

Company : SERVOLUX SIA
To :
Subject :
Reference :

Date : 2014.02.11.
From : A.Grava
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Model : **HRflat 1000 (Weight: 171,8 kg)**

The HRflat heat recovery unit is compact unit with self-contained casing from galvanized metal sheet. Bottom part of the casing has lacquered finish advantage in case of shown installation. Casing's insulation thickness is 30 mm. The unit is equipped with radial fans with TAC motors low on consumption. On both inlet and outlet the unit is fitted with desk filters G4. Furthermore the unit is equipped with counterflow heat exchangers with efficiency up to 90%, condensation tub, by-pass 100% and automatic condensation pumping. Total height of the unit enables easy mounting into ceiling. Condensed water does not drop into siphon but is drained away with pump. The unit is delivered with an prewired regulation. More details on www.lemmens.com.

Supply : Fans + Regulation

Voltage : 1 x 230 V - 50 Hz
Intensity : 6,2 A max.
Electrical protection : D8A - 10kA - AC3

Fans - TAC

Units are equipped with high efficiency TAC technology fans. They are driven by electronically commutated motors and allow accurate control of the fan's actual working point. The efficiency of the motor remains between 85% and 60%, whatever the working point. The motor is a permanent magnet DC driven motor but AC power supplied.

	<u>Supply</u>	<u>Exhaust</u>	
Airflow :	800	800	m³/h
Internal pressure drop :	105	136	Pa
External pressure drop :	260	260	Pa
Extra available pressure drop :	195	164	Pa
Rotation speed :	1251	1296	rpm
Voltage :	230	230	V
Intensity :	1,80	1,93	A
Power :	279	302	W

Fan name : DS 11-4 TAC 1/2 HRf1000
Number of fans : 1 + 1

Sound power spectrum (fan only)-(dB re.10E-12 W/m²)

	63	125	250	500	1000	2000	4000	8000	Hz
S	83,1	78,1	73,1	66,1	68,1	61,1	56,1	51,1	dBL
E	83,8	78,8	73,8	66,8	68,8	61,8	56,8	51,8	dBL

Radiated A weighted Sound pressure level for ducted unit
in free field (d=3m) 41.0 dBA

(RF=600000000/DF=1/ZF=20.40)-(dB re. 20 μ Pa)

Regulation

The units are delivered fully pre-wired as standard ('plug & play') with general switch and complete regulation of the unit. The latter includes all the necessary components and is fully wired to T° probes, fans, general switch, by-pass. Connect the power supply and configure the parameters and the unit is ready to run.

The regulation monitors each component:

- Setting and piloting of TAC fans in selected mode: CA (constant flow), CP (constant pressure) or LS (link with signal 0 - 10V, for example a CO2 air quality sensor).
- Automatic freecooling control with bypass
- Antifrost system of the air/air heat exchanger (airflow modulation or electrical coil). Device mounted outside the unit
- Control of external post-heating coil (water or electrical) or cooling coil (water), or reversible coil (heating or cooling water coil)
- Open/Close motorized dampers
- Time slot management (scheduling)
- Alarms management (fire, pressure, maintenance, component failure,...)
- Display and management of all system parameters via RC, GRC, BMS or web page (option)
- MODBUS communication (RTU, TCP/IP and GPRS) (option)

Heat Recovery unit - CF

The heat exchanger is an air/air high efficiency counterflow heat exchanger, executed in sea water resistant aluminium, at a temperature of up to 80°C. The airtightness tests according to DIN1946 show a leakage rate of 0.017 % at 400 Pa difference between the 2 air streams. The heat exchanger is compliant to standard EN 308.

Air pressure : 1013 mbar

	<u>Supply</u>	<u>Exhaust</u>		<u>Supply</u>	<u>Exhaust</u>	
Airflow :	800	800	m³/h	Air outlet temperature :	18,4	-6,5 °C
	0,22	0,22	m³/s	Relative humidity out :	2,2	100,0 %
Airspeed through HRU :	1,30	1,55	m/s	Humidity out :	0,3	2,2 g/kg
Air inlet temperature :	-23,0	22,0	°C	Total capacity (W.B.) :	11,1	kW
Relative humidity in :	60,0	45,0	%	HRU efficiency (W.B.) :	92,0	%
Humidity in :	0,3	7,4	g/kg	Pressure drop in REC :	78	109 Pa

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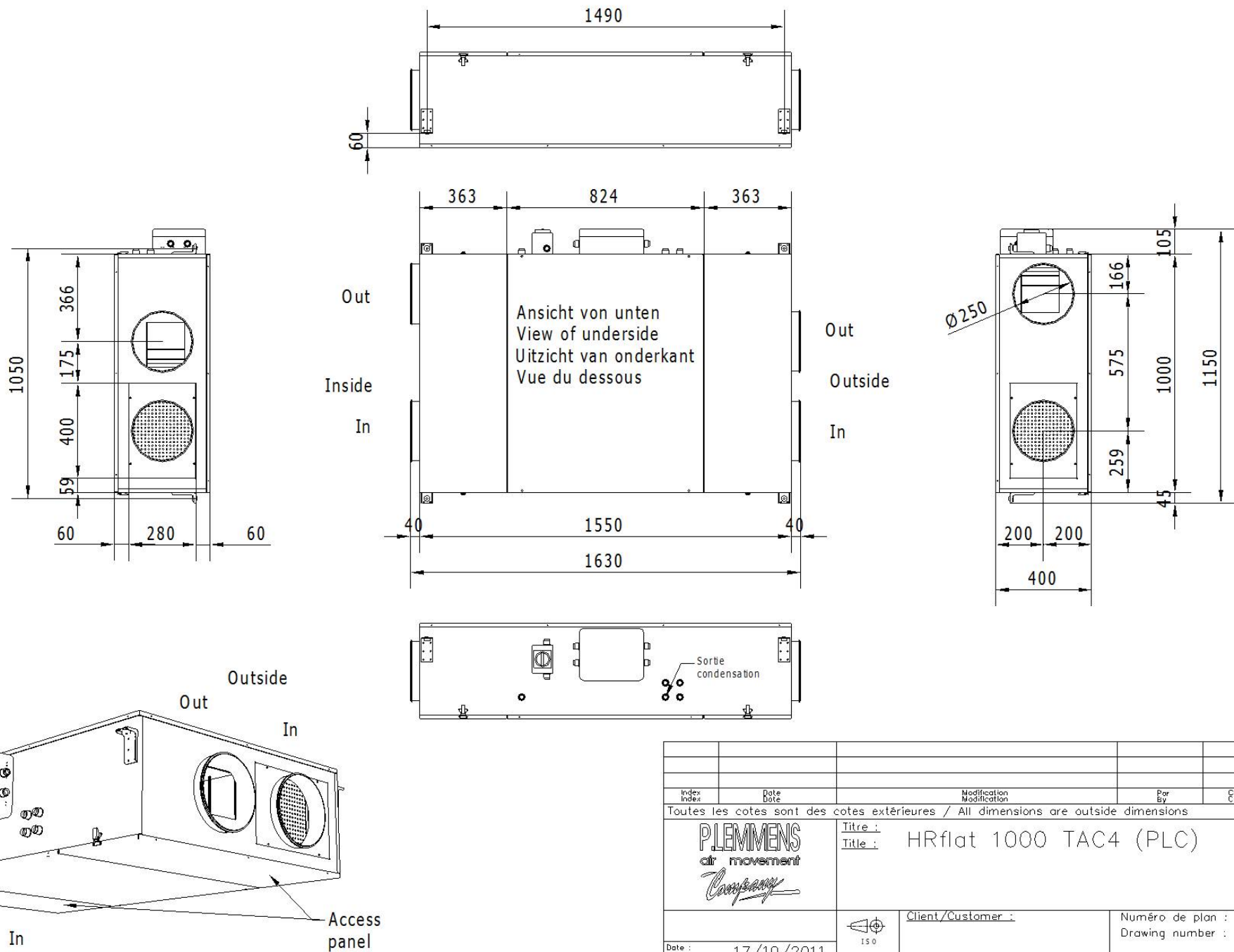
Model :	HRflat 1000 (Weight: 171,8 kg)
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Filter - G/F

The heat recovery ventilation unit is equipped with G4 zig-zag filters at the inlet of the polluted air and at inlet of the fresh air, to protect the heat exchanger and guarantee an air quality inside the building. They are easily accessible for maintenance by the access doors equipped with handles.

					<u>Supply</u>	<u>Exhaust</u>	
Filter class :	G4 (Plane Z)	Dimensions :	337 x 465 x 50 mm	Air speed :	1,42		m/s
		Quantity :	1	Filter pressure drop :	27		Pa
Filter class :	G4 (Plane Z)	Dimensions :	337 x 465 x 50 mm	Air speed :		1,42	m/s
		Quantity :	1	Filter pressure drop :		27	Pa

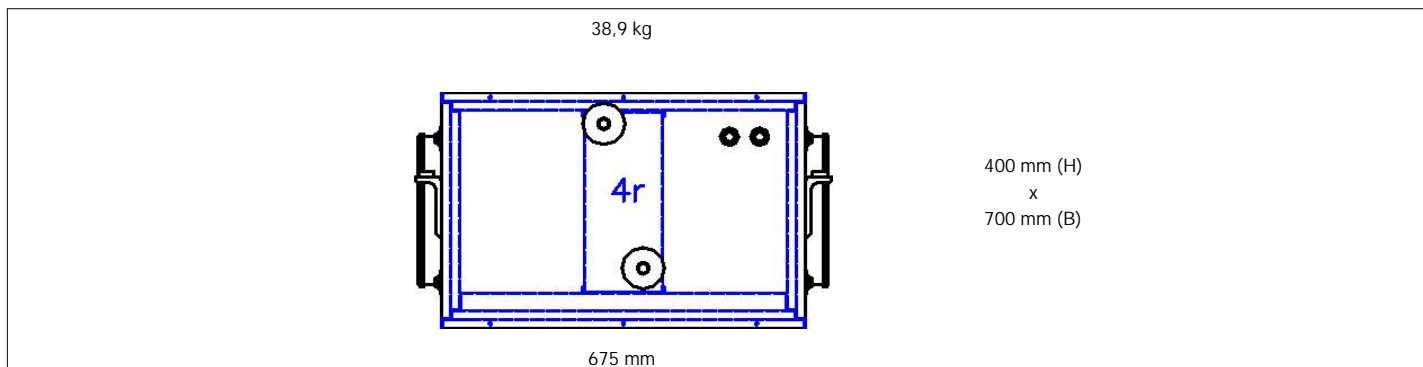
Circular inlet - ER ø 250 mm	Circular outlet - SR ø 250 mm
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Index	Date	Modification	Par	Contrôle
Toutes les cotes sont des cotes extérieures / All dimensions are outside dimensions				
PLEMMENS air movement <i>Company</i>		Titre : Title : HRflat 1000 TAC4 (PLC)		
Date : 17/10/2011 Unité : mm Dessiné par : M.H.		Client/Customer : Code client/Customer code:		Numéro de plan : Drawing number : 886207

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Model :	HR flat 1000 / BA W
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Manufacturing info
882447 / BA W

The BA option is an add-on section to the HRflat unit, equipped with a water or a direct expansion (dx) coil and a drain pan with a condensate pump (230 Vac). The water coil can be supplied with hot or cold water in order to control the supply air temperature to the room. The kit is delivered with the regulation and the temperature sensors used to control the motorized 3-way valve. The latter is controlled by a 0-10V output signal. The 3-way valve is included in the kit. The dx coil is provided without regulation.

Heating coil - NVr				Connection diam. :	3/4"
Coil name :	HRf 1000-4	Inlet air T° :	10,0 °C	Fluid type :	Propylen Glycol
Number of rows :	4	Outlet air T° :	20,0 °C	Glycol %age :	35 %
Number of circuits :	6	Airflow :	800 m³/h	Fluid T° in/out :	80,0 / 12,8 °C
Total capacity :	2,79 kW	Air speed :	1,38 m/s	Fluid flow :	38 l/h
		Air pressure drop :	26 Pa	Fluid pressure drop :	0,10 kPa

Circular inlet - ER Ø 250 mm	Circular inlet - ER Ø 250 mm
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