DivisionName_
DivisionStreet_; DivisionCity_; DivisionCountry_
DivisionTel_; DivisionFax_

Technical data for item 1

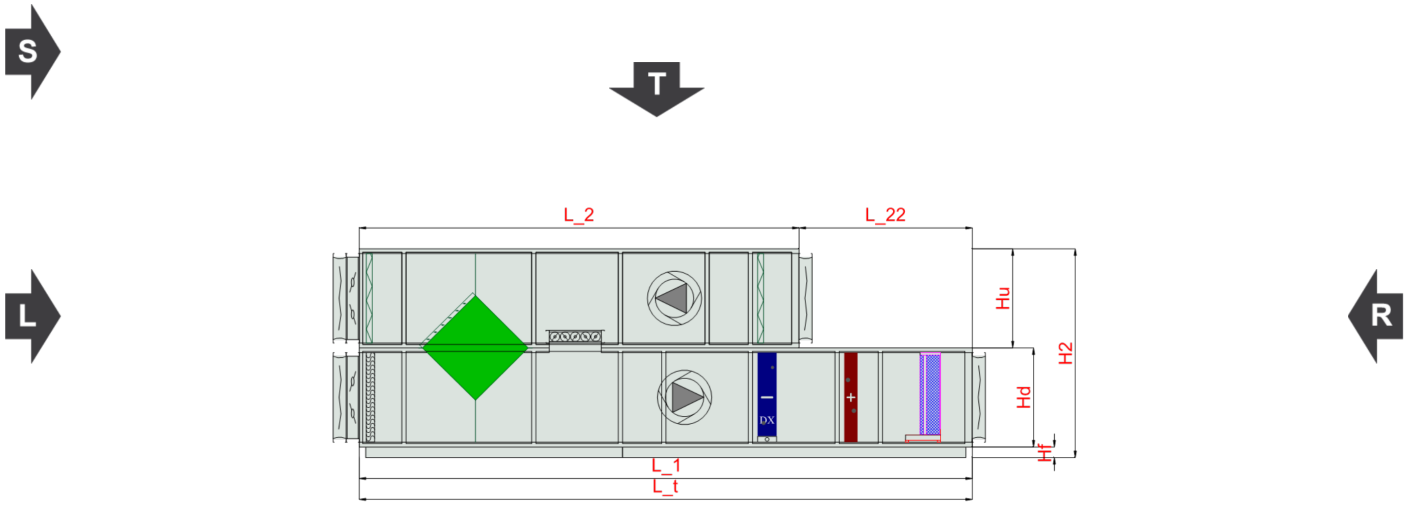
Offer number **5/LIVE.EUR/BT/2020**

Project name BSDO
TIM /1DP.DCER.0000/

Type	RecoveryCrossVertical	**Supply airflow 2**	4320.00 m³/h
Application	Indoor	**External pressure**	150 Pa
Project Tag	1		
Size	VVS075	**Exhaust airflow 2**	4320.00 m³/h
Set	VVS075-R-FPMVCHW/VVS075-L-FVMPD_cd	**External pressure**	100 Pa
Insulation thickness	40 mm	**SFP Winter (EN 13779)**	0.86 kW/m³/s
Insulation	Polyurethane Foam	**SFP Summer (EN 13779)**	0.87 kW/m³/s
Weight of the set (+/- 10%)*	882 Kg		
		Energy efficiency class	A+ 2016

EUROVENT CERTIFIED PERFORMANCE
AHU N° 06.06.320
Range: VENTUS VVS010 - VVS650
www.eurovent-certification.com

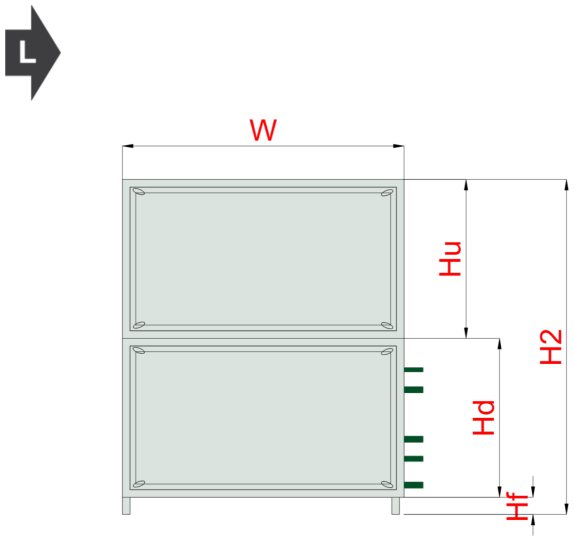
Inspection Panels



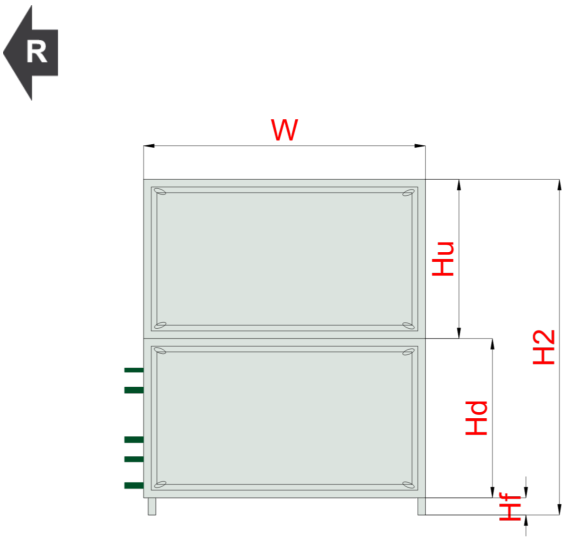
Comment 1:

Technical data for item 1 **Offer number** **5/LIVE.EUR/BT/2020**

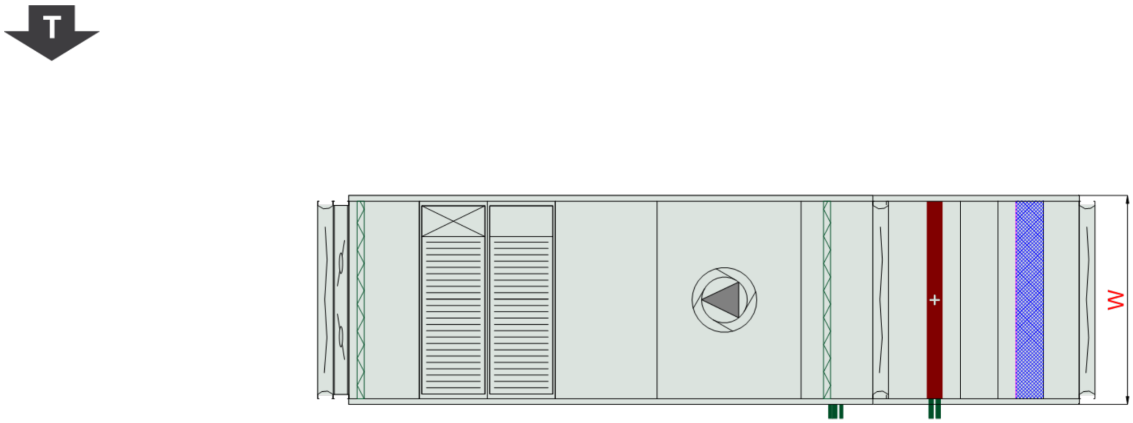
Front View (left)



Front View (right)



Top View



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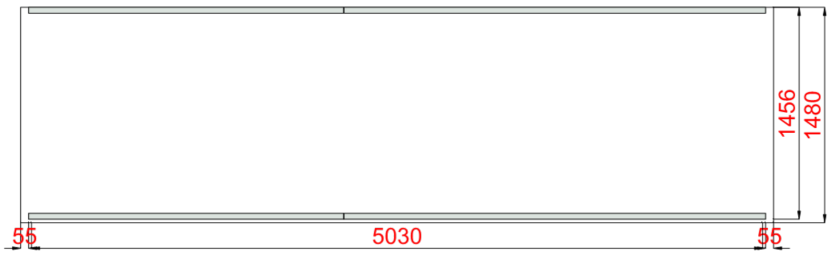
Technical data for item 1 **Offer number** **5/LIVE.EUR/BT/2020**

Frame Top View, within the AHU outline contour



Sizes [mm]

Air intake Supply	FF	1340x695	**Lt**	5180	**Hi**	755	**Wi**	1400
Air outlet Supply	FF	1340x695	**LtA**	5510	**H**	925	**W**	1480
			L1	5180	**H2**	1760		
Air inlet Exhaust	FF	1340x695	**L2**	3716	**Hf**	90		
Air outlet Exhaust	FF	1340x695	**L22**	1464				

Unit design

Casing made of 40mm polyurethane foam ‘sandwich’ type panels formed in ‘C’ shape

Mechanical strength of casing -1000 Pa ÷ 1000 Pa < 2mm (D1 - EN 1886: 2007)

Casing tightness: (MB): (-400) Pa - 0,05 l/sm² (L1 - EN 1886:2007), (+700) Pa - 0,13 l/sm² (L1 - EN 1886:2007); (RU): -400 Pa - 0,09 l/sm² (L1 - EN 1886:2007), +400 Pa - 0,93 l/sm² (L1 - EN 1886:2007)

Casing heat transfer coefficient K= 0,6 W/m²K (T2 - EN 1886: 2007)

Thermal bridges coefficient Kb = 0,52 (TB3 - EN 1886: 2007)

Temperature Conditions

Reference atmospheric pressure 101325 Pa **Winter outdoor reference temperature -3.0 °C**

	External air			Return air		
	DBT	X	DA	DBT	X	DA
Summer	30.0 °C	13.700 g/kg	1.2000 kg/m³	25.0 °C	11.000 g/kg	1.2000 kg/m³
Winter	-3.0 °C	1.800 g/kg	1.2000 kg/m³	19.0 °C	6.000 g/kg	1.2000 kg/m³

Technical data for item 1 **Offer number** **5/LIVE.EUR/BT/2020**

Supply

Panel Filter

Type PG4/50.Flat.Int.Sld

Coarse 75% (ISO 16890) - EFF CLASS E Flat[3.0]/50

Filter Energy Performance Class	E

Winter operation		**Summer operation**	
50% Dirty Air Pressure Drop	54 Pa	50% Dirty Air Pressure Drop	56 Pa
Initial Air Pressure Drop	8 Pa	Initial Air Pressure Drop	12 Pa
100% Dirty Air Pressure Drop	100 Pa	100% Dirty Air Pressure Drop	100 Pa
Air velocity	0.91 m/s	Air velocity	1.13 m/s

Cross-Flow Plate

Type PCR VVS075 StdEff

Winter operation		**Summer operation**	
Supply		**Supply**	
Intake air DBT / X	-3.0 °C / 1.800 g/kg	Intake air DBT / X	30.0 °C / 13.700 g/kg
Discharge air DBT / X	9.4 °C / 1.800 g/kg	Discharge air DBT / X	30.0 °C / 13.700 g/kg
Air velocity	1.60 m/s	Air velocity	1.60 m/s
Pressure drop Wet / Dry Wet / Dry	37 Pa / 37 Pa	Pressure drop Wet / Dry Wet	37 Pa
Air Pressure	101325 Pa	Air Pressure	101325 Pa
Air Density	1.2000 kg/m³	Air Density	1.2000 kg/m³
Air Volume Flow	3456.00 m³/h	Air Volume Flow	4320.00 m³/h
Recovery capacity Sensible / Total Sensible / Total	14.0 kW / 14.0 kW		
Actual efficiency / at balanced flow Real / BalancedFlow	56 % / 56 %		

Winter operation		**Summer operation**	
Exhaust		**Exhaust**	
Intake air DBT / X	19.0 °C / 6.000 g/kg	Intake air DBT / X	25.0 °C / 11.000 g/kg
Discharge air DBT / X	7.3 °C / 5.800 g/kg	Discharge air DBT / X	25.0 °C / 11.000 g/kg
Air velocity	1.60 m/s	Air velocity	1.60 m/s
Pressure drop Wet / Dry Wet / Dry	38 Pa / 38 Pa	Pressure drop Wet / Dry Wet	38 Pa
Air Pressure	101325 Pa	Air Pressure	101325 Pa
Air Density	1.2000 kg/m³	Air Density	1.2000 kg/m³
Air Volume Flow	3456.00 m³/h	Air Volume Flow	4320.00 m³/h
Recovery Bypass	Yes		
Air Damper	No		
Cross-Flow	Max Internal Leakage 0.25%		

Technical data for item 1 **Offer number** **5/LIVE.EUR/BT/2020**

Mixing section downstream indirect energy recovery

Mixing Box

Winter operation		**Summer operation**	
Recirculation	20 %	Recirculation	0 %
Supply inlet	9.4 °C/1.800 g/kg	Supply inlet	30.0 °C/13.700 g/kg
Exhaust inlet DBT/X	19.0 °C/6.000 g/kg	Exhaust inlet DBT/X	0.0 °C/0.000 g/kg
Supply outlet DBT/X	11.3 °C/2.640 g/kg	Supply outlet DBT/X	30.0 °C/13.700 g/kg
Sensible recovery capacity	2.8 kW	Sensible recovery capacity	0.0 kW

Plug-Fan Set

Fan Section PLUG_DD_450_2,20_4

Fan System	Main Fan	Qty in section	x 1
Fan Set Assembly Type	FLX1 (Gasket)		

Fan Set Designed for wet operating conditions

The Fan System EffectIs Taken Into Account In The Fan Performances

Fan PLUG_VS_450_AF_Px 1

Total Static Pressure	311 Pa	Impeller efficiency: Static / Total	64 %/69 %
Dynamic pressure	27 Pa	Shaft power	0.59 kW x 1
External pressure	150 Pa	Working revolutions	1355 1/min
Total Pressure	338 Pa	Fans Connection Standard	FLX1 (Gasket)

Motor AC_IE2_F_100L_IMB3_4p_2.2_50x 1

FLA	8.2 A	MCA	10.3 A
MCB	16.0 A		
Motor enclousure	IMB3	Rated Currect	7.9 A x 1
IEC Size	100L	Rated revolutions	1441 1/min
Operational Voltage	230 V/3 ph	Rated Power	2.20 kW x 1
Fan Motor Rated Voltage	230 V/3 ph/50 Hz	Motor Version	Standard

Variable Frequency Drives

Technical data for item 1 **Offer number** **5/LIVE.EUR/BT/2020**

Resp_FanSection_Vfd_FLA_Name	14.2 A	Resp_FanSection_Vfd_MCA_Name	17.8 A
Resp_FanSection_Vfd_MCB_Name	20.0 A		
VFD(AC) or Controller(EC)		Connecting point	CP Excluded
VFD(AC) or Controller(EC) Qty in section	1	VFD(AC) or Controller(EC) Voltage Supply	230/1/50 V/ph/Hz
VFD(AC) or Controller(EC) Settings	47 Hz	VFD(AC) or Controller(EC) Rated Power	2.20 kW x 1
VFD(AC) or Controller(EC) in selection	Incuded	VFD HMI	No
VFD Optional Nema KIT	No	ModBus Connecting Board	No
Winter operation		**Summer operation**	
EPC for mean contaminated filters	0.72 kW	EPC for mean contaminated filters	0.72 kW
EPC for clean filters	0.62 kW	EPC for clean filters	0.63 kW
SFP for clean filters	0.52 kW/m³/s	SFP for clean filters	0.53 kW/m³/s
Air Pressure	101325 Pa	Air Pressure	101325 Pa
Air Density	1.2000 kg/m³	Air Density	1.2000 kg/m³
Air Volume Flow	4320.00 m³/h	Air Volume Flow	4320.00 m³/h

DX Cooling Coil

Type DXC VVS075 3R-1 TD SH.Cu.St.Std | **Number of rows** 3 | **Sections** 1 | **Connection Supply/Return:** Ø22/Ø28

13,05 [dm^3] DX VVS075 3R-1 SH.Cu.St.Std

Medium	R410A	Maximum working pressure	16 bar
		Maximum working temperature	42.0 °C
Winter operation		**Summer operation**	
Intake air DBT / X	11.3 °C / 2.640 g/kg	Intake air DBT / X	30.0 °C / 13.700 g/kg
Discharge air DBT / X	11.3 °C / 2.640 g/kg	Discharge air DBT / X	14.2 °C / 9.376 g/kg
Air velocity	1.40 m/s	Air velocity	1.40 m/s
Pressure drop Wet / Dry Wet	37 Pa	Pressure drop Wet / Dry Wet / Dry	37 Pa / 22 Pa
Air Pressure	101325 Pa	Air Pressure	101325 Pa
Air Density	1.2000 kg/m³	Air Density	1.2000 kg/m³
Air Volume Flow	4320.00 m³/h	Air Volume Flow	4320.00 m³/h
Cooling capacity: Sensible / Total	0.0 kW/0.0 kW	Cooling capacity: Sensible / Total	23.4 kW/39.2 kW
Evaporation temperature	6.0 °C	Evaporation temperature	6.0 °C
Medium flow rate	0.00 m³/h	Medium flow rate	0.67 m³/h
Medium pressure drop	0.00 kPa	Medium pressure drop	17.34 kPa

Technical data for item 1 **Offer number** **5/LIVE.EUR/BT/2020**

Hot Water Coil

Type WCL VVS075 2R DT SH.St.St.Std **Number of rows** 2 **Connection Supply/Return:** 1 1/4"/1 1/4"

Standard Circuits	8,2 [dm^3]	WCL VVS075 SH.St.St.Std

Medium	Water	Maximum working pressure	16 bar
Glycole concentration	0.00 %	Maximum medium temperature	160.0 °C
Winter operation		**Summer operation**	
Intake air DBT / X	11.3 °C / 2.640 g/kg	Intake air DBT / X	14.2 °C / 9.376 g/kg
Discharge air DBT / X	31.0 °C / 2.640 g/kg	Discharge air DBT / X	17.0 °C / 9.376 g/kg
Air velocity	1.38 m/s	Air velocity	1.40 m/s
Pressure drop Wet / Dry Wet	18 Pa	Pressure drop Wet / Dry Wet	19 Pa
Air Pressure	101325 Pa	Air Pressure	101325 Pa
Air Density	1.2000 kg/m³	Air Density	1.2000 kg/m³
Air Volume Flow	4320.00 m³/h	Air Volume Flow	4320.00 m³/h
Total heating capacity	28.6 kW	Total heating capacity	4.1 kW
Medium temperature	45.0 °C/40.0 °C	Medium temperature	45.0 °C/40.0 °C
Medium flow rate	4.93 m³/h	Medium flow rate	0.71 m³/h
Medium pressure drop	11.68 kPa	Medium pressure drop	0.53 kPa

Humidifier

Type

EvaporativeHumWithPump	HUM_NOPOSSIBILITYTOREACHHUM

Winter operation		**Summer operation**	
Intake air DBT / X	31.0 °C / 2.640 g/kg	Intake air DBT / X	17.0 °C / 9.376 g/kg
Discharge air DBT / X	31.0 °C / 2.640 g/kg	Discharge air DBT / X	17.0 °C / 9.376 g/kg
Air velocity	1.14 m/s	Air velocity	1.14 m/s
Pressure drop Wet / Dry Wet	16 Pa	Pressure drop Wet / Dry Wet	16 Pa
Air Pressure	101325 Pa	Air Pressure	101325 Pa
Air Density	1.2000 kg/m³	Air Density	1.2000 kg/m³
Air Volume Flow	4320.00 m³/h	Air Volume Flow	4320.00 m³/h
Humidifier efficiency	0.0 kg/h	Humidifier efficiency	0.0 kg/h
Maximum humidifier efficiency	33.6 kg/h	Maximum humidifier efficiency	0.0 kg/h
Resp_Humidifier_HumidificationEfficiency_Name	0 %	Resp_Humidifier_HumidificationEfficiency_Name	0 %

Acoustic data

Acoustic power level [dB]	Frequency	125 [Hz]	250 [Hz]	500 [Hz]	1000 [Hz]	2000 [Hz]	4000 [Hz]	8000 [Hz]	Lw [dB]
Inlet	[dB]	58.0	62.9	63.5	59.7	57.7	51.6	47.2	68.2
Outlet	[dB]	58.9	46.7	64.4	59.7	52.3	36.3	31.0	66.7
Environment	[dB]	51.4	63.2	58.8	54.9	50.0	27.7	15.2	65.3

Acoustic pressure level at 1 meter distance [dB]	Frequency	125 [Hz]	250 [Hz]	500 [Hz]	1000 [Hz]	2000 [Hz]	4000 [Hz]	8000 [Hz]	Lp [dB]
	[dB]	44.4	56.2	51.8	47.9	43.0	20.7	8.2	58.3

Technical data for item 1 **Offer number** **5/LIVE.EUR/BT/2020**

Exhaust airflow 3

Panel Filter

Type PG4/50.Flat.Int.Sld

Coarse 75% (ISO 16890) - EFF CLASS E — Flat[3.0]/50

Filter Energy Performance Class	E		
Winter operation		**Summer operation**	
50% Dirty Air Pressure Drop	56 Pa	50% Dirty Air Pressure Drop	56 Pa
Initial Air Pressure Drop	12 Pa	Initial Air Pressure Drop	12 Pa
100% Dirty Air Pressure Drop	100 Pa	100% Dirty Air Pressure Drop	100 Pa
Air velocity	1.13 m/s	Air velocity	1.13 m/s

Plug-Fan Set

Fan Section PLUG_DD_450_2,20_4

Fan System	Main Fan	Qty in section	x 1
Fan Set Assembly Type	FLX1 (Gasket)		

Fan Set Designed for wet operating conditions

The Fan System EffectIs Taken Into Account In The Fan Performances

Fan PLUG_VS_450_AF_Px 1

Total Static Pressure	196 Pa	Impeller efficiency: Static / Total	59 %/68 %
Dynamic pressure	27 Pa	Shaft power	0.40 kW x 1
External pressure	100 Pa	Working revolutions	1227 1/min
Total Pressure	224 Pa	Fans Connection Standard	FLX1 (Gasket)

Motor AC_IE2_F_100L_IMB3_4p_2.2_50x 1

FLA	8.2 A	MCA	10.3 A
MCB	16.0 A		
Motor enclousure	IMB3	Rated Currect	7.9 A x 1
IEC Size	100L	Rated revolutions	1441 1/min
Operational Voltage	230 V/3 ph	Rated Power	2.20 kW x 1
Fan Motor Rated Voltage	230 V/3 ph/50 Hz	Motor Version	Standard

Variable Frequency Drives

Technical data for item 1

Offer number 5/LIVE.EUR/BT/2020

Resp_FanSection_Vfd_FLA_Name	14.2 A	Resp_FanSection_Vfd_MCA_Name	17.8 A
Resp_FanSection_Vfd_MCB_Name	20.0 A		
VFD(AC) or Controller(EC)		Connecting point	CP Excluded
VFD(AC) or Controller(EC) Qty in section	1	VFD(AC) or Controller(EC) Voltage Supply	230/1/50 V/ph/Hz
VFD(AC) or Controller(EC) Settings	43 Hz	VFD(AC) or Controller(EC) Rated Power	2.20 kW x 1
VFD(AC) or Controller(EC) in selection	Incuded	VFD HMI	No
VFD Optional Nema KIT	No	ModBus Connecting Board	No
Winter operation		**Summer operation**	
EPC for mean contaminated filters	0.49 kW	EPC for mean contaminated filters	0.49 kW
EPC for clean filters	0.40 kW	EPC for clean filters	0.41 kW
SFP for clean filters	0.34 kW/m³/s	SFP for clean filters	0.34 kW/m³/s
Air Pressure	101325 Pa	Air Pressure	101325 Pa
Air Density	1.2000 kg/m³	Air Density	1.2000 kg/m³
Air Volume Flow	4320.00 m³/h	Air Volume Flow	4320.00 m³/h

Mixing section downstream indirect energy recovery

Mixing Box

Winter operation		**Summer operation**	
Recirculation	20 %	Recirculation	0 %
Supply inlet	0.0 °C/0.000 g/kg	Supply inlet	0.0 °C/0.000 g/kg
Exhaust inlet DBT/X	0.0 °C/0.000 g/kg	Exhaust inlet DBT/X	0.0 °C/0.000 g/kg
Supply outlet DBT/X	0.0 °C/0.000 g/kg	Supply outlet DBT/X	0.0 °C/0.000 g/kg
Sensible recovery capacity	0.0 kW	Sensible recovery capacity	0.0 kW

Acoustic data

Acoustic power level [dB]	Frequency	125 [Hz]	250 [Hz]	500 [Hz]	1000 [Hz]	2000 [Hz]	4000 [Hz]	8000 [Hz]	Lw [dB]
Inlet	[dB]	58.8	64.6	65.1	62.3	59.4	54.2	50.7	69.9
Outlet	[dB]	59.7	65.5	65.1	62.3	56.7	47.0	41.7	70.0
Environment	[dB]	49.5	61.3	56.8	53.0	48.1	25.8	13.3	63.4

Acoustic pressure level at 1 meter distance [dB]	Frequency	125 [Hz]	250 [Hz]	500 [Hz]	1000 [Hz]	2000 [Hz]	4000 [Hz]	8000 [Hz]	Lp [dB]
	[dB]	42.5	54.3	49.8	46.0	41.1	18.8	6.3	56.4

Air Inlet Outlet ACCESSORIES

Supply **Exhaust**

Controls Selection Mode: No controls

Inlet Outlet Holes	Supply	Exhaust
Air Inlet	Front 1340x695	Front 1340x695
Air Outlet	Front 1340x695	Front 1340x695
AirDamper	Supply	Exhaust
Air Inlet	Yes	No
Air Outlet	No	Yes

Technical data for item 1 **Offer number** **5/LIVE.EUR/BT/2020**

Flexible Connection	Supply	Exhaust
Air Inlet	Yes	Yes
Air Outlet	Yes	Yes

Control application

Functional Code AP|0|2|0|0|1|1|1|6|1|0|0|1|0|0|1

Section splits

Transport Sections	**Mass [Kg]**	**LENGTH [mm]**	**WIDTH [mm]**	**HEIGHT [mm]**
1	387	2224	1480	1760
2	164	1492	1480	835
3	326	2956	1480	925

Transport Sections Dims