

**High efficiency Heat Recovery Units  
3,68-31,4 kW**

The HRD2 heat recovery units are developed for installation in commercial and service sector such as offices, bars, restaurants, meeting rooms, shops, schools, gyms, and in general in all facilities where the energy cost reduction is of high importance. In modern air-conditioning and air treatment systems is necessary to create forced ventilation which involves air conditioned expelling, with high energy consumption and high costs. HRD2 heat recovery units, using a high efficiency aluminum static heat recovery, can solve this problem by saving more than 70% of the energy that would otherwise be lost with the expelled stale air. These units may be integrated with traditional systems such as fan coils, water coolers or radiators, and can operate both in summer and in winter. The range HRD2 is recommended for suspended ceiling installation and can be ducted to allow the fresh air intake and distribution.

**Controls**

Wall mounted Control for Heat Recovery units HRD2 CR

Manual/Automatic control of EC fans. Modulating control of water valve. Electric heater control (both pre and post heating) . Heat recovery defrost control. Free Cooling on/off mode control. Filter pressure switch management. Fan management by CO2 sensor. Fan management by 1 pressure sensor. Weekly programming. Alarm management. Remote summer/winter mode. EC fan motors management by fire alarm digital input. BMS by Modbus protocol and RS485 connection. Remote display with internal temperature sensor.

**Version**

|    |                                               |
|----|-----------------------------------------------|
| OL | Horizontal installation, left air supply      |
| OR | Horizontal Installation with right air supply |
| VL | Vertical Installation with left air supply    |
| VR | Vertical installation, right air supply       |

**Features**

High efficiency counterflow heat recovery with aluminium heat exchanger plates, supplementary sealing and built-in motorized by pass device. Aluminium drain pan, fitted with 1/2" condensation outlet (on side for horizontal units and bottom for vertical units). High Efficiency >75% on dry conditions. All sizes are Eurovent Certified

Plug Fan Direct driven EC motor with Brushless technology. Plastic fiber glass reinforced impeller for size 05 to size 10, and aluminium impeller for bigger sizes.

Self -supporting steel structure, made of 25 mm double pannels with galvanized steel pannel internally and RAL9002 painted pannel externally. Inspection doors and panels. For horizontal installations longitudinal steel brackets are supplied for ceiling installation, while for vertical installation (floor installation), galvanized steel feet are supplied as standard.

Motorized Bypass Dumper for Free Cooling and Free Heating taking advantage of favorable external temperature conditions.

Mineral Wool Thermal and acoustic insulation

Compact filters M5 efficiency class on return air, F7 efficiency class on fresh air, easy removable from bottom and side panels. Efficiency according to EN 779:2012

Built-in electric box with electronic controller for a complete control of all typical functions of the units

**Accessory**

- Internal electrical pre and post heater
- External section with changeover watercoil
- Motorized adjusting Dumpers
- 3 Way valve with modulating actuator
- Roof cover for vertical and horizontal units
- Air filter pressure switch
- Ducted CO2 sensor
- Air pressure sensor
- Anti-vibration junction
- Round connections

| HRD2                                  |                     | 050      | 090      | 140      | 210      | 300        | 410        |
|---------------------------------------|---------------------|----------|----------|----------|----------|------------|------------|
| <b>ELECTRICAL DATA</b>                |                     |          |          |          |          |            |            |
| Power supply                          | V/ph/Hz             | 230/1/50 | 230/1/50 | 230/1/50 | 230/1/50 | 400/3+N/50 | 400/3+N/50 |
| Fan Power Input                       | W                   | 327      | 339      | 904      | 930      | 1841       | 1910       |
| Max absorbed power                    | W                   | 340      | 340      | 920      | 930      | 2000       | 2000       |
| Overall current input Nominal         | A                   |          |          |          |          |            |            |
| Absorbed current                      | A                   | 2,80     | 2,90     | 6,00     | 6,00     | 3,40       | 3,50       |
| Fan speed control                     | V                   |          |          |          |          |            |            |
| <b>PERFORMANCE</b>                    |                     |          |          |          |          |            |            |
| Air flow rate                         | m <sup>3</sup> /h   | 426      | 776      | 1230     | 1843     | 2720       | 3685       |
| Air flow rate                         | m <sup>3</sup> /s   |          |          |          |          |            |            |
| ESP External Static Pressure          | (1) Pa              | 218      | 153      | 265      | 172      | 194        | 200        |
| Sound Pressure on inlet side Lp (IR)  | (2) dB(A)           | 53       | 52       | 53       | 60       | 62         | 60         |
| Sound Pressure on outlet side Lp (OD) | (2) dB(A)           | 61       | 60       | 61       | 68       | 70         | 68         |
| Efficiency of Heat recovery           | (3) %               | 86,2     | 86,9     | 83,7     | 85,3     | 84,8       | 85,0       |
| Total capacity (heating mode)         | (3) kW              | 3,68     | 6,77     | 10,3     | 15,8     | 23,2       | 31,4       |
| Heat recovery outlet temperature      | (3) °C              | 16,3     | 16,5     | 15,6     | 16,0     | 15,9       | 16,0       |
| <b>CONFORMITY TO (EU 1253/2014)</b>   |                     |          |          |          |          |            |            |
| Efficiency of Heat recovery           | (4) %               | 81,4     | 80,1     | 77,9     | 77,4     | 76,8       | 76,8       |
| Efficiency bonus                      | W/m <sup>3</sup> /s | 252      | 213      | 147      | 132      | 114        | 114        |
| Filter correction factor              |                     |          |          |          |          |            |            |
| SFP internal limit                    | W/m <sup>3</sup> /s | 1337     | 1283     | 1201     | 1162     | 1113       | 1078       |
| Total internal air pressure drop      | (4) Pa              | 601      | 679      | 570      | 583      | 633        | 636        |
| Overall fan static efficiency         | (5) %               | 45,0     | 53,1     | 47,5     | 50,7     | 59,0       | 59,2       |
| SFP internal                          | W/m <sup>3</sup> /s | 1336     | 1279     | 1200     | 1150     | 1073       | 1074       |
| <b>SIZE AND WEIGHT</b>                |                     |          |          |          |          |            |            |
| A                                     | (6) mm              | 1350     | 1470     | 1850     | 1850     | 2150       | 2150       |
| B                                     | (6) mm              | 680      | 820      | 1030     | 1460     | 1460       | 1840       |
| H                                     | (6) mm              | 330      | 370      | 455      | 455      | 590        | 590        |
| Operating weight                      | (6) kg              | 85       | 105      | 175      | 235      | 290        | 360        |

Notes:

- 1 Fresh air/supply air circuit.
- 2 Sound pressure level in free field on a reflective surface, 1 m from fan front and 1 m from the ground. Non-binding value obtained from sound power level.
- 3 Size valued in the following hypothesis at wet conditions: outside air temp. -7°C 80% RH; room air temperature 20°C; 55% RH
- 4 Size valued in the following hypothesis at dry conditions: outside air temperature 5°C; room air temperature 25°C
- 5 Including motor&speed controller efficiency
- 6 Unit in standard configuration/execution, without optional accessories.

