

## Data sheet

### CFR+ 320 N

High efficiency heat recovery units



## Description

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These heat recovery units are distinguished by a special aluminium air-to-air crossflow heat recovery exchanger.

This negates the need for additional heating/cooling systems for fresh air, a simplified air & water plant and very low consumption.

Series units, designed for false-ceiling installation or similar, match most air plant configurations and use EC technology fans.

The units are provided with standard compact filter, ISO 16890 ePM<sub>1</sub> 55% (F7 EN 779) efficiency for the fresh air flow, ISO 16890 ePM<sub>10</sub> 55% (M5 EN 779) efficiency for the exhaust air flow (ePM<sub>1</sub> 55% filter available for exhaust air as optional).

These units can be easily integrated into traditional room heating/cooling systems, placed in sequence or in parallel.

Series comprises eight sizes, horizontal version only, to cover ventilation requirements from 400 to 4700 m<sup>3</sup>/h.

For each model two configurations are available.

The models of this series can be supplied with an air ionization system called BIOXIGEN®.

Offer	/ 1/31/2019	airCalc Vers.	P01_11
Project		Utente	
Position	CTA 1	Unità	CFR+ 320 N

**Technical data sheets**

Supply air		Exhaust air	
Air volume [m³/h]	<b>3,150</b>	Air volume [m³/h]	<b>3,150</b>
External static pressure (required): [Pa]	<b>100</b>	External static pressure (required): [Pa]	<b>100</b>
External static pressure (available): [Pa]	<b>193</b>	External static pressure (available): [Pa]	<b>194</b>
Winter condition: Temperature: [°C]	<b>-5.00</b>	Winter condition: Temperature: [°C]	<b>20.00</b>
Humidity: [%]	<b>80.0</b>	Humidity: [%]	<b>50.0</b>
Summer condition: Temperature: [°C]	<b>32.00</b>	Summer condition: Temperature: [°C]	<b>26.00</b>
Humidity: [%]	<b>50.0</b>	Humidity: [%]	<b>50.0</b>

<b>Panel filter</b>			
Type	<b>F7</b>	Clean dP [Pa]	<b>66</b>

<b>Plate exchanger</b>			
<b>Heating condition</b>		<b>Cooling condition</b>	
Exhaust [m³/h]	<b>3,150</b>	Exhaust [m³/h]	<b>3,150</b>
Entering [°C]	<b>20.00</b>	Humidity [%]	<b>50.0</b>
Leaving [°C]	<b>6.70</b>	Humidity [%]	<b>100.0</b>
Supply [m³/h]	<b>3,150</b>	Supply [m³/h]	<b>3,150</b>
Entering [°C]	<b>-5.00</b>	Humidity [%]	<b>80.0</b>
Leaving [°C]	<b>16.20</b>	Humidity [%]	<b>17.0</b>
Temperature efficiency [%]	<b>76.6</b>	Temperature efficiency [%]	<b>75.9</b>
Recovery capacity [kW]	<b>21.98</b>	Recovery capacity [kW]	<b>4.80</b>
Condensation (Kg/h)	<b>8.93</b>	Condensation (Kg/h)	

<b>Direct driven fan</b>			
<b>Supply</b>		Fan octave band sound power level L <sub>okt</sub> [dB] / Glob [db(A)]	
Max. power input [kW]	<b>0.550</b>	Frq. [Hz]	63 125 250 500 1000 2000 4000 8000 <b>Glob</b>
Max. current input [A]	<b>6.80</b>	Inlet	<b>83.7 81.7 81.7 78.7 73.7 67.7 65.7 64.7 79.9</b>
Power supply [ph/V/hz]	<b>1x230 / 50</b>	Outlet	
Power/Current Input [kW]	<b>kW / 0.00 A</b>		

<b>Panel filter</b>			
Type	<b>M5</b>	Clean dP [Pa]	<b>59</b>

<b>Direct driven fan</b>			
<b>Exhaust</b>		Fan octave band sound power level L <sub>okt</sub> [dB] / Glob [db(A)]	
Max. power input [kW]	<b>0.550</b>	Frq. [Hz]	63 125 250 500 1000 2000 4000 8000 <b>Glob</b>
Max. current input [A]	<b>6.80</b>	Inlet	<b>83.5 81.5 81.5 78.5 73.5 67.5 65.5 64.5 79.7</b>
Power supply [ph/V/hz]	<b>1x230 / 50</b>	Outlet	
Power/Current Input [kW]	<b>kW / 0.00 A</b>		

**Sound Power Level external casing Lw [dB(A)]**

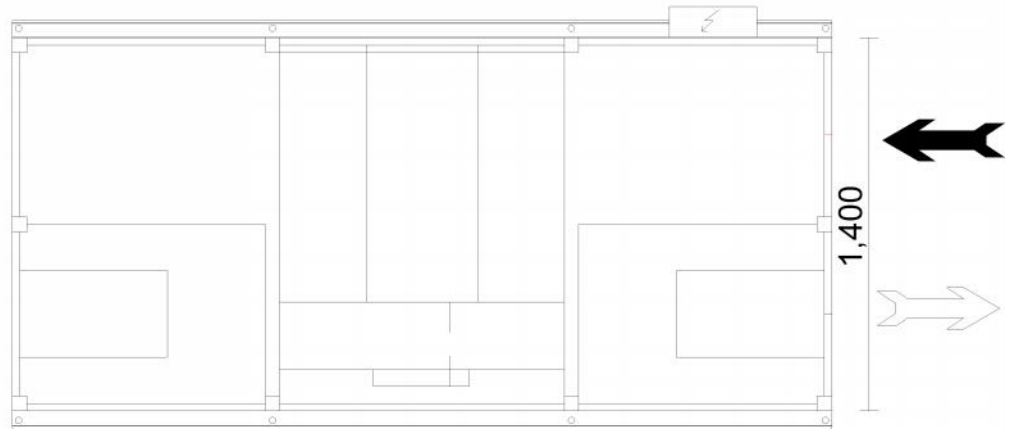
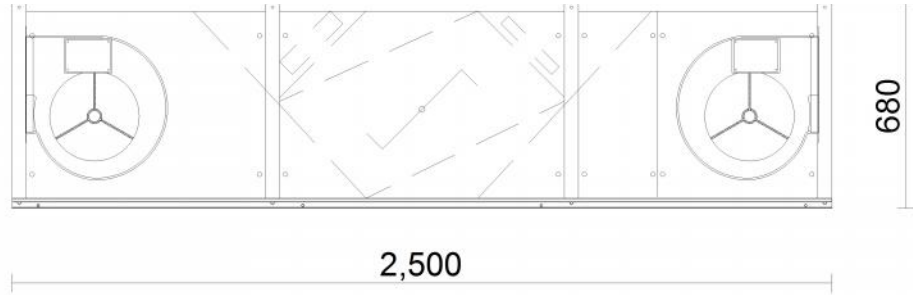
Frq [Hz]	63	125	250	500	1000	2000	4000	8000	Glob.
Lw [db(A)]	52	54	61	61	59	54	35	26	65

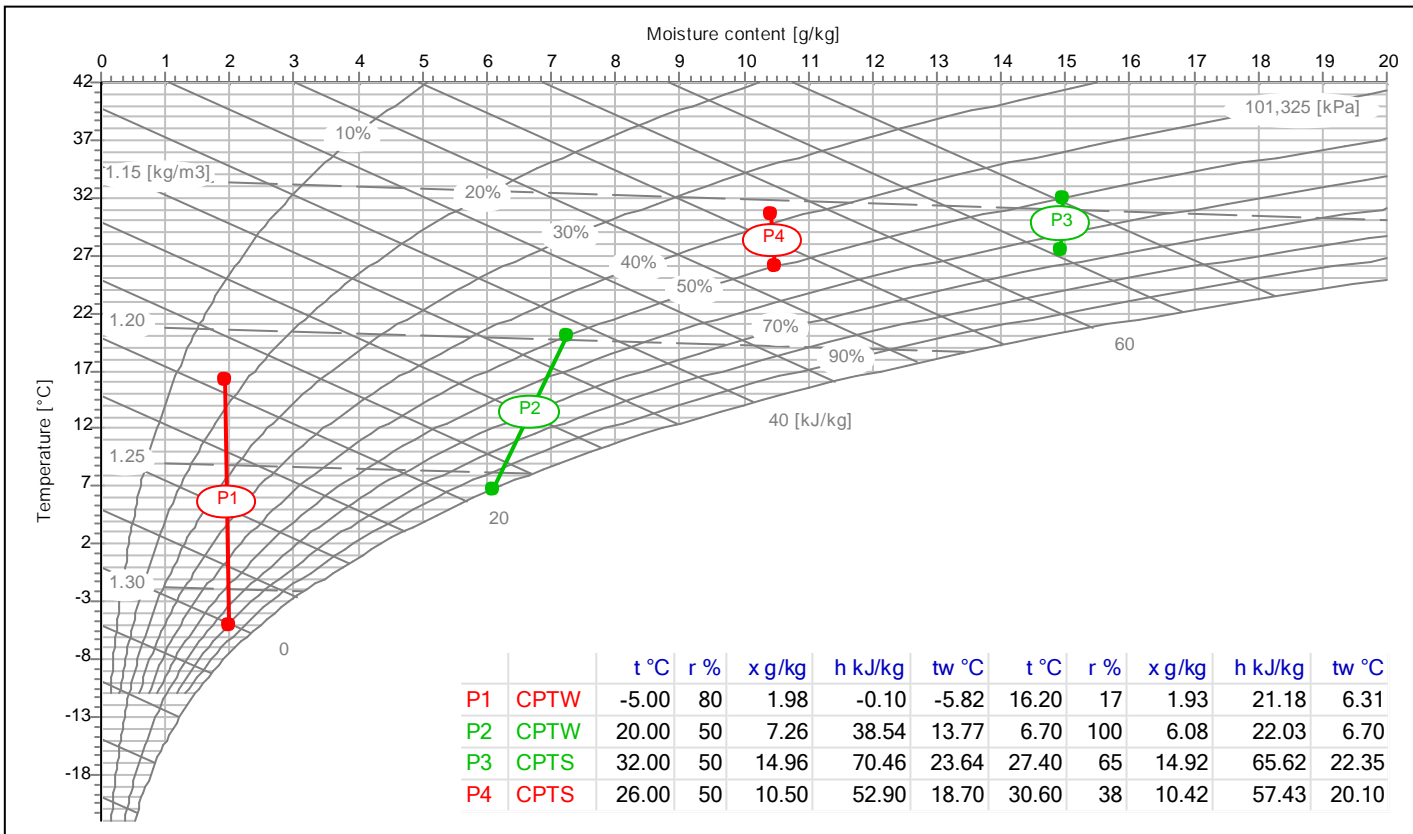
**Configuration and Design Options**

- Configuration type 01
- Configuration type 02
- Electrical post heating section - BER
- Post-heating internal water coil - BCR
- External water coil section - SBFR
- DX coil section - SBED
- High efficiency filters on exhaust air - F7CF
- 3 dampers defrosting section - RMS
- Damper on fresh air intake - SR
- Damper on exhaust air intake - SR
- N. 4 connections for circular ducts kit - SPC
- Kit for external installation - EXT
- Kit weather hood for external installation - CPA
- Duct Silencer supply air - SSC
- Duct Silencer exhaust air - SSC
- Purifying system BIOXIGEN
- Additional pressure switch - PF
- Installation valve and electronic supplied by customer - IKV

**Accessories**

- Low energy consumption fans EC
- Speed controller C3V (CFR+ 40 - 320 N)
- Unit control panel - PCU
- Unit control panel - PCUE
- Unit control panel with modbus - PCUEM
- Unit control panel out 0-10V - MCUE
- Unit control panel out 0-10V with modbus - MCUEM
- Air quality (CO2) sensor (room) - QSA
- Air quality (CO2) sensor (duct) - QSC
- Integrated Management System built-in - SIGB
- Integrated Management System wall - SIGQ
- BMS Modbus RTU Board - SCMB
- Antifreeze thermostat - ATG
- Signal lamps kit - KLS
- Kit 2-way valve with on-off actuator - V2O
- Kit 3-way valve with modulating actuator - V3M
- Damper actuator - SM230
- Damper actuator - SMR230
- Kit bypass management - KBP
- Constant air flow fans control - VSD
- Duct Humidity sensor - USD
- Wall Humidity sensor - USW
- Wall mount remote control panel - TUP





**ECODESIGN**

- Thermal efficiency of heat recovery % 76.1
- Nominal flow rate NRVU m³/s 0.88
- Effective electric power input kW 1.24
- Internal specific fan power of ventilation components (SFPint) W/(m³/s) 683
- internal specific fan power of ventilation components (SFPint\_limit) W/(m³/s) 1127
- Face velocity at design flow rate m/s 0.26
- Nominal external pressure (ps, ext) Pa 193
- Internal pressure drop of ventilation components (ps,int) - Supply/Exhaust Pa 159/152
- Static efficiency of fans % 43.4
- Declared maximum external leakage rates of the casing of ventilation units % < 3,5
- Declared maximum internal leakage rates for bidirectional ventilation units or carry over < 4
- Energy classification of the filters -
- Sound power level (LWA) dB(A) 65

All parameters meet ECODESIGN requirements