
Supply Air Inlet Induct Sound Power Level	60.3	71.6	69.7	69.0	72.9	77.0	72.0	80.0	dB(A)
Return Air Outlet Induct Sound Power Level	77.9	84.2	86.8	89.2	87.3	85.7	92.8	95.3	dB(A)
Return Air Inlet Induct Sound Power Level	58.1	49.6	51.6	44.3	47.9	54.3	68.6	67.6	dB(A)

ACCESSORIES

Lightening, Observation Glass, U-Manometer, Manometer Pressure Gauge


Model	CS Class	CAL Class -400 Pa	CAL Class +400 Pa	FBL Class	TT Class	TBF Class	Casing accoustical insulation at 125 Hz [dB]	Casing accoustical insulation at 250 Hz [dB]	Casing accoustical insulation at 500 Hz [dB]	Casing accoustical insulation at 1000 Hz [dB]	Casing accoustical insulation at 2000 Hz [dB]	Casing accoustical insulation at 4000 Hz [dB]	Casing accoustical insulation at 8000 Hz [dB]
JUPITER	D2	L1	L1	F9	T2	TB2	18.4	27.2	30.1	35.4	33.3	36.5	43.9

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	TECHNICAL DATA			
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	Project No	2233	Proj.Trace No	32495
	Project Name	HEAT ECOVERY UNIT-ECO		
AHUSEL V.	2.2.3.12 26/02/2018	AHU Name	AHU-3	
BSK	2/5	AHU Model	JUPITER 12 X 24	



FRESH AIR CONNECTION

Connection Type	Automation	Pressure Drop
Gear Damper	Automatic	10 Pa
Airflow	Dimensions	Air Velocity
10,000 m³/h	A 2082 mm x H 310 mm	4.30 m/s

SUPPLY CONNECTION

Connection Type	Automation	Pressure Drop
Flange	Automatic	10 Pa
Airflow	Dimensions	Air Velocity
10,000 m³/h	A 2082 mm x H 340 mm	3.92 m/s


RETURN CONNECTION

Connection Type	Automation	Pressure Drop
Gear Damper	Automatic	10 Pa
Airflow	Dimensions	Air Velocity
10,000 m³/h	A 2082 mm x H 310 mm	4.30 m/s

EXHAUST CONNECTION

Connection Type	Automation	Pressure Drop
Flange	Automatic	10 Pa
Airflow	Dimensions	Air Velocity
10,000 m³/h	A 2082 mm x H 340 mm	3.92 m/s

FILTER (M3)

Filter Type	Initial / Final / Design P.Drop	Air Velocity	Size/Quantity/EC*	Size/Quantity/EC*	Size/Quantity/EC*	Section Weight
G-4 Panel	41 Pa / 160 Pa / 100 Pa	1.60 m/s	592x592x50/3/NA	592x287x50/4/NA		0 kg
Filter Type	Initial / Final / Design P.Drop	Air Velocity	Size/Quantity/EC*	Size/Quantity/EC*	Size/Quantity/EC*	Spare Filter
F-7 Bag	44 Pa / 360 Pa / 202 Pa	1.60 m/s	592x592x610/3/E	592x287x610/4/B		

* Filter Energy Performance; preferably energy classification

ACCESSORIES

Lightening, Observation Glass, U-Manometer, Manometer Pressure Gauge



ROTARY HEAT RECOVERY (M1)

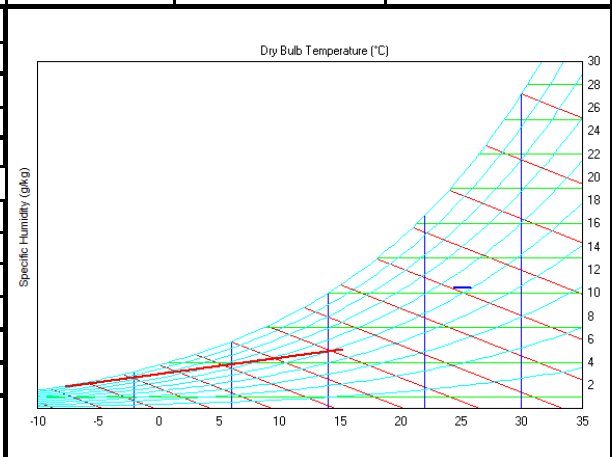
Model	Rpm	Quantity	Section Weight
RRU-P-E20-1825/1825-1700	15	1	0 kg

	Fresh Air		Exhaust		Capacity	Summer		Winter		
	Airflow	10,000 m³/h	10,000 m³/h			-4.69 kW	105.61 kW			
	Air Vel.		2.21 m/s		2.47 m/s		Fresh	Exhaus	Fresh	Exhau
	Summer		Winter		P.D (Pa)	98	97	80	96	
Effect.	Ratio(*)	Effect.	Ratio(*)	1.2kg/m³		95	95	95	95	
	76.90	76.90	77.20	77.20						

Air Inlet / Outlet	Summer				Winter			
	Fresh Air		Exhaust		Fresh Air		Exhaust	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
	DT	25.80	24.42	24.00	25.39	-7.70	15.23	22.00
WT	18.54	18.08	17.06	17.54	-8.08	9.63	15.42	0.98
RH	50.00	54.30	50.00	46.03	90.00	48.09	50.00	95.00

Condensation Pan	OACF	EATR (%)
	0.87	16.16

Frequency Inverter



* Efficiency at balanced flow


* OACF: Outdoor Air Correction Factor, EATR: Exhaust Air Transfer Ratio

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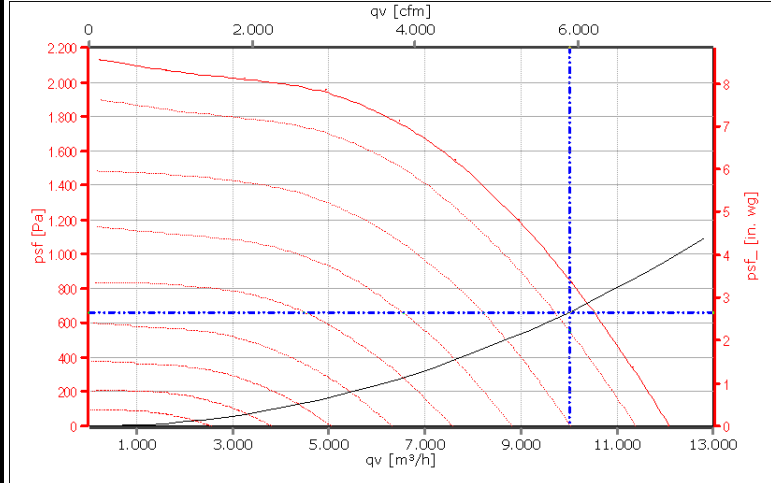


	TECHNICAL DATA			
	Date	12/03/2018	Rev. Date	03/05/2018
	Project No	2233	Proj.Trace No	32495
	Project Name	HEAT ECOVERY UNIT-ECO		
AHUSEL V.	2.2.3.12 26/02/2018	AHU Name	AHU-3	
BSK	3/5	AHU Model	JUPITER 12 X 24	



ACCESSORIES		

SUPPLY FAN (M8)

Airflow 10,000 m³/h	Fan Model EBM Papst-K3G450AZ3001	Quantity 1	Section Weight 0 kg																																								
Internal Static Pressure 414 Pa	Motor P./Volt./Pha./Freq. 3P/400V/50-60Hz																																										
External Static Pressure 250 Pa																																											
Total Static Pressure 664 Pa																																											
Total Pressure 848 Pa																																											
Total / Static Efficiency 55.08 / 43.09 %																																											
Shaft / Absorbed Power 4.28 / 4.28 kW	Absorbed Pow.With VFD 4.28 kW	<table border="1" style="width: 100%;"> <tr> <th colspan="8" style="text-align: center;">Sound Power Level (dB)</th> <th colspan="2" style="text-align: center;">LwA-tot</th> </tr> <tr> <th>Hz</th> <th>125</th> <th>250</th> <th>500</th> <th>1000</th> <th>2000</th> <th>4000</th> <th>8000</th> <th></th> <th></th> </tr> <tr> <td>SPLa - Inlet Side</td> <td>76.3</td> <td>87.6</td> <td>85.7</td> <td>85.0</td> <td>84.9</td> <td>89.0</td> <td>84.0</td> <td>93.4</td> <td>dBa</td> </tr> <tr> <td>SPLm - Outlet Side</td> <td>79.2</td> <td>88.0</td> <td>91.9</td> <td>96.4</td> <td>92.1</td> <td>94.7</td> <td>85.4</td> <td>100.5</td> <td>dBa</td> </tr> </table>		Sound Power Level (dB)								LwA-tot		Hz	125	250	500	1000	2000	4000	8000			SPLa - Inlet Side	76.3	87.6	85.7	85.0	84.9	89.0	84.0	93.4	dBa	SPLm - Outlet Side	79.2	88.0	91.9	96.4	92.1	94.7	85.4	100.5	dBa
Sound Power Level (dB)								LwA-tot																																			
Hz	125	250	500	1000	2000	4000	8000																																				
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SPLm - Outlet Side	79.2	88.0	91.9	96.4	92.1	94.7	85.4	100.5	dBa																																		
Fan Speed 2642 rpm(Max.2750 rpm)		<table border="1" style="width: 100%;"> <tr> <td>Specific Fan Power(SFPe int)</td> <td>0.15 kW/(m³/s)</td> <td>Air Density</td> <td>1.2000 kg/m³</td> </tr> <tr> <td>Backup Fan</td> <td>0</td> <td>Backup Motor</td> <td>0</td> </tr> </table>		Specific Fan Power(SFPe int)	0.15 kW/(m³/s)	Air Density	1.2000 kg/m³	Backup Fan	0	Backup Motor	0																																
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* The fan system effect is taken into account in the fan performance
 * The fan calculated for wet conditions
 * Sfp is calculated based on clean filter & dry coil conditions

ACCESSORIES		
Lightening, Observation Glass		

SILENCER (M4)

Airflow 10,000 m³/h	Sound Absorption (250 Hz) 22 dB	Pressure Drop 12 Pa	Silencer Thickness 200 mm	Silencer Material Rockwool (52 kg/m³) 50 m	Section Weight 0 kg
Silencer Code	200d 100s 7n 1000L 850H 2127A				

ACCESSORIES		

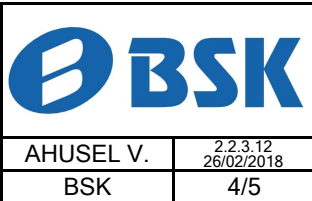
EMPTY SECTION (M7)

Airflow 10,000 m³/h	Pressure Drop 0 Pa	Section Weight 0 kg
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ACCESSORIES		

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TECHNICAL DATA			
Date	12/03/2018	Rev. Date	03/05/2018
Project No	2233	Proj.Trace No	32495
Project Name	HEAT ECOVERY UNIT-ECO		
AHU Name	AHU-3		
AHU Model	JUPITER 12 X 24		



EXHAUST FAN (M9)

Airflow	10,000 m³/h	Fan Model	EBM Papst-K3G400PA2771	Quantity	1	Section Weight	0 kg																																				
Internal Static Pressure	228 Pa	Motor P./Volt./Pha./Freq.	3P/400V/50-60Hz																																								
External Static Pressure	25 Pa																																										
Total Static Pressure	253 Pa																																										
Total Pressure	415 Pa																																										
Total / Static Efficiency	55.22 / 33.65 %																																										
Shaft / Absorbed Power	2.09 / 2.09 kW	Absorbed Pow.With VFD	2.09 kW																																								
Fan Speed	2654 rpm(Max.2750 rpm)			<table border="1"> <thead> <tr> <th colspan="8">Sound Power Level (dB)</th> <th>LwA-tot</th> </tr> <tr> <th>Hz</th> <th>125</th> <th>250</th> <th>500</th> <th>1000</th> <th>2000</th> <th>4000</th> <th>8000</th> <th></th> </tr> </thead> <tbody> <tr> <td>SPLa - Inlet Side</td> <td>76.7</td> <td>83.6</td> <td>84.1</td> <td>79.8</td> <td>80.4</td> <td>80.2</td> <td>93.7</td> <td>93.7 dBA</td> </tr> <tr> <td>SPLm - Outlet Side</td> <td>77.9</td> <td>84.2</td> <td>86.8</td> <td>89.2</td> <td>87.3</td> <td>85.7</td> <td>92.8</td> <td>95.8 dBA</td> </tr> </tbody> </table>				Sound Power Level (dB)								LwA-tot	Hz	125	250	500	1000	2000	4000	8000		SPLa - Inlet Side	76.7	83.6	84.1	79.8	80.4	80.2	93.7	93.7 dBA	SPLm - Outlet Side	77.9	84.2	86.8	89.2	87.3	85.7	92.8	95.8 dBA
Sound Power Level (dB)								LwA-tot																																			
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SPLa - Inlet Side	76.7	83.6	84.1	79.8	80.4	80.2	93.7	93.7 dBA																																			
SPLm - Outlet Side	77.9	84.2	86.8	89.2	87.3	85.7	92.8	95.8 dBA																																			
Specific Fan Power(SFP _e int)	0.07 kW/(m³/s)	Air Density	1.2000 kg/m³																																								
Backup Fan	0	Backup Motor	0																																								

* The fan system effect is taken into account in the fan performance
 * The fan calculated for wet conditions
 * Sfp is calculated based on clean filter & dry coil conditions

ACCESSORIES	
Lightening, Observation Glass	

EMPTY SECTION (M6)			
Airflow	10,000 m³/h	Pressure Drop	0 Pa
		Section Weight	0 kg

ACCESSORIES	

SILENCER (M5)					
Airflow	10,000 m³/h	Sound Absorption (250 Hz)	22 dB	Pressure Drop	12 Pa
		Silencer Thickness	200 mm	Silencer Material	Rockwool (52 kg/m³) 50 m
Silencer Code	200d 100s 7n 1000L 850H 2127A				

ACCESSORIES	

FILTER (M2)						
Filter Type	Initial / Final / Design P.Drop	Air Velocity	Size/Quantity/EC*	Size/Quantity/EC*	Size/Quantity/EC*	Section Weight
G-4 Panel	41 Pa / 160 Pa / 100 Pa	1.60 m/s	592x592x50/3/NA	592x287x50/4/NA		0 kg
Filter Type	Initial / Final / Design P.Drop	Air Velocity	Size/Quantity/EC*	Size/Quantity/EC*	Size/Quantity/EC*	Spare Filter
						<input type="checkbox"/>

* Filter Energy Performance; preferably energy classification

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BSK		TECHNICAL DATA			
		Date	12/03/2018	Rev. Date	03/05/2018
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AHUSEL V.	2.2.3.12 26/02/2018	AHU Name	AHU-3		
BSK	5/5	AHU Model	JUPITER 12 X 24		



ACCESSORIES

Lightening, Observation Glass, U-Manometer, Manometer Pressure Gauge



Ecodesign Requirements Table

	Value	2016	2018
Product	JUPITER 25		
Erp	2016		
A Manufacturer	BSK Havalandırma Ekipmanları A.Ş.		
B Model Identifier	JUPITER 12 X 24		
C ErP Code	NRVU - BVU		
D Type Of Drive	Variable Speed Drive (VSD)	Variable Speed Drive (VSD)	Required
E Type Of HRS	Rotary		
HRS Damper	Exists	Required	Required
F Thermal Efficiency of HRS	77.20 %	>= 67 %	>= 73 %
G Nominal Flow Rate	2.78 m³/s	2.78 m³/s	
H Effective Electrical Power Input	4.28 kW	2.09 kW	
I SPFInt	811 W/(m³/s)	351 W/(m³/s)	<= 1045
J Face Velocity	1.41 m/s	1.41 m/s	<= 775
K Nominal External Drop Δps, Ext	250 Pa	25 Pa	
L Internal Pressure Drop Δps, Int	414 Pa	228 Pa	
M Additional Pressure Drop Δps, Add	184 Pa	162 Pa	
N Static Fan Efficiency EC327/2011	43.09 %	33.65 %	
O Declared Maximum Ext./Int. Leakage Rate	0.87 %		
P Energy Performance Of Filters	B	NA	
Q Description Of Visual Filter Warning	Manometer Pressure Gauge	Manometer Pressure Gauge	Required
R Casing Sound Power Level (Lwa)	100.5 dB	95.8 dB	
S Internet Address Of Instructions	www.bskhavalandirma.com.tr		