

# HPR-FLEX

Heat recovery unit  
WITH MODULATING HEAT PUMP  
CIRCUIT AND A ROTARY  
HEAT RECOVERY  
from 1.500 to 24.500 m<sup>3</sup>/h

The high efficiency heat recovery units with integrated HPR refrigerant circuit have been designed and created for commercial and industrial applications and combine the need for air recirculation with maximum energy saving, thanks to the adoption of very high efficiency components. By their very nature, they are units that are generally well suited for use within traditional heating/cooling systems, even if, under certain environmental conditions, they can be used completely autonomously.



HEAT PUMP



ROTARY



EFFICIENCY

EC  
FANSINVERTER  
COMPRESSORS

PLUG&amp;PLAY

INDOOR  
INSTALLATIONOUTDOOR  
INSTALLATION

R410A

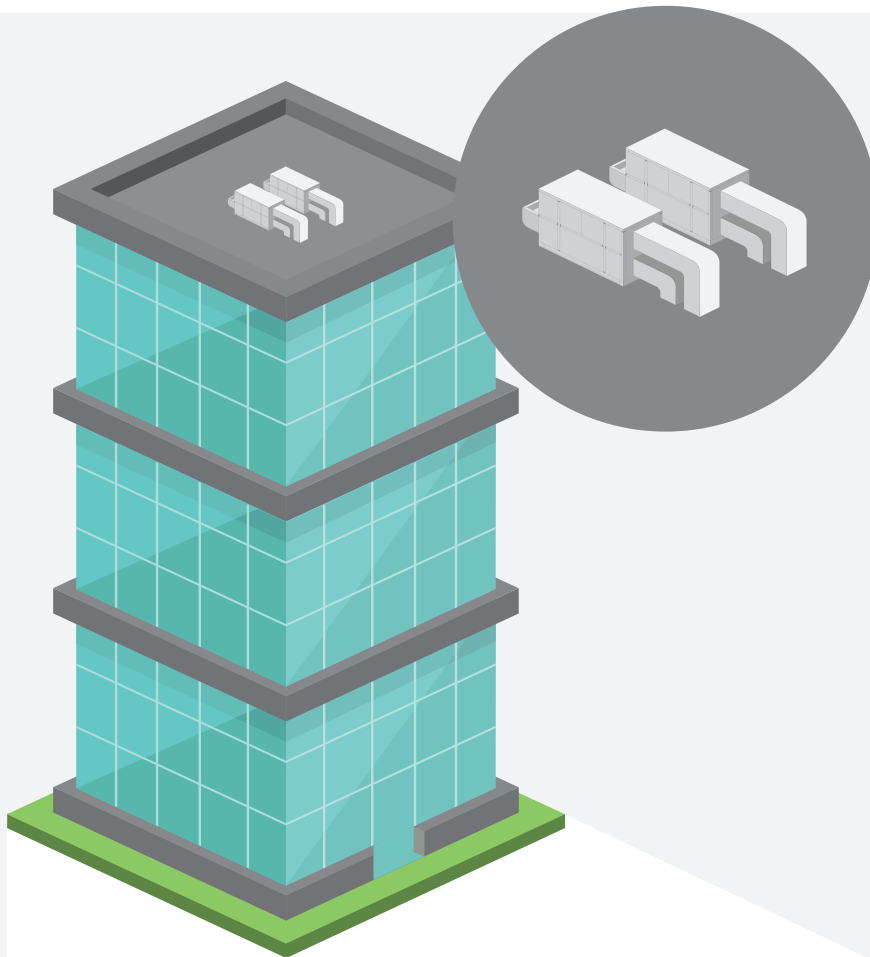
## ADVANTAGES

- High recovery efficiency
- Reduced energy consumption
- Humidity recovery with the rotary wheel
- Integration with the most popular supervision systems
- Easy to install

## HPR-FLEX OPERATION

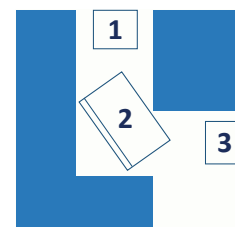
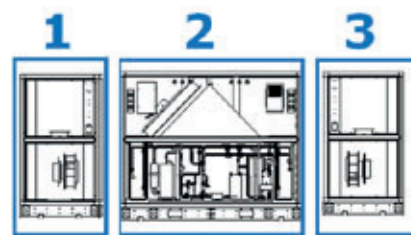
The units of the HPR range recirculate the air in the environments to be treated, recovering up to 80% of the air exhaust together with humidity recovery thanks to enthalpy heat recovery.

The double recovery allows reduction of the energy consumption necessary to reach the temperature of the air introduced into the environment.



### MODULARITY

The new configuration of the HP units, into 3 sections at the time of installation, allows easier handling and the installation of additional accessories on site (e.g. silencers, additional filters, coils).



## TECHNICAL SPECIFICATIONS

- Supporting structure in extruded aluminium profiles, panels (th. 42 mm), sandwich type, with special sealing gaskets; external finish RAL 9002; thermoacoustic insulation in high density O class rockwool.
- Filter sections on recirculation air in efficiency class ISO ePM1 50% and ISO PM10 50% on return air.
- Fan sections with plug fans with backward blades, directly coupled to EC brushless electronic motors.
- Storage type heat recovery unit with high efficiency (> 75%) enthalpy rotor in hygroscopic aluminium with motor with fixed speed gearbox and belt drive.
- Dynamic recovery section created with R410A reversible refrigerant circuit, consisting of: EC twin rotary brushless hermetic compressor(s) with dedicated inverter, Cu/Al finned tube evaporator/condenser, electronic expansion valve, cycle reversing valve, high pressure switch, high and low pressure transducers, liquid separators and receivers.
- Electrical panel complete with on-board machine display and microprocessor to manage the fixed-point thermoregulation in delivery, based on operating logics designed to maximise energy savings and environmental comfort, thanks to the modulation of cooling capacity and air flow guaranteed by the inverter technology. The unit is prepared for connection via RS485 to supervision systems based on Modbus RTU/Modbus RTU/RS 485/Modbus TCP/IP protocol; Bacnet TCP; Webserver.

## ACCESSORIES

Sanitation module with UVC plasma and antivirus filter	Kvir-P
Modulating electric preheater	SKEp
Modulating electric reheater	SKEr
Ball siphon kit	BTS
Hot water preheater coil with valve	SKWp V33
Hot water reheating coil with valve	SKWr V33
Heating/cooling coil section	CCS V33
Twin damper with modulating servomotors	SKR2
F9 (ISO ePM1 85%) fresh air filter	FC9
Air filter pressure switch	PSTD
Differential pressure sensor - constant airflow	DPSa
Differential pressure sensor - constant pressure	DPSp
CO2 sensor	AQS
Twin sound attenuator	SILm/SILf
Room winter temp. Speed-up kit	MRE/MRW
Flexible connection	GAT
Rain Hood	CFA A/ CFA B
Roof cover	TPR/ TPRs/ TPRc

## MODELS

HPR-FLEX			35	50	80	92	144	205	250
Airflow	Min	m <sup>3</sup> /h	3000	5200	7300	9500	13000	18000	22000
Available static pressure	Nom	Pa	250						
Sound power at 1m	Nom	dB(A)	64	70	77	82	78	83	81
ELECTRICAL ABSORPTION									
Total current	Nom (1)		12	18	23	28	39	52	56
	Nom (2)	A	15	24	30	39	53	80	84
	Max (3)		25	37	41	57	78	104	134
Total absorbed power	Nom (1)		3.1	5.6	8.6	12.1	15.6	24.1	29.1
	Nom (2)	kW	3.9	7.6	10.9	16.1	21.1	32.6	39.7
	Max (3)		8.0	12.0	17.0	23.0	32.0	42.0	56.0
Electrical power supply	V-Ph-Hz	400-3-50							
ENERGY RECOVERY (1)									
Recovered power		kW	30.7	53.3	74.3	96.3	132.5	177.4	215.3
Recovery efficiency		%	77.8	78.1	77.5	77.2	77.6	76.4	75.0
Power transferred by the heat pump		kW	9.4	16.1	23.1	30.3	41.0	59.4	72.9
Total power transferred		kW	40.1	69.5	97.4	126.6	173.4	236.8	288.2
Net COP		W/W	12.8	11.9	11.4	10.05	11.1	9.8	9.9
Input temperature		°C	25.0						
ENERGY RECOVERY (2)									
Recovered power		kW	7.3	12.7	17.7	22.9	31.5	39.7	48.5
Recovery efficiency		%	77.4	77.7	77.1	76.8	77.2	75.9	74.7
Power transferred by the heat pump		kW	11.6	20.7	28.7	39.0	53.2	76.2	91.4
Total power transferred		kW	18.9	33.4	46.4	61.9	84.6	115.9	139.9
Net EER		W/W	4.9	4.4	4.3	3.8	4.0	3.6	3.5
Input temperature		°C	20.0						
OPERATING LIMITS (BASE UNIT)									
Winter outdoor air temperature min.					-7°C (ambient min. 20°C 50% UR (A))				
Summer outdoor air max.					36°C - 45% (ambient max. 27°C) (B)				

(A) Input temperature ≤ 20°C; balanced air flow rates

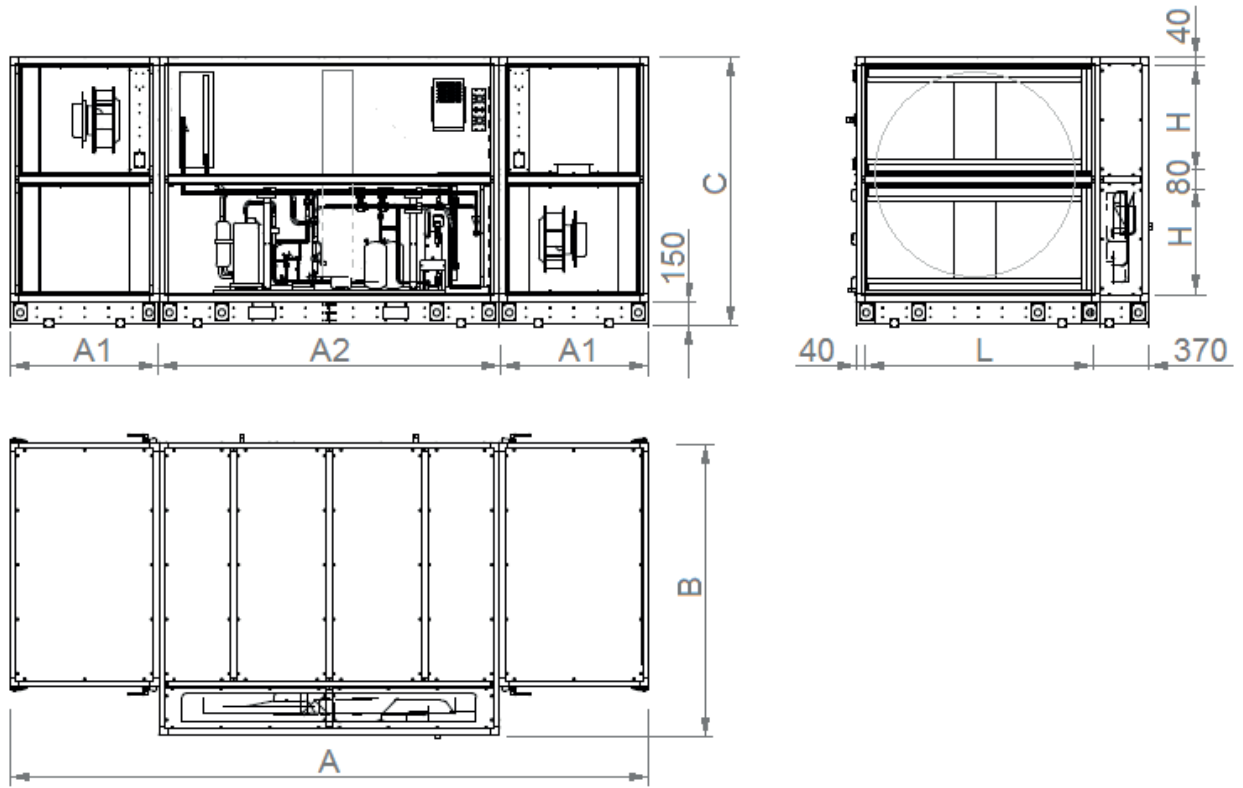
(B) Input temperature ≥ 22°C; balanced air flow rates

(1) outdoor air at -5° C 80% RH, ambient air at 22°C 50% RH; nominal air flow rate

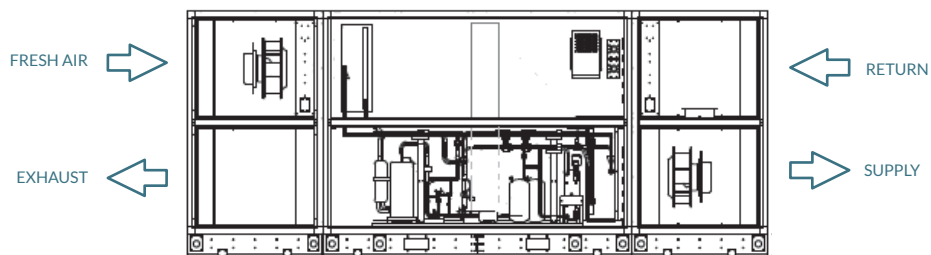
(2) outdoor air at 32° C 50% RH, ambient air at 26°C 50% RH; nominal air flow rate

(3) with ventilation regulation signals and heat pump at the maximum permissible value

# DIMENSIONS AND WEIGHTS

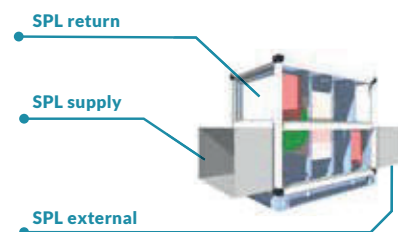


HPR-FLEX		35	50	80	92	144	205	250
A	mm	3750	3750	4410	4410	4740	4410	4410
A1	mm	1030	1030	1030	1030	1030	1030	1030
A2	mm	1690	1690	2350	2350	2680	2350	2350
B	mm	1360	1690	1855	2020	2350	2350	2845
C	mm	1510	1510	1840	1840	2170	2500	2500
L	mm	950	1280	1445	1610	1940	1940	2440
H	mm	600	600	765	765	930	1095	1095
Peso	kg	900	1050	1200	1300	1500	1700	2050



## SOUND LEVELS

With reference to the nominal operating conditions, the following table shows the sound power values (SWL) in octave band and the related results; the sound pressure values (SPL) at 1m, 5m and 10m in supply, in return and outside of the unit are also highlighted, under ducted unit conditions.



HPR-FLEX	SWL [dB] IN OCTAVE BAND [HZ]								SWL		SPL SUPPLY			SPL RETURN			SPL EXTERNAL		
	63	125	250	500	1000	2000	4000	8000	dB	dB(A)	1 m	5 m	10 m	1 m	5 m	10 m	1 m	5 m	10 m
											dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
35	67	74	72	71	71	67	62	57	79	75	64	57	54	47	40	37	41	27	21
50	69	76	79	77	77	73	69	67	84	81	70	63	60	54	47	44	46	32	26
80	76	75	87	83	85	81	77	80	91	89	77	70	67	59	52	49	53	39	34
92	79	80	90	87	88	86	81	80	95	93	82	75	72	62	55	52	57	43	37
144	76	75	87	83	85	80	76	78	91	89	78	71	68	60	53	50	54	40	34
205	82	83	93	89	89	88	83	82	97	93	83	76	73	63	56	53	58	44	38
250	79	78	91	86	87	84	80	84	95	92	81	74	70	68	60	56	57	43	37



High efficiency enthalpy heat recovery unit



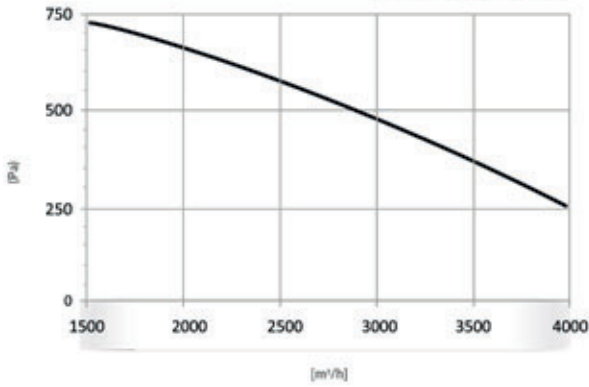
Standard electronic control with graphic display



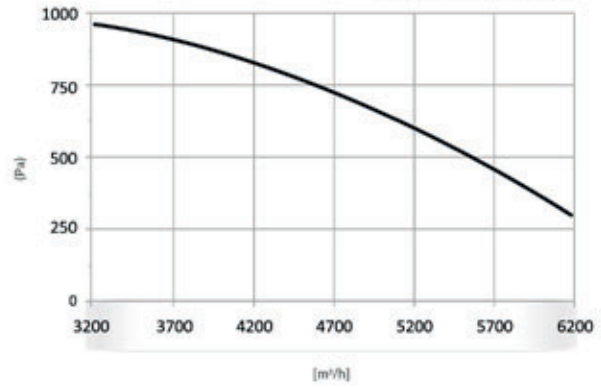
Built-in reversible cooling circuit

# PERFORMANCE

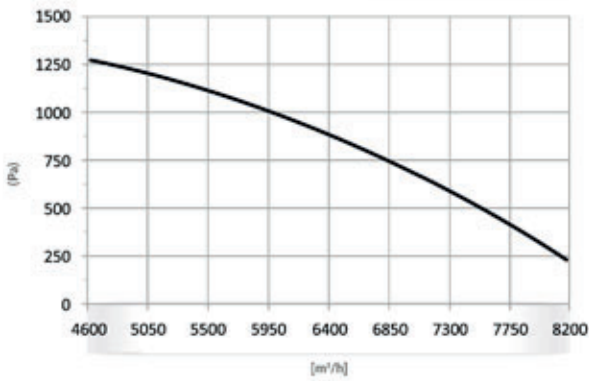
**HPR-FLEX 35**



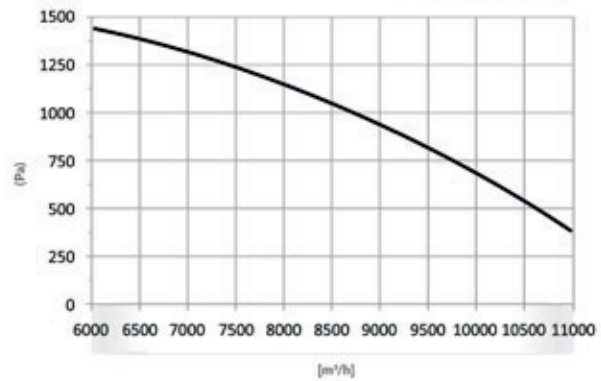
**HPR-FLEX 50**



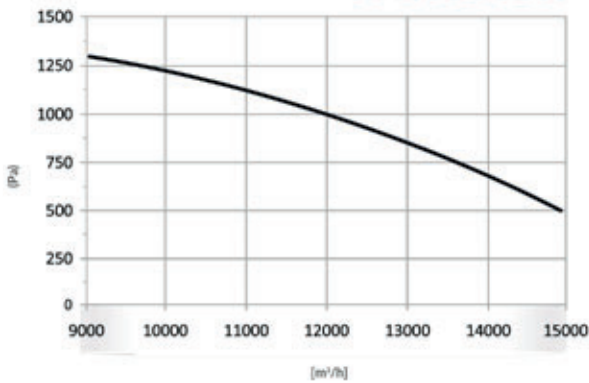
**HPR-FLEX 80**



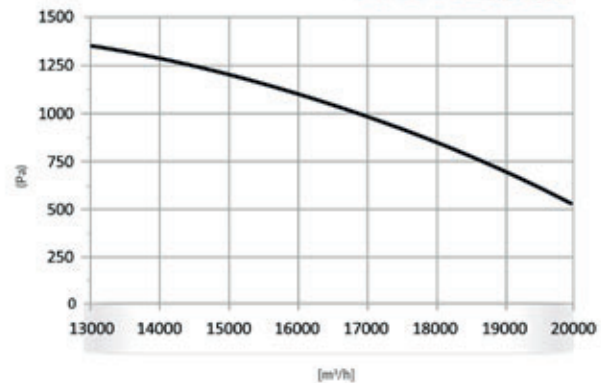
**HPR-FLEX 92**



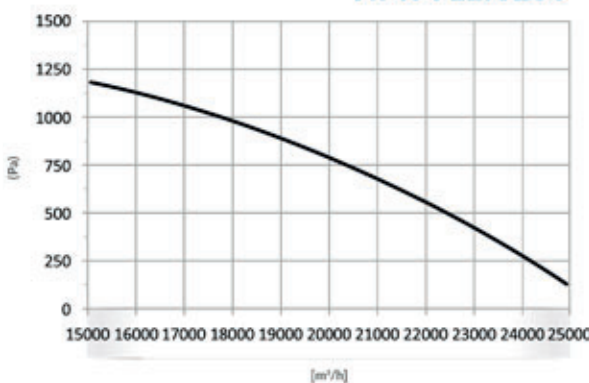
**HPR-FLEX 144**



**HPR-FLEX 205**



**HPR-FLEX 250**



The graphs provide an indication of the useful static pressure (Pa) as the airflow [m³/h] supplied by the base inlet unit varies. Consult the technical bulletin to check the specific data of the unit's aeraulic performance.