


## Liebert HPW

*The High Performance Wallmount Cooling Solutions for Telecom Mobile Remote Access Nodes*



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*Telecom Mobile*



*Control System*

For wireless telecom applications, we provide control of remote access node environmental conditions. Our product portfolio includes a wide range of configurable solutions; outdoor packaged wall-mounting cooling system for shelters, when there's not enough space available inside the site; indoor packaged floor standing cooling system, to remotely reject, the heat generated by electronic equipment from IT rooms inside buildings; split system, to adapt the cooling solution to whatever site position, dimension and layout.



## Product overview

The Liebert Hiross HPW is the ultimate cooling system ideal for Mobile Telecom Network remote access nodes in shelters and containers.

The Liebert Hiross HPW units are packaged, outdoor, wall-mounted with the traditional upflow or the innovative downflow air delivery solutions.

- Direct Expansion thought to have the highest efficiency in a wide range of external environmental conditions, thanks to the generous heat exchanger surface design.
- Free cooling with the highest energy saving combining the advanced circular damper system with the downflow air distribution concept.
- Emergency free cooling with the most efficient 48V DC plug type fan to reduce the impact on the site power consumption.

## Reliability

*Site shutdown prevention, extreme environmental conditions protection, remote site conditions control.*

### ■ Protection all over the world

Remote nodes need to be kept at the right condition whatever the external temperature is. Situations in which external temperature is over 50°C as well as cases where it goes lower than -30°C have the most stringent cooling requirements.

The only reliable way to reach this target is to use the most recent refrigeration components like scroll compressors and modulating fans, together with generously designed heat exchangers.

### ■ Site conditions always under control

The possibility to remotely monitor and control the site conditions facilitates immediate reaction to any situation by allowing the operator to interact with the unit, just like being on site in front of the control panel.

### ■ Cooling also in emergency situations

The Network availability must be guaranteed, most of all, in emergency situations.

Even if the main power supply fails due to natural or accidental causes, Liebert Hiross HPW controls the temperature inside the site thanks to the possibility of ventilating or using the free cooling system: fans, damper and control are powered through back-up power coming from DC batteries or AC power generators.

The standard on-board controls allow interaction with one or more units, optimizing the operation and enabling the connectivity to superior systems or third-party BMS (Dial up, SNMP, Modbus, IP communication).





### Free cooling circular damper

- *Enhanced energy saving*
- *Optimised fatigue resistance*
- *Higher reliability*
- *Fresh air modulation, 0 to 100%*
- *230V AC as standard*
- *48V DC power supply (optional) for emergency cooling*

## Flexibility

*Adaptive to all site layouts, suitable for critical environments, respecting the surroundings*

### ■ Standardization of site preparation

Liebert Hiross HPW is available in two versions with different airflow patterns: HPW O (Upflow) and HPW D (Downflow).

For both versions the dimensions and wall cut-outs are the same.

### ■ Providing the desired quietness

The use of intelligent fan speed regulation and the possibility to utilise the most appropriate cabinet within the different sizes available for

### ■ Solving unfavourable installation situations

Whatever configuration is used, the condensing section has been fitted in the cabinet upper part.

This simple design feature reduces installation restrictions due to environmental limitations: dusty environments, green areas; and the proximity of adjacent buildings is less likely to effect the condenser efficiency.

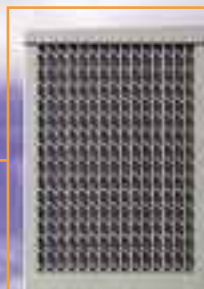
the required cooling capacity permits enhanced noise reduction, allowing site operation in residential areas.





### **Innovative layout**

- *Condensing section on top (all sizes)*
  - *Installation limits reduced to a minimum (distance from ground)*
  - *Easier cleaning and maintenance*
- *Vertical air discharge (size M)*
  - *Installation limits reduced to a minimum (distance from buildings, other units)*
  - *Lower noise level*



distance from ground



## Total Cost of Ownership

*Target fast return on investment.*

### ■ Limited energy consumption

The downflow air distribution produces unit Energy Efficiency Ratio values close to or higher than 3, even in critical environmental conditions (T higher than 40°C).

This, combined with the innovative free cooling system, can drastically reduce the yearly energy consumption.

### ■ Reduced installation impact

The cooling system is pre-charged and no pressure test is required on site. The installation is simplified thanks to the availability of pre-arranged air ducts (standard) and fast plug electrical connections (optional).

### ■ Avoiding inefficient cooling

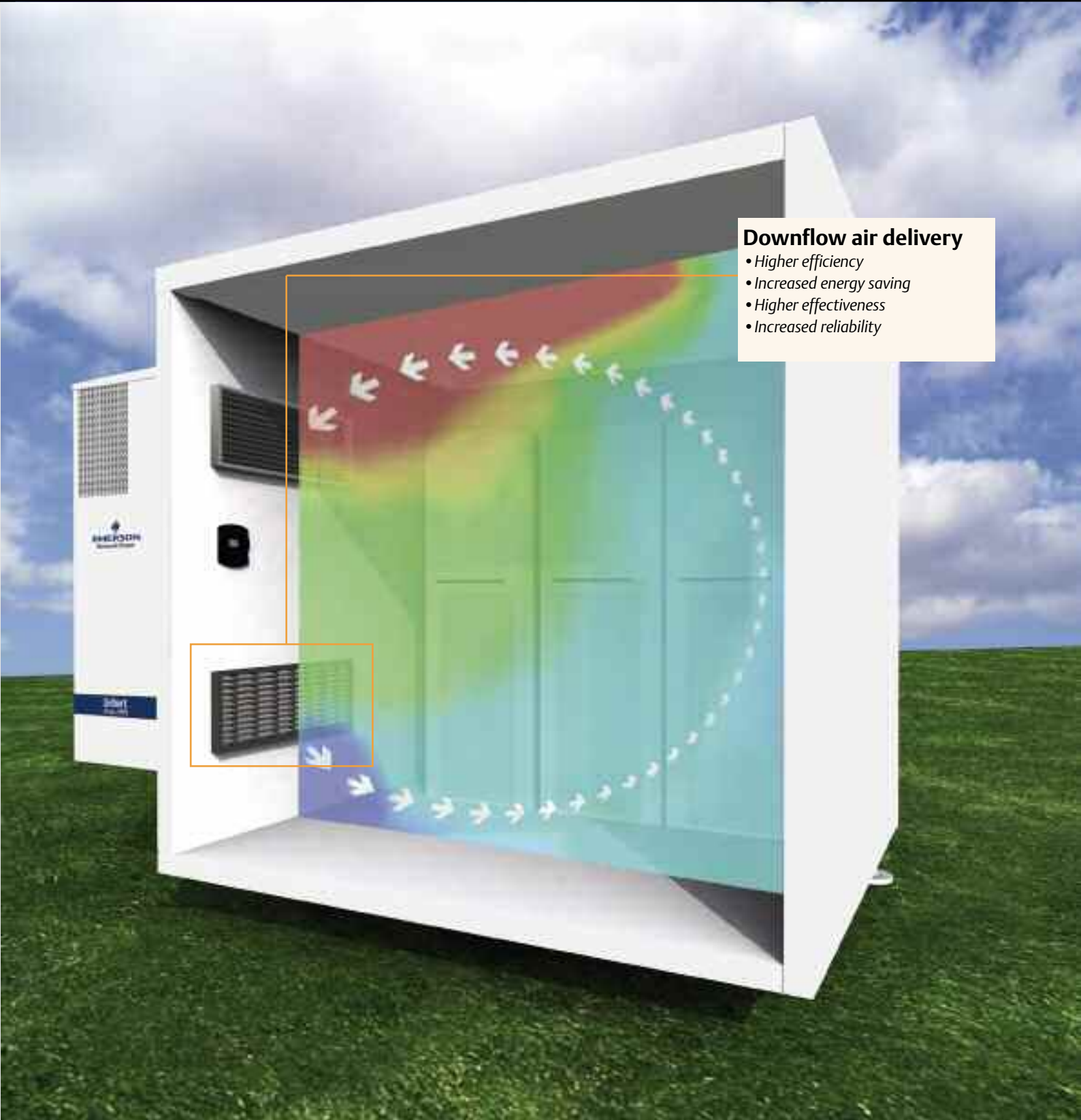
Cooling the electronics and not the site is what effectiveness can do, not efficiency.

The possibility, thanks to the Liebert Hiross HPW downflow version, to provide cooling at the telecom equipment air intakes, reduces the typical inefficiency of indirect cooling systems.

Using the automatic commissioning software, installation and start-up can be completed in less than 25 min without the need for specialized personnel on site.







**Downflow air delivery**

- Higher efficiency
- Increased energy saving
- Higher effectiveness
- Increased reliability

## Technical Data

### Downflow (D Version)

Model		05S	06S	06M	08M	10M	13M	15M
<b>Performances</b>								
Main power supply		230 / 1N / 50			400 / 3N / 50			
Emergency power supply		48 VDC or 230 / 1N / 50						
Total cooling capacity <sup>(1)</sup>	kW	5,5	6,3	6,5	8,9	11,7	13,0	14,9
RSensible cooling capacity <sup>(1)</sup>	kW	5,5	5,8	6,2	8,9	10,9	13,0	14,0
SHR <sup>(1)</sup>	-	1	0,92	0,95	1	0,93	1	0,94
Compressor AC power input	kW	1,26	1,63	1,46	1,90	2,66	2,56	3,29
Evaporator fan DC power input	kW	0,10	0,10	0,10	0,28	0,45	0,45	0,82
Condenser fan AC power input	kW	0,25	0,25	0,20	0,22	0,72	0,68	0,69
Evaporator airflow	m <sup>3</sup> /h	1110	1110	1300	1950	2300	2615	2820
Freecooling airflow	m <sup>3</sup> /h	1310	1310	1440	2420	2420	2850	3000
Condenser max. airflow	m <sup>3</sup> /h	2610	2610	3710	3710	5660	5880	5880
Outdoor SPL <sup>(2)</sup>	dB(A)	52,5	54,0	50,0	52,0	55,0	55,0	58,0
Indoor SPL <sup>(2)</sup>	dB(A)	57,0	57,0	57,0	60,0	64,0	59,0	63,0
Max. ambient temperature <sup>(3)</sup>	°C	49,0	47,0	52,0	50,5	50,0	51,0	48,5

## Technical Data

### Over (O Version)

Model		05S	06S	06M	08M	10M	13M	15M
<b>Performances</b>								
Main power supply		230 / 1N / 50			400 / 3N / 50			
Emergency power supply		48 VDC or 230 / 1N / 50						
Total cooling capacity <sup>(1)</sup>	kW	5,3	6,0	5,7	8,2	11,1	12,0	13,8
Sensible cooling capacity <sup>(1)</sup>	kW	4,6	5,0	5,4	8,0	9,5	10,2	11,2
SHR <sup>(1)</sup>	-	0,87	0,83	0,95	0,98	0,86	0,85	0,80
Compressor AC power input	kW	1,25	1,63	1,49	1,93	2,68	2,60	3,30
Evaporator fan DC power input	kW	0,10	0,10	0,10	0,45	0,45	0,45	0,78
Condenser fan AC power input	kW	0,25	0,25	0,20	0,22	0,72	0,68	0,72
Evaporator airflow	m <sup>3</sup> /h	1060	1060	1360	2130	2300	2300	2450
Freecooling airflow	m <sup>3</sup> /h	1090	1090	1360	2400	2400	2700	2840
Condenser max. airflow	m <sup>3</sup> /h	2610	2610	3710	3710	5660	5880	5880
Outdoor SPL <sup>(2)</sup>	dB(A)	52,5	54,0	49,5	52,0	55,0	55,0	58,0
Indoor SPL <sup>(2)</sup>	dB(A)	57,0	57,0	57,0	64,0	64,0	64,0	67,0
Max. ambient temperature <sup>(3)</sup>	°C	49,5	47,5	52,0	50,0	50,0	51,0	48,5

All data are referred to 48 VDC emergency version.

(1) Values are referred to 35°C outdoor temperature, to nominal power supply and the following indoor conditions:

- 30°C/39,5%R.H. at the evaporating air intake side for WM 05-15 D models
- 27°C/47%R.H. at the evaporating air intake side for WM 05-15 O models

(2) Measured with 35°C outdoor temperature, at 2m from the unit, in free field conditions

(3) Referred to:

- 30°C/39,5%R.H. at the evaporating air intake side for WM 05-15 D models
- 27°C/47%R.H. at the evaporating air intake side for WM 05-15 O models



## Technical Data

### Unit description

Model	05S	06S	06M	08M	10M	13M*	15M	
Compressor type/quantity	scroll / 1							
Refrigerant	R407C							
Expansion device	thermostatic valve							
Evaporator fan type/quantity AC						Plug / 2		
Evaporator fan type/quantity DC (48V)	Plug / 1							
Condenser fan type/quantity	Axial / 1							
Condenser fan speed control	variable (option)							
Filter type/efficiency	pleated / G3							
Electrical heating (option)	1,5		3,0			6,0		
Frame	galvanized steel							
Painting	polyester / RAL 7035							
Insulation type / thickness	polyethylene foam, class 1							
Width	mm	800		932				
Depth	mm	450		640				
Height	mm	1690		1901				
Weight	kg	170	175	195	205	220	250	260

\*: Plug/2 version available on special request



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