

Date: 22-05-2020



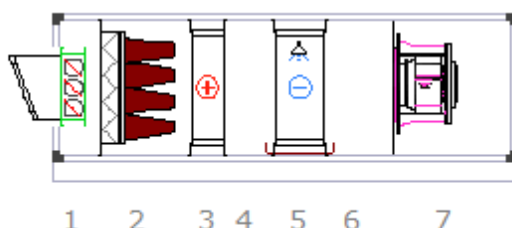
Offer N°: 0023-20
Reference: Charles Street

Customer: FG
Ref. Unit: AHU 4 Rev B 23-05-2020

UNIT TYPE: FLEX-158

Model box: RW-PPGV42
Working temperatures of the AHU: -31/+65 °C
Winter outdoor temperature: -5.0 °C
Altitude: 0 mslm
Air density [kg/m³]: 1.20

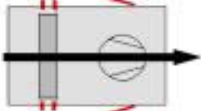
SUPPLY AIR FLOW	m³/h	13788	Supply External Static Pressure	Pa	300
RETURN AIR FLOW	m³/h	//	Return External Static Pressure	Pa	//



Width mm **1680** Height mm **1360 + 120**
Length mm **2980** Total weight kg **772**

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

STRUCTURAL FEATURES

LEFT  RIGHT		Inspection side:	Connection side:					
		Right	Right					
Frame thickness	40 mm	Panel thickness	42 mm					
Insulation	mineral wool	Inner skin material	galvanized steel 5/10					
Internal supports	galvanized steel	Outer skin material	pre-painted sheet thick. 8/10					
Weather canopy	pre-painted roof	Baseframe height	120 mm					
Drain pan	aluminum							
Vertical								
Panels acoustic attenuation - frequency analysis								
F [Hz]	63	125	250	500	1000	2000	4000	8000
[dB]	8	14	22	30	29	31	26	36

Date: 22-05-2020



Offer N°: 0023-20
Reference: Charles Street

Customer: FG
Ref. Unit: AHU 4 Rev B 23-05-2020

UNIT TYPE: FLEX-158

1

Damper section

Inlet section with front damper

Regulation damper aluminum aerofoil with a sealing gasket L1280xH950. Air flow 13788 m³/h.

Pressure drop 14.8 Pa

With on/off actuator with spring return

With rain hood

2 **Prefilters + Rigid bag filter**

Prefilter, filtering efficiency ISO Coarse 50% N°4 592 x 592 x 48 mm

Prefilter, filtering efficiency ISO Coarse 50% N°2 287 x 592 x 48 mm

Rigid bag filter efficiency ISO ePM1 50% N°4 592 x 592 x 292 mm

Rigid bag filter efficiency ISO ePM1 50% N°2 287 x 592 x 292 mm

Clean filter pressure drop 86 + 82 Pa

Calculated filter pressure drop 136 + 107 Pa

Dirty filter pressure drop 186 + 132 Pa

Side filters access

Filter energy performance: 510 kWh/annum



Differential Pressostat

Date: 22-05-2020



Offer N°: 0023-20
Reference: Charles Street

Customer: FG
Ref. Unit: AHU 4 Rev B 23-05-2020

UNIT TYPE: FLEX-158

3 HEATING COIL

AIR THERMOHYGROMETRIC DATA			FLUID	
Air flow	13788 m³/h		Water	
Entering temp./humidity	-5	/ 80 °C/%	Entering temperature	80 °C
Leaving temp./humidity	19	/ 14 °C/%	Leaving temperature	60 °C
Capacity	113.52 kW		Fluid flow rate	4882 l/h
Power margin	0.0 %		Pressure drop	23.3 kPa
Air pressure drop	23 Pa			
Pressure drop dry air	25 Pa			
Air velocity	2.38 m/s			
Coil manufacturer 3S				
P40-16 AC 1R-29T-1390A-2.0Pa Cu/Al NC 5				
N° of rows	1		N° circuits	5
Total area of exchange	49.32 m²		Headers diameter	1 1/4' 1 1/4'
Internal volume	0.01 dm³		Air passage	1390x1160 mm

Frame FeZn - Copper tube 16,45x0,4 mm - Fins Aluminum 0,12 mm

4 Air diffusion plenum

Length 165 mm.

Date: 22-05-2020



Offer N°: 0023-20
Reference: Charles Street

Customer: FG
Ref. Unit: AHU 4 Rev B 23-05-2020

UNIT TYPE: FLEX-158

5 DIRECT EXPANSION COIL

AIR THERMOHYGROMETRIC DATA			FLUID	
Air flow	13788 m³/h		R410A	
Entering temp./humidity	28	/ 50 °C/%	Evaporation temperature	7 °C
Leaving temp./humidity	20	/ 79 °C/%	Overheating	5 °C
Capacity	42.57 kW		Subcooling	5 °C
Power margin	0.0 %		Fluid flow rate	768.30 kg/h
Air pressure drop	84 Pa		Pressure drop	32.6 kPa
Pressure drop dry air	49 Pa		Number of gas circuits	1
Air velocity	2.38 m/s		Sensible-heat factor	0.91
Coil manufacturer 3S				
P40-16 ED 2R-29T-1390A-2.5Pa Cu/Al NC 5				
N° of rows	2		N° circuits	5
Total area of exchange	79.75 m²		Headers diameter	36
Internal volume	0.02 dm³		Air passage	1390x1160 mm

Frame FeZn - Copper tube 16,45x0,4 mm - Fins Aluminum 0,12 mm

Drain pan made of aluminium

6 Air diffusion plenum

Length 300 mm.

Date: 22-05-2020



Offer N°: 0023-20
Reference: Charles Street

Customer: FG
Ref. Unit: AHU 4 Rev B 23-05-2020

UNIT TYPE: FLEX-158

7 Supply fan

FAN GR56C-ZID.GL.CR - 114726/H01		MOTOR Ziehl - Abegg	
Fan type	Plug fan EC	Motor power type	IE3 5 kW
Impeller size	560	Power supply	400/3/50 V/ph/Hz
Air flow	13788 m³/h	Poles	-
External static pressure	300 Pa	Motor shaft diameter	Ø 0 mm
Internal pressure drops of AHU	365 Pa	Insulation Class	F
Total pressure	763 Pa	Protection	IP 55
Total static pressure	665 Pa	Overall static efficiency	60.21 %
Dynamic pressure	98 Pa	Max motor speed	1750 rpm
Fan speed	1703 rpm	Input power	4.23 kW
Air speed	12.76 m/s	Current at duty point	6.23 A
Absorbed power	2.93 kW	Max current	8.00 A
Installation type	free supply		
Voltage at duty point	400 V		
Conformed to E.r.P. 2018			

SOUND POWER LEVEL

Supply	95 dB	Supply	90.8 dB(A)
Inlet	89.2 dB	Inlet	84.2 dB(A)

SOUND POWER LEVEL, OCTAVE BAND

F [Hz] - dB	63	125	250	500	1000	2000	4000	8000
Supply-Lw4	79	83	92	89	86	80	80	80
Suction-Lw7	76	80	86	82	77	74	75	77
Supply-Lw(A)4	53	67	83	85	86	81	81	79
Suction-Lw(A)7	50	64	77	78	77	75	76	76

Sound pressure at 1m. in dB(A) with hemispherical propagation – Tolerance +/-4dB

F [Hz]	dB(A)	63	125	250	500	1000	2000	4000	8000
Supply	83	45	59	75	77	78	73	73	71
Suction	75	42	56	69	70	69	67	68	68
External	56	37	45	53	48	49	42	47	35

The calculated values are only valid for free hemispherical propagation. Other sources of noise, the acoustics of the room, connections of pipes and vibrations can change the indicated value.

The fan system effect is taken into account in the fan performances

Designed for wet conditions

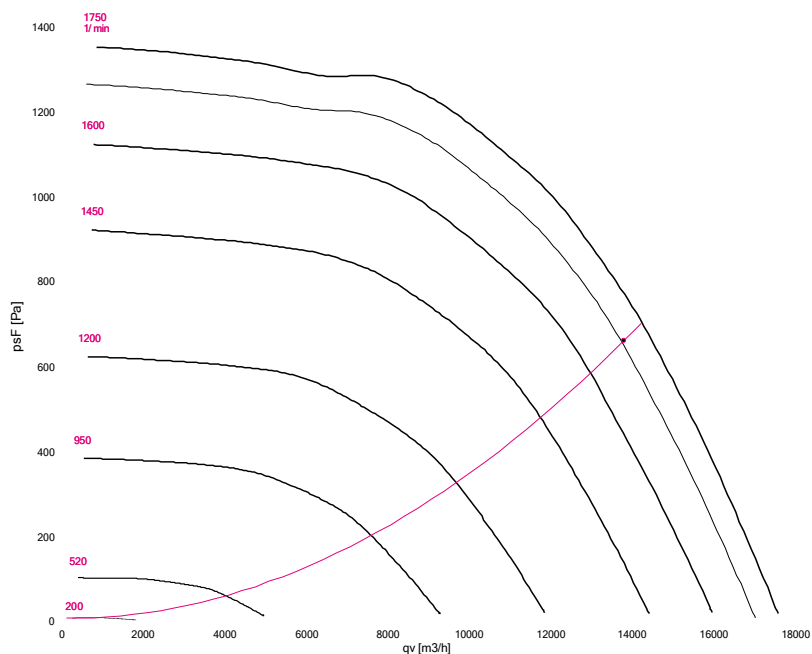
Date: 22-05-2020



Offer N°: 0023-20
Reference: Charles Street

Customer: FG
Ref. Unit: AHU 4 Rev B 23-05-2020

UNIT TYPE: FLEX-158



Date: 22-05-2020



Offer N°: 0023-20
Reference: Charles Street

Customer: FG
Ref. Unit: AHU 4 Rev B 23-05-2020

UNIT TYPE: FLEX-158

SOUND POWER LEVEL AT AHU

Octave band (Hz)	63	125	250	500	1000	2000	4000	8000	Tot. dBA
Lw at O.A. Inlet [dB]	76	80	86	82	77	74	75	77	85
Lw at S.A. Outlet [dB]	79	83	92	89	86	80	80	80	91
Lw to environment [dB]		69	70	59	57	49	54	44	64

Date: 22-05-2020



Offer N°: 0023-20
Reference: Charles Street

Customer: FG
Ref. Unit: AHU 4 Rev B 23-05-2020

UNIT TYPE: FLEX-158

ECODESIGN

Manufacturer	Ferraro Group SpA
Unit model	FLEX-158
Typology	NRVU;UVU
SFPint / SFPint limit 2018 [W/(l/s)]	0.7W/L/S
Type of HRS	-
Thermal efficiency of heat recovery [%]	-
Nominal flow rate [m³/s]	3.83
Casing leakage at -400Pa	L3(R)
Class of casing leakage at +400Pa	L3(R)
Maximum internal leakage rate [%]	-

Supply

Nominal flow rate [m³/s]	3.83
Effective electric power input [Kw]	4.2
Face velocity [m/s]	1.88
Nominal external pressure [Pa]	300
Internal pressure drop of ventilation components [Pa]	91
Static efficiency of fan [%]	60.2
Efficiency of the filters	F7
Type of drive	electronic speed control

Internet address for disassembly instructions: www.ferrarogroup.eu

Ecodesign compliance 2018

If the unit includes a filter section, the AHU must be equipped with a visual signal or alarm in the control system which is activated if the pressure drop across the filter exceeds the maximum allowed final pressure drop.