TECHNICAL CATALOGUE

# WPHA | WPHBA

Cooling only | Heat pump

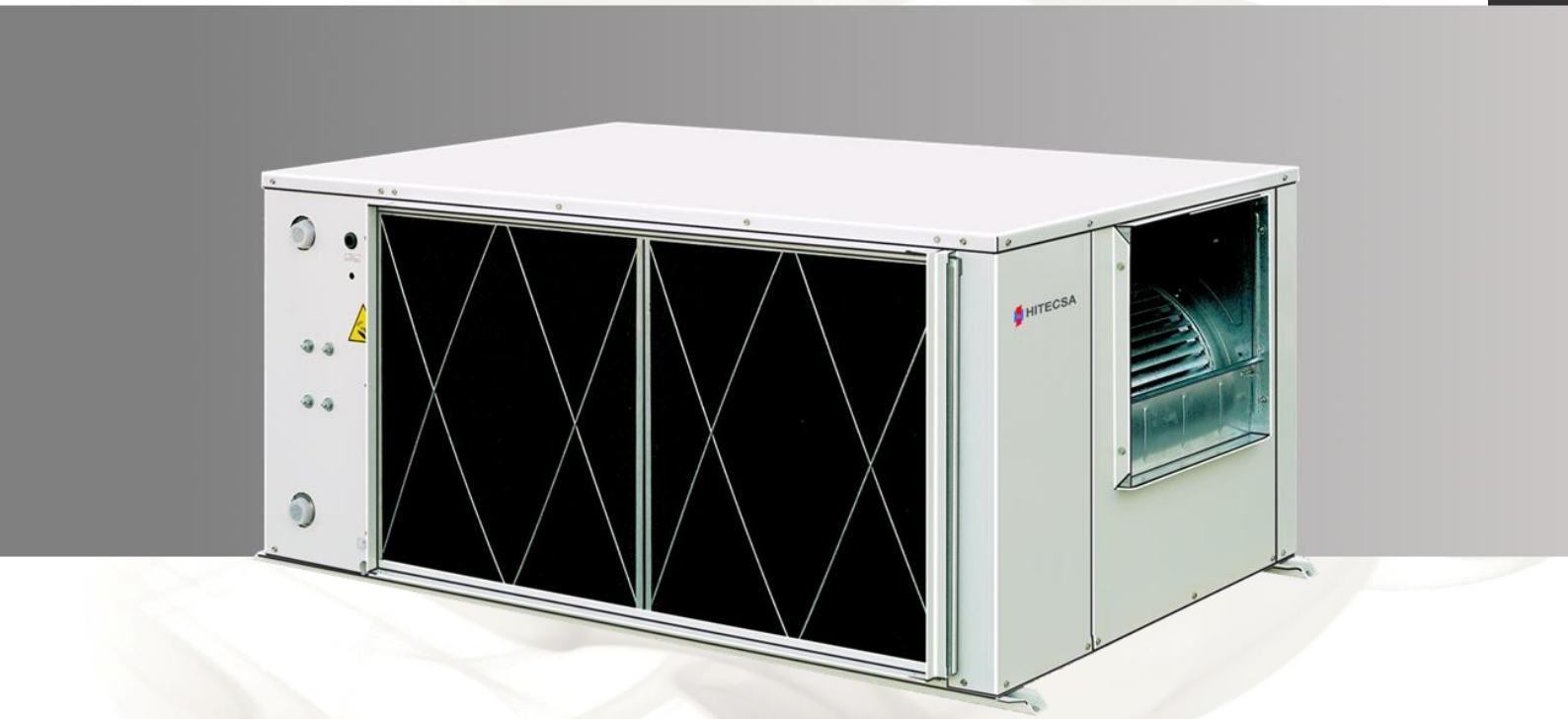
PACKAGED HORIZONTAL AIR CONDITIONERS

VERNE

WATER-AIR SERIES BY HITECSA

**Models:** 091, 121, 141, 171, 201, 251, 351, 401, 501, 701, 751, 1001, 1201

**Cooling capacities:** from 2.4 kW to 41.1 kW
**Heat capacities:** from 2.8 kW to 46.4 kW

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HITECSA COOL AIR

*Thank you for trusting the Hitecsa Products. Our company has been offering the market an extended range of specialized units for air conditioning and cooling installations for over 35 years. Our approach is based on efficiency, adaptability, usability and practical solutions. This has been the hallmark of our product catalogue.*

*The versatility of our factory allows us to contribute solutions, almost tailored to each project's specifications, in search of a solution to every problem that arises in design and implementation of air conditioning installations.*

*From all of us at Hiplus Aire Acondicionado, once again, thank you very much.*

# WPHBA | WPHA

## INDEX

# WPHBA | WPHA

# GENERAL CHARACTERISTICS

## DESCRIPTION

The **WPHA/WPHBA** RANGE are packaged horizontal units equipped with a water-cooled plate heat exchanger, suitable for the connection to a network of air distribution ducts. These units are manufactured in a compact configuration. These are delivered fully finished after being subject to a rigorous verification process, and ready for a fast installation on site (ducts system union, power supply connection, and control system connection). The units are delivered with the operational charge of **410A refrigerant.**

The components design and layout offers great installation versatility and easy access to the interior of the unit for maintenance.

## CABINET

Made of high quality galvanized steel plate, finished with electrostatically applied and oven polymerized polyester powder. The assembly is internally thermo-acoustically insulated.

## REFRIGERANT CIRCUIT

Made of ACR copper tubing, it incorporates dryer filters and Schrader Valves for service intakes in high and low pressure. Brazing is made in an inert atmosphere with silver alloy soldering.

## COMPRESSOR

It incorporates internal thermal protection of the motor windings. The compressors are equipped with an internal damping system and are mounted on the unit base by means of vibration absorbers. Models from 091 to 251 are equipped with hermetic-rotary compressors and models from 351 to 1201 are equipped with a hermetic compressor.

## EVAPORATOR COIL

Made of aluminium fins and high-performance exchange 3/8" copper tubing mechanically expanded.

## HEAT EXCHANGER

It is a brazed steel plate heat exchanger and cooled with counter current water cooled.

## FANS

Centrifugal, double intake system turbines that allow the application of ducts.
Their activation is by three-phase motor 230/400.III+N.50 excepting 091 to 401 models that are monophasic (230.I.50). The transmission is by pulleys and belts for regulation of flow-static pressure (except models from 091to 401, that wear direct transmission with incorporated motor).
Fans, that have reduced sound level, incorporate prelubricated-type bearings and are balanced static and dynamically.

## EXPANSION DEVICE

Calibrated orifices (restrictors) are used in models 091 to 401 and an expansion valve in the remaining models.

## REFRIGERANT

This product is hermetically sealed and contains R-410A which is a HFC fluorinated greenhouse gas.

## AIR FILTER

Made of washable and self-extinguishable polyurethane foam with 10 mm of thickness, of a special reticle that provides high filtering efficiency. The filter with fireproof M1 classification is available as an option.

## MANOEUVRE AND CONTROL EQUIPMENT

Controller composed of a user interface terminal or Th-TUNE thermostat installed in the room and a µPC control board with inputs and outputs programmed and installed in the outdoor unit.

- Thermostat supply 220-240Vac.
- Start / Stop programming during Day, Night and Week.
- Selection of the desired temperature.
- Operating modes: Cold, Heat, Auto and only fan.
- Continuous or Auto mode fan.
- Until 2 compressors.
- 1 remote probe on return of air for units with conduits (or in environment).
- 1 stage of electrical resistance (in defrosting)
- Until 2 stages of support coils.

OPTIONALS:

- Modbus through RS-485 card.


To obtain more information about TH-TUNE thermostat, please consult its user manual.
For other options, consult availability.

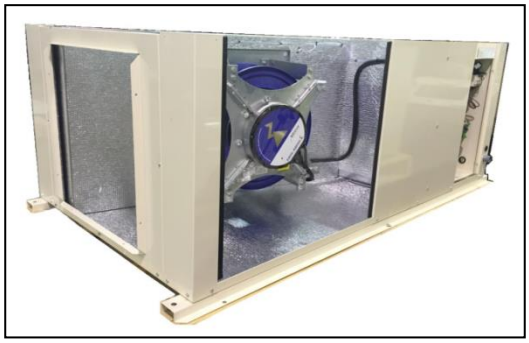
# GENERAL CHARACTERISTICS

## ACCESSORIES

- Pressostatic water regulating valve.
- Flow switch.
- Water electrovalve

## OPTIONS

- High powered fan drive
- EC motor plug-fans
- Electric resistor coils for auxiliary heating.
- Hot water coils.
- Euroclass A1 isolation (MO)



*Plug-fan with optional EC motor

## POWER SUPPLY

**WPHBA 091-251** 230.I.50 Hz~
**WPHBA 351-1201** 400.III+N.50 Hz~

## APPLICATIONS LIMITS

**COOLING CYCLE**

| INLET TEMP. | MINIMUM | MAXIMUM |
|---|---|---|
| Indoor dry air | 19ºC | 31ºC |
| Indoor wet air | 15ºC | 21ºC |
| Water inlet | 15ºC * | 45ºC ** |

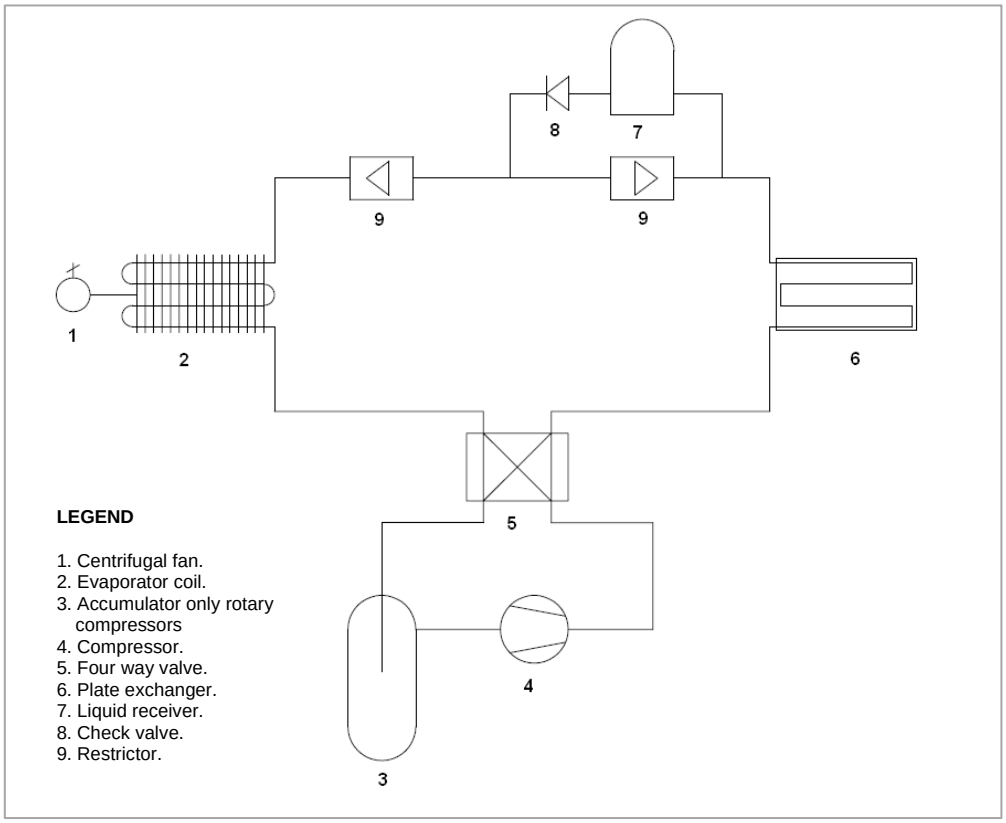
*The use of the pressostatic valve accessory is required below 25ºC.
** 50 ºC water inlet temperature units available on request.

**HEATING CYCLE**

| TEMPERATURE | MINIMUM | MAXIMUM |
|---|---|---|
| Dry air inlet | 18ºC | 24ºC |
| Water inlet | 12ºC | 27ºC |

# REFRIGERATION DIAGRAM

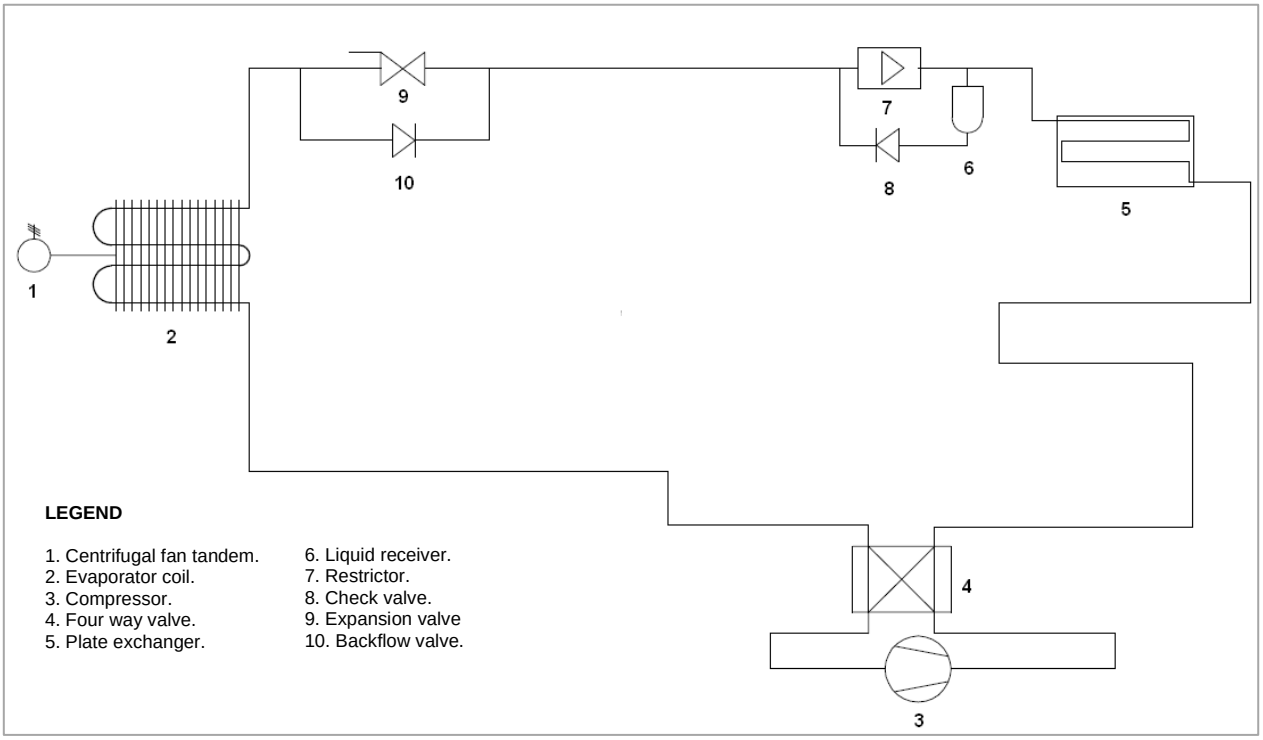
## MODELS FROM 091 TO 401




**LEGEND**

1. Centrifugal fan.
2. Evaporator coil.
3. Accumulator only rotary compressors
4. Compressor.
5. Four way valve.
6. Plate exchanger.
7. Liquid receiver.
8. Check valve.
9. Restrictor.

## MODELS FROM 501 TO 1201

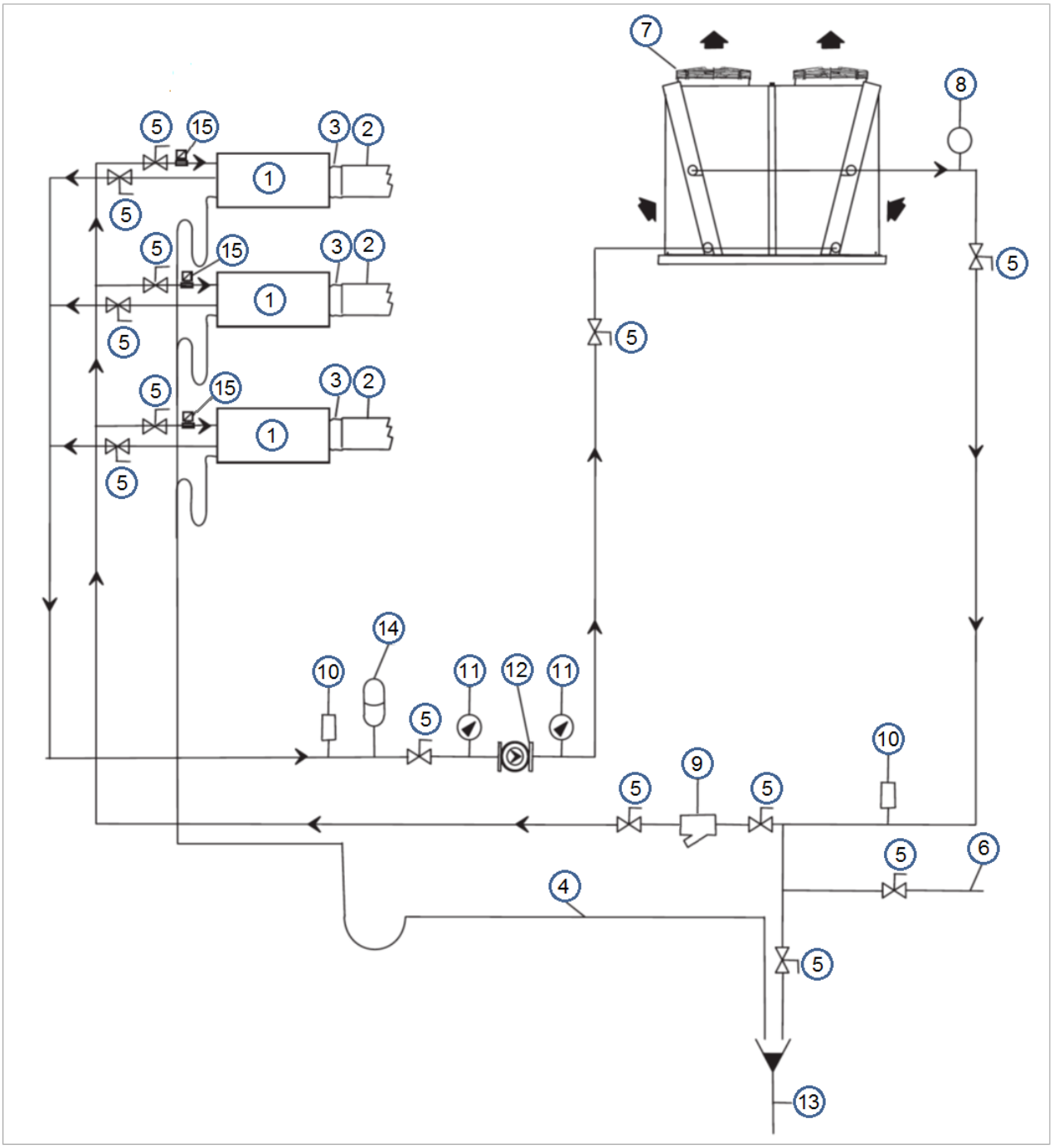



**LEGEND**

1. Centrifugal fan tandem.
2. Evaporator coil.
3. Compressor.
4. Four way valve.
5. Plate exchanger.
6. Liquid receiver.
7. Restrictor.
8. Check valve.
9. Expansion valve
10. Backflow valve.

# HYDRAULIC SCHEME

## DIAGRAM OF WATER CONNECTIONS AND COMPONENTS

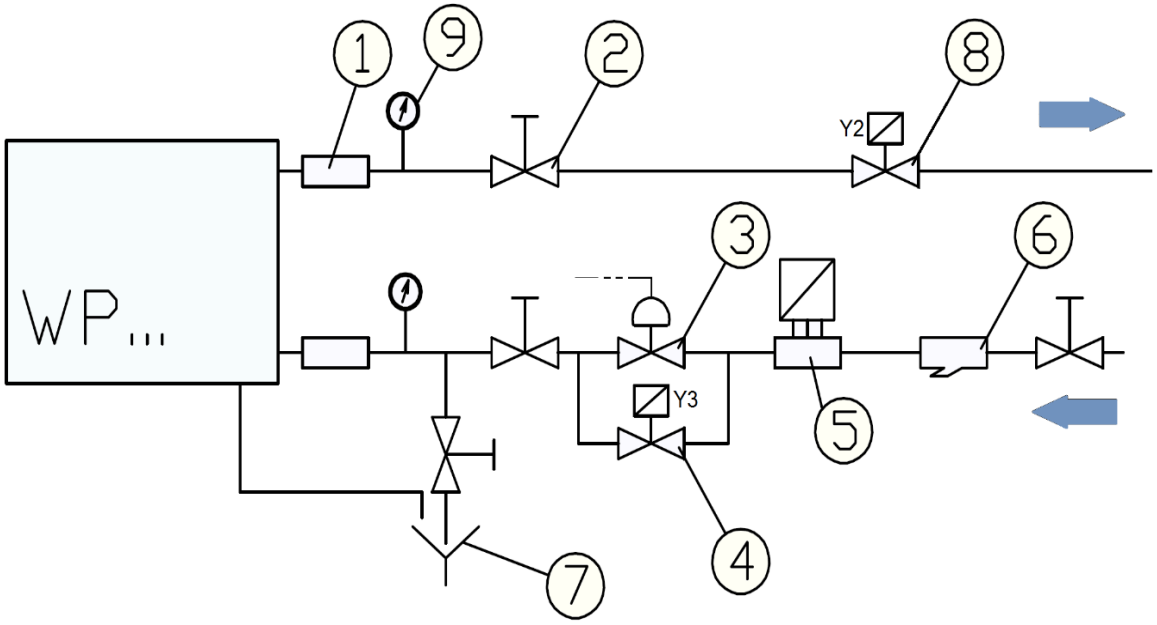



**LEGEND**

1. WPHBA-WPHA unit.
2. Air ducts.
3. Flexible connection.
4. Condensates drain tube
5. Glove valve.
6. Water line.
7. Dry cooler
8. Auto air purge
9. Water filter.
10. Thermometer.
11. Pressure gauge.
12. Water pump.
13. Drainage.
14. Expansion tank.
15. Flow switch.

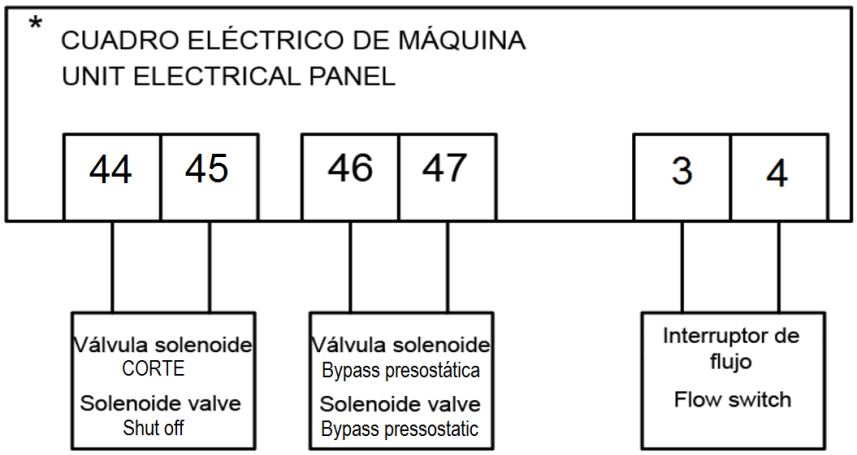
# HIDRAULIC SCHEME

## WATER CONNECTIONS OF PRESSOSTATIC VALVE OPTIONAL




**LEGEND**

1. Hump hose
2. Shut-off valve
3. Pressostatic valve
4. Open/close solenoid valve
5. Flow switch
6. Screen filter
7. Condensates/evacuation drainage system
8. ON/OFF shutoff solenoid valve accessory with the compressor
9. Pressure gauge




*For TH-TUNE operation

## NOTES

- The pressure tap of the pressostatic valve must be connected to the high pressure outlet of the unit.
- The graphs show connections for heat pump units. In the case of cooling only units, do not mount the solenoid valve.
- While mounting the pressostatic valve, the performance of the flow switch on the compressor start-up must be time during 1 minute, to let the valve act.

# TECHNICAL SPECIFICATIONS

| VERNE RANGE | | 091 | 121 | 141 | 171 | 201 |
|---|---|---|---|---|---|---|
| **WPHA (Cooling Only Units)** | | | | | | |
| **CAPACITIES** | | | | | | |
| Nominal Cooling Capacity (1) | kW | 2.33 | 3.15 | 3.88 | 4.79 | 5.76 |
| Power Input (3) | kW | 0.75 | 1.00 | 1.14 | 1.18 | 1.64 |
| Current Input (3) | A | 3 | 4.1 | 4.9 | 4.1 | 7.5 |
| EER Coefficient | kW / kW | 3.12 | 3.15 | 3.39 | 4.05 | 3.51 |
| Air flow | m³/h | 500 | 600 | 700 | 900 | 1100 |
| Available pressure | Pa | 25 | 25 | 54 | 25 | 25 |
| Water flow | m³/h | 0.5 | 0.7 | 0.9 | 1 | 1.3 |
| Pressure loss | kPa | 8.7 | 15.4 | 22.4 | 17.9 | 26.8 |
| **WPHBA (Heat Pump Units)** | | | | | | |
| **CAPACITIES** | | | | | | |
| Nominal Cooling Capacity (1) | kW | 2.33 | 3.15 | 3.88 | 4.79 | 5.76 |
| Power Input Cooling (3) | kW | 0.75 | 1.00 | 1.14 | 1.18 | 1.64 |
| Current Input Cooling (3) | A | 3 | 4.1 | 4.9 | 4.1 | 7.5 |
| EER Coefficient | kW / kW | 3.12 | 3.15 | 3.39 | 4.05 | 3.51 |
| Air flow | m³/h | 500 | 600 | 700 | 900 | 1100 |
| Available pressure | Pa | 25 | 25 | 54 | 25 | 25 |
| Hot water flow | m³/h | 0.6 | 0.7 | 0.9 | 1 | 1.3 |
| Differential pressure | kPa | 8.7 | 15.5 | 22.4 | 17.9 | 26.8 |
| Heat capacity (2) | kW | 2.83 | 3.87 | 4.7 | 5.56 | 7.11 |
| Power Input Heat (3) | kW | 0.8 | 1.05 | 1.31 | 1.26 | 1.79 |
| Current Input Heat (3) | A | 3.2 | 4.7 | 5.9 | 5.3 | 8.5 |
| COP Coefficient | kW / kW | 3.56 | 3.69 | 3.59 | 4.41 | 3.97 |
| Cold water flow | m³/h | 0.6 | 0.7 | 0.9 | 1 | 1.3 |
| **WPHA / WPHBA** | | | | | | |
| **REFRIGERANT** | | | | | | |
| Type | | R-410A | | | | |
| GWP (4) | | 2088 | | | | |
| Refrigerant load WPHA | kg | 0.4 | 0.4 | 0.4 | 0.5 | 0.55 |
| Refrigerant load WPHBA | kg | 0.7 | 0.6 | 0.9 | 1.5 | 1.2 |
| **COMPRESOR** | | | | | | |
| Type | | Rotational | | | | |
| Quantity | | 1 | | | | |
| Voltage | V / ~ / Hz | 230 / 1 / 50 | | | | |
| **EVAPORATOR FAN** | | | | | | |
| Type | | Centrifugal. double aspiration (integrated motor) | | | | |
| Quantity | | 1 | | | | |
| Model | | 180 / 184 | 180 / 184 | 7 / 7 | 7 / 7 | 180 / 184 |
| Motor power | W | 115 | 115 | 72 | 72 | 150 |
| Voltage | V / ~ / Hz | 230 / 1 / 50 | | | | |

(1) COOLING NOMINAL CONDITIONS, calculated according to the UNE-EN14511:2013 standard: return air temperature 27°C/19Chb; Water inlet temperature 30ºC. Water outlet temperature 35ºC.

(2) HEATING NOMINAL CONDITIONS (water loop): return air temperature 20ºCdb; Water inlet temperature 20ºC; Water outlet temperature 17ºC.

(3) Total power input in nominal conditions calculated according to the standard UNE-EN 14511:2013

(4) GWP: Global Warming Potential (climatic) of 1 kg of greenhouse gas relative to 1 kg of $CO_2$, calculated in terms of 100-year warming potential.

# TECHNICAL SPECIFICATIONS

| VERNE RANGE | | 091 | 121 | 141 | 171 | 201 |
|---|---|---|---|---|---|---|
| **INDOOR HEAT EXCHANGER** | | | | | | |
| Type | | Coil with aluminium fins and copper tube | | | | |
| Frontal area | m² | 0.165 | 0.165 | 0.165 | 0.188 | 0.188 |
| Fin spacing | mm - (") | 2.1 - 3/8 | | | | |
| **OUTDOOR HEAT EXCHANGER** | | | | | | |
| Type | | Brazed plates | | | | |
| Quantity | | 1 | | | | |
| Water connections (male gas thread) | (") | 3/4 | | | | |
| Number of plates | | 16 | 16 | 16 | 22 | 22 |
| Water volume | l | 0.17 | 0.17 | 0.17 | 0.23 | 0.23 |
| **GENERAL DATA FOR ELECTRICAL INSTALLATION** | | | | | | |
| Voltage | V / ~ / Hz | 230 / I + N / 50 | | | | |
| Maximum operation current | A | 4.4 | 5.8 | 7.0 | 8.0 | 11.3 |
| Start-up current | A | 19.6 | 21.6 | 34.4 | 26.5 | 43.7 |
| **DIMENSIONS AND WEIGHT** | | | | | | |
| Length | mm | 1055 | 1055 | 1055 | 1055 | 1055 |
| Width | mm | 560 | 560 | 560 | 560 | 560 |
| Height | mm | 410 | 410 | 410 | 470 | 470 |
| Weight | kg | 60 | 62 | 65 | 75 | 77 |
| **SOUND LEVEL** | | | | | | |
| Sound pressure at 2 m | dB (A) | 58 | 58 | 59 | 60 | 62 |

# TECHNICAL SPECIFICATIONS

| VERNE RANGE | | 251 | 351 | 401 | 501 |
|---|---|---|---|---|---|
| **WPHA (Cooling Only Units)** | | | | | |
| **CAPACITIES** | | | | | |
| Nominal Cooling Capacity (1) | kW | 7.42 | 11.3 | 13.08 | 16.35 |
| Power Input (3) | kW | 1.87 | 2.99 | 3.44 | 3.48 |
| Current Input (3) | A | 8.8 | 6.2 | 5.8 | 6.7 |
| EER Coefficient | kW / kW | 3.97 | 3.78 | 3.8 | 4.7 |
| Air flow | m³/h | 1500 | 2000 | 2300 | 2800 |
| Available pressure | Pa | 37 | 37 | 60 | 50 |
| Water flow | m³/h | 1.6 | 2.5 | 2.9 | 3.5 |
| Pressure loss | kPa | 15.1 | 34.3 | 44.8 | 21.3 |
| **WPHBA (Heat Pump Units)** | | | | | |
| **CAPACITIES** | | | | | |
| Nominal Cooling Capacity (1) | kW | 7.42 | 11.3 | 13.08 | 16.35 |
| Power Input Cooling (3) | kW | 1.87 | 2.99 | 3.44 | 3.48 |
| Current Input Cooling (3) | A | 8.8 | 6.2 | 5.8 | 6.7 |
| EER Coefficient | kW / kW | 3.97 | 3.78 | 3.8 | 4.7 |
| Air flow | m³/h | 1500 | 2000 | 2300 | 2800 |
| Available pressure | Pa | 37 | 37 | 60 | 50 |
| Hot water flow | m³/h | 1.6 | 2.5 | 2.9 | 3.5 |
| Pressure loss | kPa | 15.1 | 34.3 | 44.8 | 21.3 |
| Heat capacity (2) | kW | 9.22 | 14.15 | 16.34 | 18.89 |
| Power Input Heat (3) | kW | 1.86 | 3.1 | 3.6 | 3.96 |
| Current Input Heat (3) | A | 9.0 | 6.2 | 5.9 | 7.4 |
| COP Coefficient | kW / kW | 4.96 | 4.56 | 4.54 | 4.77 |
| Cold water flow | m³/h | 1.6 | 2.6 | 2.9 | 3.5 |
| **WPHA / WPHBA** | | | | | |
| **REFRIGERANT** | | | | | |
| Type | | R-410A | | | |
| GWP (4) | | 2088 | | | |
| Refrigerant load WPHA | kg | 0.7 | 0.8 | 0.8 | 2 |
| Refrigerant load WPHBA | kg | 1.7 | 1.8 | 2.8 | 3.8 |
| **COMPRESSOR** | | | | | |
| Type | | Rotational | Scroll | | |
| Quantity | | 1 | | | |
| Voltage | V / ~ / Hz | 230/1/50-400/3/50 | 400/3/50 | 400/3/50 | 400/3/50 |
| **EVAPORATOR FAN** | | | | | |
| Type | | Centrifugal. double aspiration (incorporated motor) | | | Centrifugal. transmission motor |
| Quantity | | 1 | | | |
| Model | | 7 / 7 | 9 / 9 | 10 / 10 | 10 / 10 |
| Motor power | W | 147 | 200 | 245 | 550 |
| Voltage | V / ~ / Hz | 230/1/50-400/3/50 | 230/1/50 | 400/3/50 | 400/3/50 |

(1) COOLING NOMINAL CONDITIONS, calculated according to the UNE-EN14511:2013 standard: return air temperature 27°C/19Chb; Water inlet temperature 30ºC. Water outlet temperature 35ºC.

(2) HEATING NOMINAL CONDITIONS (water loop): return air temperature 20ºCdb; Water inlet temperature 20ºC; Water outlet temperature 17ºC.

(3) Total power input in nominal conditions calculated according to the standard UNE-EN 14511:2013

(4) GWP: Global Warming Potential (climatic) of 1 kg of greenhouse gas relative to 1 kg of $CO_2$, calculated in terms of 100-year warming potential.

# TECHNICAL SPECIFICATIONS

| VERNE RANGE | | 251 | | 351 | 401 | 501 |
|---|---|---|---|---|---|---|
| **INDOOR HEAT EXCHANGER** | | | | | | |
| Type | | Coil with aluminium fins and copper tube | | | | |
| Frontal area | m² | 0.252 | | 0.252 | 0.252 | 0.45 |
| Fin spacing | mm - (") | 1.8 - 3/8 | | 1.8 - 3/4 | 1.8 - 3/8 | 2.1 - 3/8 |
| **OUTDOOR HEAT EXCHANGER** | | | | | | |
| Type | | Brazed plates | | | | |
| Quantity | | 1 | | | | |
| Water connections (male gas thread) | (") | 3/4 | | | | 1 1/4 |
| Number of plates | | 42 | | 42 | 42 | 32 |
| Water volume | l | 0.44 | | 0.44 | 0.44 | 1.3 |
| **GENERAL DATA FOR ELECTRICAL INSTALLATION** | | | | | | |
| Voltage | V / ~ / Hz | 230/1/50 | 400/3/50 | 400/3+N/50 | 400/3+N/50 | 400/3+N/50 |
| Maximum operation current | A | 13.4 | 6.9 | 9.0 | 8.5 | 10.9 |
| Start-up current | A | 61.3 | 27.0 | 50.8 | 61.3 | 71.3 |
| **DIMENSIONS AND WEIGHT** | | | | | | |
| Length | mm | 1135 | | 1135 | 1135 | 1385 |
| Width | mm | 670 | | 670 | 670 | 940 |
| Height | mm | 530 | | 530 | 530 | 620 |
| Weight | kg | 90 | | 110 | 115 | 160 |
| **SOUND LEVEL** | | | | | | |
| Sound pressure at 2 m | dB (A) | 63 | | 64 | 64 | 65 |

# TECHNICAL SPECIFICATIONS

| VERNE RANGE | | 701 | 751 | 1001 | 1201 |
|---|---|---|---|---|---|
| **WPHA (Cooling Only Units)** | | | | | |
| **CAPACITIES** | | | | | |
| Nominal Cooling Capacity (1) | kW | 19.77 | 25.18 | 33.9 | 39.96 |
| Power Input (3) | kW | 4.46 | 6.11 | 7.78 | 9.25 |
| Current Input (3) | A | 15.4 | 17.5 | 23.0 | 25.3 |
| EER Coefficient | kW / kW | 4.44 | 4.12 | 4.36 | 4.32 |
| Air flow | m³/h | 3400 | 4300 | 6200 | 7000 |
| Available pressure | Pa | 50 | 62 | 75 | 75 |
| Water flow | m³/h | 4.3 | 5.5 | 7.5 | 8.7 |
| Pressure loss | kPa | 30.9 | 49.0 | 37.1 | 49.4 |
| **WPHBA (Heat Pump Units)** | | | | | |
| **CAPACITIES** | | | | | |
| Nominal Cooling Capacity (1) | kW | 19.77 | 25.18 | 33.9 | 39.96 |
| Power Input Cooling (3) | kW | 4.46 | 6.11 | 7.78 | 9.25 |
| Current Input Cooling (3) | A | 15.4 | 17.5 | 23.0 | 25.3 |
| EER Coefficient | kW / kW | 4.44 | 4.12 | 4.36 | 4.32 |
| Air flow | m³/h | 3400 | 4300 | 6200 | 7000 |
| Available pressure | Pa | 50 | 62 | 75 | 75 |
| Hot water flow | m³/h | 4.3 | 5.5 | 7.5 | 8.7 |
| Pressure loss | kPa | 30.9 | 49.0 | 37.1 | 49.4 |
| Heat capacity (2) | kW | 23.11 | 30.6 | 39.82 | 46.41 |
| Power Input Heat (3) | kW | 4.94 | 7.01 | 8.37 | 10.1 |
| Current Input Heat (3) | A | 10.2 | 12.8 | 17.1 | 19.4 |
| COP Coefficient | kW / kW | 4.68 | 4.37 | 4.76 | 4.6 |
| Cold water flow | m³/h | 4.3 | 5.5 | 7.6 | 8.7 |
| **WPHA / WPHBA** | | | | | |
| **REFRIGERANT** | | | | | |
| Type | | R-410A | | | |
| GWP (4) | | 2088 | | | |
| Refrigerant load WPHA | kg | 1.6 | 1.7 | 2.4 | 3.0 |
| Refrigerant load WPHBA | kg | 4.0 | 4.2 | 6.1 | 6.3 |
| **COMPRESSOR** | | | | | |
| Type | | Scroll | | | |
| Quantity | | 1 | | | |
| Voltage | V / ~ / Hz | 400 / 3 / 50 | | | |
| **EVAPORATOR FAN** | | | | | |
| Type | | Centrifugal. transmission motor | | | |
| Quantity | | 1 | | | |
| Model | | 10 / 10 | 12 / 9 | 12 / 12 | 15 / 15 |
| Motor power | W | 550 | 750 | 1500 | 1100 |
| Voltage | V / ~ / Hz | 400 / 3 / 50 | | | |

(1) COOLING NOMINAL CONDITIONS, calculated according to the UNE-EN14511:2013 standard: return air temperature 27°C/19Chb; Water inlet temperature 30ºC. Water outlet temperature 35ºC.

(2) HEATING NOMINAL CONDITIONS (water loop): return air temperature 20ºCdb; Water inlet temperature 20ºC; Water outlet temperature 17ºC.

(3) Total power input in nominal conditions calculated according to the standard UNE-EN 14511:2013

(4) GWP: Global Warming Potential (climatic) of 1 kg of greenhouse gas relative to 1 kg of $CO_2$, calculated in terms of 100-year warming potential.

# TECHNICAL SPECIFICATIONS

| SERIE VERNE | | 701 | 751 | 1001 | 1201 |
|---|---|---|---|---|---|
| **INDOOR HEAT EXCHANGER** | | | | | |
| Type | | Coil with aluminium fins and copper tube | | | |
| Frontal area | m² | 0.45 | 0.45 | 0.84 | 0.84 |
| Fin spacing | mm - (") | 2.1 - 3/8 | | | |
| **OUTDOOR HEAT EXCHANGER** | | | | | |
| Type | | Brazed plates | | | |
| Quantity | | 1 | | | |
| Water connections (male gas thread) | (") | 1 1/4 | | | |
| Number of plates | | 32 | 32 | 52 | 52 |
| Water volume | l | 1.3 | 1.3 | 2.11 | 2.11 |
| **GENERAL DATA FOR ELECTRICAL INSTALLATION** | | | | | |
| Voltage | V / ~ / Hz | 400 / 3+ N / 50 | | | |
| Maximum operation current | A | 15.4 | 17.5 | 23.0 | 25.3 |
| Start-up current | A | 88.3 | 126.6 | 128.5 | 149.6 |
| **DIMENSIONS AND WEIGHT** | | | | | |
| Length | mm | 1385 | 1385 | 1930 | 1930 |
| Width | mm | 940 | 940 | 1040 | 1040 |
| Height | mm | 620 | 620 | 690 | 690 |
| Weight | kg | 160 | 180 | 230 | 250 |
| **SOUND LEVEL** | | | | | |
| Sound pressure at 2 m | dB (A) | 68 | 68 | 69 | 70 |

# COOLING CAPACITIES
## MODEL WPHBA 091

Nominal air flow 500 $m^3/h$

| Water inlet temperature (°C) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 091 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (°C) | TS (°C) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 0.166 | 1.28 | 19 / 15 | 28.77 | 2.26 | 1.47 | 0.64 | 2.65 | 3.51 |
| | | | 24 / 17 | 29.60 | 2.41 | 1.86 | 0.66 | 2.81 | 3.65 |
| | | | 27 / 19 | 30.19 | 2.52 | 1.89 | 0.67 | 2.93 | 3.77 |
| | | | 30 / 21 | 30.60 | 2.60 | 1.85 | 0.67 | 3.01 | 3.85 |
| | 0.125 | 0.77 | 19 / 15 | 32.75 | 2.15 | 1.42 | 0.67 | 2.58 | 3.20 |
| | | | 24 / 17 | 34.10 | 2.33 | 1.83 | 0.70 | 2.77 | 3.33 |
| | | | 27 / 19 | 35.09 | 2.46 | 1.91 | 0.71 | 2.91 | 3.45 |
| | | | 30 / 21 | 35.84 | 2.57 | 1.92 | 0.73 | 3.02 | 3.54 |
| | 0.100 | 0.52 | 19 / 15 | 36.46 | 2.04 | 1.37 | 0.70 | 2.49 | 2.93 |
| | | | 24 / 17 | 38.10 | 2.21 | 1.79 | 0.73 | 2.68 | 3.04 |
| | | | 27 / 19 | 39.77 | 2.38 | 1.91 | 0.76 | 2.87 | 3.15 |
| | | | 30 / 21 | 40.97 | 2.52 | 1.96 | 0.77 | 3.01 | 3.27 |
| | 0.083 | 0.37 | 19 / 15 | 39.96 | 1.93 | 1.32 | 0.72 | 2.40 | 2.68 |
| | | | 24 / 17 | 41.76 | 2.08 | 1.73 | 0.75 | 2.58 | 2.77 |
| | | | 27 / 19 | 43.81 | 2.26 | 1.87 | 0.78 | 2.77 | 2.88 |
| | | | 30 / 21 | 46.78 | 2.42 | 1.97 | 0.82 | 2.96 | 2.97 |
| 20 | 0.250 | 2.55 | 19 / 15 | 29.11 | 2.24 | 1.46 | 0.65 | 2.64 | 3.46 |
| | | | 24 / 17 | 29.70 | 2.40 | 1.85 | 0.66 | 2.81 | 3.62 |
| | | | 27 / 19 | 30.10 | 2.51 | 1.89 | 0.67 | 2.93 | 3.74 |
| | | | 30 / 21 | 30.49 | 2.60 | 1.95 | 0.68 | 3.01 | 3.83 |
| | 0.166 | 1.28 | 19 / 15 | 33.28 | 2.13 | 1.41 | 0.68 | 2.55 | 3.15 |
| | | | 24 / 17 | 34.34 | 2.31 | 1.83 | 0.70 | 2.76 | 3.29 |
| | | | 27 / 19 | 35.14 | 2.46 | 1.91 | 0.72 | 2.91 | 3.41 |
| | | | 30 / 21 | 35.74 | 2.57 | 1.93 | 0.73 | 3.03 | 3.52 |
| | 0.125 | 0.77 | 19 / 15 | 37.05 | 2.02 | 1.36 | 0.70 | 2.47 | 2.87 |
| | | | 24 / 17 | 38.39 | 2.19 | 1.78 | 0.73 | 2.66 | 2.99 |
| | | | 27 / 19 | 39.78 | 2.37 | 1.90 | 0.76 | 2.86 | 3.11 |
| | | | 30 / 21 | 40.77 | 2.51 | 1.96 | 0.78 | 3.01 | 3.23 |
| | 0.100 | 0.52 | 19 / 15 | 40.57 | 1.91 | 1.31 | 0.73 | 2.38 | 2.63 |
| | | | 24 / 17 | 42.09 | 2.06 | 1.72 | 0.76 | 2.56 | 2.72 |
| | | | 27 / 19 | 43.81 | 2.24 | 1.86 | 0.79 | 2.76 | 2.84 |
| | | | 30 / 21 | 45.51 | 2.41 | 1.97 | 0.82 | 2.96 | 2.94 |
| 25 | 0.500 | 8.72 | 19 / 15 | 29.54 | 2.22 | 1.45 | 0.65 | 2.63 | 3.41 |
| | | | 24 / 17 | 29.85 | 2.39 | 1.85 | 0.67 | 2.81 | 3.58 |
| | | | 27 / 19 | 30.06 | 2.51 | 1.89 | 0.68 | 2.92 | 3.71 |
| | | | 30 / 21 | 30.22 | 2.59 | 1.95 | 0.68 | 3.01 | 3.80 |
| | 0.250 | 2.55 | 19 / 15 | 33.78 | 2.11 | 1.40 | 0.68 | 2.54 | 3.09 |
| | | | 24 / 17 | 34.51 | 2.30 | 1.82 | 0.71 | 2.75 | 3.24 |
| | | | 27 / 19 | 35.07 | 2.45 | 1.92 | 0.72 | 2.91 | 3.38 |
| | | | 30 / 21 | 35.46 | 2.57 | 2.01 | 0.73 | 3.03 | 3.50 |
| | 0.166 | 1.28 | 19 / 15 | 37.75 | 1.99 | 1.35 | 0.71 | 2.45 | 2.81 |
| | | | 24 / 17 | 38.76 | 2.16 | 1.77 | 0.74 | 2.64 | 2.93 |
| | | | 27 / 19 | 39.87 | 2.35 | 1.90 | 0.77 | 2.85 | 3.07 |
| | | | 30 / 21 | 40.64 | 2.50 | 1.96 | 0.78 | 3.00 | 3.19 |
| | 0.125 | 0.77 | 19 / 15 | 41.34 | 1.88 | 1.30 | 0.73 | 2.36 | 2.58 |
| | | | 24 / 17 | 42.52 | 2.03 | 1.71 | 0.76 | 2.53 | 2.66 |
| | | | 27 / 19 | 43.95 | 2.21 | 1.85 | 0.79 | 2.74 | 2.79 |
| | | | 30 / 21 | 45.37 | 2.39 | 1.97 | 0.83 | 2.94 | 2.90 |

# COOLING CAPACITIES
## MODEL WPHBA 091

Nominal air flow 500 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 091 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 30 | 0.500 | 8.72 | 19 / 15 | 34.37 | 2.08 | 1.39 | 0.69 | 2.52 | 3.03 |
| | | | 24 / 17 | 34.74 | 2.28 | 1.81 | 0.71 | 2.73 | 3.20 |
| | | | **27 / 19** | **35.04** | **2.44** | **1.92** | **0.73** | **2.91** | **3.36** |
| | | | 30 / 21 | 32.25 | 2.56 | 1.93 | 0.74 | 3.03 | 3.47 |
| | 0.250 | 2.55 | 19 / 15 | 38.41 | 1.96 | 1.34 | 0.72 | 2.43 | 2.74 |
| | | | 24 / 17 | 39.09 | 2.14 | 1.76 | 0.74 | 2.62 | 2.89 |
| | | | 27 / 19 | 39.85 | 2.34 | 1.89 | 0.77 | 2.84 | 3.03 |
| | | | 30 / 21 | 40.39 | 2.49 | 1.96 | 0.79 | 3.00 | 3.17 |
| | 0.166 | 1.28 | 19 / 15 | 42.21 | 1.85 | 1.29 | 0.74 | 2.34 | 2.51 |
| | | | 24 / 17 | 43.07 | 2.00 | 1.70 | 0.77 | 2.50 | 2.60 |
| | | | 27 / 19 | 44.19 | 2.19 | 1.84 | 0.80 | 2.72 | 2.73 |
| | | | 30 / 21 | 45.30 | 2.38 | 1.96 | 0.83 | 2.93 | 2.86 |
| 35 | 0.500 | 8.72 | 19 / 15 | 39.17 | 1.93 | 1.32 | 0.72 | 2.40 | 2.67 |
| | | | 24 / 17 | 39.51 | 2.11 | 1.74 | 0.75 | 2.60 | 2.83 |
| | | | 27 / 19 | 39.91 | 2.32 | 1.89 | 0.78 | 2.83 | 2.99 |
| | | | 30 / 21 | 40.20 | 2.48 | 1.97 | 0.79 | 2.99 | 3.14 |
| | 0.250 | 2.55 | 19 / 15 | 43.02 | 1.82 | 1.27 | 0.75 | 2.31 | 2.44 |
| | | | 24 / 17 | 43.61 | 1.97 | 1.69 | 0.77 | 2.48 | 2.54 |
| | | | 27 / 19 | 44.36 | 2.16 | 1.83 | 0.80 | 2.69 | 2.69 |
| | | | 30 / 21 | 45.14 | 2.36 | 1.96 | 0.84 | 2.92 | 2.82 |
| | 0.166 | 1.28 | 19 / 15 | 46.48 | 1.68 | 1.22 | 0.77 | 2.19 | 2.18 |
| | | | 24 / 17 | 47.34 | 1.82 | 1.63 | 0.80 | 2.36 | 2.28 |
| | | | 27 / 19 | 48.36 | 1.99 | 1.77 | 0.83 | 2.55 | 2.40 |
| | | | 30 / 21 | 49.49 | 2.19 | 1.90 | 0.86 | 2.77 | 2.53 |
| 40 | 0.500 | 8.72 | 19 / 15 | 47.45 | 1.62 | 1.19 | 0.78 | 2.14 | 2.08 |
| | | | 24 / 17 | 48.10 | 1.79 | 1.61 | 0.81 | 2.33 | 2.21 |
| | | | 27 / 19 | 48.77 | 1.95 | 1.75 | 0.84 | 2.52 | 2.34 |
| | | | 30 / 21 | 49.55 | 2.15 | 1.89 | 0.87 | 2.75 | 2.48 |
| | 0.250 | 2.55 | 19 / 15 | 50.58 | 1.48 | 1.13 | 0.80 | 2.02 | 1.85 |
| | | | 24 / 17 | 51.57 | 1.65 | 1.56 | 0.83 | 2.21 | 1.98 |
| | | | 27 / 19 | 52.43 | 1.78 | 1.69 | 0.86 | 2.37 | 2.06 |
| | | | 30 / 21 | 53.53 | 1.96 | 1.83 | 0.90 | 2.58 | 2.18 |
| 45 | 0.500 | 8.72 | 19 / 15 | 51.82 | 1.41 | 1.10 | 0.81 | 1.96 | 1.73 |
| | | | 24 / 17 | 52.50 | 1.58 | 1.53 | 0.84 | 2.15 | 1.89 |
| | | | 27 / 19 | 53.11 | 1.73 | 1.67 | 0.87 | 2.33 | 1.98 |
| | | | 30 / 21 | 53.86 | 1.92 | 1.81 | 0.91 | 2.54 | 2.12 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES
## MODEL WPHBA 121

Nominal air flow 600 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 121 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 0.226 | 2.17 | 19 / 15 | 28.71 | 3.01 | 1.89 | 0.85 | 3.60 | 3.55 |
| | | | 24 / 17 | 29.58 | 3.21 | 2.34 | 0.88 | 3.82 | 3.65 |
| | | | 27 / 19 | 30.15 | 3.35 | 2.40 | 0.90 | 3.98 | 3.75 |
| | | | 30 / 21 | 30.63 | 3.47 | 2.41 | 0.91 | 4.10 | 3.83 |
| | 0.170 | 1.31 | 19 / 15 | 32.75 | 2.87 | 1.82 | 0.89 | 3.50 | 3.23 |
| | | | 24 / 17 | 34.11 | 3.11 | 2.30 | 0.93 | 3.77 | 3.32 |
| | | | 27 / 19 | 35.11 | 3.29 | 2.41 | 0.96 | 3.97 | 3.43 |
| | | | 30 / 21 | 35.87 | 3.43 | 2.43 | 0.98 | 4.12 | 3.51 |
| | 0.136 | 0.88 | 19 / 15 | 36.54 | 2.74 | 1.76 | 0.92 | 3.40 | 2.96 |
| | | | 24 / 17 | 38.15 | 2.96 | 2.23 | 0.97 | 3.65 | 3.05 |
| | | | 27 / 19 | 39.78 | 3.18 | 2.38 | 1.02 | 3.91 | 3.13 |
| | | | 30 / 21 | 40.91 | 3.34 | 2.44 | 1.04 | 4.09 | 3.22 |
| | 0.113 | 0.63 | 19 / 15 | 40.09 | 2.60 | 1.69 | 0.96 | 3.29 | 2.71 |
| | | | 24 / 17 | 41.90 | 2.80 | 2.17 | 1.00 | 3.53 | 2.78 |
| | | | 27 / 19 | 43.96 | 3.02 | 2.32 | 1.06 | 3.80 | 2.86 |
| | | | 30 / 21 | 45.77 | 3.23 | 2.44 | 1.10 | 4.03 | 2.94 |
| 20 | 0.340 | 4.30 | 19 / 15 | 29.09 | 2.99 | 1.88 | 0.85 | 3.58 | 3.50 |
| | | | 24 / 17 | 29.70 | 3.20 | 2.34 | 0.89 | 3.82 | 3.61 |
| | | | 27 / 19 | 30.09 | 3.35 | 2.40 | 0.90 | 3.98 | 3.73 |
| | | | 30 / 21 | 30.42 | 3.47 | 2.41 | 0.91 | 4.10 | 3.81 |
| | 0.226 | 2.17 | 19 / 15 | 33.31 | 2.85 | 1.81 | 0.90 | 3.49 | 3.18 |
| | | | 24 / 17 | 34.33 | 3.09 | 2.29 | 0.94 | 3.75 | 3.29 |
| | | | 27 / 19 | 35.13 | 3.28 | 2.41 | 0.96 | 3.96 | 3.40 |
| | | | 30 / 21 | 35.72 | 3.42 | 2.43 | 0.98 | 4.12 | 3.48 |
| | 0.170 | 1.31 | 19 / 15 | 37.15 | 2.71 | 1.74 | 0.93 | 3.38 | 2.90 |
| | | | 24 / 17 | 38.43 | 2.93 | 2.22 | 0.98 | 3.63 | 3.00 |
| | | | 27 / 19 | 39.80 | 3.16 | 2.37 | 1.02 | 3.90 | 3.09 |
| | | | 30 / 21 | 40.74 | 3.33 | 2.45 | 1.04 | 4.08 | 3.19 |
| | 0.136 | 0.88 | 19 / 15 | 40.72 | 2.57 | 1.68 | 0.97 | 3.26 | 2.66 |
| | | | 24 / 17 | 42.21 | 2.76 | 2.15 | 1.01 | 3.50 | 2.74 |
| | | | 27 / 19 | 43.98 | 3.00 | 2.31 | 1.06 | 3.78 | 2.83 |
| | | | 30 / 21 | 45.55 | 3.21 | 2.43 | 1.10 | 4.02 | 2.91 |
| 25 | 0.680 | 15.46 | 19 / 15 | 29.54 | 2.97 | 1.87 | 0.86 | 3.57 | 3.45 |
| | | | 24 / 17 | 29.85 | 3.19 | 2.33 | 0.89 | 3.82 | 3.58 |
| | | | 27 / 19 | 30.06 | 3.35 | 2.40 | 0.90 | 3.98 | 3.71 |
| | | | 30 / 21 | 30.22 | 3.47 | 2.42 | 0.91 | 4.11 | 3.80 |
| | 0.340 | 4.30 | 19 / 15 | 33.82 | 2.83 | 1.80 | 0.90 | 3.47 | 3.12 |
| | | | 24 / 17 | 34.50 | 3.07 | 2.28 | 0.94 | 3.74 | 3.26 |
| | | | 27 / 19 | 35.07 | 3.27 | 2.40 | 0.97 | 3.96 | 3.37 |
| | | | 30 / 21 | 35.46 | 3.41 | 2.43 | 0.99 | 4.11 | 3.46 |
| | 0.226 | 2.17 | 19 / 15 | 37.83 | 2.68 | 1.73 | 0.94 | 3.35 | 2.84 |
| | | | 24 / 17 | 38.81 | 2.90 | 2.21 | 0.98 | 3.61 | 2.95 |
| | | | 27 / 19 | 39.88 | 3.14 | 2.36 | 1.03 | 3.89 | 3.05 |
| | | | 30 / 21 | 40.62 | 3.32 | 2.45 | 1.05 | 4.08 | 3.16 |
| | 0.170 | 1.31 | 19 / 15 | 41.47 | 2.53 | 1.66 | 0.98 | 3.24 | 2.59 |
| | | | 24 / 17 | 42.68 | 2.73 | 2.14 | 1.02 | 3.47 | 2.69 |
| | | | 27 / 19 | 44.08 | 2.97 | 2.30 | 1.07 | 3.75 | 2.79 |
| | | | 30 / 21 | 45.42 | 3.19 | 2.43 | 1.11 | 4.01 | 2.87 |

# COOLING CAPACITIES
## MODEL WPHBA 121

Nominal air flow 600 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 121 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | | | | TEA (ºC) | | |
| 30 | 0.680 | 15.46 | 19 / 15 | 34.39 | 2.80 | 1.79 | 0.91 | 3.45 | 3.07 |
| | | | 24 / 17 | 34.74 | 3.05 | 2.27 | 0.95 | 3.72 | 3.22 |
| | | | **27 / 19** | **35.04** | **3.26** | **2.40** | **0.97** | **3.95** | **3.34** |
| | | | 30 / 21 | 35.24 | 3.41 | 2.43 | 0.99 | 4.11 | 3.44 |
| | 0.340 | 4.30 | 19 / 15 | 38.47 | 2.64 | 1.71 | 0.95 | 3.32 | 2.78 |
| | | | 24 / 17 | 39.14 | 2.87 | 2.20 | 0.99 | 3.59 | 2.90 |
| | | | 27 / 19 | 39.89 | 3.13 | 2.36 | 1.03 | 3.88 | 3.02 |
| | | | 30 / 21 | 40.39 | 3.31 | 2.45 | 1.05 | 4.08 | 3.14 |
| | 0.226 | 2.17 | 19 / 15 | 42.27 | 2.49 | 1.64 | 0.98 | 3.20 | 2.53 |
| | | | 24 / 17 | 43.21 | 2.69 | 2.12 | 1.03 | 3.44 | 2.63 |
| | | | 27 / 19 | 44.27 | 2.93 | 2.28 | 1.07 | 3.72 | 2.74 |
| | | | 30 / 21 | 45.34 | 3.17 | 2.42 | 1.12 | 4.00 | 2.83 |
| 35 | 0.680 | 15.46 | 19 / 15 | 39.20 | 2.60 | 1.70 | 0.96 | 3.29 | 2.72 |
| | | | 24 / 17 | 39.55 | 2.84 | 2.19 | 1.00 | 3.56 | 2.85 |
| | | | 27 / 19 | 39.93 | 3.11 | 2.35 | 1.04 | 3.86 | 2.99 |
| | | | 30 / 21 | 40.20 | 3.30 | 2.45 | 1.06 | 4.07 | 3.12 |
| | 0.340 | 4.30 | 19 / 15 | 43.08 | 2.44 | 1.62 | 0.99 | 3.17 | 2.47 |
| | | | 24 / 17 | 43.72 | 2.66 | 2.11 | 1.03 | 3.41 | 2.57 |
| | | | 27 / 19 | 44.44 | 2.90 | 2.27 | 1.08 | 3.70 | 2.70 |
| | | | 30 / 21 | 45.18 | 3.16 | 2.42 | 1.13 | 3.99 | 2.80 |
| | 0.226 | 2.17 | 19 / 15 | 46.68 | 2.29 | 1.56 | 1.02 | 3.04 | 2.25 |
| | | | 24 / 17 | 47.52 | 2.47 | 2.03 | 1.07 | 3.26 | 2.31 |
| | | | 27 / 19 | 48.53 | 2.69 | 2.19 | 1.12 | 3.52 | 2.41 |
| | | | 30 / 21 | 49.70 | 2.95 | 2.35 | 1.17 | 3.83 | 2.52 |
| 40 | 0.680 | 15.46 | 19 / 15 | 44.00 | 2.39 | 1.60 | 1.00 | 3.12 | 2.38 |
| | | | 24 / 17 | 44.31 | 2.61 | 2.09 | 1.04 | 3.37 | 2.51 |
| | | | 27 / 19 | 44.69 | 2.87 | 2.26 | 1.09 | 3.67 | 2.64 |
| | | | 30 / 21 | 45.08 | 3.13 | 2.41 | 1.13 | 3.97 | 2.76 |
| | 0.340 | 4.30 | 19 / 15 | 47.65 | 2.23 | 1.53 | 1.03 | 2.99 | 2.16 |
| | | | 24 / 17 | 48.22 | 2.41 | 2.01 | 1.08 | 3.21 | 2.24 |
| | | | 27 / 19 | 48.92 | 2.65 | 2.17 | 1.13 | 3.49 | 2.35 |
| | | | 30 / 21 | 49.70 | 2.91 | 2.34 | 1.18 | 3.79 | 2.47 |
| 45 | 0.680 | 15.46 | 19 / 15 | 48.74 | 2.14 | 1.49 | 1.05 | 2.92 | 2.04 |
| | | | 24 / 17 | 49.05 | 2.35 | 1.98 | 1.09 | 3.16 | 2.15 |
| | | | 27 / 19 | 49.41 | 2.60 | 2.15 | 1.14 | 3.44 | 2.28 |
| | | | 30 / 21 | 49.81 | 2.87 | 2.32 | 1.18 | 3.75 | 2.42 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES
## MODEL WPHBA 141

Nominal air flow 700 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 141 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 0.276 | 3.05 | 19 / 15 | 28.67 | 3.64 | 2.25 | 0.96 | 4.38 | 3.80 |
| | | | 24 / 17 | 29.51 | 3.88 | 2.76 | 1.00 | 4.65 | 3.88 |
| | | | 27 / 19 | 30.11 | 4.06 | 2.84 | 1.02 | 4.84 | 3.97 |
| | | | 30 / 21 | 30.58 | 4.20 | 2.86 | 1.04 | 4.99 | 4.04 |
| | 0.207 | 1.85 | 19 / 15 | 32.77 | 3.48 | 2.17 | 1.01 | 4.27 | 3.45 |
| | | | 24 / 17 | 34.09 | 3.76 | 2.71 | 1.07 | 4.59 | 3.52 |
| | | | 27 / 19 | 35.05 | 3.96 | 2.82 | 1.10 | 4.82 | 3.59 |
| | | | 30 / 21 | 35.81 | 4.12 | 2.86 | 1.13 | 5.00 | 3.65 |
| | 0.166 | 1.24 | 19 / 15 | 36.54 | 3.32 | 2.09 | 1.06 | 4.15 | 3.15 |
| | | | 24 / 17 | 38.11 | 3.58 | 2.63 | 1.11 | 4.45 | 3.21 |
| | | | 27 / 19 | 39.70 | 3.83 | 2.78 | 1.17 | 4.76 | 3.26 |
| | | | 30 / 21 | 40.82 | 4.02 | 2.87 | 1.21 | 4.97 | 3.34 |
| | 0.138 | 0.89 | 19 / 15 | 40.12 | 3.16 | 2.02 | 1.10 | 4.02 | 2.88 |
| | | | 24 / 17 | 41.90 | 3.39 | 2.54 | 1.16 | 4.31 | 2.93 |
| | | | 27 / 19 | 43.96 | 3.66 | 2.72 | 1.23 | 4.64 | 2.98 |
| | | | 30 / 21 | 45.66 | 3.89 | 2.84 | 1.28 | 4.91 | 3.04 |
| 20 | 0.415 | 6.04 | 19 / 15 | 29.08 | 3.62 | 2.24 | 0.97 | 4.37 | 3.75 |
| | | | 24 / 17 | 29.66 | 3.87 | 2.76 | 1.01 | 4.65 | 3.84 |
| | | | 27 / 19 | 30.06 | 4.05 | 2.84 | 1.03 | 4.84 | 3.95 |
| | | | 30 / 21 | 30.38 | 4.19 | 2.86 | 1.04 | 4.99 | 4.02 |
| | 0.276 | 3.05 | 19 / 15 | 33.29 | 3.46 | 2.16 | 1.02 | 4.25 | 3.39 |
| | | | 24 / 17 | 34.29 | 3.74 | 2.70 | 1.07 | 4.57 | 3.48 |
| | | | 27 / 19 | 35.04 | 3.95 | 2.82 | 1.11 | 4.81 | 3.56 |
| | | | 30 / 21 | 35.63 | 4.12 | 2.86 | 1.13 | 5.00 | 3.63 |
| | 0.207 | 1.85 | 19 / 15 | 37.19 | 3.29 | 2.08 | 1.07 | 4.12 | 3.08 |
| | | | 24 / 17 | 38.47 | 3.55 | 2.61 | 1.12 | 4.43 | 3.16 |
| | | | 27 / 19 | 39.79 | 3.81 | 2.78 | 1.18 | 4.75 | 3.22 |
| | | | 30 / 21 | 40.71 | 4.01 | 2.87 | 1.21 | 4.97 | 3.31 |
| | 0.166 | 1.24 | 19 / 15 | 40.77 | 3.12 | 2.00 | 1.11 | 3.99 | 2.82 |
| | | | 24 / 17 | 42.26 | 3.36 | 2.53 | 1.17 | 4.28 | 2.88 |
| | | | 27 / 19 | 43.98 | 3.63 | 2.70 | 1.23 | 4.61 | 2.94 |
| | | | 30 / 21 | 45.47 | 3.87 | 2.84 | 1.29 | 4.90 | 3.00 |
| 25 | 0.830 | 22.42 | 19 / 15 | 29.54 | 3.60 | 2.23 | 0.97 | 4.35 | 3.70 |
| | | | 24 / 17 | 28.84 | 3.87 | 2.75 | 1.01 | 4.64 | 3.82 |
| | | | 27 / 19 | 30.04 | 4.05 | 2.84 | 1.03 | 4.84 | 3.93 |
| | | | 30 / 21 | 30.20 | 4.19 | 2.86 | 1.05 | 4.99 | 4.01 |
| | 0.415 | 6.04 | 19 / 15 | 33.81 | 3.43 | 2.14 | 1.03 | 4.23 | 3.33 |
| | | | 24 / 17 | 34.50 | 3.72 | 2.69 | 1.08 | 4.56 | 3.44 |
| | | | 27 / 19 | 35.02 | 3.94 | 2.82 | 1.12 | 4.81 | 3.53 |
| | | | 30 / 21 | 35.42 | 4.12 | 2.86 | 1.14 | 5.00 | 3.62 |
| | 0.276 | 3.05 | 19 / 15 | 37.82 | 3.25 | 2.06 | 1.07 | 4.09 | 3.03 |
| | | | 24 / 17 | 38.81 | 3.52 | 2.60 | 1.13 | 4.41 | 3.11 |
| | | | 27 / 19 | 39.84 | 3.79 | 2.77 | 1.19 | 4.73 | 3.19 |
| | | | 30 / 21 | 40.55 | 4.00 | 2.87 | 1.22 | 4.96 | 3.28 |
| | 0.207 | 1.85 | 19 / 15 | 41.52 | 3.07 | 1.98 | 1.12 | 3.95 | 2.75 |
| | | | 24 / 17 | 42.75 | 3.32 | 2.51 | 1.18 | 4.25 | 2.82 |
| | | | 27 / 19 | 44.15 | 3.60 | 2.69 | 1.24 | 4.58 | 2.90 |
| | | | 30 / 21 | 45.42 | 3.85 | 2.83 | 1.30 | 4.89 | 2.96 |

# COOLING CAPACITIES
## MODEL WPHBA 141

Nominal air flow 700 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA141 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 30 | 0.830 | 22.42 | 19 / 15 | 34.38 | 3.39 | 2.13 | 1.03 | 4.20 | 3.28 |
| | | | 24 / 17 | 34.74 | 3.69 | 2.68 | 1.09 | 4.54 | 3.40 |
| | | | **27 / 19** | **35.02** | **3.93** | **2.81** | **1.12** | **4.80** | **3.51** |
| | | | 30 / 21 | 35.22 | 4.11 | 2.86 | 1.14 | 5.00 | 3.61 |
| | 0415 | 6.04 | 19 / 15 | 38.47 | 3.21 | 2.04 | 1.08 | 4.06 | 2.96 |
| | | | 24 / 17 | 39.16 | 3.49 | 2.59 | 1.14 | 4.38 | 3.06 |
| | | | 27 / 19 | 39.87 | 3.78 | 2.76 | 1.20 | 4.73 | 3.16 |
| | | | 30 / 21 | 40.35 | 3.99 | 2.87 | 1.23 | 4.96 | 3.25 |
| | 0.276 | 3.05 | 19 / 15 | 42.29 | 3.02 | 1.95 | 1.13 | 3.91 | 2.68 |
| | | | 24 / 17 | 43.23 | 3.27 | 2.49 | 1.19 | 4.21 | 2.76 |
| | | | 27 / 19 | 44.30 | 3.56 | 2.68 | 1.25 | 4.55 | 2.85 |
| | | | 30 / 21 | 45.30 | 3.83 | 2.83 | 1.31 | 4.87 | 2.93 |
| 35 | 0.830 | 22.42 | 19 / 15 | 39.21 | 3.16 | 2.02 | 1.10 | 4.03 | 2.89 |
| | | | 24 / 17 | 39.55 | 3.45 | 2.57 | 1.15 | 4.35 | 3.01 |
| | | | 27 / 19 | 39.93 | 3.76 | 2.76 | 1.21 | 4.72 | 3.12 |
| | | | 30 / 21 | 40.18 | 3.98 | 2.87 | 1.23 | 4.95 | 3.23 |
| | 0.415 | 6.04 | 19 / 15 | 43.10 | 2.97 | 1.93 | 1.14 | 3.87 | 2.60 |
| | | | 24 / 17 | 43.73 | 3.22 | 2.47 | 1.19 | 4.17 | 2.70 |
| | | | 27 / 19 | 44.47 | 3.53 | 2.66 | 1.26 | 4.53 | 2.81 |
| | | | 30 / 21 | 45.17 | 3.81 | 2.82 | 1.32 | 4.86 | 2.89 |
| | 0.276 | 3.05 | 19 / 15 | 46.71 | 2.78 | 1.84 | 1.18 | 3.72 | 2.36 |
| | | | 24 / 17 | 47.57 | 3.00 | 2.38 | 1.24 | 4.00 | 2.42 |
| | | | 27 / 19 | 48.61 | 3.28 | 2.56 | 1.31 | 4.33 | 2.51 |
| | | | 30 / 21 | 49.74 | 3.58 | 2.74 | 1.38 | 4.69 | 2.60 |
| 40 | 0.830 | 22.42 | 19 / 15 | 44.01 | 2.91 | 1.90 | 1.16 | 3.82 | 2.52 |
| | | | 24 / 17 | 44.33 | 3.17 | 2.45 | 1.21 | 4.13 | 2.63 |
| | | | 27 / 19 | 44.71 | 3.49 | 2.65 | 1.26 | 4.50 | 2.76 |
| | | | 30 / 21 | 45.08 | 3.79 | 2.82 | 1.32 | 4.85 | 2.86 |
| | 0.415 | 6.04 | 19 / 15 | 47.69 | 2.72 | 1.81 | 1.20 | 3.67 | 2.27 |
| | | | 24 / 17 | 48.27 | 2.94 | 2.35 | 1.25 | 3.95 | 2.35 |
| | | | 27 / 19 | 48.97 | 3.22 | 2.54 | 1.32 | 4.28 | 2.45 |
| | | | 30 / 21 | 49.75 | 3.53 | 2.73 | 1.39 | 4.65 | 2.55 |
| 45 | 0.830 | 22.42 | 19 / 15 | 48.77 | 2.63 | 1.77 | 1.21 | 3.59 | 2.17 |
| | | | 24 / 17 | 49.08 | 2.87 | 2.32 | 1.27 | 3.89 | 2.26 |
| | | | 27 / 19 | 49.44 | 3.16 | 2.52 | 1.33 | 4.23 | 2.38 |
| | | | 30 / 21 | 49.84 | 3.49 | 2.71 | 1.39 | 4.61 | 2.50 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES

## MODEL WPHBA 171

Nominal air flow 900 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 171 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 0.330 | 2.48 | 19 / 15 | 28.66 | 4.49 | 2.85 | 0.97 | 5.23 | 4.65 |
| | | | 24 / 17 | 29.54 | 4.80 | 3.55 | 1.00 | 5.57 | 4.79 |
| | | | 27 / 19 | 30.12 | 5.01 | 3.63 | 1.02 | 5.79 | 4.92 |
| | | | 30 / 21 | 30.59 | 5.19 | 3.61 | 1.03 | 5.97 | 5.04 |
| | 0.247 | 1.48 | 19 / 15 | 32.82 | 4.30 | 2.76 | 1.03 | 5.11 | 4.16 |
| | | | 24 / 17 | 34.18 | 4.65 | 3.50 | 1.08 | 5.50 | 4.29 |
| | | | 27 / 19 | 35.18 | 4.92 | 3.65 | 1.11 | 5.78 | 4.43 |
| | | | 30 / 21 | 35.90 | 5.12 | 3.67 | 1.13 | 5.99 | 4.53 |
| | 0.198 | 1.00 | 19 / 15 | 36.59 | 4.10 | 2.66 | 1.09 | 4.96 | 3.75 |
| | | | 24 / 17 | 38.26 | 4.44 | 3.41 | 1.15 | 5.34 | 3.87 |
| | | | 27 / 19 | 39.87 | 4.77 | 3.62 | 1.20 | 5.71 | 3.99 |
| | | | 30 / 21 | 40.95 | 5.01 | 3.69 | 1.22 | 5.96 | 4.11 |
| | 0.165 | 0.72 | 19 / 15 | 40.06 | 3.89 | 2.57 | 1.15 | 4.80 | 3.39 |
| | | | 24 / 17 | 41.98 | 4.21 | 3.31 | 1.20 | 5.16 | 3.50 |
| | | | 27 / 19 | 44.17 | 4.58 | 3.56 | 1.27 | 5.58 | 3.62 |
| | | | 30 / 21 | 45.83 | 4.86 | 3.71 | 1.30 | 5.90 | 3.73 |
| 20 | 0.495 | 4.91 | 19 / 15 | 29.09 | 4.46 | 2.86 | 0.98 | 5.22 | 4.55 |
| | | | 24 / 17 | 26.69 | 4.78 | 3.07 | 1.02 | 5.56 | 4.71 |
| | | | 27 / 19 | 30.10 | 5.01 | 3.22 | 1.03 | 5.80 | 4.86 |
| | | | 30 / 21 | 30.70 | 5.19 | 3.33 | 1.04 | 5.98 | 4.99 |
| | 0.330 | 2.48 | 19 / 15 | 33.29 | 4.26 | 2.74 | 1.05 | 5.08 | 4.07 |
| | | | 24 / 17 | 34.32 | 4.62 | 3.49 | 1.09 | 5.47 | 4.23 |
| | | | 27 / 19 | 35.11 | 4.90 | 3.64 | 1.12 | 5.78 | 4.36 |
| | | | 30 / 21 | 35.66 | 5.10 | 3.67 | 1.14 | 5.99 | 4.47 |
| | 0.247 | 1.48 | 19 / 15 | 37.21 | 4.05 | 2.64 | 1.11 | 4.92 | 3.66 |
| | | | 24 / 17 | 38.57 | 4.40 | 3.39 | 1.16 | 5.31 | 3.80 |
| | | | 27 / 19 | 39.91 | 4.74 | 3.61 | 1.21 | 5.70 | 3.92 |
| | | | 30 / 21 | 40.82 | 4.99 | 3.70 | 1.23 | 5.96 | 4.06 |
| | 0.198 | 1.00 | 19 / 15 | 40.74 | 3.84 | 2.54 | 1.16 | 4.76 | 3.31 |
| | | | 24 / 17 | 42.36 | 4.16 | 3.29 | 1.21 | 5.13 | 3.42 |
| | | | 27 / 19 | 44.18 | 4.53 | 3.54 | 1.27 | 5.55 | 3.56 |
| | | | 30 / 21 | 45.66 | 4.84 | 3.71 | 1.32 | 5.89 | 3.67 |
| 25 | 0.990 | 17.90 | 19 / 15 | 29.54 | 4.43 | 2.82 | 0.99 | 5.20 | 4.45 |
| | | | 24 / 17 | 29.85 | 4.76 | 3.54 | 1.03 | 5.56 | 4.64 |
| | | | 27 / 19 | 30.07 | 5.01 | 3.65 | 1.04 | 5.80 | 4.81 |
| | | | 30 / 21 | 30.23 | 5.19 | 3.64 | 1.05 | 5.99 | 4.93 |
| | 0.495 | 4.91 | 19 / 15 | 33.82 | 4.22 | 2.72 | 1.06 | 5.05 | 3.98 |
| | | | 24 / 17 | 34.52 | 4.59 | 3.47 | 1.11 | 5.45 | 4.15 |
| | | | 27 / 19 | 35.08 | 4.88 | 3.64 | 1.14 | 5.77 | 4.30 |
| | | | 30 / 21 | 35.45 | 5.09 | 3.67 | 1.15 | 5.98 | 4.42 |
| | 0.330 | 2.48 | 19 / 15 | 37.79 | 4.00 | 2.62 | 1.12 | 4.88 | 3.58 |
| | | | 24 / 17 | 38.85 | 4.36 | 3.37 | 1.17 | 5.28 | 3.72 |
| | | | 27 / 19 | 39.88 | 4.71 | 3.60 | 1.22 | 5.68 | 3.86 |
| | | | 30 / 21 | 40.60 | 4.98 | 3.71 | 1.24 | 5.95 | 4.01 |
| | 0.247 | 1.48 | 19 / 15 | 41.50 | 3.78 | 2.52 | 1.17 | 4.71 | 3.24 |
| | | | 24 / 17 | 42.81 | 4.11 | 3.27 | 1.23 | 5.09 | 3.34 |
| | | | 27 / 19 | 44.26 | 4.48 | 3.52 | 1.28 | 5.50 | 3.49 |
| | | | 30 / 21 | 45.55 | 4.81 | 3.70 | 1.33 | 5.87 | 3.61 |

# COOLING CAPACITIES
## MODEL WPHBA 171

Nominal air flow 900 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA171 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 30 | 0.99 | 17.9 | 19 / 15 | 34.39 | 4.17 | 2.7 | 1.07 | 5.01 | 3.89 |
| | | | 24 / 17 | 34.75 | 4.55 | 3.46 | 1.12 | 5.43 | 4.08 |
| | | | **27 / 19** | **35.04** | **4.86** | **3.63** | **1.15** | **5.76** | **4.24** |
| | | | 30 / 21 | 35.23 | 5.08 | 3.67 | 1.16 | 5.98 | 4.37 |
| | 0.495 | 4.91 | 19 / 15 | 38.48 | 3.94 | 2.59 | 1.13 | 4.84 | 3.49 |
| | | | 24 / 17 | 39.19 | 4.31 | 3.35 | 1.18 | 5.25 | 3.64 |
| | | | 27 / 19 | 39.92 | 4.69 | 3.6 | 1.23 | 5.67 | 3.8 |
| | | | 30 / 21 | 40.41 | 4.96 | 3.71 | 1.25 | 5.94 | 3.95 |
| | 0.33 | 2.48 | 19 / 15 | 42.27 | 3.73 | 2.5 | 1.18 | 4.67 | 3.17 |
| | | | 24 / 17 | 43.22 | 4.04 | 3.24 | 1.24 | 5.03 | 3.27 |
| | | | 27 / 19 | 44.35 | 4.43 | 3.5 | 1.29 | 5.46 | 3.42 |
| | | | 30 / 21 | 45.36 | 4.77 | 3.69 | 1.35 | 5.85 | 3.55 |
| 35 | 0.99 | 17.9 | 19 / 15 | 39.21 | 3.89 | 2.57 | 1.15 | 4.8 | 3.38 |
| | | | 24 / 17 | 39.56 | 4.26 | 3.33 | 1.19 | 5.2 | 3.57 |
| | | | 27 / 19 | 39.95 | 4.66 | 3.58 | 1.24 | 5.64 | 3.74 |
| | | | 30 / 21 | 40.2 | 4.94 | 3.7 | 1.27 | 5.93 | 3.9 |
| | 0.495 | 4.91 | 19 / 15 | 43.1 | 3.67 | 2.47 | 1.19 | 4.62 | 3.07 |
| | | | 24 / 17 | 43.73 | 3.98 | 3.21 | 1.25 | 4.98 | 3.18 |
| | | | 27 / 19 | 44.51 | 4.38 | 3.48 | 1.31 | 5.43 | 3.35 |
| | | | 30 / 21 | 45.22 | 4.74 | 3.69 | 1.36 | 5.83 | 3.49 |
| | 0.33 | 2.48 | 19 / 15 | 46.6 | 3.41 | 2.35 | 1.25 | 4.41 | 2.74 |
| | | | 24 / 17 | 47.5 | 3.7 | 3.1 | 1.31 | 4.75 | 2.83 |
| | | | 27 / 19 | 48.62 | 4.07 | 3.36 | 1.37 | 5.18 | 2.98 |
| | | | 30 / 21 | 49.81 | 4.47 | 3.62 | 1.43 | 5.63 | 3.13 |
| 40 | 0.99 | 17.9 | 19 / 15 | 43.99 | 3.57 | 2.42 | 1.21 | 4.54 | 2.94 |
| | | | 24 / 17 | 44.33 | 3.91 | 3.19 | 1.27 | 4.92 | 3.09 |
| | | | 27 / 19 | 44.72 | 4.32 | 3.46 | 1.32 | 5.38 | 3.27 |
| | | | 30 / 21 | 45.1 | 4.7 | 3.68 | 1.37 | 5.8 | 3.43 |
| | 0.495 | 4.91 | 19 / 15 | 47.58 | 3.3 | 2.31 | 1.26 | 4.32 | 2.61 |
| | | | 24 / 17 | 48.23 | 3.62 | 3.07 | 1.32 | 4.69 | 2.74 |
| | | | 27 / 19 | 48.98 | 4 | 3.33 | 1.38 | 5.11 | 2.9 |
| | | | 30 / 21 | 49.79 | 4.41 | 3.59 | 1.44 | 5.57 | 3.06 |
| 45 | 0.99 | 17.9 | 19 / 15 | 48.71 | 3.17 | 2.25 | 1.29 | 4.21 | 2.46 |
| | | | 24 / 17 | 49.05 | 3.52 | 3.03 | 1.34 | 4.61 | 2.63 |
| | | | 27 / 19 | 49.43 | 3.91 | 3.3 | 1.39 | 5.03 | 2.8 |
| | | | 30 / 21 | 49.86 | 4.34 | 3.57 | 1.45 | 5.52 | 2.98 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES
## MODEL WPHBA 201

Nominal air flow 1100 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 201 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 0.410 | 3.6 | 19 / 15 | 30.88 | 5.48 | 3.44 | 1.34 | 6.50 | 4.09 |
| | | | 24 / 17 | 31.90 | 5.85 | 4.27 | 1.39 | 6.91 | 4.20 |
| | | | 27 / 19 | 32.51 | 6.11 | 4.38 | 1.41 | 7.19 | 4.33 |
| | | | 30 / 21 | 32.95 | 6.33 | 4.38 | 1.43 | 7.41 | 4.42 |
| | 0.310 | 2.20 | 19 / 15 | 34.39 | 5.26 | 3.34 | 1.43 | 6.37 | 3.69 |
| | | | 24 / 17 | 35.75 | 5.68 | 4.21 | 1.49 | 6.84 | 3.81 |
| | | | 27 / 19 | 36.51 | 5.99 | 4.38 | 1.53 | 7.17 | 3.91 |
| | | | 30 / 21 | 37.05 | 6.22 | 4.40 | 1.56 | 7.42 | 4.00 |
| | 0.246 | 1.45 | 19 / 15 | 37.83 | 5.01 | 3.22 | 1.50 | 6.19 | 3.33 |
| | | | 24 / 17 | 39.43 | 5.43 | 4.10 | 1.58 | 6.66 | 3.44 |
| | | | 27 / 19 | 40.55 | 5.81 | 4.34 | 1.65 | 7.10 | 3.53 |
| | | | 30 / 21 | 41.25 | 6.09 | 4.43 | 1.68 | 7.40 | 3.63 |
| | 0.200 | 1.00 | 19 / 15 | 41.34 | 4.71 | 3.08 | 1.58 | 5.96 | 2.97 |
| | | | 24 / 17 | 43.16 | 5.11 | 3.96 | 1.66 | 6.42 | 3.07 |
| | | | 27 / 19 | 44.68 | 5.54 | 4.25 | 1.75 | 6.93 | 3.16 |
| | | | 30 / 21 | 45.64 | 5.88 | 4.43 | 1.81 | 7.31 | 3.25 |
| 20 | 0.615 | 7.13 | 19 / 15 | 29.10 | 5.45 | 3.42 | 1.36 | 6.48 | 4.01 |
| | | | 24 / 17 | 29.68 | 5.83 | 4.27 | 1.41 | 6.90 | 4.14 |
| | | | 27 / 19 | 30.09 | 6.10 | 4.39 | 1.43 | 7.19 | 4.27 |
| | | | 30 / 21 | 30.40 | 6.31 | 4.38 | 1.45 | 7.41 | 4.37 |
| | 0.410 | 3.6 | 19 / 15 | 33.31 | 5.20 | 3.31 | 1.45 | 6.32 | 3.60 |
| | | | 24 / 17 | 34.34 | 5.64 | 4.19 | 1.51 | 6.81 | 3.73 |
| | | | 27 / 19 | 35.07 | 5.96 | 4.37 | 1.55 | 7.16 | 3.84 |
| | | | 30 / 21 | 35.60 | 6.19 | 4.40 | 1.58 | 7.41 | 3.93 |
| | 0.310 | 2.20 | 19 / 15 | 37.10 | 4.95 | 3.19 | 1.52 | 6.14 | 3.26 |
| | | | 24 / 17 | 38.47 | 5.38 | 4.08 | 1.59 | 6.63 | 3.38 |
| | | | 27 / 19 | 39.72 | 5.78 | 4.33 | 1.66 | 7.08 | 3.48 |
| | | | 30 / 21 | 41.19 | 6.05 | 4.44 | 1.70 | 7.39 | 3.55 |
| | 0.246 | 1.45 | 19 / 15 | 40.82 | 4.68 | 3.07 | 1.59 | 5.93 | 2.94 |
| | | | 24 / 17 | 42.50 | 5.09 | 3.95 | 1.67 | 6.41 | 3.05 |
| | | | 27 / 19 | 44.29 | 5.53 | 4.24 | 1.75 | 6.92 | 3.16 |
| | | | 30 / 21 | 45.66 | 5.88 | 4.43 | 1.81 | 7.31 | 3.25 |
| 25 | 1.230 | 26.81 | 19 / 15 | 29.54 | 5.40 | 3.40 | 1.37 | 6.46 | 3.93 |
| | | | 24 / 17 | 29.85 | 5.81 | 4.26 | 1.42 | 6.89 | 4.09 |
| | | | 27 / 19 | 30.05 | 6.09 | 4.39 | 1.44 | 7.19 | 4.22 |
| | | | 30 / 21 | 30.21 | 6.30 | 4.38 | 1.46 | 7.41 | 4.32 |
| | 0.615 | 7.13 | 19 / 15 | 33.83 | 5.15 | 3.28 | 1.46 | 6.28 | 3.53 |
| | | | 24 / 17 | 34.54 | 5.60 | 4.17 | 1.53 | 6.79 | 3.67 |
| | | | 27 / 19 | 35.05 | 5.93 | 4.36 | 1.57 | 7.15 | 3.79 |
| | | | 30 / 21 | 35.43 | 6.19 | 4.41 | 1.59 | 7.42 | 3.89 |
| | 0.410 | 3.6 | 19 / 15 | 37.84 | 4.88 | 3.16 | 1.54 | 6.09 | 3.17 |
| | | | 24 / 17 | 38.90 | 5.32 | 4.05 | 1.61 | 6.59 | 3.30 |
| | | | 27 / 19 | 39.89 | 5.73 | 4.32 | 1.68 | 7.06 | 3.42 |
| | | | 30 / 21 | 40.58 | 6.04 | 4.44 | 1.71 | 7.38 | 3.53 |
| | 0.310 | 2.20 | 19 / 15 | 41.42 | 4.62 | 3.04 | 1.61 | 5.89 | 2.87 |
| | | | 24 / 17 | 42.75 | 5.03 | 3.93 | 1.68 | 6.36 | 2.99 |
| | | | 27 / 19 | 44.22 | 5.48 | 4.22 | 1.77 | 6.89 | 3.11 |
| | | | 30 / 21 | 45.93 | 5.82 | 4.42 | 1.84 | 7.28 | 3.17 |

# COOLING CAPACITIES
## MODEL WPHBA 201

Nominal air flow 1100 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 201 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 30 | 1.230 | 26.81 | 19 / 15 | 34.40 | 5.09 | 3.26 | 1.48 | 6.24 | 3.45 |
| | | | 24 / 17 | 34.76 | 5.56 | 4.16 | 1.54 | 6.76 | 3.61 |
| | | | **27 / 19** | **35.03** | **5.92** | **4.37** | **1.58** | **7.15** | **3.74** |
| | | | 30 / 21 | 35.23 | 6.18 | 4.42 | 1.60 | 7.42 | 3.86 |
| | 0.615 | 7.13 | 19 / 15 | 38.51 | 4.82 | 3.13 | 1.56 | 6.04 | 3.09 |
| | | | 24 / 17 | 39.21 | 5.26 | 4.02 | 1.62 | 6.54 | 3.24 |
| | | | 27 / 19 | 39.91 | 5.70 | 4.30 | 1.70 | 7.03 | 3.36 |
| | | | 30 / 21 | 40.39 | 6.01 | 4.43 | 1.73 | 7.37 | 3.48 |
| | 0.410 | 3.6 | 19 / 15 | 42.31 | 4.53 | 3.00 | 1.63 | 5.82 | 2.78 |
| | | | 24 / 17 | 43.30 | 4.94 | 3.89 | 1.70 | 6.29 | 2.91 |
| | | | 27 / 19 | 44.45 | 5.41 | 4.20 | 1.78 | 6.83 | 3.04 |
| | | | 30 / 21 | 45.38 | 5.80 | 4.42 | 1.85 | 7.27 | 3.14 |
| 35 | 1.230 | 26.81 | 19 / 15 | 39.22 | 4.74 | 3.09 | 1.58 | 5.98 | 3.01 |
| | | | 24 / 17 | 39.58 | 5.19 | 4.00 | 1.64 | 6.49 | 3.17 |
| | | | 27 / 19 | 39.95 | 5.66 | 4.29 | 1.71 | 7.02 | 3.30 |
| | | | 30 / 21 | 40.20 | 5.99 | 4.43 | 1.74 | 7.36 | 3.44 |
| | 0.615 | 7.13 | 19 / 15 | 43.12 | 4.45 | 2.96 | 1.65 | 5.75 | 2.70 |
| | | | 24 / 17 | 43.80 | 4.87 | 3.86 | 1.72 | 6.24 | 2.83 |
| | | | 27 / 19 | 44.58 | 5.35 | 4.17 | 1.80 | 6.78 | 2.98 |
| | | | 30 / 21 | 45.24 | 5.76 | 4.41 | 1.86 | 7.25 | 3.09 |
| | 0.410 | 3.6 | 19 / 15 | 46.72 | 4.17 | 2.84 | 1.71 | 5.54 | 2.45 |
| | | | 24 / 17 | 47.63 | 4.53 | 3.72 | 1.79 | 5.96 | 2.53 |
| | | | 27 / 19 | 48.73 | 4.98 | 4.03 | 1.88 | 6.49 | 2.65 |
| | | | 30 / 21 | 49.93 | 5.46 | 4.33 | 1.97 | 7.05 | 2.77 |
| 40 | 1.230 | 26.81 | 19 / 15 | 44.01 | 4.35 | 2.92 | 1.67 | 5.67 | 2.61 |
| | | | 24 / 17 | 44.36 | 4.78 | 3.82 | 1.74 | 6.17 | 2.75 |
| | | | 27 / 19 | 44.75 | 5.27 | 4.14 | 1.81 | 6.72 | 2.91 |
| | | | 30 / 21 | 45.11 | 5.72 | 4.40 | 1.88 | 7.23 | 3.04 |
| | 0.615 | 7.13 | 19 / 15 | 47.69 | 4.06 | 2.79 | 1.73 | 5.44 | 2.35 |
| | | | 24 / 17 | 48.32 | 4.43 | 3.68 | 1.81 | 5.88 | 2.44 |
| | | | 27 / 19 | 49.06 | 4.88 | 3.99 | 1.89 | 6.41 | 2.58 |
| | | | 30 / 21 | 49.89 | 5.39 | 4.30 | 1.99 | 6.99 | 2.71 |
| 45 | 1.230 | 26.81 | 19 / 15 | 48.77 | 3.91 | 2.73 | 1.76 | 5.33 | 2.23 |
| | | | 24 / 17 | 49.09 | 4.30 | 3.63 | 1.83 | 5.78 | 2.34 |
| | | | 27 / 19 | 49.48 | 4.78 | 3.95 | 1.92 | 6.32 | 2.49 |
| | | | 30 / 21 | 49.91 | 5.30 | 4.27 | 2.01 | 6.92 | 2.64 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES
## MODEL WPHBA 251

Nominal air flow 1500 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA251 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 0.520 | 2.07 | 19 / 15 | 29.27 | 7.35 | 4.82 | 1.60 | 8.62 | 4.59 |
| | | | 24 / 17 | 29.65 | 7.55 | 5.76 | 1.62 | 8.84 | 4.65 |
| | | | 27 / 19 | 29.92 | 7.71 | 5.61 | 1.64 | 9.01 | 4.71 |
| | | | 30 / 21 | 30.17 | 7.85 | 5.45 | 1.65 | 9.16 | 4.75 |
| | 0.390 | 1.23 | 19 / 15 | 33.64 | 7.06 | 4.69 | 1.71 | 8.43 | 4.12 |
| | | | 24 / 17 | 34.56 | 7.42 | 5.86 | 1.77 | 8.85 | 4.18 |
| | | | 27 / 19 | 34.94 | 7.58 | 5.70 | 1.79 | 9.02 | 4.23 |
| | | | 30 / 21 | 35.35 | 7.75 | 5.54 | 1.81 | 9.21 | 4.29 |
| | 0.310 | 0.81 | 19 / 15 | 37.75 | 6.71 | 4.54 | 1.82 | 8.18 | 3.70 |
| | | | 24 / 17 | 39.41 | 7.22 | 5.89 | 1.91 | 8.78 | 3.77 |
| | | | 27 / 19 | 40.16 | 7.46 | 5.87 | 1.95 | 9.05 | 3.83 |
| | | | 30 / 21 | 40.68 | 7.63 | 5.67 | 1.97 | 9.24 | 3.88 |
| | 0.260 | 0.60 | 19 / 15 | 41.25 | 6.37 | 4.39 | 1.90 | 7.92 | 3.36 |
| | | | 24 / 17 | 43.25 | 6.88 | 5.76 | 2.00 | 8.52 | 3.44 |
| | | | 27 / 19 | 44.92 | 7.30 | 6.04 | 2.09 | 9.02 | 3.49 |
| | | | 30 / 21 | 45.57 | 7.48 | 5.82 | 2.12 | 9.22 | 3.53 |
| 20 | 0.780 | 4.17 | 19 / 15 | 29.51 | 7.31 | 4.81 | 1.61 | 8.60 | 4.53 |
| | | | 24 / 17 | 29.78 | 7.53 | 5.76 | 1.64 | 8.84 | 4.59 |
| | | | 27 / 19 | 29.96 | 7.69 | 5.62 | 1.65 | 9.01 | 4.65 |
| | | | 30 / 21 | 30.13 | 7.83 | 5.45 | 1.67 | 9.16 | 4.71 |
| | 0.520 | 2.07 | 19 / 15 | 33.95 | 7.01 | 4.67 | 1.73 | 8.40 | 4.05 |
| | | | 24 / 17 | 34.70 | 7.41 | 5.88 | 1.79 | 8.86 | 4.13 |
| | | | 27 / 19 | 35.00 | 7.58 | 5.73 | 1.81 | 9.04 | 4.19 |
| | | | 30 / 21 | 35.31 | 7.75 | 5.57 | 1.82 | 9.23 | 4.25 |
| | 0.390 | 1.23 | 19 / 15 | 38.02 | 6.66 | 4.52 | 1.83 | 8.14 | 3.63 |
| | | | 24 / 17 | 39.37 | 7.18 | 5.88 | 1.93 | 8.75 | 3.73 |
| | | | 27 / 19 | 40.02 | 7.44 | 5.88 | 1.96 | 9.04 | 3.79 |
| | | | 30 / 21 | 40.43 | 7.61 | 5.68 | 1.98 | 9.23 | 3.84 |
| | 0.310 | 0.81 | 19 / 15 | 41.85 | 6.27 | 4.35 | 1.92 | 7.85 | 3.27 |
| | | | 24 / 17 | 43.55 | 6.79 | 5.72 | 2.02 | 8.46 | 3.36 |
| | | | 27 / 19 | 45.07 | 7.25 | 6.05 | 2.12 | 9.00 | 3.42 |
| | | | 30 / 21 | 45.68 | 7.45 | 5.85 | 2.15 | 9.22 | 3.47 |
| 25 | 1.560 | 15.07 | 19 / 15 | 29.76 | 7.28 | 4.80 | 1.63 | 8.58 | 4.47 |
| | | | 24 / 17 | 29.90 | 7.52 | 5.76 | 1.66 | 8.84 | 4.54 |
| | | | 27 / 19 | 29.99 | 7.68 | 5.62 | 1.67 | 9.00 | 4.60 |
| | | | 30 / 21 | 30.08 | 7.82 | 5.45 | 1.68 | 9.16 | 4.66 |
| | 0.780 | 4.17 | 19 / 15 | 34.28 | 6.96 | 4.65 | 1.75 | 8.37 | 3.97 |
| | | | 24 / 17 | 34.82 | 7.40 | 5.90 | 1.81 | 8.86 | 4.08 |
| | | | 27 / 19 | 35.03 | 7.57 | 5.75 | 1.83 | 9.05 | 4.14 |
| | | | 30 / 21 | 35.23 | 7.74 | 5.57 | 1.84 | 9.23 | 4.20 |
| | 0.520 | 2.07 | 19 / 15 | 38.45 | 6.58 | 4.48 | 1.85 | 8.08 | 3.56 |
| | | | 24 / 17 | 39.50 | 7.13 | 5.86 | 1.94 | 8.72 | 3.67 |
| | | | 27 / 19 | 40.03 | 7.42 | 5.90 | 1.98 | 9.04 | 3.74 |
| | | | 30 / 21 | 40.35 | 7.59 | 5.69 | 2.00 | 9.23 | 3.79 |
| | 0.390 | 1.23 | 19 / 15 | 42.25 | 6.19 | 4.31 | 1.93 | 7.78 | 3.20 |
| | | | 24 / 17 | 43.65 | 6.73 | 5.70 | 2.04 | 8.41 | 3.30 |
| | | | 27 / 19 | 44.94 | 7.22 | 6.07 | 2.14 | 8.99 | 3.38 |
| | | | 30 / 21 | 45.46 | 7.44 | 5.88 | 2.16 | 9.23 | 3.44 |

# COOLING CAPACITIES
## MODEL WPHBA 251

Nominal air flow 1500 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 251 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 30 | 1.560 | 15.07 | 19 / 15 | 34.62 | 6.89 | 4.62 | 1.77 | 8.32 | 3.90 |
| | | | 24 / 17 | 34.92 | 7.38 | 5.91 | 1.83 | 8.86 | 4.03 |
| | | | **27 / 19** | **35.02** | **7.55** | **5.75** | **1.84** | **9.04** | **4.10** |
| | | | 30 / 21 | 35.12 | 7.72 | 5.58 | 1.86 | 9.22 | 4.16 |
| | 0.780 | 4.17 | 19 / 15 | 38.90 | 6.50 | 4.45 | 1.86 | 8.01 | 3.49 |
| | | | 24 / 17 | 39.64 | 7.07 | 5.84 | 1.96 | 8.68 | 3.61 |
| | | | 27 / 19 | 40.03 | 7.39 | 5.92 | 2.01 | 9.03 | 3.68 |
| | | | 30 / 21 | 40.25 | 7.58 | 5.71 | 2.02 | 9.23 | 3.75 |
| | 0.520 | 2.07 | 19 / 15 | 42.83 | 6.09 | 4.27 | 1.95 | 7.70 | 3.12 |
| | | | 24 / 17 | 43.92 | 6.65 | 5.67 | 2.06 | 8.35 | 3.23 |
| | | | 27 / 19 | 44.94 | 7.18 | 6.08 | 2.16 | 8.97 | 3.33 |
| | | | 30 / 21 | 45.37 | 7.41 | 5.92 | 2.19 | 9.22 | 3.39 |
| 35 | 1.560 | 15.07 | 19 / 15 | 39.42 | 6.41 | 4.41 | 1.89 | 7.95 | 3.40 |
| | | | 24 / 17 | 39.80 | 7.01 | 5.81 | 1.98 | 8.63 | 3.55 |
| | | | 27 / 19 | 40.03 | 7.38 | 5.96 | 2.03 | 9.04 | 3.64 |
| | | | 30 / 21 | 40.14 | 7.57 | 5.75 | 2.04 | 9.24 | 3.71 |
| | 0.780 | 4.17 | 19 / 15 | 43.48 | 5.99 | 4.22 | 1.98 | 7.61 | 3.03 |
| | | | 24 / 17 | 44.21 | 6.56 | 5.63 | 2.08 | 8.27 | 3.16 |
| | | | 27 / 19 | 44.95 | 7.13 | 6.07 | 2.18 | 8.94 | 3.27 |
| | | | 30 / 21 | 45.25 | 7.38 | 5.94 | 2.21 | 9.21 | 3.34 |
| | 0.520 | 2.07 | 19 / 15 | 47.16 | 5.57 | 4.05 | 2.07 | 7.28 | 2.70 |
| | | | 24 / 17 | 48.17 | 6.09 | 5.44 | 2.17 | 7.89 | 2.81 |
| | | | 27 / 19 | 49.32 | 6.67 | 5.91 | 2.28 | 8.58 | 2.93 |
| | | | 30 / 21 | 50.28 | 7.16 | 6.21 | 2.38 | 9.15 | 3.01 |
| 40 | 1.560 | 15.07 | 19 / 15 | 44.19 | 5.87 | 4.17 | 2.01 | 7.52 | 2.93 |
| | | | 24 / 17 | 44.56 | 6.45 | 5.59 | 2.10 | 8.18 | 3.08 |
| | | | 27 / 19 | 44.96 | 7.07 | 6.05 | 2.20 | 8.89 | 3.21 |
| | | | 30 / 21 | 45.13 | 7.35 | 5.97 | 2.23 | 9.21 | 3.29 |
| | 0.780 | 4.17 | 19 / 15 | 48.00 | 5.44 | 3.99 | 2.09 | 7.17 | 2.60 |
| | | | 24 / 17 | 48.68 | 5.96 | 5.39 | 2.19 | 7.78 | 2.72 |
| | | | 27 / 19 | 49.47 | 6.57 | 5.87 | 2.30 | 8.49 | 2.86 |
| | | | 30 / 21 | 50.17 | 7.11 | 6.24 | 2.41 | 9.13 | 2.95 |
| 45 | 1.560 | 15.07 | 19 / 15 | 48.93 | 5.27 | 3.92 | 2.12 | 7.03 | 2.48 |
| | | | 24 / 17 | 49.28 | 5.82 | 5.33 | 2.22 | 7.66 | 2.62 |
| | | | 27 / 19 | 49.68 | 6.45 | 5.83 | 2.32 | 8.39 | 2.77 |
| | | | 30 / 21 | 50.07 | 7.04 | 6.25 | 2.44 | 9.08 | 2.89 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES
## MODEL WPHBA 351

Nominal air flow 2000 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 351 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 0.80 | 4.42 | 19 / 15 | 29.22 | 11.15 | 6.99 | 2.48 | 13.21 | 4.51 |
| | | | 24 / 17 | 29.71 | 11.55 | 8.38 | 2.54 | 13.66 | 4.55 |
| | | | 27 / 19 | 29.99 | 11.79 | 8.25 | 2.57 | 13.93 | 4.59 |
| | | | 30 / 21 | 30.27 | 12.02 | 8.11 | 2.60 | 14.18 | 4.61 |
| | 0.60 | 2.63 | 19 / 15 | 33.53 | 10.70 | 6.78 | 2.64 | 12.90 | 4.05 |
| | | | 24 / 17 | 34.57 | 11.30 | 8.39 | 2.77 | 13.63 | 4.07 |
| | | | 27 / 19 | 34.99 | 11.56 | 8.29 | 2.82 | 13.92 | 4.10 |
| | | | 30 / 21 | 35.38 | 11.79 | 8.12 | 2.85 | 14.19 | 4.13 |
| | 0.48 | 1.75 | 19 / 15 | 37.56 | 10.21 | 6.55 | 2.80 | 12.57 | 3.64 |
| | | | 24 / 17 | 39.17 | 10.92 | 8.26 | 3.00 | 13.46 | 3.64 |
| | | | 27 / 19 | 40.03 | 11.33 | 8.40 | 3.08 | 13.94 | 3.68 |
| | | | 30 / 21 | 40.56 | 11.58 | 8.21 | 3.12 | 14.23 | 3.71 |
| | 0.40 | 1.75 | 19 / 15 | 41.32 | 9.70 | 6.31 | 2.97 | 12.21 | 3.27 |
| | | | 24 / 17 | 43.27 | 10.42 | 8.05 | 3.17 | 13.12 | 3.28 |
| | | | 27 / 19 | 44.93 | 11.03 | 8.46 | 3.34 | 13.89 | 3.30 |
| | | | 30 / 21 | 45.66 | 11.31 | 8.32 | 3.40 | 14.23 | 3.33 |
| 20 | 1.20 | 8.93 | 19 / 15 | 29.47 | 11.11 | 6.97 | 2.49 | 13.18 | 4.46 |
| | | | 24 / 17 | 29.83 | 11.55 | 8.39 | 2.56 | 13.68 | 4.51 |
| | | | 27 / 19 | 30.01 | 11.78 | 8.25 | 2.59 | 13.93 | 4.55 |
| | | | 30 / 21 | 30.20 | 12.00 | 8.10 | 2.62 | 14.18 | 4.59 |
| | 0.80 | 4.42 | 19 / 15 | 33.86 | 10.63 | 6.74 | 2.66 | 12.85 | 3.99 |
| | | | 24 / 17 | 34.69 | 11.26 | 8.38 | 2.80 | 13.61 | 4.02 |
| | | | 27 / 19 | 35.01 | 11.53 | 8.29 | 2.84 | 13.92 | 4.06 |
| | | | 30 / 21 | 35.31 | 11.77 | 8.13 | 2.87 | 14.19 | 4.10 |
| | 0.60 | 2.63 | 19 / 15 | 37.99 | 10.12 | 6.51 | 2.83 | 12.50 | 3.57 |
| | | | 24 / 17 | 39.31 | 10.86 | 8.24 | 3.02 | 13.42 | 3.59 |
| | | | 27 / 19 | 40.07 | 11.31 | 8.43 | 3.11 | 13.95 | 3.64 |
| | | | 30 / 21 | 40.47 | 11.55 | 8.22 | 3.15 | 14.23 | 3.67 |
| | 0.48 | 1.75 | 19 / 15 | 41.83 | 9.59 | 6.26 | 3.00 | 12.14 | 3.19 |
| | | | 24 / 17 | 43.46 | 10.32 | 8.01 | 3.20 | 13.05 | 3.23 |
| | | | 27 / 19 | 44.94 | 10.97 | 8.46 | 3.38 | 13.87 | 3.25 |
| | | | 30 / 21 | 45.58 | 11.28 | 8.33 | 3.43 | 14.22 | 3.28 |
| 25 | 2.41 | 34.30 | 19 / 15 | 29.72 | 11.07 | 6.95 | 2.50 | 13.15 | 4.42 |
| | | | 24 / 17 | 29.91 | 11.54 | 8.39 | 2.57 | 13.68 | 4.49 |
| | | | 27 / 19 | 29.99 | 11.76 | 8.25 | 2.60 | 13.92 | 4.53 |
| | | | 30 / 21 | 30.09 | 11.99 | 8.10 | 2.62 | 14.18 | 4.57 |
| | 1.20 | 8.93 | 19 / 15 | 34.23 | 10.55 | 6.71 | 2.69 | 12.80 | 3.93 |
| | | | 24 / 17 | 34.80 | 11.22 | 8.37 | 2.83 | 13.60 | 3.97 |
| | | | 27 / 19 | 35.03 | 11.51 | 8.30 | 2.86 | 13.92 | 4.02 |
| | | | 30 / 21 | 35.23 | 11.77 | 8.15 | 2.90 | 14.20 | 4.06 |
| | 0.80 | 4.42 | 19 / 15 | 38.45 | 10.02 | 6.46 | 2.87 | 12.44 | 3.50 |
| | | | 24 / 17 | 39.45 | 10.78 | 8.21 | 3.04 | 13.37 | 3.54 |
| | | | 27 / 19 | 40.07 | 11.28 | 8.43 | 3.14 | 13.94 | 3.59 |
| | | | 30 / 21 | 40.38 | 11.53 | 8.22 | 3.18 | 14.23 | 3.63 |
| | 0.60 | 2.63 | 19 / 15 | 42.38 | 9.47 | 6.21 | 3.04 | 12.06 | 3.11 |
| | | | 24 / 17 | 43.70 | 10.22 | 7.96 | 3.22 | 12.97 | 3.17 |
| | | | 27 / 19 | 44.95 | 10.92 | 8.45 | 3.41 | 13.84 | 3.20 |
| | | | 30 / 21 | 45.50 | 11.24 | 8.34 | 3.47 | 14.22 | 3.24 |

# COOLING CAPACITIES
## MODEL WPHBA 351

Nominal air flow 2000 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA351 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 30 | 2.41 | 34.30 | 19 / 15 | 34.59 | 10.48 | 6.68 | 2.71 | 12.76 | 3.87 |
| | | | 24 / 17 | 34.88 | 11.19 | 8.36 | 2.85 | 13.59 | 3.93 |
| | | | **27 / 19** | **35.01** | **11.50** | **8.32** | **2.88** | **13.93** | **4.00** |
| | | | 30 / 21 | 35.11 | 11.76 | 8.16 | 2.91 | 14.21 | 4.04 |
| | 1.20 | 8.93 | 19 / 15 | 38.94 | 9.92 | 6.41 | 2.90 | 12.37 | 3.41 |
| | | | 24 / 17 | 39.61 | 10.71 | 8.17 | 3.07 | 13.31 | 3.49 |
| | | | 27 / 19 | 40.06 | 11.24 | 8.43 | 3.17 | 13.93 | 3.55 |
| | | | 30 / 21 | 40.27 | 11.50 | 8.22 | 3.20 | 14.22 | 3.59 |
| | 0.80 | 4.42 | 19 / 15 | 42.97 | 9.34 | 6.15 | 3.08 | 11.97 | 3.03 |
| | | | 24 / 17 | 43.97 | 10.12 | 7.92 | 3.26 | 12.90 | 3.10 |
| | | | 27 / 19 | 44.96 | 10.85 | 8.43 | 3.45 | 13.81 | 3.15 |
| | | | 30 / 21 | 45.41 | 11.22 | 8.38 | 3.50 | 14.22 | 3.20 |
| 35 | 2.41 | 34.30 | 19 / 15 | 39.43 | 9.81 | 6.36 | 2.94 | 12.29 | 3.34 |
| | | | 24 / 17 | 39.78 | 10.64 | 8.14 | 3.09 | 13.27 | 3.44 |
| | | | 27 / 19 | 40.02 | 11.21 | 8.43 | 3.20 | 13.93 | 3.51 |
| | | | 30 / 21 | 40.12 | 11.47 | 8.22 | 3.23 | 14.22 | 3.55 |
| | 1.20 | 8.93 | 19 / 15 | 43.58 | 9.19 | 6.08 | 3.12 | 11.85 | 2.94 |
| | | | 24 / 17 | 44.28 | 10.00 | 7.87 | 3.30 | 12.82 | 3.03 |
| | | | 27 / 19 | 44.97 | 10.79 | 8.42 | 3.49 | 13.78 | 3.09 |
| | | | 30 / 21 | 45.29 | 11.18 | 8.42 | 3.54 | 14.23 | 3.16 |
| | 0.80 | 4.42 | 19 / 15 | 47.38 | 8.58 | 5.81 | 3.30 | 11.41 | 2.60 |
| | | | 24 / 17 | 48.40 | 9.34 | 7.60 | 3.50 | 12.35 | 2.67 |
| | | | 27 / 19 | 49.48 | 10.15 | 8.18 | 3.69 | 13.34 | 2.75 |
| | | | 30 / 21 | 50.35 | 10.82 | 8.56 | 3.85 | 14.15 | 2.81 |
| 40 | 2.41 | 34.30 | 19 / 15 | 44.24 | 9.03 | 6.01 | 3.17 | 11.74 | 2.85 |
| | | | 24 / 17 | 44.60 | 9.88 | 7.82 | 3.34 | 12.74 | 2.96 |
| | | | 27 / 19 | 44.96 | 10.72 | 8.40 | 3.52 | 13.74 | 3.05 |
| | | | 30 / 21 | 45.13 | 11.15 | 8.43 | 3.58 | 14.22 | 3.12 |
| | 1.20 | 8.93 | 19 / 15 | 48.17 | 8.39 | 5.73 | 3.35 | 11.27 | 2.50 |
| | | | 24 / 17 | 48.86 | 9.17 | 7.53 | 3.54 | 12.22 | 2.59 |
| | | | 27 / 19 | 45.59 | 10.01 | 8.13 | 3.73 | 13.24 | 2.69 |
| | | | 30 / 21 | 50.23 | 10.75 | 8.57 | 3.89 | 14.12 | 2.76 |
| 45 | 2.41 | 34.30 | 19 / 15 | 49.02 | 8.17 | 5.63 | 3.42 | 11.11 | 2.39 |
| | | | 24 / 17 | 49.37 | 8.98 | 7.45 | 3.59 | 12.07 | 2.50 |
| | | | 27 / 19 | 49.75 | 9.87 | 8.07 | 3.77 | 13.13 | 2.62 |
| | | | 30 / 21 | 50.09 | 10.67 | 8.57 | 3.94 | 14.08 | 2.71 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES
## MODEL WPHBA 401

Nominal air flow 2300 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 401 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 0.93 | 5.77 | 19 / 15 | 29.18 | 12.96 | 8.06 | 2.84 | 15.31 | 4.56 |
| | | | 24 / 17 | 29.64 | 13.39 | 9.61 | 2.91 | 15.80 | 4.60 |
| | | | 27 / 19 | 29.90 | 13.64 | 9.46 | 2.95 | 16.08 | 4.63 |
| | | | 30 / 21 | 30.16 | 13.89 | 9.31 | 2.99 | 16.37 | 4.65 |
| | 0.69 | 3.36 | 19 / 15 | 33.62 | 12.37 | 7.78 | 3.03 | 14.91 | 4.08 |
| | | | 24 / 17 | 34.62 | 13.02 | 9.58 | 3.20 | 15.71 | 4.07 |
| | | | 27 / 19 | 35.07 | 13.34 | 9.53 | 3.25 | 16.07 | 4.10 |
| | | | 30 / 21 | 35.48 | 13.62 | 9.38 | 3.31 | 16.40 | 4.12 |
| | 0.55 | 2.23 | 19 / 15 | 37.74 | 11.79 | 7.51 | 3.24 | 14.51 | 3.64 |
| | | | 24 / 17 | 39.26 | 12.55 | 9.41 | 3.46 | 15.48 | 3.62 |
| | | | 27 / 19 | 40.19 | 13.04 | 9.64 | 3.57 | 16.07 | 3.65 |
| | | | 30 / 21 | 40.71 | 13.32 | 9.43 | 3.63 | 16.40 | 3.66 |
| | 0.46 | 1.60 | 19 / 15 | 41.46 | 11.22 | 7.24 | 3.43 | 14.12 | 3.27 |
| | | | 24 / 17 | 43.27 | 11.96 | 9.16 | 3.66 | 15.08 | 3.27 |
| | | | 27 / 19 | 44.92 | 12.64 | 9.64 | 3.88 | 15.96 | 3.26 |
| | | | 30 / 21 | 45.71 | 13.00 | 9.55 | 3.96 | 16.39 | 3.29 |
| 20 | 1.39 | 12.36 | 19 / 15 | 29.48 | 12.91 | 8.04 | 2.86 | 15.27 | 4.52 |
| | | | 24 / 17 | 29.80 | 13.36 | 9.61 | 2.93 | 15.80 | 4.56 |
| | | | 27 / 19 | 29.98 | 13.61 | 9.46 | 2.97 | 16.08 | 4.59 |
| | | | 30 / 21 | 30.16 | 13.87 | 9.31 | 3.01 | 16.37 | 4.61 |
| | 0.93 | 5.77 | 19 / 15 | 33.80 | 12.32 | 7.76 | 3.05 | 14.87 | 4.03 |
| | | | 24 / 17 | 34.57 | 13.00 | 9.57 | 3.22 | 15.70 | 4.04 |
| | | | 27 / 19 | 34.92 | 13.33 | 9.54 | 3.27 | 16.08 | 4.08 |
| | | | 30 / 21 | 35.22 | 13.61 | 9.38 | 3.32 | 16.40 | 4.11 |
| | 0.69 | 3.36 | 19 / 15 | 38.09 | 11.70 | 7.47 | 3.27 | 14.46 | 3.58 |
| | | | 24 / 17 | 39.32 | 12.49 | 9.38 | 3.48 | 15.44 | 3.59 |
| | | | 27 / 19 | 40.10 | 13.01 | 9.64 | 3.60 | 16.07 | 3.62 |
| | | | 30 / 21 | 40.52 | 13.29 | 9.43 | 3.65 | 16.40 | 3.64 |
| | 0.55 | 2.23 | 19 / 15 | 42.03 | 11.09 | 7.18 | 3.47 | 14.04 | 3.19 |
| | | | 24 / 17 | 43.55 | 11.85 | 9.11 | 3.69 | 15.00 | 3.21 |
| | | | 27 / 19 | 45.01 | 12.58 | 9.62 | 3.92 | 15.94 | 3.21 |
| | | | 30 / 21 | 45.73 | 12.97 | 9.59 | 4.00 | 16.39 | 3.24 |
| 25 | 2.78 | 44.80 | 19 / 15 | 29.74 | 12.86 | 8.01 | 2.87 | 15.24 | 4.48 |
| | | | 24 / 17 | 29.91 | 13.34 | 9.60 | 2.95 | 15.79 | 4.53 |
| | | | 27 / 19 | 30.00 | 13.60 | 9.46 | 2.98 | 16.07 | 4.57 |
| | | | 30 / 21 | 30.09 | 13.86 | 9.31 | 3.01 | 16.36 | 4.60 |
| | 1.39 | 12.36 | 19 / 15 | 34.22 | 12.23 | 7.72 | 3.09 | 14.82 | 3.96 |
| | | | 24 / 17 | 34.76 | 12.95 | 9.56 | 3.25 | 15.69 | 3.99 |
| | | | 27 / 19 | 35.01 | 13.32 | 9.56 | 3.30 | 16.07 | 4.04 |
| | | | 30 / 21 | 35.21 | 13.59 | 9.39 | 3.34 | 16.36 | 4.07 |
| | 0.93 | 5.77 | 19 / 15 | 38.40 | 11.62 | 7.43 | 3.30 | 14.82 | 3.52 |
| | | | 24 / 17 | 39.32 | 12.43 | 9.36 | 3.50 | 15.69 | 3.55 |
| | | | 27 / 19 | 39.94 | 12.98 | 9.64 | 3.62 | 1609 | 3.59 |
| | | | 30 / 21 | 40.25 | 13.27 | 9.43 | 3.67 | 16.40 | 3.61 |
| | 0.69 | 3.36 | 19 / 15 | 42.50 | 10.97 | 7.13 | 3.51 | 14.41 | 3.12 |
| | | | 24 / 17 | 43.73 | 11.76 | 9.07 | 3.72 | 15.40 | 3.16 |
| | | | 27 / 19 | 44.95 | 12.52 | 9.61 | 3.95 | 16.06 | 3.17 |
| | | | 30 / 21 | 45.55 | 12.94 | 9.61 | 4.03 | 16.40 | 3.21 |

# COOLING CAPACITIES
## MODEL WPHBA 401

Nominal air flow 2300 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 401 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 30 | 2.78 | 44.80 | 19 / 15 | 34.60 | 12.15 | 7.68 | 3.12 | 14.77 | 3.90 |
| | | | 24 / 17 | 34.89 | 12.92 | 9.56 | 3.27 | 15.68 | 3.95 |
| | | | **27 / 19** | **35.02** | **13.30** | **9.58** | **3.31** | **16.09** | **4.02** |
| | | | 30 / 21 | 35.11 | 13.57 | 9.38 | 3.36 | 16.40 | 4.04 |
| | 1.39 | 12.36 | 19 / 15 | 38.93 | 11.49 | 7.37 | 3.34 | 14.32 | 3.44 |
| | | | 24 / 17 | 39.57 | 12.34 | 9.32 | 3.54 | 15.35 | 3.49 |
| | | | 27 / 19 | 40.01 | 12.94 | 9.63 | 3.66 | 16.05 | 3.54 |
| | | | 30 / 21 | 40.22 | 13.24 | 9.44 | 3.71 | 16.39 | 3.57 |
| | 0.93 | 5.77 | 19 / 15 | 42.92 | 10.85 | 7.07 | 3.55 | 13.86 | 3.06 |
| | | | 24 / 17 | 43.86 | 11.67 | 9.03 | 3.75 | 14.88 | 3.11 |
| | | | 27 / 19 | 44.80 | 12.47 | 9.60 | 3.98 | 15.89 | 3.14 |
| | | | 30 / 21 | 45.28 | 12.91 | 9.63 | 4.05 | 16.39 | 3.18 |
| 35 | 2.78 | 44.80 | 19 / 15 | 39.44 | 11.36 | 7.31 | 3.38 | 14.22 | 3.37 |
| | | | 24 / 17 | 39.78 | 12.26 | 9.28 | 3.57 | 15.29 | 3.44 |
| | | | 27 / 19 | 40.01 | 12.90 | 9.63 | 3.69 | 16.04 | 3.50 |
| | | | 30 / 21 | 40.12 | 13.22 | 9.46 | 3.73 | 16.40 | 3.54 |
| | 1.39 | 12.36 | 19 / 15 | 43.58 | 10.67 | 6.99 | 3.60 | 13.74 | 2.97 |
| | | | 24 / 17 | 44.24 | 11.53 | 8.97 | 3.80 | 14.79 | 3.03 |
| | | | 27 / 19 | 44.90 | 12.39 | 9.57 | 4.02 | 15.85 | 3.08 |
| | | | 30 / 21 | 45.23 | 12.86 | 9.65 | 4.10 | 16.38 | 3.14 |
| | 0.93 | 5.77 | 19 / 15 | 47.36 | 9.99 | 6.69 | 3.80 | 13.25 | 2.63 |
| | | | 24 / 17 | 48.32 | 10.80 | 8.67 | 4.02 | 14.27 | 2.68 |
| | | | 27 / 19 | 49.32 | 11.67 | 9.29 | 4.25 | 15.34 | 2.74 |
| | | | 30 / 21 | 50.17 | 12.41 | 9.75 | 4.44 | 16.26 | 2.79 |
| 40 | 2.78 | 44.80 | 19 / 15 | 44.26 | 10.50 | 6.91 | 3.65 | 13.62 | 2.87 |
| | | | 24 / 17 | 44.59 | 11.39 | 8.91 | 3.84 | 14.68 | 2.96 |
| | | | 27 / 19 | 44.94 | 12.30 | 9.54 | 4.06 | 15.79 | 3.03 |
| | | | 30 / 21 | 45.12 | 12.81 | 9.66 | 4.14 | 16.37 | 3.10 |
| | 1.39 | 12.36 | 19 / 15 | 48.19 | 9.77 | 6.59 | 3.87 | 13.09 | 2.53 |
| | | | 24 / 17 | 48.83 | 10.60 | 8.58 | 4.07 | 14.11 | 2.60 |
| | | | 27 / 19 | 49.52 | 11.51 | 9.23 | 4.30 | 15.22 | 2.68 |
| | | | 30 / 21 | 50.14 | 12.32 | 9.75 | 4.49 | 16.21 | 2.74 |
| 45 | 2.78 | 44.80 | 19 / 15 | 49.04 | 9.52 | 6.48 | 3.93 | 12.90 | 2.42 |
| | | | 24 / 17 | 49.37 | 10.39 | 8.50 | 4.13 | 13.95 | 2.52 |
| | | | 27 / 19 | 49.74 | 11.35 | 9.17 | 4.34 | 15.11 | 2.61 |
| | | | 30 / 21 | 50.07 | 12.22 | 9.74 | 4.54 | 16.16 | 2.69 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES
## MODEL WPHBA 501

Nominal air flow 2800 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 501 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (º C) | TS (º C) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 1.14 | 3.12 | 19 / 15 | 28.91 | 16.03 | 10.08 | 2.92 | 18.41 | 5.49 |
| | | | 24 / 17 | 29.70 | 17.04 | 12.51 | 2.95 | 19.45 | 5.78 |
| | | | 27 / 19 | 30.52 | 18.10 | 13.20 | 2.97 | 20.54 | 6.09 |
| | | | 30 / 21 | 31.36 | 19.19 | 13.84 | 3.00 | 21.65 | 6.40 |
| | 0.85 | 2.16 | 19 / 15 | 33.25 | 15.41 | 9.79 | 3.14 | 18.01 | 4.90 |
| | | | 24 / 17 | 34.22 | 16.33 | 12.19 | 3.19 | 18.96 | 5.12 |
| | | | 27 / 19 | 35.25 | 17.29 | 12.87 | 3.23 | 19.97 | 5.35 |
| | | | 30 / 21 | 36.31 | 18.29 | 13.50 | 3.28 | 21.02 | 5.58 |
| | 0.68 | 1.47 | 19 / 15 | 37.40 | 14.88 | 9.54 | 3.36 | 17.67 | 4.43 |
| | | | 24 / 17 | 38.54 | 15.72 | 11.93 | 3.42 | 18.57 | 4.60 |
| | | | 27 / 19 | 39.74 | 16.60 | 12.58 | 3.48 | 19.51 | 4.77 |
| | | | 30 / 21 | 40.98 | 17.52 | 13.21 | 3.55 | 20.49 | 4.94 |
| | 0.56 | 1.05 | 19 / 15 | 41.73 | 14.35 | 9.29 | 3.59 | 17.37 | 4.00 |
| | | | 24 / 17 | 43.04 | 15.13 | 11.67 | 3.57 | 18.21 | 4.13 |
| | | | 27 / 19 | 44.40 | 15.94 | 12.32 | 3.74 | 19.10 | 4.26 |
| | | | 30 / 21 | 45.81 | 16.79 | 12.94 | 3.82 | 20.01 | 4.39 |
| 20 | 1.70 | 6.08 | 19 / 15 | 29.29 | 15.86 | 10.00 | 2.98 | 19.30 | 5.32 |
| | | | 24 / 17 | 29.82 | 16.89 | 12.44 | 2.99 | 19.35 | 5.64 |
| | | | 27 / 19 | 30.38 | 17.99 | 13.15 | 3.01 | 20.46 | 5.98 |
| | | | 30 / 21 | 30.97 | 19.13 | 13.82 | 3.02 | 21.61 | 6.34 |
| | 1.14 | 3.12 | 19 / 15 | 33.56 | 15.26 | 9.72 | 3.20 | 17.91 | 4.76 |
| | | | 24 / 17 | 34.29 | 16.20 | 12.14 | 3.23 | 18.88 | 5.01 |
| | | | 27 / 19 | 35.07 | 17.20 | 12.83 | 3.27 | 19.91 | 5.26 |
| | | | 30 / 21 | 35.88 | 18.24 | 13.48 | 3.30 | 20.98 | 5.52 |
| | 0.85 | 2.16 | 19 / 15 | 37.85 | 14.71 | 9.46 | 3.43 | 17.58 | 4.29 |
| | | | 24 / 17 | 38.76 | 15.57 | 11.86 | 3.48 | 18.48 | 4.47 |
| | | | 27 / 19 | 39.73 | 16.48 | 12.53 | 3.53 | 19.43 | 4.67 |
| | | | 30 / 21 | 40.75 | 17.43 | 13.17 | 3.58 | 20.43 | 4.87 |
| | 0.68 | 1.47 | 19 / 15 | 41.95 | 14.22 | 9.23 | 3.66 | 17.29 | 3.89 |
| | | | 24 / 17 | 43.03 | 15.01 | 11.62 | 3.72 | 18.14 | 4.04 |
| | | | 27 / 19 | 44.17 | 15.85 | 12.28 | 3.78 | 19.04 | 4.19 |
| | | | 30 / 21 | 45.35 | 16.72 | 12.91 | 3.85 | 19.97 | 4.34 |
| 25 | 3.41 | 21.75 | 19 / 15 | 29.61 | 15.68 | 9.92 | 3.04 | 18.18 | 5.15 |
| | | | 24 / 17 | 29.88 | 16.74 | 12.38 | 3.04 | 19.24 | 5.50 |
| | | | 27 / 19 | 30.17 | 17.88 | 13.11 | 3.04 | 20.38 | 5.88 |
| | | | 30 / 21 | 30.47 | 19.07 | 13.80 | 3.04 | 21.57 | 6.28 |
| | 1.70 | 6.08 | 19 / 15 | 34.05 | 15.07 | 9.63 | 3.28 | 17.79 | 4.60 |
| | | | 24 / 17 | 34.55 | 16.03 | 12.06 | 3.20 | 18.77 | 4.86 |
| | | | 27 / 19 | 35.08 | 17.06 | 12.77 | 3.32 | 19.81 | 5.14 |
| | | | 30 / 21 | 35.63 | 18.13 | 13.44 | 3.33 | 20.91 | 5.44 |
| | 1.14 | 3.12 | 19 / 15 | 38.26 | 14.54 | 9.38 | 3.51 | 17.47 | 4.14 |
| | | | 24 / 17 | 38.95 | 15.41 | 11.79 | 3.54 | 18.38 | 4.35 |
| | | | 27 / 19 | 39.68 | 16.35 | 12.48 | 3.58 | 19.35 | 4.57 |
| | | | 30 / 21 | 40.45 | 17.33 | 13.14 | 3.62 | 20.36 | 4.79 |
| | 0.85 | 2.16 | 19 / 15 | 42.49 | 14.03 | 9.14 | 3.74 | 17.18 | 3.75 |
| | | | 24 / 17 | 43.36 | 14.84 | 11.55 | 3.80 | 18.04 | 3.91 |
| | | | 27 / 19 | 44.28 | 15.69 | 12.22 | 3.85 | 18.94 | 4.08 |
| | | | 30 / 21 | 45.24 | 16.59 | 12.86 | 3.90 | 19.89 | 4.25 |

# COOLING CAPACITIES
## MODEL WPHBA 501

Nominal air flow 2800 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 501 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (º C) | TS (º C) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 30 | 3.41 | 21.75 | 19 / 15 | 34.49 | 14.87 | 9.54 | 3.36 | 17.67 | 4.42 |
| | | | 24 / 17 | 34.74 | 15.85 | 11.98 | 3.37 | 18.65 | 4.71 |
| | | | **27 / 19** | **35.01** | **16.90** | **12.71** | **3.37** | **19.71** | **5.01** |
| | | | 30 / 21 | 35.29 | 18.02 | 13.40 | 3.37 | 20.83 | 5.34 |
| | 1.70 | 6.08 | 19 / 15 | 38.85 | 14.33 | 9.28 | 3.60 | 17.35 | 3.98 |
| | | | 24 / 17 | 39.31 | 15.22 | 11.71 | 3.63 | 18.27 | 4.20 |
| | | | 27 / 19 | 39.81 | 16.18 | 12.41 | 3.65 | 19.24 | 4.43 |
| | | | 30 / 21 | 40.33 | 17.18 | 13.08 | 3.67 | 20.27 | 4.68 |
| | 1.14 | 3.12 | 19 / 15 | 42.98 | 13.83 | 9.05 | 3.84 | 17.08 | 3.60 |
| | | | 24 / 17 | 43.64 | 14.66 | 11.47 | 3.88 | 17.94 | 3.78 |
| | | | 27 / 19 | 44.33 | 15.53 | 12.16 | 3.92 | 18.85 | 3.97 |
| | | | 30 / 21 | 45.05 | 16.45 | 12.82 | 3.95 | 19.80 | 4.16 |
| 35 | 3.41 | 21.75 | 19 / 15 | 39.39 | 14.11 | 9.18 | 3.71 | 17.23 | 3.81 |
| | | | 24 / 17 | 39.62 | 15.02 | 11.62 | 3.72 | 18.15 | 4.04 |
| | | | 27 / 19 | 39.87 | 15.99 | 12.34 | 3.72 | 19.13 | 4.30 |
| | | | 30 / 21 | 40.13 | 17.03 | 13.03 | 3.73 | 20.17 | 4.57 |
| | 1.70 | 6.08 | 19 / 15 | 43.66 | 13.60 | 8.94 | 3.96 | 16.95 | 3.44 |
| | | | 24 / 17 | 44.10 | 14.44 | 11.38 | 3.98 | 17.82 | 3.63 |
| | | | 27 / 19 | 44.56 | 15.33 | 12.08 | 4.00 | 18.72 | 3.83 |
| | | | 30 / 21 | 45.05 | 16.27 | 12.75 | 4.03 | 16.69 | 4.04 |
| | 1.14 | 3.12 | 19 / 15 | 47.72 | 13.12 | 8.73 | 4.20 | 16.70 | 3.12 |
| | | | 24 / 17 | 48.35 | 13.91 | 11.15 | 4.24 | 17.53 | 3.28 |
| | | | 27 / 19 | 48.99 | 14.72 | 11.84 | 4.27 | 18.37 | 3.44 |
| | | | 30 / 21 | 49.67 | 15.59 | 12.50 | 4.31 | 19.27 | 3.61 |
| 40 | 3.41 | 21.75 | 19 / 15 | 44.29 | 13.34 | 8.83 | 4.09 | 16.82 | 3.26 |
| | | | 24 / 17 | 44.51 | 14.21 | 11.28 | 4.09 | 17.69 | 3.47 |
| | | | 27 / 19 | 44.74 | 15.10 | 11.99 | 4.10 | 18.59 | 3.68 |
| | | | 30 / 21 | 44.99 | 16.07 | 12.68 | 4.11 | 19.56 | 3.91 |
| | 1.70 | 6.08 | 19 / 15 | 48.48 | 12.85 | 8.61 | 4.34 | 16.57 | 2.96 |
| | | | 24 / 17 | 48.90 | 13.66 | 11.04 | 4.37 | 17.40 | 3.13 |
| | | | 27 / 19 | 49.33 | 14.48 | 11.75 | 4.39 | 18.24 | 3.30 |
| | | | 30 / 21 | 49.79 | 15.36 | 12.42 | 4.41 | 19.14 | 3.48 |
| 45 | 3.41 | 21.75 | 19 / 15 | 49.19 | 12.55 | 8.47 | 4.50 | 16.41 | 2.79 |
| | | | 24 / 17 | 49.41 | 13.37 | 10.92 | 4.51 | 17.24 | 2.96 |
| | | | 27 / 19 | 49.62 | 14.21 | 11.64 | 4.52 | 18.09 | 3.15 |
| | | | 30 / 21 | 49.85 | 15.11 | 12.33 | 4.52 | 18.99 | 3.34 |
| | 1.70 | 6.08 | 19 / 15 | 53.29 | 12.07 | 8.25 | 4.75 | 16.17 | 2.54 |
| | | | 24 / 17 | 53.69 | 12.83 | 10.70 | 4.78 | 16.95 | 2.69 |
| | | | 27 / 19 | 54.10 | 13.62 | 11.41 | 4.80 | 17.76 | 2.84 |
| | | | 30 / 21 | 54.53 | 14.43 | 12.09 | 4.82 | 18.60 | 2.99 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES
## MODEL WPHBA 701

Nominal air flow 3400 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 701 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (º C) | TS (º C) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 1.37 | 4.32 | 19 / 15 | 28.96 | 19.21 | 12.06 | 3.74 | 22.20 | 5.14 |
| | | | 24 / 17 | 29.74 | 20.42 | 14.93 | 3.77 | 23.45 | 5.41 |
| | | | 27 / 19 | 30.56 | 21.68 | 15.74 | 3.81 | 24.74 | 5.69 |
| | | | 30 / 21 | 31.41 | 23.00 | 16.51 | 3.85 | 26.09 | 5.98 |
| | 1.03 | 2.60 | 19 / 15 | 33.20 | 18.52 | 11.73 | 4.00 | 21.75 | 4.64 |
| | | | 24 / 17 | 34.17 | 19.64 | 14.58 | 4.05 | 22.92 | 4.85 |
| | | | 27 / 19 | 35.19 | 20.80 | 15.38 | 4.11 | 24.14 | 5.06 |
| | | | 30 / 21 | 36.24 | 22.00 | 16.13 | 4.17 | 25.39 | 5.28 |
| | 0.82 | 1.70 | 19 / 15 | 37.46 | 17.90 | 11.43 | 4.26 | 21.37 | 4.20 |
| | | | 24 / 17 | 38.61 | 18.92 | 14.27 | 4.33 | 22.46 | 4.37 |
| | | | 27 / 19 | 39.82 | 20.00 | 15.05 | 4.40 | 23.61 | 4.54 |
| | | | 30 / 21 | 41.05 | 21.10 | 15.79 | 4.48 | 24.78 | 4.71 |
| | 0.68 | 1.45 | 19 / 15 | 41.67 | 17.32 | 11.16 | 4.52 | 21.04 | 3.83 |
| | | | 24 / 17 | 42.97 | 18.27 | 13.98 | 4.60 | 22.06 | 3.97 |
| | | | 27 / 19 | 44.34 | 19.26 | 14.76 | 4.70 | 23.15 | 4.10 |
| | | | 30 / 21 | 45.75 | 20.28 | 15.49 | 4.79 | 24.25 | 4.24 |
| 20 | 2.06 | 8.70 | 19 / 15 | 29.25 | 19.03 | 11.97 | 3.80 | 22.08 | 5.00 |
| | | | 24 / 17 | 29.78 | 20.27 | 14.86 | 3.82 | 23.35 | 5.30 |
| | | | 27 / 19 | 30.33 | 21.58 | 15.70 | 3.85 | 24.67 | 5.61 |
| | | | 30 / 21 | 30.91 | 22.95 | 16.49 | 3.86 | 26.06 | 5.94 |
| | 1.37 | 4.32 | 19 / 15 | 33.63 | 18.33 | 11.64 | 4.07 | 21.64 | 4.50 |
| | | | 24 / 17 | 34.37 | 19.47 | 14.51 | 4.11 | 22.81 | 4.73 |
| | | | 27 / 19 | 35.15 | 20.67 | 15.32 | 4.16 | 24.05 | 4.97 |
| | | | 30 / 21 | 35.95 | 21.91 | 16.09 | 4.20 | 25.33 | 5.22 |
| | 1.03 | 2.60 | 19 / 15 | 37.82 | 17.72 | 11.35 | 4.33 | 21.27 | 4.09 |
| | | | 24 / 17 | 38.74 | 18.76 | 14.20 | 4.39 | 22.37 | 4.27 |
| | | | 27 / 19 | 39.72 | 19.87 | 15.00 | 4.45 | 23.53 | 4.46 |
| | | | 30 / 21 | 40.72 | 21.01 | 15.76 | 4.51 | 24.72 | 4.66 |
| | 0.82 | 1.70 | 19 / 15 | 42.04 | 17.14 | 11.08 | 4.60 | 20.94 | 3.73 |
| | | | 24 / 17 | 43.13 | 18.11 | 13.91 | 4.67 | 21.97 | 3.87 |
| | | | 27 / 19 | 44.28 | 19.13 | 14.70 | 4.75 | 23.06 | 4.03 |
| | | | 30 / 21 | 45.46 | 20.18 | 15.45 | 4.83 | 24.18 | 4.18 |
| 25 | 4.13 | 30.90 | 19 / 15 | 29.59 | 18.82 | 11.87 | 3.88 | 21.95 | 4.85 |
| | | | 24 / 17 | 29.86 | 20.10 | 14.79 | 3.88 | 23.23 | 5.18 |
| | | | 27 / 19 | 30.15 | 21.45 | 15.65 | 3.89 | 24.58 | 5.52 |
| | | | 30 / 21 | 30.44 | 22.88 | 16.46 | 3.89 | 26.01 | 5.89 |
| | 2.06 | 8.70 | 19 / 15 | 34.03 | 18.13 | 11.54 | 4.16 | 21.51 | 4.36 |
| | | | 24 / 17 | 34.53 | 19.29 | 14.43 | 4.18 | 22.70 | 4.61 |
| | | | 27 / 19 | 35.06 | 20.53 | 15.27 | 4.21 | 23.96 | 4.88 |
| | | | 30 / 21 | 35.60 | 21.81 | 16.06 | 4.23 | 25.26 | 5.16 |
| | 1.37 | 4.32 | 19 / 15 | 38.35 | 17.51 | 11.25 | 4.43 | 21.14 | 3.95 |
| | | | 24 / 17 | 39.05 | 18.57 | 14.12 | 4.47 | 22.25 | 4.15 |
| | | | 27 / 19 | 39.79 | 19.71 | 14.93 | 4.52 | 23.43 | 4.36 |
| | | | 30 / 21 | 40.55 | 20.88 | 15.71 | 4.56 | 24.63 | 4.58 |
| | 1.03 | 2.60 | 19 / 15 | 42.49 | 16.94 | 10.99 | 4.69 | 20.82 | 3.61 |
| | | | 24 / 17 | 43.36 | 17.93 | 13.84 | 4.75 | 21.87 | 3.77 |
| | | | 27 / 19 | 44.29 | 18.97 | 14.64 | 4.82 | 22.97 | 3.94 |
| | | | 30 / 21 | 45.24 | 20.05 | 15.40 | 4.88 | 24.10 | 4.11 |

# COOLING CAPACITIES
## MODEL WPHBA 701

Nominal air flow 3400 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 701 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (º C) | TS (º C) | Pf (kW) | Ps (kW) | Pabs (kW) | CC(kW) | EER |
| 30 | 4.13 | 30.90 | 19 / 15 | 34.48 | 17.91 | 11.44 | 4.25 | 21.38 | 4.21 |
| | | | 24 / 17 | 34.73 | 19.09 | 14.34 | 4.26 | 22.57 | 4.48 |
| | | | **27 / 19** | **35.00** | **20.36** | **15.20** | **4.27** | **23.84** | **4.77** |
| | | | 30 / 21 | 35.28 | 21.68 | 16.01 | 4.27 | 25.17 | 5.08 |
| | 2.06 | 8.70 | 19 / 15 | 38.84 | 17.29 | 11.15 | 4.53 | 21.02 | 3.81 |
| | | | 24 / 17 | 39.31 | 18.37 | 14.03 | 4.56 | 22.13 | 4.03 |
| | | | 27 / 19 | 39.81 | 19.53 | 14.86 | 4.59 | 23.31 | 4.26 |
| | | | 30 / 21 | 40.32 | 20.73 | 15.65 | 4.61 | 24.54 | 4.49 |
| | 1.37 | 4.32 | 19 / 15 | 43.09 | 16.70 | 10.88 | 4.81 | 20.70 | 3.47 |
| | | | 24 / 17 | 43.75 | 17.70 | 13.74 | 4.85 | 21.74 | 3.65 |
| | | | 27 / 19 | 44.45 | 18.76 | 14.56 | 4.90 | 22.84 | 3.83 |
| | | | 30 / 21 | 45.18 | 19.88 | 15.34 | 4.95 | 24.00 | 4.02 |
| 35 | 4.13 | 30.90 | 19 / 15 | 39.39 | 17.03 | 11.03 | 4.65 | 20.88 | 3.66 |
| | | | 24 / 17 | 39.62 | 18.13 | 13.93 | 4.66 | 21.99 | 3.89 |
| | | | 27 / 19 | 39.87 | 19.32 | 14.78 | 4.67 | 23.18 | 4.14 |
| | | | 30 / 21 | 40.14 | 20.56 | 15.59 | 4.68 | 24.43 | 4.39 |
| | 2.06 | 8.70 | 19 / 15 | 43.66 | 16.45 | 10.76 | 4.94 | 20.56 | 3.33 |
| | | | 24 / 17 | 44.10 | 17.47 | 13.64 | 4.97 | 21.60 | 3.52 |
| | | | 27 / 19 | 44.57 | 18.55 | 14.47 | 4.99 | 22.71 | 3.72 |
| | | | 30 / 21 | 45.06 | 19.69 | 15.27 | 5.02 | 23.88 | 3.92 |
| | 1.37 | 4.32 | 19 / 15 | 47.84 | 15.88 | 10.50 | 5.22 | 20.26 | 3.04 |
| | | | 24 / 17 | 48.46 | 16.83 | 13.37 | 5.27 | 21.25 | 3.19 |
| | | | 27 / 19 | 49.12 | 17.83 | 14.18 | 5.31 | 22.29 | 3.35 |
| | | | 30 / 21 | 49.81 | 18.88 | 14.97 | 5.36 | 23.38 | 3.52 |
| 40 | 4.13 | 30.90 | 19 / 15 | 44.30 | 16.16 | 10.63 | 5.08 | 20.41 | 3.18 |
| | | | 24 / 17 | 44.52 | 17.19 | 13.52 | 5.10 | 21.45 | 3.37 |
| | | | 27 / 19 | 44.75 | 18.29 | 14.37 | 5.10 | 22.56 | 3.58 |
| | | | 30 / 21 | 45.00 | 19.47 | 15.19 | 5.11 | 23.74 | 3.81 |
| | 2.06 | 8.70 | 19 / 15 | 48.49 | 15.58 | 10.36 | 5.37 | 20.10 | 2.90 |
| | | | 24 / 17 | 48.91 | 16.55 | 13.25 | 5.40 | 21.09 | 3.06 |
| | | | 27 / 19 | 49.34 | 17.56 | 14.08 | 5.43 | 22.13 | 3.23 |
| | | | 30 / 21 | 49.81 | 18.64 | 14.89 | 5.46 | 23.23 | 3.42 |
| 45 | 4.13 | 30.90 | 19 / 15 | 49.20 | 15.23 | 10.20 | 5.55 | 19.91 | 2.74 |
| | | | 24 / 17 | 49.41 | 16.22 | 13.11 | 5.56 | 20.91 | 2.92 |
| | | | 27 / 19 | 49.63 | 17.25 | 13.96 | 5.57 | 21.95 | 3.10 |
| | | | 30 / 21 | 49.87 | 18.35 | 14.78 | 5.58 | 23.06 | 3.29 |
| | 2.06 | 8.70 | 19 / 15 | 53.29 | 14.65 | 9.94 | 5.83 | 19.59 | 3.51 |
| | | | 24 / 17 | 53.69 | 15.58 | 12.84 | 5.87 | 20.55 | 2.66 |
| | | | 27 / 19 | 54.11 | 16.53 | 13.68 | 5.89 | 21.54 | 2.81 |
| | | | 30 / 21 | 54.54 | 17.54 | 14.49 | 5.92 | 22.57 | 2.96 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES

## MODEL WPHBA 751

Nominal air flow 4300 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 751 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 1.77 | 6.61 | 19 / 15 | 28.80 | 24.27 | 15.12 | 5.11 | 28.35 | 4.75 |
| | | | 24 / 17 | 29.55 | 25.73 | 18.59 | 5.20 | 29.89 | 4.95 |
| | | | 27 / 19 | 30.34 | 27.27 | 19.55 | 5.30 | 31.52 | 5.15 |
| | | | 30 / 21 | 31.18 | 28.89 | 20.47 | 5.40 | 33.24 | 5.35 |
| | 1.33 | 4.05 | 19 / 15 | 33.11 | 23.59 | 14.79 | 5.42 | 27.96 | 4.35 |
| | | | 24 / 17 | 34.07 | 24.97 | 18.25 | 5.53 | 29.44 | 4.51 |
| | | | 27 / 19 | 35.08 | 26.42 | 19.20 | 5.65 | 30.99 | 4.68 |
| | | | 30 / 21 | 36.14 | 27.93 | 20.10 | 5.78 | 32.63 | 4.83 |
| | 1.06 | 2.68 | 19 / 15 | 37.40 | 22.89 | 14.46 | 5.74 | 27.55 | 3.99 |
| | | | 24 / 17 | 38.56 | 24.19 | 17.90 | 5.87 | 28.98 | 4.12 |
| | | | 27 / 19 | 39.77 | 25.54 | 18.84 | 6.01 | 30.46 | 4.25 |
| | | | 30 / 21 | 41.02 | 26.94 | 19.72 | 6.16 | 32.00 | 4.37 |
| | 0.88 | 1.91 | 19 / 15 | 41.60 | 22.19 | 14.12 | 6.06 | 27.15 | 3.66 |
| | | | 24 / 17 | 42.93 | 23.41 | 17.55 | 6.22 | 28.51 | 3.76 |
| | | | 27 / 19 | 44.32 | 24.66 | 18.48 | 6.38 | 29.92 | 3.86 |
| | | | 30 / 21 | 45.75 | 25.96 | 19.36 | 6.55 | 31.38 | 3.96 |
| 20 | 2.66 | 14.01 | 19 / 15 | 29.16 | 24.09 | 15.03 | 5.19 | 28.24 | 4.64 |
| | | | 24 / 17 | 29.67 | 25.58 | 18.52 | 5.27 | 29.80 | 4.86 |
| | | | 27 / 19 | 30.20 | 27.16 | 19.51 | 5.34 | 31.45 | 5.08 |
| | | | 30 / 21 | 30.77 | 28.83 | 20.45 | 5.43 | 33.20 | 5.31 |
| | 1.77 | 6.61 | 19 / 15 | 33.57 | 23.38 | 14.69 | 5.51 | 27.84 | 4.24 |
| | | | 24 / 17 | 34.30 | 24.79 | 18.17 | 5.61 | 29.33 | 4.42 |
| | | | 27 / 19 | 35.07 | 26.27 | 19.14 | 5.71 | 30.91 | 4.60 |
| | | | 30 / 21 | 35.88 | 27.83 | 20.06 | 5.82 | 32.56 | 4.78 |
| | 1.33 | 4.05 | 19 / 15 | 37.80 | 22.68 | 14.35 | 5.84 | 27.43 | 3.89 |
| | | | 24 / 17 | 38.74 | 24.01 | 17.82 | 5.95 | 28.87 | 4.03 |
| | | | 27 / 19 | 39.71 | 25.39 | 18.77 | 6.08 | 30.36 | 4.18 |
| | | | 30 / 21 | 40.72 | 26.83 | 19.68 | 6.21 | 31.93 | 4.32 |
| | 1.06 | 2.68 | 19 / 15 | 42.01 | 21.96 | 14.01 | 6.17 | 27.03 | 3.56 |
| | | | 24 / 17 | 43.13 | 23.20 | 17.46 | 6.31 | 28.40 | 3.68 |
| | | | 27 / 19 | 44.29 | 24.49 | 18.41 | 6.46 | 29.82 | 3.79 |
| | | | 30 / 21 | 45.49 | 25.82 | 19.30 | 6.61 | 31.30 | 3.91 |
| 25 | 5.32 | 49.03 | 19 / 15 | 29.57 | 23.89 | 14.93 | 5.29 | 28.13 | 4.52 |
| | | | 24 / 17 | 29.83 | 25.41 | 18.45 | 5.34 | 29.70 | 4.76 |
| | | | 27 / 19 | 30.10 | 27.03 | 19.45 | 5.40 | 31.37 | 5.01 |
| | | | 30 / 21 | 30.39 | 28.75 | 20.42 | 5.46 | 33.15 | 5.27 |
| | 2.66 | 14.01 | 19 / 15 | 34.01 | 23.16 | 14.58 | 5.62 | 27.71 | 4.12 |
| | | | 24 / 17 | 34.50 | 24.61 | 18.08 | 5.69 | 29.22 | 4.32 |
| | | | 27 / 19 | 35.02 | 26.12 | 19.07 | 5.77 | 30.81 | 4.53 |
| | | | 30 / 21 | 35.56 | 27.72 | 20.02 | 5.86 | 32.49 | 4.73 |
| | 1.77 | 6.61 | 19 / 15 | 38.33 | 22.43 | 14.23 | 5.95 | 27.29 | 3.77 |
| | | | 24 / 17 | 39.04 | 23.78 | 17.72 | 6.05 | 28.74 | 3.93 |
| | | | 27 / 19 | 39.78 | 25.19 | 18.69 | 6.16 | 30.25 | 4.09 |
| | | | 30 / 21 | 40.55 | 26.68 | 19.62 | 6.27 | 31.83 | 4.26 |
| | 1.33 | 4.05 | 19 / 15 | 42.48 | 21.70 | 13.89 | 6.30 | 26.88 | 3.44 |
| | | | 24 / 17 | 43.38 | 22.96 | 17.36 | 6.42 | 28.26 | 3.58 |
| | | | 27 / 19 | 44.31 | 24.28 | 18.32 | 6.54 | 29.70 | 3.71 |
| | | | 30 / 21 | 45.29 | 25.66 | 19.24 | 6.68 | 31.20 | 3.84 |

# COOLING CAPACITIES
## MODEL WPHBA 751

Nominal air flow 4300 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 751 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TSE (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 30 | 5.32 | 49.03 | 19 / 15 | 34.49 | 22.91 | 14.46 | 5.73 | 27.56 | 4.00 |
| | | | 24 / 17 | 34.74 | 24.38 | 17.98 | 5.79 | 29.09 | 4.21 |
| | | | **27 / 19** | **35.00** | **25.93** | **19.00** | **5.85** | **30.70** | **4.43** |
| | | | 30 / 21 | 35.28 | 27.58 | 19.97 | 5.91 | 32.40 | 4.66 |
| | 2.66 | 14.01 | 19 / 15 | 38.84 | 22.14 | 14.10 | 6.09 | 27.13 | 3.64 |
| | | | 24 / 17 | 39.31 | 23.53 | 17.61 | 6.16 | 28.59 | 3.82 |
| | | | 27 / 19 | 39.81 | 24.98 | 18.61 | 6.25 | 30.11 | 4.00 |
| | | | 30 / 21 | 40.34 | 26.50 | 19.56 | 6.34 | 31.73 | 4.18 |
| | 1.77 | 6.61 | 19 / 15 | 43.08 | 21.38 | 13.74 | 6.46 | 26.71 | 3.31 |
| | | | 24 / 17 | 43.76 | 22.67 | 17.23 | 6.55 | 28.10 | 3.46 |
| | | | 27 / 19 | 44.47 | 24.03 | 18.22 | 6.66 | 29.55 | 3.61 |
| | | | 30 / 21 | 45.21 | 25.44 | 19.16 | 6.77 | 31.06 | 3.76 |
| 35 | 5.32 | 49.03 | 19 / 15 | 39.40 | 21.82 | 13.95 | 6.24 | 26.95 | 3.50 |
| | | | 24 / 17 | 39.64 | 23.24 | 17.48 | 6.29 | 28.42 | 3.69 |
| | | | 27 / 19 | 38.89 | 24.73 | 18.51 | 6.35 | 29.97 | 3.89 |
| | | | 30 / 21 | 40.16 | 26.30 | 19.48 | 6.42 | 31.60 | 4.10 |
| | 2.66 | 14.01 | 19 / 15 | 43.66 | 21.04 | 13.59 | 6.63 | 26.53 | 3.17 |
| | | | 24 / 17 | 44.11 | 22.36 | 17.10 | 6.70 | 27.92 | 3.34 |
| | | | 27 / 19 | 44.59 | 23.75 | 18.11 | 6.78 | 29.39 | 3.50 |
| | | | 30 / 21 | 45.09 | 25.20 | 19.07 | 6.87 | 3.092 | 3.67 |
| | 1.77 | 6.61 | 19 / 15 | 47.82 | 20.27 | 13.23 | 7.02 | 26.13 | 2.89 |
| | | | 24 / 17 | 48.46 | 21.50 | 16.73 | 7.12 | 27.45 | 3.02 |
| | | | 27 / 19 | 49.14 | 22.79 | 17.73 | 7.22 | 28.84 | 3.15 |
| | | | 30 / 21 | 49.85 | 24.12 | 18.68 | 7.33 | 30.28 | 3.29 |
| 40 | 5.32 | 49.03 | 19 / 15 | 44.30 | 20.65 | 13.40 | 6.83 | 26.33 | 3.03 |
| | | | 24 / 17 | 44.53 | 21.99 | 16.94 | 6.88 | 27.72 | 3.20 |
| | | | 27 / 19 | 44.77 | 23.42 | 17.98 | 6.93 | 29.20 | 3.38 |
| | | | 30 / 21 | 45.03 | 24.91 | 18.97 | 6.99 | 30.74 | 3.56 |
| | 2.66 | 14.01 | 19 / 15 | 48.47 | 19.86 | 13.04 | 7.24 | 25.92 | 2.74 |
| | | | 24 / 17 | 48.91 | 21.11 | 16.56 | 7.31 | 27.24 | 2.89 |
| | | | 27 / 19 | 49.36 | 22.43 | 17.58 | 7.39 | 28.64 | 3.03 |
| | | | 30 / 21 | 49.84 | 23.80 | 18.56 | 7.48 | 30.09 | 3.18 |
| 45 | 5.32 | 49.03 | 19 / 15 | 49.21 | 19.38 | 12.82 | 7.49 | 25.68 | 2.59 |
| | | | 24 / 17 | 49.42 | 20.66 | 16.36 | 7.54 | 27.00 | 2.74 |
| | | | 27 / 19 | 49.65 | 22.00 | 17.41 | 7.59 | 28.40 | 2.90 |
| | | | 30 / 21 | 49.89 | 23.42 | 18.42 | 7.65 | 29.87 | 3.06 |
| | 2.66 | 14.01 | 19 / 15 | 53.28 | 18.60 | 12.47 | 7.91 | 25.29 | 2.35 |
| | | | 24 / 17 | 53.69 | 19.78 | 15.99 | 7.99 | 26.54 | 2.48 |
| | | | 27 / 19 | 54.13 | 21.02 | 17.02 | 8.07 | 27.86 | 2.60 |
| | | | 30 / 21 | 54.58 | 22.32 | 18.01 | 8.15 | 29.24 | 2.74 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES
## MODEL WPHBA 1001

Nominal air flow 6200 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 1001 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 2.40 | 5.17 | 19 / 15 | 28.73 | 33.09 | 20.84 | 6.58 | 38.25 | 5.03 |
| | | | 24 / 17 | 29.49 | 35.10 | 25.83 | 6.70 | 40.37 | 5.24 |
| | | | 27 / 19 | 30.29 | 37.22 | 27.23 | 6.82 | 42.60 | 5.46 |
| | | | 30 / 21 | 31.12 | 39.41 | 28.55 | 6.94 | 44.90 | 5.67 |
| | 1.80 | 3.07 | 19 / 15 | 33.06 | 32.20 | 20.42 | 6.97 | 37.72 | 4.62 |
| | | | 24 / 17 | 34.03 | 34.09 | 25.37 | 7.12 | 39.75 | 4.79 |
| | | | 27 / 19 | 35.05 | 36.09 | 26.76 | 7.27 | 41.88 | 4.97 |
| | | | 30 / 21 | 36.11 | 38.14 | 28.06 | 7.43 | 44.08 | 5.13 |
| | 1.43 | 2.01 | 19 / 15 | 37.40 | 31.27 | 19.97 | 7.38 | 37.17 | 4.24 |
| | | | 24 / 17 | 38.56 | 33.03 | 24.90 | 7.55 | 39.09 | 4.38 |
| | | | 27 / 19 | 39.79 | 34.89 | 26.27 | 7.73 | 41.12 | 4.52 |
| | | | 30 / 21 | 41.05 | 36.81 | 27.56 | 7.92 | 43.22 | 4.65 |
| | 1.20 | 1.72 | 19 / 15 | 41.33 | 30.39 | 19.56 | 7.76 | 36.65 | 3.91 |
| | | | 24 / 17 | 42.64 | 32.04 | 24.47 | 7.95 | 38.48 | 4.03 |
| | | | 27 / 19 | 44.03 | 33.78 | 25.82 | 8.16 | 40.42 | 4.14 |
| | | | 30 / 21 | 45.48 | 35.58 | 27.10 | 8.38 | 42.42 | 4.25 |
| 20 | 3.60 | 10.35 | 19 / 15 | 29.13 | 32.84 | 20.72 | 6.69 | 38.10 | 4.91 |
| | | | 24 / 17 | 29.64 | 34.89 | 25.73 | 6.78 | 40.24 | 5.14 |
| | | | 27 / 19 | 30.19 | 37.07 | 27.16 | 6.88 | 42.50 | 5.38 |
| | | | 30 / 21 | 30.75 | 39.31 | 28.51 | 6.98 | 44.84 | 5.63 |
| | 2.40 | 5.17 | 19 / 15 | 33.51 | 31.93 | 20.29 | 7.09 | 37.56 | 4.50 |
| | | | 24 / 17 | 34.24 | 33.85 | 25.27 | 7.21 | 39.60 | 4.69 |
| | | | 27 / 19 | 35.02 | 35.90 | 26.68 | 7.34 | 41.76 | 4.89 |
| | | | 30 / 21 | 35.82 | 38.01 | 28.01 | 7.48 | 44.00 | 5.08 |
| | 1.80 | 3.07 | 19 / 15 | 37.74 | 30.99 | 19.85 | 7.50 | 37.01 | 4.13 |
| | | | 24 / 17 | 38.67 | 32.80 | 24.80 | 7.64 | 38.94 | 4.29 |
| | | | 27 / 19 | 39.66 | 34.71 | 26.19 | 7.80 | 41.00 | 4.45 |
| | | | 30 / 21 | 40.68 | 36.68 | 27.51 | 7.97 | 43.13 | 4.60 |
| | 1.43 | 2.01 | 19 / 15 | 42.00 | 30.03 | 19.39 | 7.92 | 36.44 | 3.79 |
| | | | 24 / 17 | 43.11 | 31.70 | 24.32 | 8.10 | 38.28 | 3.92 |
| | | | 27 / 19 | 44.28 | 33.48 | 25.69 | 8.28 | 40.22 | 4.04 |
| | | | 30 / 21 | 45.51 | 35.32 | 27.00 | 8.48 | 42.25 | 4.16 |
| 25 | 7.18 | 37.1 | 19 / 15 | 29.57 | 32.57 | 20.59 | 6.81 | 37.94 | 4.78 |
| | | | 24 / 17 | 29.83 | 34.66 | 25.62 | 6.88 | 40.09 | 5.04 |
| | | | 27 / 19 | 30.10 | 36.88 | 27.09 | 6.96 | 42.38 | 5.30 |
| | | | 30 / 21 | 30.39 | 39.18 | 28.46 | 7.03 | 44.76 | 5.57 |
| | 3.60 | 10.35 | 19 / 15 | 33.98 | 31.62 | 20.14 | 7.22 | 37.38 | 4.38 |
| | | | 24 / 17 | 34.47 | 33.59 | 25.15 | 7.32 | 39.43 | 4.59 |
| | | | 27 / 19 | 35.00 | 35.68 | 26.59 | 7.43 | 41.62 | 4.80 |
| | | | 30 / 21 | 35.54 | 37.85 | 27.95 | 7.53 | 43.89 | 5.02 |
| | 2.40 | 5.17 | 19 / 15 | 38.26 | 30.66 | 19.69 | 7.65 | 36.81 | 4.01 |
| | | | 24 / 17 | 38.97 | 32.50 | 24.67 | 7.77 | 38.76 | 4.18 |
| | | | 27 / 19 | 39.72 | 34.45 | 26.09 | 7.90 | 40.84 | 4.36 |
| | | | 30 / 21 | 40.50 | 36.48 | 27.44 | 8.04 | 43.00 | 4.54 |
| | 1.80 | 3.07 | 19 / 15 | 42.41 | 29.69 | 19.23 | 8.08 | 36.24 | 3.68 |
| | | | 24 / 17 | 42.31 | 31.40 | 24.19 | 8.23 | 38.09 | 3.82 |
| | | | 27 / 19 | 44.25 | 33.22 | 25.59 | 8.39 | 40.06 | 3.96 |
| | | | 30 / 21 | 45.24 | 35.11 | 26.93 | 8.56 | 42.12 | 4.10 |

# COOLING CAPACITIES
## MODEL WPHBA 1001

Nominal air flow 6200 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 1001 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 30 | 7.18 | 37.1 | 19 / 15 | 34.49 | 31.27 | 19.97 | 7.38 | 37.17 | 4.24 |
| | | | 24 / 17 | 34.73 | 33.27 | 25.01 | 7.45 | 39.24 | 4.47 |
| | | | **27 / 19** | **35.00** | **35.41** | **26.48** | **7.53** | **41.45** | **4.71** |
| | | | 30 / 21 | 35.28 | 37.64 | 27.87 | 7.61 | 43.76 | 4.95 |
| | 3.60 | 10.35 | 19 / 15 | 38.81 | 30.28 | 19.51 | 7.81 | 36.58 | 3.87 |
| | | | 24 / 17 | 39.28 | 32.15 | 24.51 | 7.91 | 38.54 | 4.06 |
| | | | 27 / 19 | 39.78 | 34.15 | 25.96 | 8.02 | 40.64 | 4.26 |
| | | | 30 / 21 | 40.31 | 36.24 | 27.35 | 8.13 | 42.84 | 4.46 |
| | 2.40 | 5.17 | 19 / 15 | 43.00 | 29.28 | 19.04 | 8.26 | 36.00 | 3.54 |
| | | | 24 / 17 | 43.67 | 31.02 | 24.03 | 8.39 | 37.86 | 3.70 |
| | | | 27 / 19 | 44.39 | 32.88 | 25.45 | 8.52 | 39.85 | 3.86 |
| | | | 30 / 21 | 45.14 | 34.82 | 26.82 | 8.67 | 41.93 | 4.02 |
| 35 | 7.18 | 37.1 | 19 / 15 | 39.39 | 29.84 | 19.30 | 8.01 | 36.33 | 3.73 |
| | | | 24 / 17 | 39.63 | 31.75 | 24.34 | 8.08 | 38.30 | 3.93 |
| | | | 27 / 19 | 39.89 | 33.79 | 25.82 | 8.16 | 40.42 | 4.14 |
| | | | 30 / 21 | 40.16 | 35.95 | 27.24 | 8.24 | 42.66 | 4.36 |
| | 3.60 | 10.35 | 19 / 15 | 43.62 | 28.81 | 18.82 | 8.48 | 35.74 | 3.40 |
| | | | 24 / 17 | 44.07 | 30.59 | 23.84 | 8.58 | 37.61 | 3.57 |
| | | | 27 / 19 | 44.55 | 32.49 | 25.30 | 8.68 | 39.61 | 3.74 |
| | | | 30 / 21 | 45.06 | 34.49 | 26.70 | 8.80 | 41.72 | 3.92 |
| | 2.40 | 5.17 | 19 / 15 | 47.72 | 27.77 | 18.35 | 8.97 | 35.16 | 3.10 |
| | | | 24 / 17 | 48.37 | 29.45 | 23.35 | 9.09 | 36.95 | 3.24 |
| | | | 27 / 19 | 49.04 | 31.20 | 24.79 | 9.22 | 38.83 | 3.38 |
| | | | 30 / 21 | 49.76 | 33.05 | 26.17 | 9.36 | 40.80 | 3.53 |
| 40 | 7.18 | 37.1 | 19 / 15 | 44.29 | 28.26 | 18.57 | 8.74 | 35.43 | 3.23 |
| | | | 24 / 17 | 44.52 | 30.09 | 23.62 | 8.80 | 37.32 | 3.42 |
| | | | 27 / 19 | 44.76 | 32.02 | 25.11 | 8.87 | 39.32 | 3.61 |
| | | | 30 / 21 | 45.02 | 34.08 | 26.55 | 8.95 | 41.45 | 3.81 |
| | 3.60 | 10.35 | 19 / 15 | 48.42 | 27.20 | 18.08 | 9.24 | 34.84 | 2.94 |
| | | | 24 / 17 | 48.85 | 28.92 | 23.13 | 9.34 | 36.65 | 3.10 |
| | | | 27 / 19 | 49.31 | 30.70 | 24.59 | 9.44 | 38.52 | 3.25 |
| | | | 30 / 21 | 49.79 | 32.59 | 26.01 | 9.55 | 40.52 | 3.41 |
| 45 | 7.18 | 37.1 | 19 / 15 | 49.18 | 26.53 | 17.78 | 9.57 | 34.48 | 2.77 |
| | | | 24 / 17 | 49.41 | 28.29 | 22.86 | 9.63 | 36.30 | 2.94 |
| | | | 27 / 19 | 49.63 | 30.11 | 24.36 | 9.70 | 38.18 | 3.10 |
| | | | 30 / 21 | 49.88 | 32.05 | 25.81 | 9.77 | 40.20 | 3.28 |
| | 3.60 | 10.35 | 19 / 15 | 53.21 | 25.47 | 17.30 | 10.09 | 33.91 | 2.52 |
| | | | 24 / 17 | 53.63 | 27.12 | 22.37 | 1019 | 35.65 | 2.66 |
| | | | 27 / 19 | 54.06 | 28.79 | 23.85 | 10.29 | 37.42 | 2.80 |
| | | | 30 / 21 | 54.51 | 30.57 | 25.29 | 10.40 | 39.30 | 2.94 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# COOLING CAPACITIES
## MODEL WPHBA 1201

Nominal air flow 7000 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 1201 – COOLING MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 15 | 2.80 | 6.40 | 19 / 15 | 28.74 | 38.33 | 23.88 | 7.79 | 44.67 | 4.92 |
| | | | 24 / 17 | 29.51 | 40.69 | 29.40 | 7.92 | 47.16 | 5.14 |
| | | | 27 / 19 | 30.30 | 43.13 | 30.94 | 8.06 | 49.73 | 5.35 |
| | | | 30 / 21 | 31.14 | 45.73 | 32.40 | 8.20 | 52.46 | 5.57 |
| | 2.10 | 4.03 | 19 / 15 | 33.08 | 37.27 | 23.37 | 8.26 | 44.06 | 4.51 |
| | | | 24 / 17 | 34.06 | 39.51 | 28.86 | 8.42 | 46.45 | 4.69 |
| | | | 27 / 19 | 35.08 | 41.82 | 30.38 | 8.59 | 48.93 | 4.87 |
| | | | 30 / 21 | 36.14 | 44.24 | 31.82 | 8.78 | 51.51 | 5.04 |
| | 1.68 | 2.70 | 19 / 15 | 37.29 | 36.23 | 22.87 | 8.73 | 43.46 | 4.15 |
| | | | 24 / 17 | 38.47 | 38.33 | 28.34 | 8.92 | 45.74 | 4.30 |
| | | | 27 / 19 | 39.69 | 40.52 | 29.84 | 9.13 | 48.13 | 4.44 |
| | | | 30 / 21 | 40.95 | 42.77 | 31.26 | 9.35 | 50.58 | 4.58 |
| | 1.40 | 1.92 | 19 / 15 | 41.40 | 35.21 | 22.39 | 9.19 | 42.87 | 3.83 |
| | | | 24 / 17 | 42.74 | 37.18 | 27.82 | 9.42 | 45.06 | 3.94 |
| | | | 27 / 19 | 44.16 | 39.24 | 29.31 | 9.67 | 47.35 | 4.06 |
| | | | 30 / 21 | 45.59 | 41.34 | 30.71 | 9.92 | 49.68 | 4.17 |
| 20 | 4.19 | 13.6 | 19 / 15 | 29.16 | 38.02 | 23.73 | 7.92 | 44.49 | 4.80 |
| | | | 24 / 17 | 29.68 | 40.43 | 29.29 | 8.03 | 47.00 | 5.04 |
| | | | 27 / 19 | 30.22 | 42.94 | 30.86 | 8.14 | 49.61 | 5.28 |
| | | | 30 / 21 | 30.79 | 45.60 | 32.36 | 8.25 | 52.38 | 5.53 |
| | 2.80 | 6.40 | 19 / 15 | 33.52 | 36.95 | 23.22 | 8.40 | 43.87 | 4.40 |
| | | | 24 / 17 | 34.26 | 39.23 | 28.74 | 8.54 | 46.28 | 4.59 |
| | | | 27 / 19 | 35.04 | 41.61 | 30.29 | 8.68 | 48.79 | 4.79 |
| | | | 30 / 21 | 35.85 | 44.09 | 31.76 | 8.83 | 51.41 | 4.99 |
| | 2.10 | 4.03 | 19 / 15 | 37.78 | 35.89 | 22.71 | 8.88 | 43.26 | 4.04 |
| | | | 24 / 17 | 38.73 | 38.03 | 28.20 | 9.06 | 45.56 | 4.20 |
| | | | 27 / 19 | 39.72 | 40.27 | 29.74 | 9.24 | 47.98 | 4.36 |
| | | | 30 / 21 | 40.74 | 42.58 | 31.18 | 9.43 | 50.46 | 4.52 |
| | 1.68 | 2.70 | 19 / 15 | 41.92 | 34.84 | 22.21 | 9.37 | 42.66 | 3.72 |
| | | | 24 / 17 | 43.05 | 36.84 | 27.67 | 9.57 | 44.86 | 3.85 |
| | | | 27 / 19 | 44.24 | 38.95 | 29.19 | 9.79 | 47.17 | 3.98 |
| | | | 30 / 21 | 45.46 | 41.10 | 30.62 | 10.02 | 49.54 | 4.10 |
| 25 | 8.39 | 49.35 | 19 / 15 | 29.57 | 37.70 | 23.57 | 8.06 | 44.30 | 4.68 |
| | | | 24 / 17 | 29.83 | 40.16 | 29.16 | 8.14 | 46.84 | 4.93 |
| | | | 27 / 19 | 30.10 | 42.73 | 30.77 | 8.22 | 49.48 | 5.20 |
| | | | 30 / 21 | 30.39 | 45.46 | 32.30 | 8.30 | 52.29 | 5.48 |
| | 4.1 | 13.6 | 19 / 15 | 34.01 | 36.60 | 23.05 | 8.56 | 43.66 | 4.28 |
| | | | 24 / 17 | 34.51 | 38.92 | 28.60 | 8.67 | 46.09 | 4.49 |
| | | | 27 / 19 | 35.04 | 41.35 | 30.19 | 8.79 | 48.63 | 4.71 |
| | | | 30 / 21 | 35.59 | 43.89 | 31.69 | 8.91 | 51.29 | 4.93 |
| | 2.80 | 6.40 | 19 / 15 | 38.30 | 35.51 | 22.53 | 9.06 | 43.04 | 3.92 |
| | | | 24 / 17 | 39.01 | 37.69 | 28.05 | 9.20 | 45.36 | 4.10 |
| | | | 27 / 19 | 39.76 | 39.98 | 29.62 | 9.36 | 47.80 | 4.27 |
| | | | 30 / 21 | 40.54 | 42.35 | 31.10 | 9.52 | 50.32 | 4.45 |
| | 2.1 | 4.03 | 19 / 15 | 42.48 | 34.43 | 22.02 | 9.57 | 42.44 | 3.60 |
| | | | 24 / 17 | 43.39 | 36.46 | 27.51 | 9.74 | 44.64 | 3.74 |
| | | | 27 / 19 | 44.35 | 38.62 | 29.06 | 9.93 | 46.97 | 3.89 |
| | | | 30 / 21 | 45.33 | 40.83 | 30.52 | 10.13 | 49.37 | 4.03 |

# COOLING CAPACITIES
## MODEL WPHBA 1201

Nominal air flow 7000 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 1201 – COOLNIG MODE | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | Pf (kW) | Ps (kW) | Pabs (kW) | CC (kW) | EER |
| 30 | 8.39 | 49.35 | 19 / 15 | 34.49 | 36.20 | 22.86 | 8.74 | 43.43 | 4.14 |
| | | | 24 / 17 | 34.74 | 38.56 | 28.44 | 8.82 | 45.88 | 4.37 |
| | | | **27 / 19** | **35.00** | **41.06** | **30.06** | **8.91** | **48.45** | **4.61** |
| | | | 30 / 21 | 35.28 | 43.67 | 31.60 | 8.9 | 51.15 | 4.86 |
| | 4.19 | 13.6 | 19 / 15 | 38.85 | 35.07 | 22.32 | 9.26 | 42.80 | 3.79 |
| | | | 24 / 17 | 39.33 | 37.29 | 27.87 | 9.38 | 45.12 | 3.98 |
| | | | 27 / 19 | 39.84 | 39.64 | 29.48 | 9.50 | 47.59 | 4.17 |
| | | | 30 / 21 | 40.37 | 42.08 | 30.99 | 9.63 | 50.15 | 4.37 |
| | 2.80 | 6.40 | 19 / 15 | 43.06 | 33.97 | 21.80 | 9.79 | 42.19 | 3.47 |
| | | | 24 / 17 | 43.74 | 36.04 | 27.32 | 9.93 | 44.40 | 3.63 |
| | | | 27 / 19 | 44.47 | 38.25 | 28.90 | 10.09 | 46.75 | 3.79 |
| | | | 30 / 21 | 45.22 | 40.51 | 30.40 | 10.25 | 49.17 | 3.95 |
| 35 | 8.39 | 49.35 | 19 / 15 | 39.40 | 34.59 | 22.10 | 9.48 | 42.53 | 3.65 |
| | | | 24 / 17 | 39.64 | 36.86 | 27.68 | 9.56 | 44.87 | 3.85 |
| | | | 27 / 19 | 39.90 | 39.27 | 29.32 | 9.66 | 47.37 | 4.07 |
| | | | 30 / 21 | 40.17 | 41.77 | 30.87 | 9.75 | 49.95 | 4.29 |
| | 4.19 | 13.6 | 19 / 15 | 43.68 | 33.46 | 21.56 | 10.04 | 41.91 | 3.33 |
| | | | 24 / 17 | 44.14 | 33.57 | 27.11 | 10.16 | 44.13 | 3.50 |
| | | | 27 / 19 | 44.63 | 37.82 | 28.73 | 10.27 | 46.49 | 3.68 |
| | | | 30 / 21 | 45.14 | 40.15 | 30.26 | 10.40 | 48.94 | 3.86 |
| | 2.80 | 6.40 | 19 / 15 | 47.81 | 32.34 | 21.04 | 10.59 | 41.32 | 3.05 |
| | | | 24 / 17 | 48.47 | 34.31 | 26.57 | 10.74 | 43.43 | 3.19 |
| | | | 27 / 19 | 49.16 | 36.40 | 28.16 | 10.90 | 45.66 | 3.34 |
| | | | 30 / 21 | 49.88 | 38.58 | 29.68 | 11.06 | 47.99 | 3.49 |
| 40 | 8.39 | 49.35 | 19 / 15 | 44.31 | 32.88 | 21.29 | 10.32 | 41.60 | 3.19 |
| | | | 24 / 17 | 44.54 | 35.03 | 26.88 | 10.40 | 43.82 | 3.37 |
| | | | 27 / 19 | 44.79 | 37.32 | 28.53 | 1.049 | 46.20 | 3.56 |
| | | | 30 / 21 | 45.05 | 39.72 | 30.10 | 10.58 | 48.68 | 3.76 |
| | 4.19 | 13.6 | 19 / 15 | 48.51 | 31.73 | 20.76 | 10.90 | 40.99 | 2.91 |
| | | | 24 / 17 | 48.95 | 33.73 | 26.32 | 11.02 | 43.11 | 3.06 |
| | | | 27 / 19 | 49.41 | 35.85 | 27.94 | 11.14 | 45.35 | 3.22 |
| | | | 30 / 21 | 49.90 | 38.09 | 29.50 | 11.27 | 47.70 | 3.38 |
| 45 | 8.39 | 49.35 | 19 / 15 | 49.22 | 31.04 | 20.44 | 11.24 | 40.63 | 2.76 |
| | | | 24 / 17 | 49.44 | 33.08 | 26.04 | 11.33 | 42.5 | 2.92 |
| | | | 27 / 19 | 49.67 | 35.24 | 27.70 | 11.42 | 44.99 | 3.09 |
| | | | 30 / 21 | 49.92 | 37.54 | 29.30 | 11.51 | 47.37 | 3.26 |
| | 4.19 | 13.6 | 19 / 15 | 53.32 | 29.89 | 19.92 | 11.81 | 40.01 | 2.53 |
| | | | 24 / 17 | 53.74 | 31.80 | 25.49 | 11.94 | 42.04 | 2.66 |
| | | | 27 / 19 | 54.18 | 33.78 | 27.12 | 12.07 | 44.15 | 2.80 |
| | | | 30 / 21 | 54.64 | 35.90 | 28.70 | 12.20 | 46.39 | 2.94 |

NOTE:
Cooling capacities are net capacities, after deducting the heat of the interior motor.
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature.
Pf: Total cooling capacity.
Ps: Sensible cooling capacity.
Pabs: Total power input.
CC: Condenser capacity.

# HEAT CAPACITIES
## MODEL WPHBA 091

Nominal air flow 500 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 091 – HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 0.500 | 8.72 | 24 | 8.80 | 2.36 | 0.77 | 1.86 | 3.07 |
| | | | 20 | 8.62 | 2.44 | 0.74 | 1.97 | 3.32 |
| | | | 16 | 8.45 | 2.51 | 0.70 | 2.07 | 3.58 |
| | 0.250 | 2.55 | 24 | 6.25 | 2.15 | 0.74 | 1.67 | 2.91 |
| | | | 20 | 5.93 | 2.22 | 0.71 | 1.77 | 3.14 |
| | | | 16 | 5.62 | 2.28 | 0.67 | 1.86 | 3.38 |
| 14 | 0.500 | 8.72 | 24 | 10.57 | 2.51 | 0.79 | 1.99 | 3.18 |
| | | | 20 | 10.40 | 2.58 | 0.76 | 2.10 | 3.42 |
| | | | 16 | 10.26 | 2.63 | 0.72 | 2.18 | 3.67 |
| | 0.250 | 2.55 | 24 | 7.85 | 2.28 | 0.76 | 1.79 | 3.01 |
| | | | 20 | 7.52 | 2.35 | 0.72 | 1.89 | 3.24 |
| | | | 16 | 7.21 | 2.41 | 0.69 | 1.98 | 3.49 |
| | 0.166 | 1.28 | 24 | 5.56 | 2.11 | 0.73 | 1.63 | 2.87 |
| | | | 20 | 5.12 | 2.16 | 0.70 | 1.72 | 3.09 |
| | | | 16 | 4.70 | 2.22 | 0.67 | 1.80 | 3.32 |
| 16 | 0.500 | 8.72 | 24 | 12.37 | 2.64 | 0.60 | 2.11 | 4.44 |
| | | | 20 | 12.23 | 2.69 | 0.55 | 2.19 | 4.87 |
| | | | 16 | 12.10 | 2.73 | 0.51 | 2.27 | 5.34 |
| | 0.250 | 2.55 | 24 | 9.43 | 2.42 | 0.56 | 1.91 | 4.32 |
| | | | 20 | 9.10 | 2.48 | 0.52 | 2.01 | 4.73 |
| | | | 16 | 8.80 | 2.54 | 0.49 | 2.09 | 5.20 |
| | 0.166 | 1.28 | 24 | 7.01 | 2.22 | 0.53 | 1.74 | 4.16 |
| | | | 20 | 6.56 | 2.28 | 0.50 | 1.82 | 4.56 |
| | | | 16 | 6.14 | 2.33 | 0.46 | 1.91 | 5.02 |
| 18 | 0.500 | 8.72 | 24 | 14.23 | 2.73 | 0.82 | 2.19 | 3.32 |
| | | | 20 | 14.10 | 2.77 | 0.78 | 2.27 | 3.56 |
| | | | 16 | 13.99 | 2.80 | 0.73 | 2.33 | 3.82 |
| | 0.250 | 2.55 | 24 | 11.03 | 2.55 | 0.80 | 2.03 | 3.20 |
| | | | 20 | 10.71 | 2.61 | 0.76 | 2.12 | 3.44 |
| | | | 16 | 10.47 | 2.65 | 0.72 | 2.19 | 3.68 |
| | 0.166 | 1.28 | 24 | 8.44 | 2.34 | 0.77 | 1.84 | 3.06 |
| | | | 20 | 7.99 | 2.40 | 0.73 | 1.93 | 3.29 |
| | | | 16 | 7.58 | 2.45 | 0.69 | 2.01 | 3.53 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 091

Nominal air flow 500 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 091 – HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 0.500 | 8.72 | 24 | 16.12 | 2.80 | 0.83 | 2.25 | 3.37 |
| | | | **20** | **16.00** | **2.83** | **0.78** | **2.32** | **3.61** |
| | | | 16 | 15.89 | 2.85 | 0.74 | 2.38 | 3.87 |
| | 0.250 | 2.55 | 24 | 12.69 | 2.66 | 0.81 | 2.12 | 3.27 |
| | | | 20 | 12.42 | 2.70 | 0.77 | 2.20 | 3.51 |
| | | | 16 | 12.20 | 2.73 | 0.73 | 2.27 | 3.75 |
| | 0.166 | 1.28 | 24 | 9.87 | 2.46 | 0.78 | 1.95 | 3.15 |
| | | | 20 | 9.43 | 2.52 | 0.75 | 2.04 | 3.38 |
| | | | 16 | 9.03 | 2.56 | 0.71 | 2.12 | 3.62 |
| 22 | 0.500 | 8.72 | 24 | 18.03 | 2.85 | 0.84 | 2.30 | 3.41 |
| | | | 20 | 17.91 | 2.88 | 0.79 | 2.37 | 3.65 |
| | | | 16 | 17.81 | 2.90 | 0.74 | 2.43 | 3.91 |
| | 0.250 | 2.55 | 24 | 14.44 | 2.74 | 0.82 | 2.19 | 3.33 |
| | | | 20 | 14.19 | 2.77 | 0.78 | 2.26 | 3.56 |
| | | | 16 | 13.99 | 2.79 | 0.73 | 2.32 | 3.81 |
| | 0.166 | 1.28 | 24 | 11.34 | 2.58 | 0.80 | 2.05 | 3.22 |
| | | | 20 | 10.92 | 2.63 | 0.76 | 2.14 | 3.45 |
| | | | 16 | 10.58 | 2.66 | 0.72 | 2.20 | 3.69 |
| 24 | 0.500 | 8.72 | 24 | 19.40 | 3.62 | 0.74 | 2.66 | 4.87 |
| | | | 20 | 19.82 | 2.93 | 0.80 | 2.42 | 3.69 |
| | | | 16 | 19.72 | 2.95 | 0.75 | 2.48 | 3.95 |
| | 0.250 | 2.55 | 24 | 16.24 | 2.80 | 0.83 | 2.25 | 3.37 |
| | | | 20 | 16.01 | 2.82 | 0.78 | 2.32 | 3.61 |
| | | | 16 | 15.81 | 2.84 | 0.74 | 2.37 | 3.86 |
| | 0.166 | 1.28 | 24 | 12.90 | 2.67 | 0.82 | 2.14 | 3.28 |
| | | | 20 | 12.53 | 2.71 | 0.77 | 2.21 | 3.51 |
| | | | 16 | 12.22 | 2.73 | 0.73 | 2.27 | 3.76 |
| 27 | 0.500 | 8.72 | 24 | 22.82 | 2.98 | 0.85 | 2.41 | 3.49 |
| | | | 20 | 22.70 | 3.01 | 0.80 | 2.49 | 3.74 |
| | | | 16 | 22.60 | 3.03 | 0.76 | 2.55 | 4.00 |
| | 0.250 | 2.55 | 24 | 18.99 | 2.87 | 0.84 | 2.32 | 3.42 |
| | | | 20 | 18.76 | 2.90 | 0.79 | 2.38 | 3.66 |
| | | | 16 | 18.56 | 2.91 | 0.74 | 2.44 | 3.92 |
| | 0.166 | 1.28 | 24 | 15.42 | 2.77 | 0.83 | 2.22 | 3.35 |
| | | | 20 | 15.08 | 2.80 | 0.78 | 2.29 | 3.58 |
| | | | 16 | 14.80 | 2.81 | 0.73 | 2.34 | 3.83 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 121

Nominal air flow 600 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 121 – HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 0.680 | 15.46 | 24 | 8.89 | 3.24 | 1.02 | 2.47 | 3.18 |
| | | | 20 | 8.70 | 3.35 | 0.97 | 2.62 | 3.44 |
| | | | 16 | 8.53 | 3.45 | 0.93 | 2.75 | 3.71 |
| | 0.340 | 4.30 | 24 | 6.39 | 2.96 | 0.97 | 2.22 | 3.04 |
| | | | 20 | 6.06 | 3.05 | 0.93 | 2.36 | 3.29 |
| | | | 16 | 5.75 | 3.14 | 0.88 | 2.48 | 3.55 |
| 14 | 0.680 | 15.46 | 24 | 10.67 | 3.44 | 1.06 | 2.63 | 3.26 |
| | | | 20 | 10.49 | 3.54 | 1.01 | 2.78 | 3.51 |
| | | | 16 | 10.33 | 3.62 | 0.96 | 2.90 | 3.78 |
| | 0.340 | 4.30 | 24 | 7.99 | 3.14 | 1.00 | 2.38 | 3.13 |
| | | | 20 | 7.65 | 3.23 | 0.96 | 2.51 | 3.38 |
| | | | 16 | 7.34 | 3.32 | 0.91 | 2.64 | 3.65 |
| | 0.23 | 2.17 | 24 | 5.87 | 2.91 | 0.96 | 2.18 | 3.02 |
| | | | 20 | 5.42 | 2.99 | 0.92 | 2.30 | 3.25 |
| | | | 16 | 5.00 | 3.06 | 0.87 | 2.41 | 3.50 |
| 16 | 0.680 | 15.46 | 24 | 12.48 | 3.61 | 1.09 | 2.78 | 3.31 |
| | | | 20 | 12.33 | 3.68 | 1.03 | 2.90 | 3.57 |
| | | | 16 | 12.19 | 3.74 | 0.97 | 3.01 | 3.85 |
| | 0.340 | 4.30 | 24 | 9.59 | 3.32 | 1.03 | 2.53 | 3.22 |
| | | | 20 | 9.26 | 3.41 | 0.98 | 2.67 | 3.47 |
| | | | 16 | 8.95 | 3.49 | 0.94 | 2.79 | 3.73 |
| | 0.23 | 2.17 | 24 | 7.34 | 3.07 | 0.99 | 2.32 | 3.10 |
| | | | 20 | 6.88 | 3.15 | 0.94 | 2.44 | 3.34 |
| | | | 16 | 6.46 | 3.22 | 0.90 | 2.55 | 3.59 |
| 18 | 0.680 | 15.46 | 24 | 14.35 | 3.73 | 1.11 | 2.88 | 3.36 |
| | | | 20 | 14.21 | 3.79 | 1.05 | 3.00 | 3.62 |
| | | | 16 | 14.08 | 3.84 | 0.98 | 3.10 | 3.90 |
| | 0.340 | 4.30 | 24 | 11.22 | 3.49 | 1.07 | 2.68 | 3.28 |
| | | | 20 | 10.90 | 3.57 | 1.01 | 2.81 | 3.53 |
| | | | 16 | 10.61 | 3.64 | 0.96 | 2.92 | 3.79 |
| | 0.23 | 2.17 | 24 | 8.80 | 3.23 | 1.02 | 2.46 | 3.18 |
| | | | 20 | 8.34 | 3.31 | 0.97 | 2.58 | 3.42 |
| | | | 16 | 7.92 | 3.38 | 0.92 | 2.70 | 3.68 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 121

Nominal air flow 600 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 121 – HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 0.680 | 15.46 | 24 | 16.25 | 3.83 | 1.13 | 2.96 | 3.40 |
| | | | **20** | **16.11** | **3.87** | **1.06** | **3.07** | **3.66** |
| | | | 16 | 15.98 | 3.92 | 0.99 | 3.17 | 3.94 |
| | 0.340 | 4.30 | 24 | 12.92 | 3.63 | 1.09 | 2.79 | 3.32 |
| | | | 20 | 12.63 | 3.69 | 1.03 | 2.91 | 3.58 |
| | | | 16 | 12.37 | 3.74 | 0.97 | 3.01 | 3.85 |
| | 0.23 | 2.17 | 24 | 10.27 | 3.40 | 1.05 | 2.60 | 3.24 |
| | | | 20 | 9.81 | 3.47 | 0.99 | 2.72 | 3.49 |
| | | | 16 | 9.41 | 3.54 | 0.94 | 2.83 | 3.75 |
| 22 | 0.680 | 15.46 | 24 | 18.16 | 3.90 | 1.14 | 3.03 | 3.42 |
| | | | 20 | 18.02 | 3.95 | 1.07 | 3.13 | 3.69 |
| | | | 16 | 17.90 | 3.99 | 1.00 | 3.23 | 3.97 |
| | 0.340 | 4.30 | 24 | 14.67 | 3.74 | 1.11 | 2.89 | 3.37 |
| | | | 20 | 14.41 | 3.79 | 1.05 | 3.00 | 3.62 |
| | | | 16 | 14.16 | 3.83 | 0.98 | 3.09 | 3.89 |
| | 0.23 | 2.17 | 24 | 11.78 | 3.55 | 1.08 | 2.73 | 3.29 |
| | | | 20 | 11.35 | 3.62 | 1.02 | 2.84 | 3.54 |
| | | | 16 | 11.00 | 3.66 | 0.96 | 2.94 | 3.80 |
| 24 | 0.680 | 15.46 | 24 | 19.79 | 4.92 | 0.86 | 3.32 | 5.70 |
| | | | 20 | 19.94 | 4.02 | 1.08 | 3.20 | 3.72 |
| | | | 16 | 19.82 | 4.06 | 1.01 | 3.29 | 4.00 |
| | 0.340 | 4.30 | 24 | 16.48 | 3.82 | 1.13 | 2.96 | 3.40 |
| | | | 20 | 16.22 | 3.87 | 1.06 | 3.06 | 3.66 |
| | | | 16 | 15.99 | 3.90 | 0.99 | 3.16 | 3.93 |
| | 0.23 | 2.17 | 24 | 13.40 | 3.67 | 1.10 | 2.83 | 3.34 |
| | | | 20 | 13.01 | 3.72 | 1.04 | 2.93 | 3.59 |
| | | | 16 | 12.65 | 3.76 | 0.97 | 3.02 | 3.85 |
| 27 | 0.680 | 15.46 | 24 | 22.96 | 4.07 | 1.17 | 3.17 | 3.48 |
| | | | 20 | 22.83 | 4.12 | 1.10 | 3.28 | 3.75 |
| | | | 16 | 22.70 | 4.16 | 1.03 | 3.38 | 4.04 |
| | 0.340 | 4.30 | 24 | 19.24 | 3.93 | 1.14 | 3.05 | 3.43 |
| | | | 20 | 18.98 | 3.97 | 1.07 | 3.15 | 3.70 |
| | | | 16 | 18.74 | 4.01 | 1.01 | 3.25 | 3.98 |
| | 0.23 | 2.17 | 24 | 15.96 | 3.80 | 1.12 | 2.94 | 3.39 |
| | | | 20 | 15.59 | 3.84 | 1.05 | 3.04 | 3.65 |
| | | | 16 | 15.25 | 3.87 | 0.99 | 3.13 | 3.91 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 141

Nominal air flow 700 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 141 – HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 0.830 | 22.42 | 24 | 8.95 | 3.93 | 1.24 | 2.95 | 3.16 |
| | | | 20 | 8.76 | 4.07 | 1.19 | 3.13 | 3.42 |
| | | | 16 | 8.58 | 4.19 | 1.13 | 3.31 | 3.70 |
| | 0.415 | 6.04 | 24 | 6.49 | 3.60 | 1.18 | 2.67 | 3.04 |
| | | | 20 | 6.15 | 3.71 | 1.13 | 2.83 | 3.29 |
| | | | 16 | 5.83 | 3.82 | 1.07 | 2.98 | 3.56 |
| 14 | 0.830 | 22.42 | 24 | 10.74 | 4.18 | 1.30 | 3.15 | 3.22 |
| | | | 20 | 10.55 | 4.31 | 1.24 | 3.33 | 3.48 |
| | | | 16 | 10.39 | 4.41 | 1.17 | 3.49 | 3.75 |
| | 0.415 | 6.04 | 24 | 8.11 | 3.81 | 1.22 | 2.85 | 3.12 |
| | | | 20 | 7.76 | 3.93 | 1.16 | 3.02 | 3.38 |
| | | | 16 | 7.44 | 4.04 | 1.11 | 3.17 | 3.65 |
| | 0.280 | 3.05 | 24 | 5.99 | 3.53 | 1.17 | 2.61 | 3.02 |
| | | | 20 | 5.53 | 3.63 | 1.11 | 2.76 | 3.26 |
| | | | 16 | 5.10 | 3.72 | 1.06 | 2.90 | 3.52 |
| 16 | 0.830 | 22.42 | 24 | 12.56 | 4.40 | 1.35 | 3.32 | 3.26 |
| | | | 20 | 12.41 | 4.47 | 1.27 | 3.47 | 3.52 |
| | | | 16 | 12.26 | 4.55 | 1.20 | 3.61 | 3.81 |
| | 0.415 | 6.04 | 24 | 9.72 | 4.04 | 1.27 | 3.03 | 3.19 |
| | | | 20 | 9.38 | 4.15 | 1.20 | 3.20 | 3.44 |
| | | | 16 | 9.06 | 4.25 | 1.14 | 3.35 | 3.71 |
| | 0.280 | 3.05 | 24 | 7.47 | 3.73 | 1.21 | 2.78 | 3.09 |
| | | | 20 | 7.00 | 3.83 | 1.15 | 2.93 | 3.34 |
| | | | 16 | 6.57 | 3.92 | 1.09 | 3.07 | 3.60 |
| 18 | 0.830 | 22.42 | 24 | 14.41 | 4.72 | 1.42 | 3.46 | 3.32 |
| | | | 20 | 14.28 | 4.62 | 1.29 | 3.59 | 3.57 |
| | | | 16 | 14.14 | 4.68 | 1.22 | 3.72 | 3.85 |
| | 0.415 | 6.04 | 24 | 11.36 | 4.25 | 1.31 | 3.20 | 3.23 |
| | | | 20 | 11.02 | 4.35 | 1.25 | 3.37 | 3.49 |
| | | | 16 | 10.73 | 4.43 | 1.18 | 3.51 | 3.76 |
| | 0.280 | 3.05 | 24 | 8.95 | 3.93 | 1.24 | 2.95 | 3.16 |
| | | | 20 | 8.48 | 4.03 | 1.18 | 3.10 | 3.41 |
| | | | 16 | 8.04 | 4.12 | 1.12 | 3.24 | 3.68 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 141

Nominal air flow 700 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 141 – HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 0.830 | 22.42 | 24 | 16.32 | 4.66 | 1.40 | 3.54 | 3.33 |
| | | | **20** | **16.18** | **4.73** | **1.31** | **3.68** | **3.60** |
| | | | 16 | 16.05 | 4.78 | 1.23 | 3.81 | 3.88 |
| | 0.415 | 6.04 | 24 | 13.05 | 4.43 | 1.36 | 3.35 | 3.27 |
| | | | 20 | 12.77 | 4.49 | 1.27 | 3.48 | 3.53 |
| | | | 16 | 12.49 | 4.56 | 1.20 | 3.62 | 3.81 |
| | 0.280 | 3.05 | 24 | 10.43 | 4.14 | 1.29 | 3.11 | 3.21 |
| | | | 20 | 9.96 | 4.23 | 1.22 | 3.26 | 3.46 |
| | | | 16 | 9.54 | 4.31 | 1.15 | 3.40 | 3.73 |
| 22 | 0.830 | 22.42 | 24 | 18.24 | 4.76 | 1.42 | 3.62 | 3.35 |
| | | | 20 | 18.09 | 4.82 | 1.33 | 3.76 | 3.62 |
| | | | 16 | 17.96 | 4.87 | 1.25 | 3.89 | 3.91 |
| | 0.415 | 6.04 | 24 | 14.82 | 4.56 | 1.38 | 3.46 | 3.31 |
| | | | 20 | 14.54 | 4.62 | 1.29 | 3.59 | 3.57 |
| | | | 16 | 14.29 | 4.67 | 1.21 | 3.71 | 3.85 |
| | 0.280 | 3.05 | 24 | 11.96 | 4.33 | 1.33 | 3.26 | 3.25 |
| | | | 20 | 11.51 | 4.40 | 1.26 | 3.41 | 3.50 |
| | | | 16 | 11.14 | 4.46 | 1.18 | 3.53 | 3.77 |
| 24 | 0.830 | 22.42 | 24 | 20.16 | 4.85 | 1.44 | 3.69 | 3.37 |
| | | | 20 | 20.01 | 4.90 | 1.35 | 3.83 | 3.64 |
| | | | 16 | 19.88 | 4.96 | 1.26 | 3.96 | 3.93 |
| | 0.415 | 6.04 | 24 | 16.63 | 4.66 | 1.40 | 3.54 | 3.33 |
| | | | 20 | 16.36 | 4.72 | 1.31 | 3.68 | 3.59 |
| | | | 16 | 16.11 | 4.76 | 1.23 | 3.80 | 3.88 |
| | 0.280 | 3.05 | 24 | 13.60 | 4.46 | 1.36 | 3.38 | 3.28 |
| | | | 20 | 13.18 | 4.53 | 1.28 | 3.51 | 3.54 |
| | | | 16 | 12.81 | 4.58 | 1.20 | 3.63 | 3.81 |
| 27 | 0.830 | 22.42 | 24 | 23.05 | 4.97 | 1.46 | 3.79 | 3.40 |
| | | | 20 | 22.90 | 5.03 | 1.37 | 3.93 | 3.67 |
| | | | 16 | 22.76 | 5.08 | 1.28 | 4.07 | 3.96 |
| | 0.415 | 6.04 | 24 | 19.39 | 4.79 | 1.43 | 3.65 | 3.36 |
| | | | 20 | 19.12 | 4.85 | 1.34 | 3.78 | 3.63 |
| | | | 16 | 18.86 | 4.89 | 1.25 | 3.91 | 3.91 |
| | 0.280 | 3.05 | 24 | 16.14 | 4.63 | 1.39 | 3.52 | 3.32 |
| | | | 20 | 15.75 | 4.68 | 1.31 | 3.64 | 3.58 |
| | | | 16 | 15.40 | 4.72 | 1.22 | 3.76 | 3.86 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 171

Nominal air flow 900 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 171 – HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 0.990 | 17.90 | 24 | 8.90 | 4.54 | 1.21 | 3.58 | 3.77 |
| | | | 20 | 8.67 | 4.76 | 1.15 | 3.84 | 4.12 |
| | | | 16 | 8.46 | 4.94 | 1.10 | 4.08 | 4.49 |
| | 0.495 | 4.91 | 24 | 6.46 | 4.10 | 1.14 | 3.20 | 3.61 |
| | | | 20 | 6.06 | 4.29 | 1.09 | 3.43 | 3.95 |
| | | | 16 | 5.70 | 4.44 | 1.03 | 3.64 | 4.32 |
| 14 | 0.990 | 17.90 | 24 | 10.64 | 4.88 | 1.26 | 3.87 | 3.88 |
| | | | 20 | 10.41 | 5.10 | 1.20 | 4.14 | 4.24 |
| | | | 16 | 10.23 | 5.25 | 1.14 | 4.35 | 4.59 |
| | 0.495 | 4.91 | 24 | 8.01 | 4.39 | 1.18 | 3.45 | 3.72 |
| | | | 20 | 7.62 | 4.57 | 1.13 | 3.68 | 4.05 |
| | | | 16 | 7.25 | 4.73 | 1.07 | 3.89 | 4.42 |
| | 0.330 | 2.48 | 24 | 5.86 | 4.02 | 1.13 | 3.13 | 3.57 |
| | | | 20 | 5.34 | 4.18 | 1.07 | 3.33 | 3.90 |
| | | | 16 | 4.86 | 4.31 | 1.01 | 3.52 | 4.26 |
| 16 | 0.990 | 17.90 | 24 | 12.37 | 5.22 | 1.31 | 4.18 | 4.00 |
| | | | 20 | 12.19 | 5.38 | 1.25 | 4.39 | 4.31 |
| | | | 16 | 12.11 | 5.39 | 1.16 | 4.48 | 4.64 |
| | 0.495 | 4.91 | 24 | 9.55 | 4.69 | 1.23 | 3.71 | 3.82 |
| | | | 20 | 9.14 | 4.88 | 1.17 | 3.95 | 4.16 |
| | | | 16 | 8.78 | 5.03 | 1.11 | 4.16 | 4.52 |
| | 0.330 | 2.48 | 24 | 7.27 | 4.28 | 1.16 | 3.35 | 3.68 |
| | | | 20 | 6.73 | 4.44 | 1.11 | 3.56 | 4.01 |
| | | | 16 | 6.24 | 4.57 | 1.05 | 3.75 | 4.35 |
| 18 | 0.990 | 17.90 | 24 | 14.19 | 5.47 | 1.35 | 4.39 | 4.05 |
| | | | 20 | 14.09 | 5.49 | 1.26 | 4.50 | 4.36 |
| | | | 16 | 14.05 | 5.46 | 1.17 | 4.55 | 4.68 |
| | 0.495 | 4.91 | 24 | 11.09 | 4.99 | 1.27 | 3.98 | 3.92 |
| | | | 20 | 10.69 | 5.17 | 1.21 | 4.20 | 4.26 |
| | | | 16 | 10.40 | 5.27 | 1.15 | 4.37 | 4.60 |
| | 0.330 | 2.48 | 24 | 8.66 | 4.55 | 1.21 | 3.58 | 3.77 |
| | | | 20 | 8.12 | 4.70 | 1.15 | 3.79 | 4.10 |
| | | | 16 | 7.63 | 4.83 | 1.08 | 3.98 | 4.46 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 171

Nominal air flow 900 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 171 – HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 0.990 | 17.90 | 24 | 16.10 | 5.56 | 1.36 | 4.48 | 4.09 |
| | | | **20** | **16.03** | **5.56** | **1.27** | **4.56** | **4.39** |
| | | | 16 | 15.99 | 5.52 | 1.17 | 4.61 | 4.71 |
| | 0.495 | 4.91 | 24 | 12.63 | 5.29 | 1.32 | 4.23 | 4.01 |
| | | | 20 | 12.35 | 5.39 | 1.25 | 4.40 | 4.32 |
| | | | 16 | 12.21 | 5.39 | 1.16 | 4.48 | 4.64 |
| | 0.330 | 2.48 | 24 | 10.04 | 4.82 | 1.25 | 3.82 | 3.86 |
| | | | 20 | 9.48 | 4.97 | 1.19 | 4.03 | 4.19 |
| | | | 16 | 9.00 | 5.10 | 1.12 | 4.22 | 4.55 |
| 22 | 0.990 | 17.90 | 24 | 18.04 | 5.64 | 1.37 | 4.55 | 4.12 |
| | | | 20 | 17.98 | 5.62 | 1.27 | 4.62 | 4.42 |
| | | | 16 | 17.94 | 5.58 | 1.18 | 4.67 | 4.75 |
| | 0.495 | 4.91 | 24 | 14.34 | 5.48 | 1.35 | 4.40 | 4.05 |
| | | | 20 | 14.17 | 5.49 | 1.26 | 4.50 | 4.36 |
| | | | 16 | 14.09 | 5.46 | 1.17 | 4.54 | 4.68 |
| | 0.330 | 2.48 | 24 | 11.40 | 5.09 | 1.29 | 4.06 | 3.95 |
| | | | 20 | 10.89 | 5.22 | 1.22 | 4.26 | 4.28 |
| | | | 16 | 10.53 | 5.29 | 1.15 | 4.39 | 4.60 |
| 24 | 0.990 | 17.90 | 24 | 19.98 | 5.71 | 1.38 | 4.61 | 4.15 |
| | | | 20 | 19.92 | 5.68 | 1.28 | 4.67 | 4.45 |
| | | | 16 | 19.88 | 5.65 | 1.18 | 4.72 | 4.77 |
| | 0.495 | 4.91 | 24 | 16.19 | 5.57 | 1.36 | 4.48 | 4.09 |
| | | | 20 | 16.05 | 5.56 | 1.26 | 4.56 | 4.39 |
| | | | 16 | 15.97 | 5.52 | 1.17 | 4.60 | 4.71 |
| | 0.330 | 2.48 | 24 | 12.82 | 5.34 | 1.33 | 4.28 | 4.02 |
| | | | 20 | 12.46 | 5.41 | 1.25 | 4.41 | 4.32 |
| | | | 16 | 12.29 | 5.39 | 1.16 | 4.48 | 4.65 |
| 27 | 0.990 | 17.90 | 24 | 22.89 | 5.81 | 1.39 | 4.71 | 4.18 |
| | | | 20 | 22.84 | 5.77 | 1.29 | 4.76 | 4.48 |
| | | | 16 | 22.80 | 5.74 | 1.19 | 4.81 | 4.81 |
| | 0.495 | 4.91 | 24 | 19.01 | 5.67 | 1.37 | 4.58 | 4.14 |
| | | | 20 | 18.89 | 5.65 | 1.27 | 4.64 | 4.43 |
| | | | 16 | 18.81 | 5.61 | 1.18 | 4.69 | 4.76 |
| | 0.330 | 2.48 | 24 | 15.35 | 5.53 | 1.36 | 4.45 | 4.08 |
| | | | 20 | 15.14 | 5.53 | 1.26 | 4.53 | 4.38 |
| | | | 16 | 15.03 | 5.49 | 1.17 | 4.57 | 4.69 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 201

Nominal air flow 1100 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 201- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 1.23 | 26.81 | 24 | 8.84 | 5.91 | 1.74 | 4.52 | 3.39 |
| | | | 20 | 8.65 | 6.11 | 1.66 | 4.80 | 3.69 |
| | | | 16 | 8.47 | 6.29 | 1.57 | 5.06 | 4.01 |
| | 0.61 | 7.13 | 24 | 6.29 | 5.38 | 1.66 | 4.06 | 3.23 |
| | | | 20 | 5.95 | 5.54 | 1.58 | 4.30 | 3.51 |
| | | | 16 | 5.63 | 5.69 | 1.49 | 4.53 | 3.82 |
| 14 | 1.23 | 26.81 | 24 | 10.61 | 6.29 | 1.81 | 4.85 | 3.48 |
| | | | 20 | 10.42 | 6.48 | 1.72 | 5.12 | 3.78 |
| | | | 16 | 10.25 | 6.64 | 1.62 | 5.37 | 4.10 |
| | 0.61 | 7.13 | 24 | 7.88 | 5.71 | 1.71 | 4.35 | 3.33 |
| | | | 20 | 7.52 | 5.88 | 1.62 | 4.60 | 3.62 |
| | | | 16 | 7.20 | 6.03 | 1.53 | 4.83 | 3.93 |
| | 0.41 | 3.6 | 24 | 5.68 | 5.28 | 1.65 | 3.97 | 3.21 |
| | | | 20 | 5.23 | 5.41 | 1.56 | 4.19 | 3.47 |
| | | | 16 | 4.80 | 5.54 | 1.47 | 4.39 | 3.77 |
| 16 | 1.23 | 26.81 | 24 | 12.43 | 6.60 | 1.86 | 5.11 | 3.55 |
| | | | 20 | 12.25 | 6.75 | 1.75 | 5.36 | 3.85 |
| | | | 16 | 12.10 | 6.88 | 1.65 | 5.58 | 4.17 |
| | 0.61 | 7.13 | 24 | 9.44 | 6.06 | 1.76 | 4.65 | 3.43 |
| | | | 20 | 9.09 | 6.22 | 1.67 | 4.90 | 3.72 |
| | | | 16 | 8.77 | 6.36 | 1.58 | 5.13 | 4.04 |
| | 0.41 | 3.6 | 24 | 7.12 | 5.58 | 1.69 | 4.24 | 3.30 |
| | | | 20 | 6.65 | 5.72 | 1.60 | 4.46 | 3.57 |
| | | | 16 | 6.22 | 5.85 | 1.51 | 4.67 | 3.87 |
| 18 | 1.23 | 26.81 | 24 | 14.28 | 6.83 | 1.89 | 5.32 | 3.61 |
| | | | 20 | 14.12 | 6.96 | 1.78 | 5.55 | 3.91 |
| | | | 16 | 13.97 | 7.07 | 1.67 | 5.75 | 4.23 |
| | 0.61 | 7.13 | 24 | 11.04 | 6.39 | 1.82 | 4.94 | 3.50 |
| | | | 20 | 10.70 | 6.54 | 1.73 | 5.18 | 3.79 |
| | | | 16 | 10.39 | 6.67 | 1.62 | 5.40 | 4.11 |
| | 0.41 | 3.6 | 24 | 8.55 | 5.89 | 1.74 | 4.51 | 3.39 |
| | | | 20 | 8.08 | 6.03 | 1.64 | 4.73 | 3.67 |
| | | | 16 | 7.64 | 6.15 | 1.55 | 4.94 | 3.97 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 201

Nominal air flow 1100 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 201- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 1.23 | 26.81 | 24 | 16.17 | 6.99 | 1.91 | 5.46 | 3.66 |
| | | | **20** | **16.02** | **7.11** | **1.80** | **5.69** | **3.96** |
| | | | 16 | 15.87 | 7.22 | 1.69 | 5.90 | 4.28 |
| | 0.61 | 7.13 | 24 | 12.72 | 6.65 | 1.87 | 5.16 | 3.56 |
| | | | 20 | 12.40 | 6.77 | 1.76 | 5.38 | 3.86 |
| | | | 16 | 12.11 | 6.88 | 1.65 | 5.59 | 4.17 |
| | 0.41 | 3.6 | 24 | 9.98 | 6.20 | 1.79 | 4.77 | 3.47 |
| | | | 20 | 9.50 | 6.34 | 1.69 | 5.00 | 3.75 |
| | | | 16 | 9.06 | 6.45 | 1.59 | 5.21 | 4.06 |
| 22 | 1.23 | 26.81 | 24 | 18.09 | 7.13 | 1.93 | 5.58 | 3.69 |
| | | | 20 | 17.93 | 7.25 | 1.82 | 5.81 | 3.99 |
| | | | 16 | 17.78 | 7.36 | 1.70 | 6.02 | 4.33 |
| | 0.61 | 7.13 | 24 | 14.47 | 6.84 | 1.89 | 5.33 | 3.62 |
| | | | 20 | 14.17 | 6.95 | 1.78 | 5.54 | 3.91 |
| | | | 16 | 13.89 | 7.05 | 1.67 | 5.74 | 4.23 |
| | 0.41 | 3.6 | 24 | 11.45 | 6.49 | 1.84 | 5.02 | 3.53 |
| | | | 20 | 10.99 | 6.62 | 1.74 | 5.24 | 3.81 |
| | | | 16 | 10.57 | 6.72 | 1.63 | 5.44 | 4.12 |
| 24 | 1.23 | 26.81 | 24 | 20.00 | 7.26 | 1.95 | 5.69 | 3.72 |
| | | | 20 | 19.84 | 7.38 | 1.83 | 5.92 | 4.02 |
| | | | 16 | 19.70 | 7.48 | 1.72 | 6.13 | 4.36 |
| | 0.61 | 7.13 | 24 | 16.28 | 6.99 | 1.91 | 5.46 | 3.66 |
| | | | 20 | 15.98 | 7.09 | 1.79 | 5.67 | 3.95 |
| | | | 16 | 15.70 | 7.19 | 1.68 | 5.87 | 4.27 |
| | 0.41 | 3.6 | 24 | 13.04 | 6.71 | 1.87 | 5.21 | 3.58 |
| | | | 20 | 12.61 | 6.81 | 1.76 | 5.41 | 3.87 |
| | | | 16 | 12.21 | 6.90 | 1.65 | 5.60 | 4.18 |
| 27 | 1.23 | 26.81 | 24 | 22.89 | 7.44 | 1.98 | 5.85 | 3.76 |
| | | | 20 | 22.73 | 7.56 | 1.86 | 6.08 | 4.07 |
| | | | 16 | 22.57 | 7.67 | 1.74 | 6.29 | 4.40 |
| | 0.61 | 7.13 | 24 | 19.03 | 7.18 | 1.94 | 5.62 | 3.70 |
| | | | 20 | 18.73 | 7.28 | 1.82 | 5.84 | 4.00 |
| | | | 16 | 18.45 | 7.38 | 1.70 | 6.04 | 4.33 |
| | 0.41 | 3.6 | 24 | 15.60 | 6.93 | 1.90 | 5.41 | 3.64 |
| | | | 20 | 15.17 | 7.03 | 1.79 | 5.61 | 3.93 |
| | | | 16 | 14.77 | 7.12 | 1.67 | 5.80 | 4.25 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 251

Nominal air flow 1500 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 251- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 1.56 | 15.07 | 24 | 8.64 | 7.63 | 1.87 | 6.11 | 4.09 |
| | | | 20 | 8.45 | 7.87 | 1.75 | 6.46 | 4.49 |
| | | | 16 | 8.27 | 8.08 | 1.64 | 6.78 | 4.94 |
| | 0.78 | 4.17 | 24 | 6.05 | 6.86 | 1.79 | 5.41 | 3.84 |
| | | | 20 | 5.73 | 7.05 | 1.68 | 5.71 | 4.21 |
| | | | 16 | 5.42 | 7.23 | 1.56 | 5.99 | 4.63 |
| 14 | 1.56 | 15.07 | 24 | 10.37 | 8.16 | 1.92 | 6.60 | 4.26 |
| | | | 20 | 10.18 | 8.39 | 1.80 | 6.93 | 4.67 |
| | | | 16 | 10.01 | 8.58 | 1.68 | 7.24 | 5.12 |
| | 0.78 | 4.17 | 24 | 7.58 | 7.32 | 1.83 | 5.83 | 3.99 |
| | | | 20 | 7.25 | 7.51 | 1.72 | 6.13 | 4.37 |
| | | | 16 | 6.94 | 7.69 | 1.60 | 6.41 | 4.81 |
| | 0.52 | 2.07 | 24 | 5.34 | 6.68 | 1.77 | 5.25 | 3.78 |
| | | | 20 | 4.90 | 6.84 | 1.66 | 5.52 | 4.14 |
| | | | 16 | 4.48 | 6.99 | 1.54 | 5.77 | 4.54 |
| 16 | 1.56 | 15.07 | 24 | 12.16 | 8.59 | 1.97 | 6.97 | 4.36 |
| | | | 20 | 11.99 | 8.76 | 1.84 | 7.27 | 4.77 |
| | | | 16 | 11.84 | 8.92 | 1.70 | 7.55 | 5.23 |
| | 0.78 | 4.17 | 24 | 9.10 | 7.79 | 1.88 | 6.26 | 4.14 |
| | | | 20 | 8.77 | 7.98 | 1.76 | 6.56 | 4.53 |
| | | | 16 | 8.46 | 8.15 | 1.64 | 6.84 | 4.97 |
| | 0.52 | 2.07 | 24 | 6.72 | 7.08 | 1.81 | 5.62 | 3.92 |
| | | | 20 | 6.28 | 7.25 | 1.69 | 5.89 | 4.28 |
| | | | 16 | 5.86 | 7.39 | 1.57 | 6.14 | 4.70 |
| 18 | 1.56 | 15.07 | 24 | 14.01 | 8.86 | 1.99 | 7.23 | 4.45 |
| | | | 20 | 13.85 | 9.03 | 1.86 | 7.53 | 4.87 |
| | | | 16 | 13.70 | 9.17 | 1.72 | 7.79 | 5.33 |
| | 0.78 | 4.17 | 24 | 10.64 | 8.25 | 1.93 | 6.67 | 4.28 |
| | | | 20 | 10.31 | 8.43 | 1.80 | 6.97 | 4.68 |
| | | | 16 | 10.01 | 8.58 | 1.68 | 7.24 | 5.12 |
| | 0.52 | 2.07 | 24 | 8.08 | 7.50 | 1.85 | 6.00 | 4.05 |
| | | | 20 | 7.64 | 7.66 | 1.73 | 6.27 | 4.42 |
| | | | 16 | 7.22 | 7.80 | 1.61 | 6.52 | 4.85 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 251

Nominal air flow 1500 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 251- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 1.56 | 15.07 | 24 | 15.90 | 9.06 | 2.00 | 7.42 | 4.52 |
| | | | **20** | **15.74** | **9.23** | **1.87** | **7.72** | **4.94** |
| | | | 16 | 15.60 | 9.37 | 1.73 | 7.98 | 5.41 |
| | 0.78 | 4.17 | 24 | 12.28 | 8.61 | 1.97 | 7.00 | 4.37 |
| | | | 20 | 11.98 | 8.76 | 1.84 | 7.27 | 4.77 |
| | | | 16 | 11.69 | 8.89 | 1.70 | 7.53 | 5.22 |
| | 0.52 | 2.07 | 24 | 9.44 | 7.92 | 1.89 | 6.38 | 4.19 |
| | | | 20 | 8.99 | 8.08 | 1.77 | 6.65 | 4.57 |
| | | | 16 | 8.58 | 8.22 | 1.65 | 6.90 | 4.99 |
| 22 | 1.56 | 15.07 | 24 | 17.81 | 9.22 | 2.01 | 7.57 | 4.58 |
| | | | 20 | 17.65 | 9.40 | 1.88 | 7.87 | 5.00 |
| | | | 16 | 17.50 | 9.53 | 1.74 | 8.13 | 5.47 |
| | 0.78 | 4.17 | 24 | 14.02 | 8.85 | 1.99 | 7.22 | 4.45 |
| | | | 20 | 13.72 | 9.00 | 1.85 | 7.50 | 4.86 |
| | | | 16 | 13.44 | 9.12 | 1.72 | 7.75 | 5.31 |
| | 0.52 | 2.07 | 24 | 10.83 | 8.32 | 1.94 | 6.74 | 4.30 |
| | | | 20 | 10.39 | 8.47 | 1.81 | 7.01 | 4.69 |
| | | | 16 | 9.98 | 8.60 | 1.68 | 7.26 | 5.13 |
| 24 | 1.56 | 15.07 | 24 | 19.73 | 9.37 | 2.03 | 7.71 | 4.62 |
| | | | 20 | 19.57 | 9.54 | 1.89 | 8.01 | 5.06 |
| | | | 16 | 19.42 | 9.68 | 1.75 | 8.28 | 5.53 |
| | 0.78 | 4.17 | 24 | 15.82 | 9.03 | 2.00 | 7.39 | 4.51 |
| | | | 20 | 15.51 | 9.18 | 1.86 | 7.67 | 4.92 |
| | | | 16 | 15.24 | 9.31 | 1.73 | 7.92 | 5.38 |
| | 0.52 | 2.07 | 24 | 12.37 | 8.63 | 1.97 | 7.01 | 4.37 |
| | | | 20 | 11.93 | 8.76 | 1.84 | 7.27 | 4.77 |
| | | | 16 | 11.53 | 8.88 | 1.70 | 7.51 | 5.22 |
| 27 | 1.56 | 15.07 | 24 | 22.62 | 9.58 | 2.05 | 7.91 | 4.68 |
| | | | 20 | 22.45 | 9.76 | 1.90 | 8.21 | 5.12 |
| | | | 16 | 22.30 | 9.89 | 1.76 | 8.47 | 5.61 |
| | 0.78 | 4.17 | 24 | 18.57 | 9.25 | 2.02 | 7.60 | 4.59 |
| | | | 20 | 18.25 | 9.41 | 1.88 | 7.89 | 5.01 |
| | | | 16 | 17.98 | 9.54 | 1.74 | 8.14 | 5.48 |
| | 0.52 | 2.07 | 24 | 14.86 | 8.93 | 1.99 | 7.30 | 4.48 |
| | | | 20 | 14.42 | 9.08 | 1.86 | 7.57 | 4.88 |
| | | | 16 | 14.03 | 9.19 | 1.72 | 7.80 | 5.34 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 351

Nominal air flow 2000 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 351- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 2.41 | 34.3 | 24 | 8.74 | 11.73 | 3.04 | 9.15 | 3.85 |
| | | | 20 | 8.55 | 12.09 | 2.84 | 9.70 | 4.26 |
| | | | 16 | 8.37 | 12.42 | 2.65 | 10.21 | 4.69 |
| | 1.20 | 8.93 | 24 | 6.21 | 10.53 | 2.88 | 8.10 | 3.65 |
| | | | 20 | 5.86 | 10.84 | 2.68 | 8.59 | 4.04 |
| | | | 16 | 5.53 | 11.12 | 2.49 | 9.05 | 4.46 |
| 14 | 2.41 | 34.3 | 24 | 10.48 | 12.56 | 3.16 | 9.88 | 3.98 |
| | | | 20 | 10.30 | 12.87 | 2.94 | 10.38 | 4.37 |
| | | | 16 | 10.14 | 13.13 | 2.74 | 10.84 | 4.80 |
| | 1.20 | 8.93 | 24 | 7.75 | 11.26 | 2.98 | 8.74 | 3.78 |
| | | | 20 | 7.39 | 11.57 | 2.78 | 9.23 | 4.17 |
| | | | 16 | 7.07 | 11.83 | 2.58 | 9.68 | 4.59 |
| | 0.80 | 4.42 | 24 | 5.57 | 10.26 | 2.84 | 7.86 | 3.61 |
| | | | 20 | 5.09 | 10.52 | 2.64 | 8.31 | 3.98 |
| | | | 16 | 4.64 | 10.76 | 2.45 | 8.73 | 4.39 |
| 16 | 2.41 | 34.3 | 24 | 12.27 | 13.25 | 3.26 | 10.47 | 4.06 |
| | | | 20 | 12.13 | 13.40 | 3.02 | 10.84 | 4.44 |
| | | | 16 | 11.98 | 13.60 | 2.79 | 11.26 | 4.87 |
| | 1.20 | 8.93 | 24 | 9.29 | 11.98 | 3.08 | 9.37 | 3.90 |
| | | | 20 | 8.94 | 12.26 | 2.86 | 9.85 | 4.29 |
| | | | 16 | 8.63 | 12.52 | 2.66 | 10.29 | 4.71 |
| | 0.80 | 4.42 | 24 | 6.94 | 10.91 | 2.93 | 8.43 | 3.72 |
| | | | 20 | 6.48 | 11.15 | 2.72 | 8.87 | 4.10 |
| | | | 16 | 6.05 | 11.37 | 2.52 | 9.27 | 4.50 |
| 18 | 2.41 | 34.3 | 24 | 14.14 | 13.64 | 3.31 | 10.82 | 4.12 |
| | | | 20 | 13.99 | 13.83 | 3.06 | 11.24 | 4.52 |
| | | | 16 | 13.85 | 14.00 | 2.83 | 11.62 | 4.95 |
| | 1.20 | 8.93 | 24 | 10.83 | 12.70 | 3.18 | 10.00 | 3.99 |
| | | | 20 | 10.51 | 12.94 | 2.95 | 10.44 | 4.38 |
| | | | 16 | 10.22 | 13.14 | 2.74 | 10.85 | 4.80 |
| | 0.80 | 4.42 | 24 | 8.33 | 11.56 | 3.02 | 9.00 | 3.83 |
| | | | 20 | 7.85 | 11.80 | 2.80 | 9.44 | 4.21 |
| | | | 16 | 7.42 | 12.01 | 2.60 | 9.84 | 4.62 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 351

Nominal air flow 2000 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 351- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 2.41 | 34.3 | 24 | 16.02 | 14.00 | 3.35 | 11.14 | 4.18 |
| | | | **20** | **15.88** | **14.15** | **3.10** | **11.54** | **4.56** |
| | | | 16 | 15.74 | 14.31 | 2.86 | 11.91 | 5.01 |
| | 1.20 | 8.93 | 24 | 12.47 | 13.29 | 3.27 | 10.50 | 4.06 |
| | | | 20 | 12.22 | 13.40 | 3.02 | 10.85 | 4.44 |
| | | | 16 | 11.95 | 13.56 | 2.79 | 11.22 | 4.86 |
| | 0.80 | 4.42 | 24 | 9.70 | 12.21 | 3.10 | 9.57 | 3.93 |
| | | | 20 | 9.25 | 12.42 | 2.88 | 9.99 | 4.31 |
| | | | 16 | 8.83 | 12.62 | 2.67 | 10.39 | 4.73 |
| 22 | 2.41 | 34.3 | 24 | 17.93 | 14.28 | 3.38 | 11.39 | 4.22 |
| | | | 20 | 17.78 | 14.44 | 3.13 | 11.78 | 4.62 |
| | | | 16 | 17.65 | 14.58 | 2.88 | 12.15 | 5.05 |
| | 1.20 | 8.93 | 24 | 14.24 | 13.63 | 3.31 | 10.81 | 4.12 |
| | | | 20 | 13.96 | 13.79 | 3.06 | 11.20 | 4.51 |
| | | | 16 | 13.70 | 13.93 | 2.82 | 11.56 | 4.93 |
| | 0.80 | 4.42 | 24 | 11.11 | 12.84 | 3.20 | 10.11 | 4.01 |
| | | | 20 | 10.68 | 13.02 | 2.96 | 10.51 | 4.39 |
| | | | 16 | 10.28 | 13.18 | 2.74 | 10.88 | 4.81 |
| 24 | 2.41 | 34.3 | 24 | 19.84 | 14.52 | 3.41 | 11.61 | 4.25 |
| | | | 20 | 19.70 | 14.68 | 3.15 | 12.01 | 4.65 |
| | | | 16 | 19.57 | 14.83 | 2.91 | 12.37 | 5.09 |
| | 1.20 | 8.93 | 24 | 16.02 | 13.95 | 3.34 | 11.09 | 4.17 |
| | | | 20 | 15.75 | 14.09 | 3.09 | 11.47 | 4.56 |
| | | | 16 | 15.50 | 14.22 | 2.85 | 11.82 | 4.99 |
| | 0.80 | 4.42 | 24 | 12.63 | 13.34 | 3.28 | 10.55 | 4.07 |
| | | | 20 | 12.28 | 13.43 | 3.02 | 10.87 | 4.44 |
| | | | 16 | 11.91 | 13.56 | 2.79 | 11.22 | 4.86 |
| 27 | 2.41 | 34.3 | 24 | 22.71 | 14.86 | 3.46 | 11.95 | 4.30 |
| | | | 20 | 22.58 | 15.03 | 3.19 | 12.32 | 4.71 |
| | | | 16 | 22.45 | 15.18 | 2.95 | 12.69 | 5.15 |
| | 1.20 | 8.93 | 24 | 18.76 | 14.34 | 3.39 | 11.44 | 4.23 |
| | | | 20 | 18.49 | 14.47 | 3.13 | 11.82 | 4.62 |
| | | | 16 | 18.23 | 14.59 | 2.89 | 12.17 | 5.06 |
| | 0.80 | 4.42 | 24 | 15.16 | 13.80 | 3.32 | 10.96 | 4.15 |
| | | | 20 | 14.77 | 13.92 | 3.07 | 11.32 | 4.53 |
| | | | 16 | 14.41 | 14.04 | 2.83 | 11.66 | 4.95 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 401

Nominal air flow 2300 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 401- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 2.78 | 44.8 | 24 | 8.74 | 13.55 | 3.51 | 10.57 | 3.86 |
| | | | 20 | 8.54 | 13.96 | 3.28 | 11.20 | 4.26 |
| | | | 16 | 8.36 | 14.34 | 3.06 | 11.79 | 4.69 |
| | 1.39 | 12.36 | 24 | 6.19 | 12.22 | 3.32 | 9.42 | 3.68 |
| | | | 20 | 5.83 | 12.60 | 3.10 | 10.01 | 4.07 |
| | | | 16 | 5.50 | 12.93 | 2.88 | 10.54 | 4.49 |
| 14 | 2.78 | 44.8 | 24 | 10.49 | 14.45 | 3.65 | 11.34 | 3.96 |
| | | | 20 | 10.31 | 14.81 | 3.40 | 11.93 | 4.35 |
| | | | 16 | 10.15 | 15.13 | 3.16 | 12.47 | 4.78 |
| | 1.39 | 12.36 | 24 | 7.75 | 13.03 | 3.44 | 10.12 | 3.79 |
| | | | 20 | 7.40 | 13.38 | 3.20 | 10.68 | 4.18 |
| | | | 16 | 7.08 | 13.69 | 2.98 | 11.21 | 4.60 |
| | 0.93 | 5.77 | 24 | 5.53 | 11.94 | 3.27 | 9.18 | 3.65 |
| | | | 20 | 5.05 | 12.25 | 3.04 | 9.70 | 4.02 |
| | | | 16 | 4.61 | 12.52 | 2.82 | 10.18 | 4.44 |
| 16 | 2.78 | 44.8 | 24 | 12.29 | 15.23 | 3.78 | 12.00 | 4.03 |
| | | | 20 | 12.13 | 15.49 | 3.50 | 12.52 | 4.42 |
| | | | 16 | 11.97 | 15.74 | 3.24 | 13.02 | 4.86 |
| | 1.39 | 12.36 | 24 | 9.32 | 13.82 | 3.55 | 10.81 | 3.89 |
| | | | 20 | 8.98 | 14.14 | 3.30 | 11.36 | 4.28 |
| | | | 16 | 8.65 | 14.45 | 3.07 | 11.88 | 4.71 |
| | 0.93 | 5.77 | 24 | 6.97 | 12.64 | 3.38 | 9.78 | 3.74 |
| | | | 20 | 6.49 | 12.93 | 3.14 | 10.30 | 4.12 |
| | | | 16 | 6.04 | 13.21 | 2.91 | 10.78 | 4.53 |
| 18 | 2.78 | 44.8 | 24 | 14.14 | 15.75 | 3.84 | 12.47 | 4.10 |
| | | | 20 | 13.98 | 15.99 | 3.56 | 12.97 | 4.49 |
| | | | 16 | 13.84 | 16.20 | 3.29 | 13.43 | 4.93 |
| | 1.39 | 12.36 | 24 | 10.89 | 14.62 | 3.68 | 11.49 | 3.98 |
| | | | 20 | 10.57 | 14.89 | 3.42 | 12.00 | 4.36 |
| | | | 16 | 10.27 | 15.14 | 3.17 | 12.49 | 4.78 |
| | 0.93 | 5.77 | 24 | 8.37 | 13.36 | 3.49 | 10.41 | 3.83 |
| | | | 20 | 7.90 | 13.65 | 3.24 | 10.92 | 4.21 |
| | | | 16 | 7.47 | 13.90 | 3.00 | 11.39 | 4.63 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 401

Nominal air flow 2300 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 401- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 2.78 | 44.8 | 24 | 16.02 | 16.16 | 3.90 | 12.83 | 4.15 |
| | | | **20** | **15.88** | **16.36** | **3.60** | **13.31** | **4.54** |
| | | | 16 | 15.74 | 16.55 | 3.32 | 13.75 | 4.98 |
| | 1.39 | 12.36 | 24 | 12.53 | 15.28 | 3.78 | 12.05 | 4.04 |
| | | | 20 | 12.24 | 15.50 | 3.51 | 12.52 | 4.42 |
| | | | 16 | 11.96 | 15.69 | 3.24 | 12.97 | 4.85 |
| | 0.93 | 5.77 | 24 | 9.79 | 14.08 | 3.59 | 11.03 | 3.92 |
| | | | 20 | 9.33 | 14.33 | 3.33 | 11.52 | 4.31 |
| | | | 16 | 8.90 | 14.57 | 3.08 | 11.99 | 4.73 |
| 22 | 2.78 | 44.8 | 24 | 17.93 | 16.49 | 3.94 | 13.12 | 4.18 |
| | | | 20 | 17.78 | 16.68 | 3.64 | 13.59 | 4.58 |
| | | | 16 | 17.65 | 16.86 | 3.36 | 14.03 | 5.02 |
| | 1.39 | 12.36 | 24 | 14.27 | 15.74 | 3.84 | 12.46 | 4.10 |
| | | | 20 | 13.99 | 15.94 | 3.55 | 12.92 | 4.48 |
| | | | 16 | 13.72 | 16.12 | 3.28 | 13.36 | 4.91 |
| | 0.93 | 5.77 | 24 | 11.23 | 14.78 | 3.70 | 11.63 | 3.99 |
| | | | 20 | 10.79 | 15.00 | 3.43 | 12.10 | 4.37 |
| | | | 16 | 10.39 | 15.20 | 3.17 | 12.54 | 4.79 |
| 24 | 2.78 | 44.8 | 24 | 19.85 | 16.78 | 3.98 | 13.37 | 4.21 |
| | | | 20 | 19.70 | 16.97 | 3.68 | 13.85 | 4.61 |
| | | | 16 | 19.56 | 17.15 | 3.39 | 14.29 | 5.05 |
| | 1.39 | 12.36 | 24 | 16.06 | 16.11 | 3.89 | 12.79 | 4.14 |
| | | | 20 | 15.78 | 15.28 | 3.59 | 13.23 | 4.53 |
| | | | 16 | 15.52 | 16.45 | 3.31 | 13.66 | 4.96 |
| | 0.93 | 5.77 | 24 | 12.76 | 15.36 | 3.80 | 12.12 | 4.05 |
| | | | 20 | 12.35 | 15.53 | 3.51 | 12.55 | 4.42 |
| | | | 16 | 11.97 | 15.70 | 3.24 | 12.97 | 4.85 |
| 27 | 2.78 | 44.8 | 24 | 22.73 | 17.16 | 4.03 | 13.71 | 4.26 |
| | | | 20 | 22.58 | 17.37 | 3.73 | 14.20 | 4.66 |
| | | | 16 | 22.44 | 17.55 | 3.44 | 14.65 | 5.10 |
| | 1.39 | 12.36 | 24 | 18.80 | 16.56 | 3.95 | 13.18 | 4.19 |
| | | | 20 | 18.52 | 16.73 | 3.65 | 13.63 | 4.58 |
| | | | 16 | 18.26 | 16.88 | 3.36 | 14.05 | 5.02 |
| | 0.93 | 5.77 | 24 | 15.26 | 15.94 | 3.87 | 12.63 | 4.12 |
| | | | 20 | 14.86 | 16.10 | 3.57 | 13.07 | 4.51 |
| | | | 16 | 14.48 | 16.25 | 3.29 | 13.47 | 4.93 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 501

Nominal air flow 2800 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 501- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 3.41 | 21.75 | 24 | 8.79 | 15.94 | 3.75 | 12.77 | 4.25 |
| | | | 20 | 8.59 | 16.51 | 3.54 | 13.54 | 4.66 |
| | | | 16 | 8.41 | 17.05 | 3.34 | 14.27 | 5.10 |
| | 1.70 | 6.08 | 24 | 6.15 | 14.56 | 3.54 | 11.60 | 4.12 |
| | | | 20 | 5.80 | 15.06 | 3.33 | 12.29 | 4.53 |
| | | | 16 | 5.47 | 15.54 | 3.13 | 12.96 | 4.97 |
| 14 | 3.41 | 21.75 | 24 | 10.57 | 16.95 | 3.93 | 13.62 | 4.31 |
| | | | 20 | 10.38 | 17.48 | 3.70 | 14.36 | 4.72 |
| | | | 16 | 10.21 | 17.95 | 3.49 | 15.04 | 5.15 |
| | 1.70 | 6.08 | 24 | 7.75 | 15.48 | 3.68 | 12.38 | 4.21 |
| | | | 20 | 7.39 | 15.98 | 3.46 | 13.08 | 4.62 |
| | | | 16 | 7.05 | 16.46 | 3.25 | 13.75 | 5.06 |
| | 1.14 | 3.12 | 24 | 5.45 | 14.28 | 3.50 | 11.35 | 4.09 |
| | | | 20 | 4.99 | 14.71 | 3.28 | 11.97 | 4.48 |
| | | | 16 | 4.53 | 15.13 | 3.08 | 12.59 | 4.91 |
| 16 | 3.41 | 21.75 | 24 | 12.38 | 17.87 | 4.13 | 14.35 | 4.33 |
| | | | 20 | 12.25 | 18.11 | 3.83 | 14.87 | 4.72 |
| | | | 16 | 12.11 | 18.41 | 3.56 | 15.43 | 5.17 |
| | 1.70 | 6.08 | 24 | 9.34 | 16.42 | 3.84 | 13.17 | 4.28 |
| | | | 20 | 8.99 | 16.88 | 3.60 | 13.86 | 4.69 |
| | | | 16 | 8.67 | 17.32 | 3.38 | 14.50 | 5.12 |
| | 1.14 | 3.12 | 24 | 6.90 | 15.12 | 3.62 | 12.07 | 4.18 |
| | | | 20 | 6.42 | 15.54 | 3.39 | 12.71 | 4.58 |
| | | | 16 | 5.96 | 15.96 | 3.18 | 13.32 | 5.02 |
| 18 | 3.41 | 21.75 | 24 | 14.28 | 18.33 | 4.21 | 14.74 | 4.35 |
| | | | 20 | 14.14 | 18.59 | 3.91 | 15.29 | 4.76 |
| | | | 16 | 14.02 | 18.79 | 3.61 | 15.76 | 5.20 |
| | 1.70 | 6.08 | 24 | 10.96 | 17.30 | 4.01 | 13.90 | 4.32 |
| | | | 20 | 10.63 | 17.72 | 3.75 | 14.55 | 4.72 |
| | | | 16 | 10.33 | 18.09 | 3.51 | 15.15 | 5.15 |
| | 1.14 | 3.12 | 24 | 8.35 | 15.97 | 3.76 | 12.79 | 4.25 |
| | | | 20 | 7.88 | 16.38 | 3.52 | 13.42 | 4.65 |
| | | | 16 | 7.42 | 16.77 | 3.30 | 14.03 | 5.08 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 501

Nominal air flow 2800 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 501- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 3.41 | 21.75 | 24 | 16.20 | 18.70 | 4.28 | 15.05 | 4.37 |
| | | | **20** | **16.07** | **18.89** | **3.95** | **15.55** | **4.78** |
| | | | 16 | 15.96 | 19.05 | 3.65 | 15.99 | 5.22 |
| | 1.70 | 6.08 | 24 | 12.65 | 18.06 | 4.17 | 14.51 | 4.33 |
| | | | 20 | 12.43 | 18.19 | 3.85 | 14.94 | 4.73 |
| | | | 16 | 12.16 | 18.46 | 3.57 | 15.47 | 5.18 |
| | 1.14 | 3.12 | 24 | 9.81 | 16.80 | 3.91 | 13.49 | 4.30 |
| | | | 20 | 9.34 | 17.18 | 3.65 | 14.11 | 4.71 |
| | | | 16 | 8.90 | 17.55 | 3.41 | 14.70 | 5.14 |
| 22 | 3.41 | 21.75 | 24 | 18.14 | 18.96 | 4.33 | 15.27 | 4.38 |
| | | | 20 | 18.01 | 19.15 | 4.00 | 15.76 | 4.79 |
| | | | 16 | 17.90 | 19.29 | 3.68 | 16.20 | 5.24 |
| | 1.70 | 6.08 | 24 | 14.49 | 18.41 | 4.23 | 14.81 | 4.35 |
| | | | 20 | 14.24 | 18.62 | 3.91 | 15.31 | 4.76 |
| | | | 16 | 14.01 | 18.79 | 3.61 | 15.76 | 5.20 |
| | 1.14 | 3.12 | 24 | 11.32 | 17.58 | 4.07 | 14.13 | 4.32 |
| | | | 20 | 10.88 | 17.92 | 3.80 | 14.71 | 4.72 |
| | | | 16 | 10.50 | 18.17 | 3.53 | 15.22 | 5.15 |
| 24 | 3.41 | 21.75 | 24 | 20.08 | 19.21 | 4.38 | 15.47 | 4.38 |
| | | | 20 | 19.96 | 19.39 | 4.04 | 15.97 | 4.80 |
| | | | 16 | 19.85 | 19.53 | 3.72 | 16.40 | 5.24 |
| | 1.70 | 6.08 | 24 | 16.35 | 18.72 | 4.28 | 15.07 | 4.37 |
| | | | 20 | 16.11 | 18.89 | 3.95 | 15.55 | 4.78 |
| | | | 16 | 15.89 | 19.03 | 3.65 | 15.97 | 5.22 |
| | 1.14 | 3.12 | 24 | 13.00 | 18.09 | 4.18 | 14.53 | 4.33 |
| | | | 20 | 12.62 | 18.31 | 3.87 | 15.04 | 4.74 |
| | | | 16 | 12.26 | 18.51 | 3.57 | 15.52 | 5.18 |
| 27 | 3.41 | 21.75 | 24 | 23.00 | 19.56 | 4.45 | 15.76 | 4.40 |
| | | | 20 | 22.88 | 19.74 | 4.10 | 16.26 | 4.81 |
| | | | 16 | 22.76 | 19.89 | 3.78 | 16.70 | 5.26 |
| | 1.70 | 6.08 | 24 | 19.18 | 19.09 | 4.36 | 15.37 | 4.38 |
| | | | 20 | 18.94 | 19.25 | 4.02 | 15.85 | 4.79 |
| | | | 16 | 18.72 | 19.38 | 3.70 | 16.28 | 5.24 |
| | 1.14 | 3.12 | 24 | 15.64 | 18.62 | 4.26 | 14.98 | 4.37 |
| | | | 20 | 15.28 | 18.79 | 3.94 | 15.45 | 4.77 |
| | | | 16 | 14.97 | 18.92 | 3.63 | 15.87 | 5.21 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 701

Nominal air flow 3400 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 701- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 4.13 | 30.90 | 24 | 8.77 | 19.44 | 4.70 | 15.55 | 4.14 |
| | | | 20 | 8.58 | 20.11 | 4.45 | 16.45 | 4.52 |
| | | | 16 | 8.40 | 20.75 | 4.21 | 17.32 | 4.93 |
| | 2.06 | 8.7 | 24 | 6.14 | 17.72 | 4.43 | 14.08 | 4.00 |
| | | | 20 | 5.80 | 18.31 | 4.19 | 14.89 | 4.37 |
| | | | 16 | 5.48 | 18.87 | 3.96 | 15.67 | 4.77 |
| 14 | 4.13 | 30.90 | 24 | 10.54 | 20.72 | 4.91 | 16.63 | 4.22 |
| | | | 20 | 10.36 | 21.34 | 4.65 | 17.50 | 4.59 |
| | | | 16 | 10.19 | 21.90 | 4.39 | 18.30 | 4.99 |
| | 2.06 | 8.7 | 24 | 7.72 | 18.88 | 4.60 | 15.07 | 4.10 |
| | | | 20 | 7.38 | 19.47 | 4.35 | 15.89 | 4.47 |
| | | | 16 | 7.05 | 20.03 | 4.11 | 16.68 | 4.87 |
| | 1.37 | 4.32 | 24 | 5.39 | 17.33 | 4.38 | 13.74 | 3.96 |
| | | | 20 | 4.93 | 17.84 | 4.13 | 14.48 | 4.32 |
| | | | 16 | 4.48 | 18.34 | 3.89 | 15.20 | 4.71 |
| 16 | 4.13 | 30.90 | 24 | 12.35 | 21.82 | 5.14 | 17.52 | 4.25 |
| | | | 20 | 12.22 | 22.12 | 4.80 | 18.13 | 4.61 |
| | | | 16 | 12.10 | 22.39 | 4.47 | 18.72 | 5.01 |
| | 2.06 | 8.7 | 24 | 9.30 | 20.05 | 4.80 | 16.07 | 4.18 |
| | | | 20 | 8.97 | 20.57 | 4.52 | 16.85 | 4.55 |
| | | | 16 | 8.65 | 21.09 | 4.26 | 17.61 | 4.95 |
| | 1.37 | 4.32 | 24 | 6.81 | 18.39 | 4.53 | 14.66 | 4.06 |
| | | | 20 | 6.34 | 18.90 | 4.27 | 15.40 | 4.43 |
| | | | 16 | 5.90 | 19.37 | 4.02 | 16.11 | 4.82 |
| 18 | 4.13 | 30.90 | 24 | 14.27 | 22.28 | 5.21 | 17.92 | 4.27 |
| | | | 20 | 14.12 | 22.66 | 4.88 | 18.61 | 4.65 |
| | | | 16 | 13.99 | 22.97 | 4.55 | 19.22 | 5.05 |
| | 2.06 | 8.7 | 24 | 10.91 | 21.14 | 5.00 | 16.97 | 4.23 |
| | | | 20 | 10.59 | 21.63 | 4.71 | 17.74 | 4.59 |
| | | | 16 | 10.30 | 22.08 | 4.42 | 18.45 | 4.99 |
| | 1.37 | 4.32 | 24 | 8.24 | 19.44 | 4.69 | 15.55 | 4.14 |
| | | | 20 | 7.78 | 19.91 | 4.42 | 16.28 | 4.51 |
| | | | 16 | 7.33 | 20.39 | 4.16 | 17.00 | 4.90 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 701

Nominal air flow 3400 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 701- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 4.13 | 30.90 | 24 | 16.18 | 22.78 | 5.30 | 18.33 | 4.30 |
| | | | **20** | **16.04** | **23.08** | **4.94** | **18.97** | **4.67** |
| | | | 16 | 15.92 | 23.34 | 4.60 | 19.55 | 5.08 |
| | 2.06 | 8.7 | 24 | 12.62 | 21.98 | 5.17 | 17.66 | 4.25 |
| | | | 20 | 12.41 | 22.15 | 4.81 | 18.17 | 4.61 |
| | | | 16 | 12.14 | 22.49 | 4.49 | 18.80 | 5.01 |
| | 1.37 | 4.32 | 24 | 9.68 | 20.48 | 4.87 | 16.43 | 4.21 |
| | | | 20 | 9.23 | 20.92 | 4.57 | 17.14 | 4.57 |
| | | | 16 | 8.80 | 21.34 | 4.29 | 17.83 | 4.97 |
| 22 | 4.13 | 30.90 | 24 | 18.11 | 23.12 | 5.36 | 18.61 | 4.31 |
| | | | 20 | 17.98 | 23.41 | 4.99 | 19.25 | 4.69 |
| | | | 16 | 17.86 | 23.65 | 4.64 | 19.82 | 5.09 |
| | 2.06 | 8.7 | 24 | 14.46 | 22.39 | 5.23 | 18.01 | 4.28 |
| | | | 20 | 14.20 | 22.71 | 4.88 | 18.65 | 4.65 |
| | | | 16 | 13.96 | 22.97 | 4.55 | 19.22 | 5.05 |
| | 1.37 | 4.32 | 24 | 11.18 | 21.43 | 5.06 | 17.21 | 4.24 |
| | | | 20 | 10.74 | 21.84 | 4.75 | 17.90 | 4.60 |
| | | | 16 | 10.33 | 22.20 | 4.45 | 18.55 | 4.99 |
| 24 | 4.13 | 30.90 | 24 | 20.06 | 23.42 | 5.42 | 18.87 | 4.32 |
| | | | 20 | 19.92 | 23.71 | 5.05 | 19.51 | 4.70 |
| | | | 16 | 19.80 | 23.95 | 4.69 | 20.08 | 5.11 |
| | 2.06 | 8.7 | 24 | 16.31 | 22.80 | 5.30 | 18.35 | 4.30 |
| | | | 20 | 16.05 | 23.07 | 4.94 | 18.97 | 4.67 |
| | | | 16 | 15.82 | 23.31 | 4.59 | 19.52 | 5.07 |
| | 1.37 | 4.32 | 24 | 12.86 | 22.01 | 5.18 | 17.69 | 4.25 |
| | | | 20 | 12.51 | 22.24 | 4.82 | 18.24 | 4.62 |
| | | | 16 | 12.13 | 22.55 | 4.50 | 18.85 | 5.02 |
| 27 | 4.13 | 30.90 | 24 | 22.97 | 23.85 | 5.50 | 19.23 | 4.34 |
| | | | 20 | 22.84 | 24.13 | 5.12 | 19.87 | 4.72 |
| | | | 16 | 22.72 | 24.39 | 4.76 | 20.45 | 5.13 |
| | 2.06 | 8.7 | 24 | 19.14 | 23.26 | 5.39 | 18.74 | 4.32 |
| | | | 20 | 18.87 | 23.54 | 5.01 | 19.36 | 4.69 |
| | | | 16 | 18.64 | 23.76 | 4.66 | 19.91 | 5.10 |
| | 1.37 | 4.32 | 24 | 15.50 | 22.66 | 5.28 | 18.24 | 4.29 |
| | | | 20 | 15.12 | 22.92 | 4.91 | 18.83 | 4.66 |
| | | | 16 | 14.78 | 23.14 | 4.57 | 19.37 | 5.06 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 751

Nominal air flow 4300 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 751- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 5.32 | 49.03 | 24 | 8.88 | 24.42 | 6.37 | 19.33 | 3.84 |
| | | | 20 | 8.67 | 25.47 | 6.08 | 20.64 | 4.19 |
| | | | 16 | 8.48 | 26.40 | 5.79 | 21.84 | 4.56 |
| | 2.66 | 14.01 | 24 | 6.39 | 22.13 | 5.99 | 17.39 | 3.69 |
| | | | 20 | 6.01 | 23.07 | 5.72 | 18.59 | 4.04 |
| | | | 16 | 5.67 | 23.88 | 5.44 | 19.65 | 4.39 |
| 14 | 5.32 | 49.03 | 24 | 10.63 | 26.27 | 6.70 | 20.87 | 3.92 |
| | | | 20 | 10.43 | 27.23 | 6.37 | 22.14 | 4.27 |
| | | | 16 | 10.24 | 28.09 | 6.06 | 23.29 | 4.63 |
| | 2.66 | 14.01 | 24 | 7.92 | 23.82 | 6.26 | 18.83 | 3.80 |
| | | | 20 | 7.54 | 24.71 | 5.96 | 20.01 | 4.15 |
| | | | 16 | 7.20 | 25.50 | 5.66 | 21.07 | 4.51 |
| | 1.77 | 6.61 | 24 | 5.72 | 21.76 | 5.93 | 17.07 | 3.67 |
| | | | 20 | 5.20 | 22.56 | 5.64 | 18.14 | 4.00 |
| | | | 16 | 4.73 | 23.26 | 5.36 | 19.11 | 4.34 |
| 16 | 5.32 | 49.03 | 24 | 12.40 | 28.02 | 7.07 | 22.27 | 3.96 |
| | | | 20 | 12.21 | 28.85 | 6.70 | 23.45 | 4.31 |
| | | | 16 | 12.07 | 29.32 | 6.29 | 24.30 | 4.66 |
| | 2.66 | 14.01 | 24 | 9.47 | 25.47 | 6.55 | 20.20 | 3.89 |
| | | | 20 | 9.10 | 26.30 | 6.22 | 21.35 | 4.23 |
| | | | 16 | 8.76 | 27.05 | 5.89 | 22.40 | 4.59 |
| | 1.77 | 6.61 | 24 | 7.08 | 23.28 | 6.17 | 18.37 | 3.77 |
| | | | 20 | 6.57 | 24.04 | 5.85 | 19.43 | 4.11 |
| | | | 16 | 6.11 | 24.70 | 5.54 | 20.37 | 4.46 |
| 18 | 5.32 | 49.03 | 24 | 14.25 | 29.17 | 7.33 | 23.18 | 3.98 |
| | | | 20 | 14.08 | 29.80 | 6.87 | 24.25 | 4.34 |
| | | | 16 | 13.93 | 30.31 | 6.44 | 25.16 | 4.71 |
| | 2.66 | 14.01 | 24 | 11.04 | 27.08 | 6.86 | 21.53 | 3.95 |
| | | | 20 | 10.68 | 27.85 | 6.49 | 22.64 | 4.29 |
| | | | 16 | 10.35 | 28.52 | 6.14 | 23.64 | 4.65 |
| | 1.77 | 6.61 | 24 | 8.47 | 24.77 | 6.43 | 19.62 | 3.85 |
| | | | 20 | 7.96 | 25.49 | 6.08 | 20.67 | 4.19 |
| | | | 16 | 7.49 | 26.15 | 5.75 | 21.63 | 4.54 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 751

Nominal air flow 4300 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | WPHBA 751- HEAT MODE | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 5.32 | 49.03 | 24 | 16.11 | 30.17 | 7.53 | 24.00 | 4.01 |
| | | | **20** | **15.97** | **30.60** | **7.01** | **24.92** | **4.36** |
| | | | 16 | 15.83 | 30.97 | 6.54 | 25.73 | 4.73 |
| | 2.66 | 14.01 | 24 | 12.65 | 28.56 | 7.19 | 22.70 | 3.97 |
| | | | 20 | 12.32 | 29.18 | 6.77 | 23.72 | 4.31 |
| | | | 16 | 12.09 | 29.47 | 6.31 | 24.44 | 4.67 |
| | 1.77 | 6.61 | 24 | 9.86 | 26.25 | 6.69 | 20.85 | 3.92 |
| | | | 20 | 9.36 | 26.92 | 6.32 | 21.87 | 4.26 |
| | | | 16 | 8.91 | 27.52 | 5.96 | 22.81 | 4.61 |
| 22 | 5.32 | 49.03 | 24 | 18.03 | 30.79 | 7.67 | 24.49 | 4.02 |
| | | | 20 | 17.89 | 31.17 | 7.13 | 25.38 | 4.37 |
| | | | 16 | 17.76 | 31.49 | 6.64 | 26.16 | 4.75 |
| | 2.66 | 14.01 | 24 | 14.41 | 29.46 | 7.38 | 23.42 | 3.99 |
| | | | 20 | 14.11 | 29.94 | 6.89 | 24.36 | 4.34 |
| | | | 16 | 13.84 | 30.34 | 6.44 | 25.18 | 4.71 |
| | 1.77 | 6.61 | 24 | 11.29 | 27.66 | 6.99 | 22.00 | 3.96 |
| | | | 20 | 10.81 | 28.27 | 6.57 | 22.99 | 4.30 |
| | | | 16 | 10.38 | 28.80 | 6.19 | 23.88 | 4.65 |
| 24 | 5.32 | 49.03 | 24 | 19.95 | 31.27 | 7.75 | 24.90 | 4.03 |
| | | | 20 | 19.82 | 31.63 | 7.22 | 25.75 | 4.38 |
| | | | 16 | 19.69 | 31.95 | 6.72 | 26.54 | 4.75 |
| | 2.66 | 14.01 | 24 | 16.19 | 30.24 | 7.55 | 24.06 | 4.01 |
| | | | 20 | 15.92 | 30.60 | 7.01 | 24.91 | 4.36 |
| | | | 16 | 15.67 | 30.92 | 6.53 | 25.68 | 4.73 |
| | 1.77 | 6.61 | 24 | 12.80 | 28.91 | 7.27 | 22.98 | 3.97 |
| | | | 20 | 12.48 | 29.31 | 6.79 | 23.82 | 4.32 |
| | | | 16 | 12.02 | 29.61 | 6.33 | 24.55 | 4.68 |
| 27 | 5.32 | 49.03 | 24 | 22.87 | 31.93 | 7.92 | 25.40 | 4.03 |
| | | | 20 | 22.73 | 32.28 | 7.35 | 26.28 | 4.39 |
| | | | 16 | 22.60 | 32.59 | 6.84 | 27.08 | 4.77 |
| | 2.66 | 14.01 | 24 | 18.98 | 31.02 | 7.72 | 24.67 | 4.02 |
| | | | 20 | 18.70 | 31.35 | 7.16 | 25.52 | 4.38 |
| | | | 16 | 18.46 | 31.63 | 6.66 | 26.27 | 4.75 |
| | 1.77 | 6.61 | 24 | 15.35 | 30.00 | 7.49 | 23.86 | 4.00 |
| | | | 20 | 14.94 | 30.33 | 6.96 | 24.69 | 4.36 |
| | | | 16 | 14.58 | 30.64 | 6.49 | 25.44 | 4.72 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 1001

Nominal air flow 6200 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | | WPHBA 1001- HEAT MODE | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 7.18 | 37.1 | 24 | 8.81 | 33.04 | 7.84 | 26.65 | 4.22 |
| | | | 20 | 8.62 | 34.31 | 7.46 | 28.28 | 4.60 |
| | | | 16 | 8.44 | 35.44 | 7.09 | 29.76 | 5.00 |
| | 3.60 | 10.35 | 24 | 6.27 | 29.98 | 7.36 | 24.03 | 4.07 |
| | | | 20 | 5.93 | 31.10 | 6.99 | 25.49 | 4.45 |
| | | | 16 | 5.61 | 32.09 | 6.63 | 26.83 | 4.84 |
| 14 | 7.18 | 37.1 | 24 | 10.57 | 35.42 | 8.24 | 28.66 | 4.30 |
| | | | 20 | 10.38 | 36.59 | 7.82 | 30.23 | 4.68 |
| | | | 16 | 10.22 | 37.61 | 7.42 | 31.62 | 5.07 |
| | 3.60 | 10.35 | 24 | 7.82 | 32.16 | 7.69 | 25.91 | 4.18 |
| | | | 20 | 7.47 | 33.24 | 7.29 | 27.36 | 4.56 |
| | | | 16 | 7.16 | 34.21 | 6.91 | 28.69 | 4.95 |
| | 2.40 | 5.17 | 24 | 5.58 | 29.40 | 7.28 | 23.54 | 4.04 |
| | | | 20 | 5.11 | 30.37 | 6.89 | 24.87 | 4.41 |
| | | | 16 | 4.69 | 31.21 | 6.52 | 26.05 | 4.78 |
| 16 | 7.18 | 37.1 | 24 | 12.36 | 37.53 | 8.68 | 30.36 | 4.32 |
| | | | 20 | 12.23 | 38.17 | 8.13 | 31.52 | 4.69 |
| | | | 16 | 12.12 | 38.54 | 7.58 | 32.40 | 5.08 |
| | 3.60 | 10.35 | 24 | 9.38 | 34.32 | 8.05 | 27.73 | 4.26 |
| | | | 20 | 9.04 | 35.33 | 7.61 | 29.15 | 4.64 |
| | | | 16 | 8.73 | 36.24 | 7.20 | 30.45 | 5.03 |
| | 2.40 | 5.17 | 24 | 6.96 | 31.37 | 7.57 | 25.24 | 4.15 |
| | | | 20 | 6.49 | 32.31 | 7.15 | 26.45 | 4.52 |
| | | | 16 | 6.07 | 33.13 | 6.76 | 27.75 | 4.90 |
| 18 | 7.18 | 37.1 | 24 | 14.29 | 38.25 | 8.81 | 30.96 | 4.34 |
| | | | 20 | 14.13 | 39.01 | 8.26 | 32.25 | 4.73 |
| | | | 16 | 14.00 | 39.65 | 7.74 | 33.37 | 5.13 |
| | 3.60 | 10.35 | 24 | 10.97 | 36.36 | 8.44 | 29.42 | 4.31 |
| | | | 20 | 10.64 | 37.28 | 7.95 | 30.79 | 4.69 |
| | | | 16 | 10.35 | 38.08 | 7.50 | 32.02 | 5.08 |
| | 2.40 | 5.17 | 24 | 8.36 | 33.33 | 7.89 | 26.90 | 4.23 |
| | | | 20 | 7.89 | 34.22 | 7.44 | 28.21 | 4.60 |
| | | | 16 | 7.47 | 35.03 | 7.03 | 29.40 | 4.99 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 1001

Nominal air flow 6200 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | | WPHBA 1001 - HEAT MODE | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 7.18 | 37.1 | 24 | 16.18 | 39.25 | 8.99 | 31.81 | 4.37 |
| | | | **20** | **16.05** | **39.82** | **8.38** | **32.94** | **4.75** |
| | | | 16 | 15.92 | 40.34 | 7.83 | 33.98 | 5.15 |
| | 3.60 | 10.35 | 24 | 12.67 | 37.87 | 8.75 | 30.64 | 4.33 |
| | | | 20 | 12.45 | 38.24 | 8.14 | 31.58 | 4.70 |
| | | | 16 | 12.21 | 38.72 | 7.61 | 32.56 | 5.09 |
| | 2.40 | 5.17 | 24 | 9.77 | 35.24 | 8.21 | 28.51 | 4.29 |
| | | | 20 | 9.32 | 36.06 | 7.73 | 29.78 | 4.67 |
| | | | 16 | 8.90 | 36.81 | 7.28 | 30.94 | 5.05 |
| 22 | 7.18 | 37.1 | 24 | 18.12 | 39.88 | 9.11 | 32.32 | 4.38 |
| | | | 20 | 17.98 | 40.42 | 8.49 | 33.45 | 4.76 |
| | | | 16 | 17.86 | 40.91 | 7.92 | 34.47 | 5.17 |
| | 3.60 | 10.35 | 24 | 14.53 | 38.55 | 8.86 | 31.21 | 4.35 |
| | | | 20 | 14.25 | 39.15 | 8.28 | 32.36 | 4.73 |
| | | | 16 | 14.00 | 39.69 | 7.74 | 33.41 | 5.13 |
| | 2.40 | 5.17 | 24 | 11.25 | 37.00 | 8.57 | 29.94 | 4.32 |
| | | | 20 | 10.81 | 37.74 | 8.05 | 31.16 | 4.69 |
| | | | 16 | 10.41 | 38.39 | 7.55 | 32.27 | 5.08 |
| 24 | 7.18 | 37.1 | 24 | 20.06 | 40.41 | 9.22 | 32.75 | 4.38 |
| | | | 20 | 19.92 | 40.96 | 8.58 | 33.89 | 4.77 |
| | | | 16 | 19.80 | 41.44 | 8.01 | 34.91 | 5.18 |
| | 3.60 | 10.35 | 24 | 16.36 | 39.33 | 9.00 | 31.86 | 4.37 |
| | | | 20 | 16.10 | 39.84 | 8.38 | 32.96 | 4.75 |
| | | | 16 | 15.86 | 40.31 | 7.83 | 33.95 | 5.15 |
| | 2.40 | 5.17 | 24 | 12.97 | 37.93 | 8.76 | 30.69 | 4.33 |
| | | | 20 | 12.62 | 38.33 | 8.16 | 31.65 | 4.70 |
| | | | 16 | 12.23 | 38.92 | 7.64 | 32.73 | 5.10 |
| 27 | 7.18 | 37.1 | 24 | 22.98 | 41.16 | 9.36 | 33.36 | 4.40 |
| | | | 20 | 22.84 | 41.71 | 8.72 | 34.52 | 4.78 |
| | | | 16 | 22.72 | 42.20 | 8.13 | 35.56 | 5.19 |
| | 3.60 | 10.35 | 24 | 19.18 | 40.15 | 9.17 | 32.54 | 4.38 |
| | | | 20 | 18.92 | 40.66 | 8.53 | 33.64 | 4.77 |
| | | | 16 | 18.68 | 41.11 | 7.95 | 34.63 | 5.17 |
| | 2.40 | 5.17 | 24 | 15.60 | 39.09 | 8.96 | 31.67 | 4.36 |
| | | | 20 | 15.21 | 39.57 | 8.34 | 32.73 | 4.74 |
| | | | 16 | 14.87 | 40.02 | 7.79 | 33.70 | 5.14 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 1201

Nominal air flow 7000 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | | WPHBA 1201- HEAT MODE | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 12 | 8.39 | 49.35 | 24 | 8.85 | 38.49 | 9.40 | 30.61 | 4.09 |
| | | | 20 | 8.68 | 39.90 | 8.96 | 32.44 | 4.45 |
| | | | 16 | 8.51 | 41.19 | 8.52 | 34.14 | 4.84 |
| | 4.19 | 13.60 | 24 | 6.39 | 34.68 | 8.79 | 27.38 | 3.95 |
| | | | 20 | 6.05 | 35.99 | 8.36 | 29.09 | 4.30 |
| | | | 16 | 5.72 | 37.18 | 7.95 | 30.67 | 4.68 |
| 14 | 8.39 | 49.35 | 24 | 10.62 | 41.38 | 9.94 | 33.01 | 4.16 |
| | | | 20 | 10.44 | 42.68 | 9.44 | 34.77 | 4.52 |
| | | | 16 | 10.28 | 43.81 | 8.95 | 36.36 | 4.89 |
| | 4.19 | 13.60 | 24 | 7.90 | 37.47 | 9.24 | 29.75 | 4.06 |
| | | | 20 | 7.56 | 38.68 | 8.77 | 31.41 | 4.41 |
| | | | 16 | 7.25 | 39.78 | 8.31 | 32.93 | 4.79 |
| | 2.80 | 6.40 | 24 | 5.76 | 34.08 | 8.69 | 26.87 | 3.92 |
| | | | 20 | 5.29 | 35.22 | 8.25 | 28.42 | 4.27 |
| | | | 16 | 4.85 | 36.25 | 7.82 | 29.86 | 4.63 |
| 16 | 8.39 | 49.35 | 24 | 12.41 | 43.90 | 10.48 | 35.02 | 4.19 |
| | | | 20 | 12.29 | 44.35 | 9.80 | 36.10 | 4.53 |
| | | | 16 | 12.19 | 44.82 | 9.14 | 37.20 | 4.91 |
| | 4.19 | 13.60 | 24 | 9.44 | 40.11 | 9.70 | 31.96 | 4.14 |
| | | | 20 | 9.12 | 41.19 | 9.17 | 33.53 | 4.49 |
| | | | 16 | 8.82 | 42.20 | 8.67 | 35.02 | 4.87 |
| | 2.80 | 6.40 | 24 | 7.09 | 36.61 | 9.09 | 29.03 | 4.03 |
| | | | 20 | 6.64 | 37.62 | 8.60 | 30.51 | 4.38 |
| | | | 16 | 6.22 | 38.56 | 8.13 | 31.88 | 4.74 |
| 18 | 8.39 | 49.35 | 24 | 14.36 | 44.41 | 10.57 | 35.45 | 4.20 |
| | | | 20 | 14.21 | 45.31 | 9.92 | 36.96 | 4.57 |
| | | | 16 | 14.07 | 46.08 | 9.31 | 38.30 | 4.95 |
| | 4.19 | 13.60 | 24 | 11.02 | 42.58 | 10.19 | 33.97 | 4.18 |
| | | | 20 | 10.71 | 43.55 | 9.61 | 35.48 | 4.53 |
| | | | 16 | 10.43 | 44.41 | 9.06 | 36.86 | 4.90 |
| | 2.80 | 6.40 | 24 | 8.47 | 39.01 | 9.50 | 31.04 | 4.10 |
| | | | 20 | 8.02 | 39.97 | 8.97 | 32.50 | 4.46 |
| | | | 16 | 7.60 | 40.87 | 8.47 | 33.87 | 4.83 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# HEAT CAPACITIES
## MODEL WPHBA 1201

Nominal air flow 7000 $m^3/h$

| Water inlet temperature (ºC) | Water flow($m^3/h$) | Pressure drops water side (kPa) | | WPHBA 1201- HEAT MODE | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | TEA (ºC) | TS (ºC) | PC (kW) | Pabs (kW) | CC (kW) | COP |
| 20 | 8.39 | 49.35 | 24 | 16.25 | 45.71 | 10.81 | 36.52 | 4.23 |
| | | | **20** | **16.11** | **46.42** | **10.11** | **37.89** | **4.59** |
| | | | 16 | 15.98 | 47.04 | 9.45 | 39.13 | 4.98 |
| | 4.19 | 13.60 | 24 | 13.06 | 41.93 | 10.26 | 33.65 | 4.09 |
| | | | 20 | 12.54 | 44.52 | 9.80 | 36.27 | 4.54 |
| | | | 16 | 12.34 | 44.91 | 9.15 | 37.28 | 4.91 |
| | 2.80 | 6.40 | 24 | 9.87 | 41.31 | 9.92 | 32.95 | 4.16 |
| | | | 20 | 9.43 | 42.19 | 9.34 | 34.37 | 4.52 |
| | | | 16 | 9.03 | 42.99 | 8.79 | 35.69 | 4.89 |
| 22 | 8.39 | 49.35 | 24 | 18.18 | 46.49 | 10.96 | 37.16 | 4.24 |
| | | | 20 | 18.04 | 47.16 | 10.24 | 38.51 | 4.60 |
| | | | 16 | 17.92 | 47.76 | 9.57 | 39.74 | 4.99 |
| | 4.19 | 13.60 | 24 | 14.63 | 44.84 | 10.64 | 35.81 | 4.21 |
| | | | 20 | 14.35 | 45.56 | 9.96 | 37.16 | 4.57 |
| | | | 16 | 14.10 | 46.18 | 9.33 | 38.39 | 4.95 |
| | 2.80 | 6.40 | 24 | 11.35 | 43.40 | 10.37 | 34.62 | 4.19 |
| | | | 20 | 10.93 | 44.17 | 9.74 | 35.98 | 4.54 |
| | | | 16 | 10.55 | 44.84 | 9.14 | 37.22 | 4.91 |
| 24 | 8.39 | 49.35 | 24 | 20.12 | 47.15 | 11.09 | 37.70 | 4.25 |
| | | | 20 | 19.98 | 47.79 | 10.36 | 39.03 | 4.61 |
| | | | 16 | 19.86 | 48.40 | 9.68 | 40.27 | 5.00 |
| | 4.19 | 13.60 | 24 | 16.46 | 45.82 | 10.83 | 36.62 | 4.23 |
| | | | 20 | 16.19 | 46.45 | 10.11 | 37.92 | 4.59 |
| | | | 16 | 15.94 | 47.01 | 9.45 | 39.11 | 4.98 |
| | 2.80 | 6.40 | 24 | 13.15 | 44.12 | 10.52 | 35.20 | 4.19 |
| | | | 20 | 12.80 | 44.59 | 9.81 | 36.33 | 4.54 |
| | | | 16 | 12.43 | 45.22 | 9.19 | 37.55 | 4.92 |
| 27 | 8.39 | 49.35 | 24 | 23.04 | 48.05 | 11.26 | 38.44 | 4.27 |
| | | | 20 | 22.90 | 48.70 | 10.52 | 39.79 | 4.63 |
| | | | 16 | 22.77 | 49.30 | 9.83 | 41.04 | 5.02 |
| | 4.19 | 13.60 | 24 | 19.27 | 46.84 | 11.03 | 37.45 | 4.25 |
| | | | 20 | 19.01 | 47.44 | 10.30 | 38.74 | 4.61 |
| | | | 16 | 18.76 | 48.00 | 9.62 | 39.94 | 4.99 |
| | 2.80 | 6.40 | 24 | 15.76 | 45.56 | 10.78 | 36.40 | 4.23 |
| | | | 20 | 15.37 | 46.15 | 10.06 | 37.67 | 4.59 |
| | | | 16 | 15.02 | 46.67 | 9.40 | 38.81 | 4.97 |

NOTE:
TEA: Air inlet temperature (dry bulb / wet bulb).
TS: Water outlet temperature
PC: Heat capacity
Pabs: Total power input
CC: Condenser power input

# OPTIONAL WPHBA RETURN VENTILATION

## ENHANCED RETURN TRAIN

### Models 501 – 701 – 751 – 1001 – 1201

| | PD | PM | PA | V | PD | PM | PA | V | PD | PM | PA | V |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 501 | Flow ($m^3/h$): 2240 | | | | Flow ($m^3/h$): 2800 | | | | Flow ($m^3/h$): 3360 | | | |
| | 50 | 0.18 | 0.14 | 592 | 50 | 0.55 | 0.22 | 666 | 50 | 0.37 | 0.35 | 751 |
| | 75 | 0.18 | 0.16 | 658 | 75 | 0.55 | 0.25 | 725 | 75 | 0.55 | 0.39 | 801 |
| | 100 | 0.25 | 0.18 | 722 | 100 | 0.55 | 0.29 | 781 | 100 | 0.55 | 0.43 | 851 |
| | 150 | 0.37 | 0.25 | 841 | 150 | 0.55 | 0.36 | 886 | 150 | - | 0.51 | 942 |
| | 200 | - | - | - | 200 | 0.55 | 0.43 | 983 | 200 | 0.75 | 0.59 | 1033 |
| | 250 | - | - | - | 250 | 0.55 | 0.51 | 1075 | 250 | - | 0.67 | 1115 |
| | 300 | - | - | - | 300 | 0.75 | 0.59 | 1164 | 300 | 1.1 | 0.76 | 1196 |
| 701 | Flow ($m^3/h$): 2720 | | | | Flow ($m^3/h$): 3400 | | | | Flow ($m^3/h$): 4080 | | | |
| | 62 | 0.25 | 0.22 | 682 | 62 | 0.55 | 0.37 | 780 | 62 | 0.75 | 0.59 | 887 |
| | 100 | 0.37 | 0.28 | 771 | 100 | 0.55 | 0.44 | 855 | 100 | - | 0.66 | 949 |
| | 150 | 0.37 | 0.35 | 875 | 150 | 0.55 | 0.52 | 949 | 150 | - | 0.75 | 1029 |
| | 200 | 0.55 | 0.41 | 976 | 200 | 0.75 | 0.60 | 1036 | 200 | 1.1 | 0.85 | 1109 |
| | 250 | 0.55 | 0.48 | 1070 | 250 | 0.75 | 0.69 | 1119 | 250 | - | 0.95 | 1183 |
| | 300 | - | 0.51 | 1194 | 300 | 1.1 | 0.77 | 1198 | 300 | - | 1.06 | 1256 |
| 751 | Flow ($m^3/h$): 3440 | | | | Flow ($m^3/h$): 4300 | | | | Flow ($m^3/h$): 5160 | | | |
| | 62 | 0.37 | 0.29 | 609 | 62 | 0.55 | 0.49 | 703 | 62 | 1.1 | 0.81 | 803 |
| | 100 | 0.37 | 0.33 | 676 | 100 | 0.75 | 0.55 | 760 | 100 | - | 0.87 | 852 |
| | 150 | 0.46 | 0.41 | 757 | 150 | 0.75 | 0.64 | 831 | 150 | - | 0.97 | 913 |
| | 200 | 0.55 | 0.48 | 837 | 200 | 0.75 | 0.72 | 898 | 200 | 1.1 | 1.07 | 973 |
| | 250 | - | - | - | 250 | 1.1 | 0.82 | 963 | 250 | - | 1.17 | 1030 |
| | 300 | - | - | - | 300 | 1.1 | 0.91 | 1026 | 300 | 1.5 | 1.28 | 1086 |
| | 350 | - | - | - | 350 | - | - | - | 350 | 1.5 | 1.38 | 1141 |
| 1001 | Flow ($m^3/h$): 4960 | | | | Flow ($m^3/h$): 6200 | | | | Flow ($m^3/h$): 7440 | | | |
| | 75 | 0.55 | 0.54 | 656 | 75 | 1.1 | 0.98 | 761 | 75 | 2.2 | 1.60 | 873 |
| | 100 | 0.75 | 0.59 | 699 | 100 | 1.1 | 1.02 | 794 | 100 | - | 1.66 | 899 |
| | 150 | 0.75 | 0.69 | 778 | 150 | 1.5 | 1.13 | 861 | 150 | - | 1.78 | 955 |
| | 200 | 1.1 | 0.79 | 857 | 200 | 1.5 | 1.24 | 927 | 200 | - | 1.90 | 1010 |
| | 250 | 1.1 | 0.91 | 931 | 250 | 1.5 | 1.37 | 991 | 250 | - | 2.04 | 1066 |
| | 300 | - | 1.0 | 1065 | 300 | 2.2 | 1.50 | 1053 | 300 | - | 2.17 | 1121 |
| | 300 | - | 1.13 | 1130 | 350 | 2.2 | 1.64 | 1113 | 350 | - | 2.32 | 1174 |
| | 300 | - | 1.25 | 1193 | 400 | 2.2 | 1.78 | 1171 | 400 | 3 | 2.47 | 1226 |
| 1201 | Flow ($m^3/h$): 5600 | | | | Flow ($m^3/h$): 7000 | | | | Flow ($m^3/h$): 8400 | | | |
| | 75 | 0.55 | 0.48 | 526 | 75 | 1.1 | 0.83 | 599 | 75 | 1.5 | 1.30 | 674 |
| | 100 | 0.55 | 0.54 | 564 | 100 | 1.1 | 0.89 | 631 | 100 | 1.5 | 1.38 | 702 |
| | 150 | 0.75 | 0.66 | 634 | 150 | 1.1 | 1.02 | 693 | 150 | - | 1.54 | 756 |
| | 200 | 1.1 | 0.77 | 703 | 200 | 1.5 | 1.16 | 752 | 200 | 2.2 | 1.70 | 810 |
| | 250 | - | 0.79 | 782 | 250 | 1.5 | 1.30 | 807 | 250 | - | 1.86 | 858 |
| | 300 | - | 0.91 | 845 | 300 | 1.5 | 1.45 | 861 | 300 | - | 2.02 | 907 |
| | 350 | - | 1.03 | 906 | 350 | - | 0.83 | 599 | 350 | - | 2.20 | 954 |

PD: Available pressure (Pa)
PM: Motor power (KW)
PA: Power input (KW)
V: Fan speed (rpm)

# PLUG-FAN WITH EC MOTOR OPTION

## TECHNICAL SPECIFICATIONS

| WPHBA RANGE | | 091 | | 121 | | 141 | | 171 | | 201 | | 251 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Air flow | $m^3/h$ | 500 | | 600 | | 700 | | 900 | | 1100 | | 1500 | |
| Available static pressure | Pa | 25 | 400 | 25 | 400 | 54 | 300 | 25 | 400 | 25 | 400 | 37 | 400 |
| Power input | W | 37 | 128 | 58 | 160 | 95 | 167 | 58 | 227 | 86 | 275 | 121 | 401 |
| Max. available static pressure | Pa | 518 | | 420 | | 309 | | 749 | | 689 | | 1046 | |
| Quantity | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | |
| Diameter | mm | 190 | | 190 | | 190 | | 250 | | 250 | | 310 | |
| Power | W | 170 | | 170 | | 170 | | 500 | | 500 | | 1350 | |
| Max. speed | r.p.m. | 4240 | | 4240 | | 4240 | | 3080 | | 3080 | | 2920 | |
| Power supply | V.~.Hz | 230.I | | 230.I | | 230.I | | 230.I | | 230.I | | 230.I | |
| Current input | A | 1.5 | | 1.5 | | 1.5 | | 2.5 | | 2.5 | | 6.7 | |

| WPHBA RANGE | | 351 | | 401 | | 501 | | 701 | | 751 | | 1001 | | 1201 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Air flow | $m^3/h$ | 2000 | | 2300 | | 2800 | | 3400 | | 4300 | | 6200 | | 7000 | |
| Available static pressure | Pa | 37 | 400 | 50 | 400 | 50 | 400 | 62 | 400 | 62 | 400 | 75 | 400 | 75 | 400 |
| Power input | W | 220 | 525 | 294 | 613 | 203 | 638 | 309 | 788 | 519 | 1075 | 734 | 1433 | 985 | 1752 |
| Max. available static pressure | Pa | 967 | | 1563 | | 1135 | | 1082 | | 958 | | 622 | | 475 | |
| Quantity | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | | 1 | |
| Diameter | mm | 310 | | 310 | | 400 | | 400 | | 400 | | 450 | | 450 | |
| Power | W | 2500 | | 2500 | | 2400 | | 2400 | | 2400 | | 2000 | | 2000 | |
| Max. speed | r.p.m. | 3640 | | 3640 | | 2400 | | 2400 | | 2400 | | 1880 | | 1880 | |
| Power supply | V.~.Hz | 400.III | | 400.III | | 400.III | | 400.III | | 400.III | | 400.III | | 400.III | |
| Current input | A | 4 | | 4 | | 3,9 | | 3,9 | | 3,9 | | 3,3 | | 3,3 | |

## SOUND POWER LEVELS IN DISCHARGE OF PLUG-FAN FAN

| RANGE WPHBA | 091 | 121 | 141 | 171 | 201 | 251 | 351 | 401 | 501 | 701 | 751 | 1001 | 1201 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hz | Lw (dBA) | | | | | | | | | | | | |
| 63 | 32.2 | 37.4 | 41.8 | 26.2 | 28.2 | 32.9 | 41.5 | 32.3 | 32.0 | 33.1 | 37.7 | 47.9 | 50.1 |
| 125 | 44.1 | 46.5 | 48.3 | 41.3 | 42.8 | 46.4 | 53.8 | 49.4 | 46.5 | 50.3 | 57.0 | 63.7 | 65.8 |
| 250 | 53.9 | 57.5 | 59.1 | 45.9 | 49.5 | 51.3 | 64.1 | 61.4 | 53.5 | 56.3 | 61.6 | 68.7 | 72.1 |
| 500 | 56.5 | 61.0 | 64.8 | 51.7 | 55.3 | 57.1 | 66.1 | 66.4 | 58.5 | 62.2 | 67.3 | 72.7 | 76.0 |
| 1000 | 61.2 | 64.9 | 68.7 | 56.4 | 59.2 | 61.7 | 72.2 | 71.2 | 62.2 | 65.9 | 71.2 | 74.7 | 78.1 |
| 2000 | 64.3 | 69.1 | 72.9 | 56.6 | 61.1 | 57.9 | 71.2 | 68.7 | 59.0 | 62.8 | 67.6 | 71.3 | 74.3 |
| 4000 | 61.5 | 64.5 | 68.4 | 49.2 | 52.9 | 53.8 | 66.0 | 64.5 | 58.0 | 62.7 | 68.5 | 71.1 | 72.5 |
| 8000 | 63.8 | 67.1 | 68.2 | 40.1 | 48.5 | 45.3 | 59.2 | 58.9 | 41.5 | 48.5 | 61.5 | 69.7 | 74.8 |
| TOTAL (dBA) | 69.3 | 73.3 | 76.5 | 60.8 | 64.5 | 64.9 | 76.2 | 74.8 | 66.1 | 70.0 | 75.4 | 79.7 | 83.0 |

Calculated in standard conditions of pressure and flow

## SOUND PRESSURE LEVELS IN DISCHARGE OF PLUG-FAN FAN

Machine over land in free field, directivity 2 and at 1.5m of height.

| WPHBA RANGE | 091 | 121 | 141 | 171 | 201 | 251 | 351 | 401 | 501 | 701 | 751 | 1001 | 1201 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Distance (metres)** | **dBA** | | | | | | | | | | | | |
| **1** | 61.8 | 65.8 | 69.0 | 53.3 | 57.0 | 57.4 | 68.7 | 67.3 | 58.6 | 62.5 | 67.9 | 72.2 | 75.5 |
| **2** | 55.8 | 59.7 | 63.0 | 47.3 | 51.0 | 51.4 | 62.7 | 61.3 | 52.6 | 56.4 | 61.9 | 66.2 | 69.5 |
| **3** | 52.3 | 56.2 | 59.4 | 43.7 | 47.5 | 47.9 | 59.2 | 57.8 | 49.1 | 52.9 | 58.4 | 62.7 | 66.0 |
| **5** | 47.9 | 51.8 | 55.0 | 39.3 | 43.0 | 43.4 | 54.7 | 53.3 | 44.6 | 48.5 | 53.9 | 58.3 | 61.5 |
| **10** | 41.8 | 45.8 | 49.0 | 33.3 | 37.0 | 37.4 | 48.7 | 47.3 | 38.6 | 42.5 | 47.9 | 52.2 | 55.5 |

Sound pressure levels depend on the installation conditions and adjacent elements.

# ACCESSORIES

## µPC CONTROLLER - TH TUNE

Controller composed by a user interface terminal or Th-TUNE thermostat installed in the room and a µPC control board with inputs and outputs programmed and installed in the outdoor unit.

- Thermostat supply 220-240Vac
- Thermostat-Board Communication via 3-wire twisted and shielded cable (Recommended: 22 AWG, 3 x 0.33mm²)
- Start / Stop programming during Day, Night and Week.
- Selection of the desired temperature.
- Operating modes: Cooling, Heating, Auto and fan only
- Continuous fan mode or Auto mode.
- Up to 2 Compressors
- "1 remote return air probe for units with ducts (or in room)"
- Up to 2 capacity steps with electric heater
- Free cooling
- Auxiliary hot water coil
- Display of alarms

### OPTIONAL

- Modbus via RS-485 card, Modbus RTU, Modbus IP
- BACnet MS/TP, BACnet IP
- LONWorks
- KNX (Konnex)
- SNMP
- Check other communication options.


***For more information on the TH TUNE thermostat, please refer to the user manual.***

## SUPER SI CONTROLLER (OPTION)

### Control board

Defrost control using pressure switches
Suitable thermostat only with relay board (not CAREL) at 24VAC
(Replace the relay board with µPC or PCO3 if the optional PGD thermostat is used)

### SUPER-SI standard thermostat

Wall temperature controller equipped with cable, which has LCD screen. This controller allows the following functions

- Manoeuver at 24V AC.
- Supported operating modes: Ventilation, Cooling, Heating and Auto.
- Automatic or continuous ventilation mode in the Cooling, Heating and Auto modes.
- Display and modification of operating mode.
- Display and modification of the desired temperature.
- Setting the operating limits in Cooling and Heating modes.
- Internal ambient temperature probe.
- Temperature display.
- Control of 1 or 2 stages of coil.
- Window contact, remote ON / OFF.
- Wall installation.
- Button Lock Function.
- Led indicator ON / OFF.

# ACCESSORIES

## SUPER SI CONTROLLER (OPTION)

### Option

Remote room temperature probe or return pipes temperature
For other not considered options consult availability.

***For more information on the SUPER SI thermostat, please consult the user manual.***

## ELECTRIC HEATERS

### Models from 091 to 1201

Coils of 1 or 2 heat stage(s), formed by nickel-chrome thread heaters, mounted on a structure of galvanized and bichromate steel sheet and frame shape with handrail of ceramic steatite that separate the coils from the structure incorporate protection thermostat, contactor and terminal strip for electrical connections.

## PRESSOSTATIC VALVE

For installations of network water, well water etc., with the purpose to regulate the water consumption according to the working conditions.

| MODEL | | 091 | 121 | 141 | 171 | 201 | 251 | 351 | 401 | 501 | 701 | 751 | 1001 | 1201 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water flow | $m^3/h$ | 0.50 | 0.68 | 0.83 | 0.99 | 1.23 | 1.56 | 2.41 | 2.78 | 3.41 | 4.13 | 5.32 | 7.18 | 8.39 |
| Valves hydraulic connection | - | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 | 1 1/4 |
| Valve plate exchanger connection | | 3/8 | 3/8 | 3/8 | 3/8 | 3/4 | 3/4 | 3/4 | 3/4 | 1 | 1 | 1 | 1 1/4 | 1 1/4 |
| Pressure drop | bar | 0.177 | 0.326 | 0.485 | 0.693 | 0.587 | 0.938 | 0.695 | 0.928 | 1.40 | 0.784 | 1.30 | 0.59 | 0.805 |

## OUTDOOR COILS

Anti-corrosion pre-covered coils. (Blue fins)

## OTHER ACCESSORIES

— Base guides
— Compressor lining
— Start-up

## VARIATIONS OVER THE STANDARD MANUFACTURING

— Without water condenser
— Upgraded plate heat exchanger
— Pool water heat machine
— Upgraded fan

FOR OTHER SPECIAL OPERATIONS, PLEASE CONTACT HITECSA.

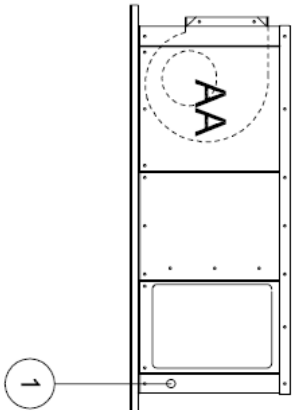
# DIMENSIONS AND WEIGHT

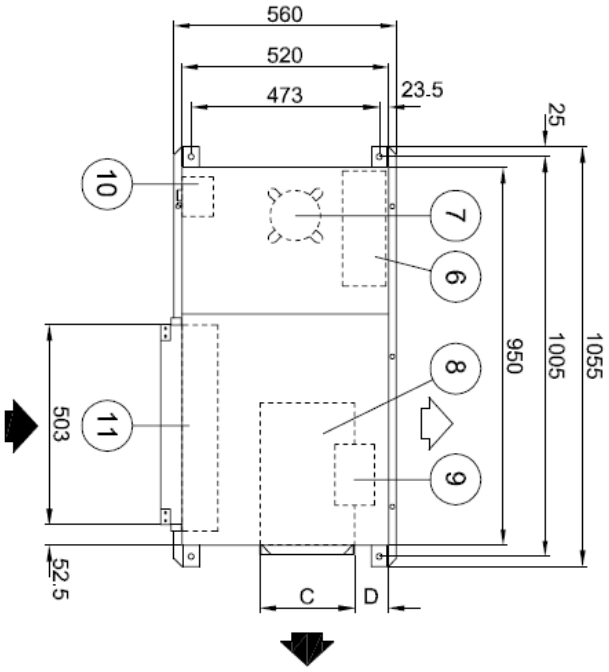
## WITH CENTRIFUGAL FAN

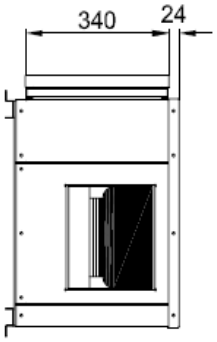
### Models 091 – 141

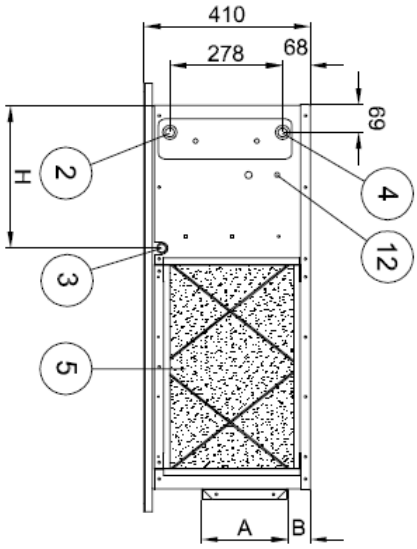
**LEGEND**

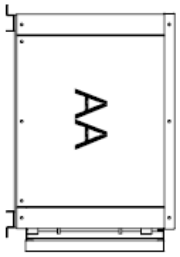
1 Electrical connections
2 Water inlet
3 External drainage 3/4'' male
4 Water outlet
5 Air filter
6 Electrical panel
7 Compressor
8 Evaporator turbine
9 Turbine engine
10 Condenser exchanger
11 Evaporator coil
12 Pressure valve connection (optional)
AA Panel access



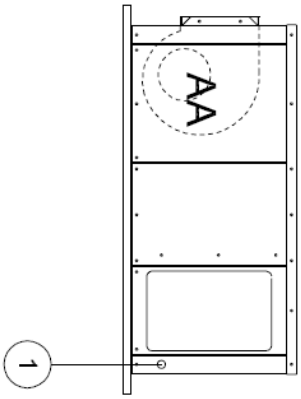

| DIMENSIONS (mm) | | | | |
|---|---|---|---|---|
| MODEL | A | B | C | D |
| 091-121 | 131 | 108 | 232 | 86 |
| 141 | 213 | 56 | 238 | 86 |

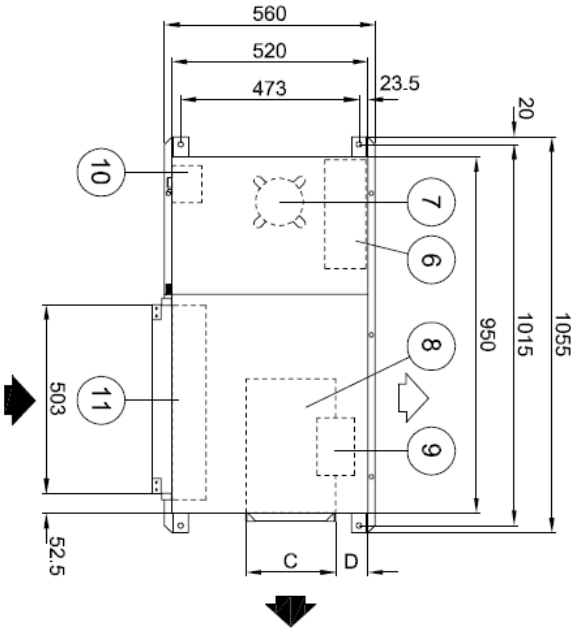
| WEIGHT (kg) | | |
|---|---|---|
| MODEL | NET WEIGHT | PACKED WEIGHT |
| 091 | 60 | 75 |
| 121 | 62 | 77 |
| 141 | 65 | 80 |

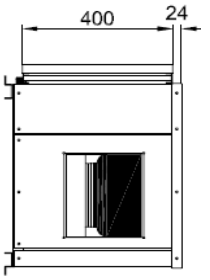
# DIMENSIONS AND WEIGHT
## WITH CENTRIFUGAL FAN
### Models 171 – 201

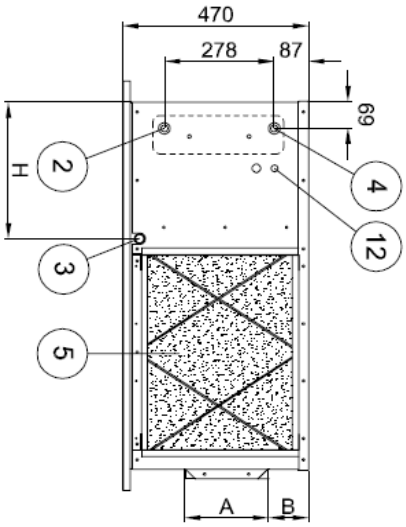
**LEGEND**

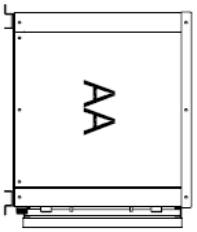
1 Electrical connections
2 Water inlet
3 External drainage 3/4'' male
4 Water outlet
5 Air filter
6 Electrical panel
7 Compressor
8 Evaporator turbine
9 Turbine engine
10 Condenser exchanger
11 Evaporator coil
12 Pressure valve connection (optional)
AA Panel access




| DIMENSIONS (mm) | | | | |
|---|---|---|---|---|
| MODEL | A | B | C | D |
| 171 | 213 | 100 | 238 | 232 |
| 201 | 131 | 153 | 232 | 86 |

| WEIGHT (kg) | | |
|---|---|---|
| MODEL | NET WEIGHT | PACKED WEIGHT |
| 171 | 75 | 90 |
| 201 | 77 | 92 |

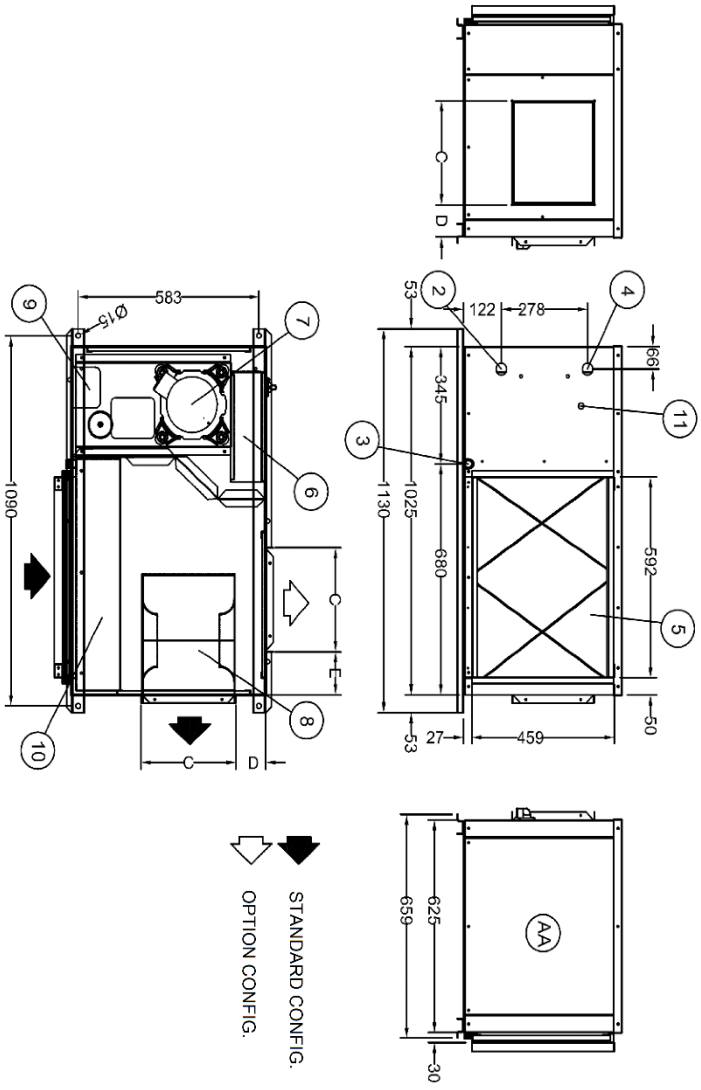
# DIMENSIONS AND WEIGHT
## WITH CENTRIFUGAL FAN
### Models 251 – 401

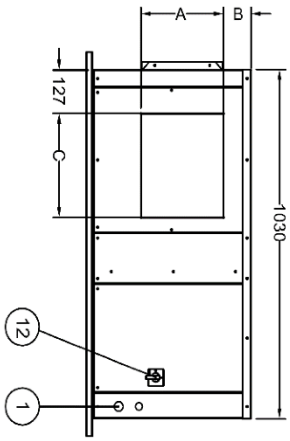
**LEGEND**

1 Electrical connections
2 Water inlet
3 External drainage 3/4'' male
4 Water outlet
5 Air filter
6 Electrical panel
7 Compressor

8 Evaporator turbine
9 Condenser exchanger
10 Evaporator coil
11 Pressure valve connection (option)
12 General switch

AA Panel access



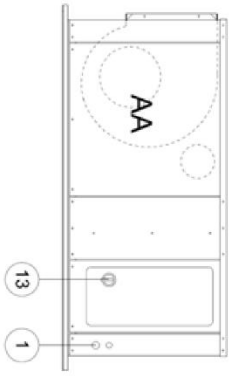

| DIMENSIONS (mm) | | | | | |
|---|---|---|---|---|---|
| MODEL | A | B | C | D | E |
| 251 | 213 | 146 | 238 | 95 | 195 |
| 351 | 266 | 88 | 306 | 95 | 127 |
| 401 | 293 | 37 | 339 | 95 | 95 |

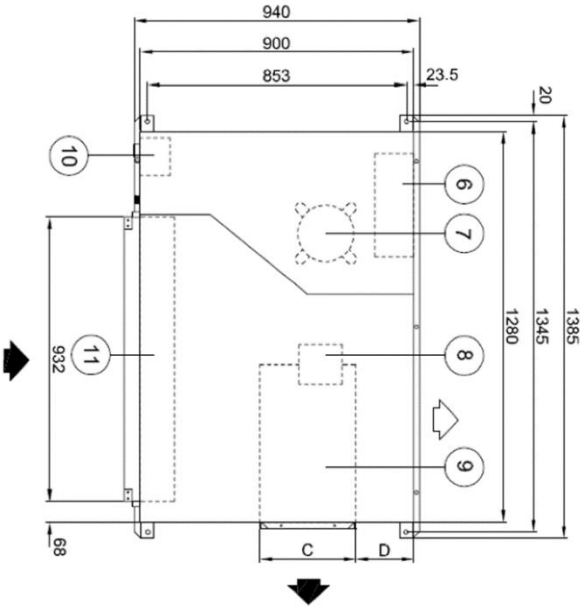
| WEIGHT (kg) | | |
|---|---|---|
| MODEL | NET WEIGHT | PACKED WEIGHT |
| 251 | 90 | 105 |
| 351 | 110 | 125 |
| 401 | 115 | 130 |

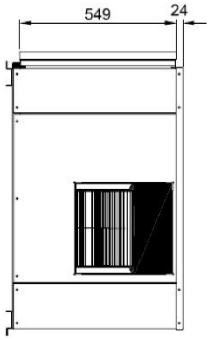
# DIMENSIONS AND WEIGHT
## WITH CENTRIFUGAL FAN
### Models 501 – 751

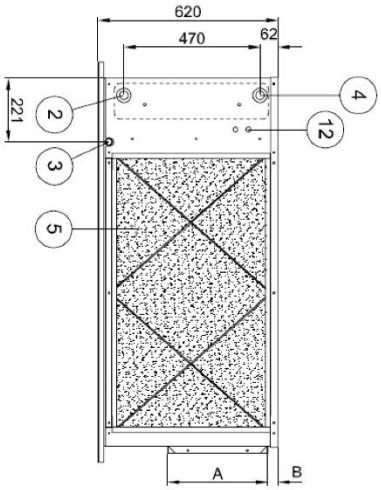
**LEGEND**

1 Electrical connections
2 Water inlet
3 External drainage 3/4'' male
4 Water outlet
5 Air filter
6 Electrical panel
7 Compressor
8 Evaporator turbine
9 Turbine engine
10 Condenser exchanger
11 Evaporator coil
12 Pressure valve connection (optional)
13 General switch
AA Panel access



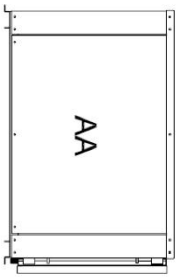




| DIMENSIONS (mm) | | | | |
|---|---|---|---|---|
| MODEL | A | B | C | D |
| 501-701 | 293 | 128 | 338 | 190 |
| 751 | 345 | 65 | 315 | 190 |

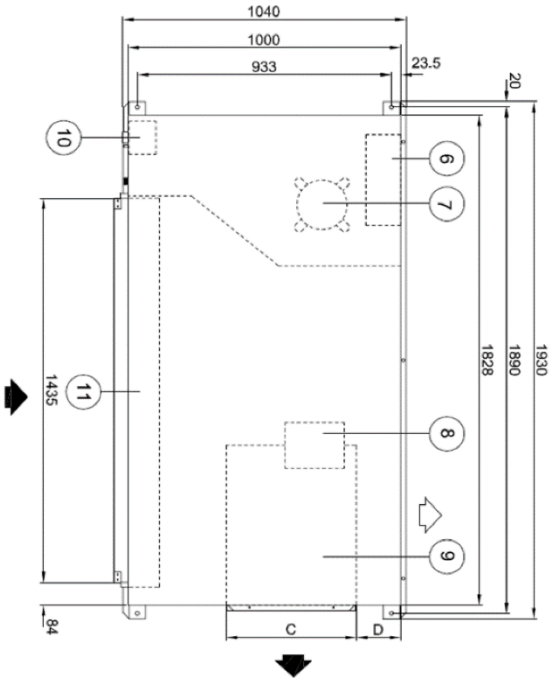
| WEIGHT (kg) | | |
|---|---|---|
| MODEL | NET WEIGHT | PACKED WEIGHT |
| 501 | 160 | 175 |
| 701 | 160 | 175 |
| 751 | 180 | 195 |

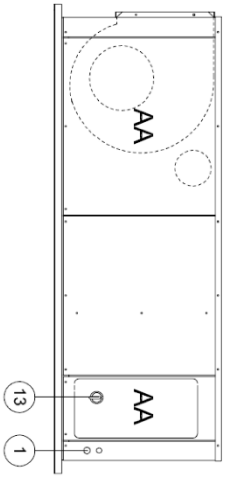


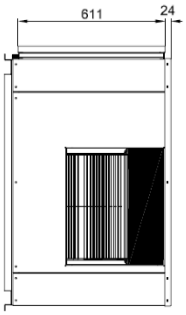
# DIMENSIONS AND WEIGHT
## WITH CENTRIFUGAL FAN
### Models 1001 – 1201

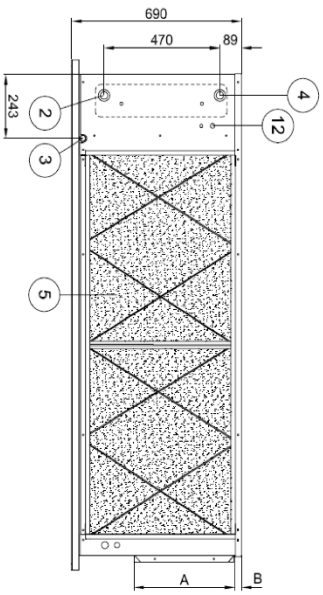
**LEGEND**

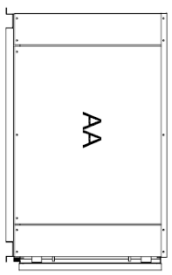
1 Electrical connections
2 Water inlet
3 External drainage 3/4'' male
4 Water outlet
5 Air filter
6 Electrical panel
7 Compressor
8 Evaporator turbine
9 Turbine engine
10 Condenser exchanger
11 Evaporator coil
12 Pressure valve connection (optional)
13 Main switch
AA Panel access



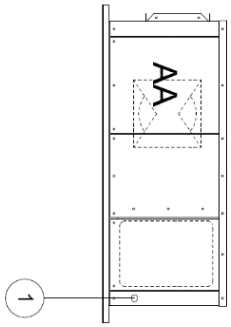

| DIMENSIONS (mm) | | | | |
|---|---|---|---|---|
| MODEL | A | B | C | D |
| 1001 | 347 | 117 | 402 | 200 |
| 1201 | 409 | 28 | 478 | 163 |

| WEIGHT (kg) | | |
|---|---|---|
| MODEL | NET WEIGHT | PACKED WEIGHT |
| 1001 | 230 | 245 |
| 1201 | 250 | 265 |

# DIMENSIONS AND WEIGHT

## WITH EC MOTOR FAN

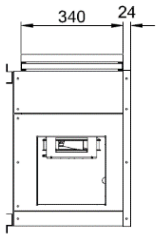
### Models 091 – 141

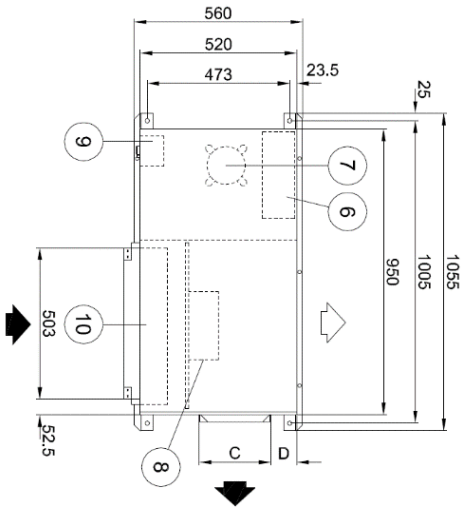


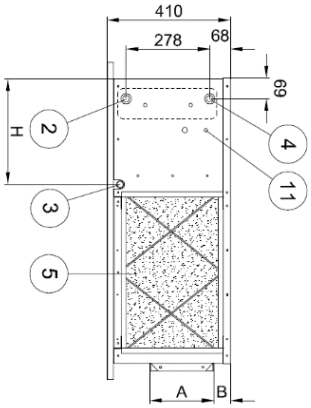

**LEGEND**

1. Electrical connections
2. Water inlet
3. External drainage Ø ¾" male
4. Water outlet
5. Air filter
6. Electrical panel
7. Compressor
8. EC motor fan
9. Condenser exchanger
10. Evaporator coil
11. Pressure valve connection (optional)
12. Main switch

AA Panel access

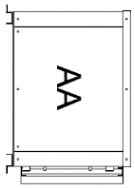


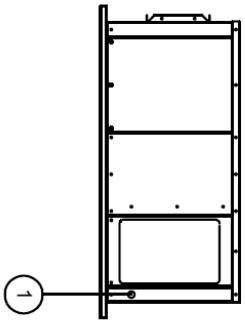




| DIMENSIONS (mm) | | | | |
|---|---|---|---|---|
| MODEL | A | B | C | D |
| 091-121 - 141 | 227 | 82 | 227 | 74 |

| WEIGHT (kg) | | |
|---|---|---|
| MODEL | NET WEIGHT | PACKED WEIGHT |
| 091 | 60 | 75 |
| 121 | 62 | 77 |
| 141 | 65 | 80 |



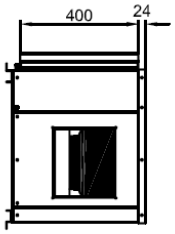
# DIMENSIONS AND WEIGHT
## WITH EC MOTOR FAN
### Models 171 – 201

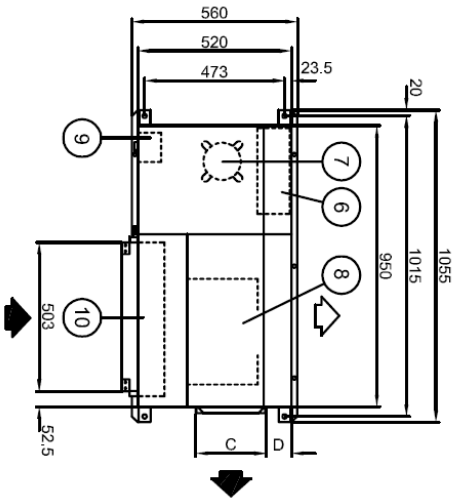


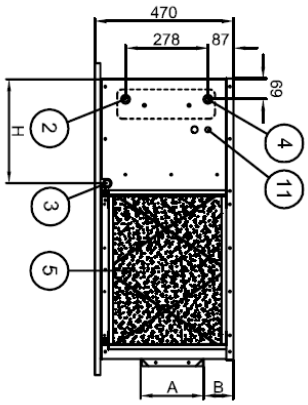

**LEGEND**

1. Electrical connections
2. Water inlet
3. External drainage Ø ¾" male
4. Water outlet
5. Air filter
6. Electrical panel
7. Compressor
8. EC motor fan
9. Condenser exchanger
10. Evaporator coil
11. Pressure valve connection (optional)
12. General Switch

AA Panel access

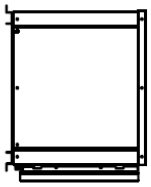



| DIMENSIONS (mm) | | | | |
|---|---|---|---|---|
| MODEL | A | B | C | D |
| 171-201 | 300 | 76 | 238 | 94 |

| WEIGHT (kg) | | |
|---|---|---|
| MODEL | NET WEIGHT | PACKED WEIGHT |
| 171 | 75 | 90 |
| 201 | 77 | 92 |

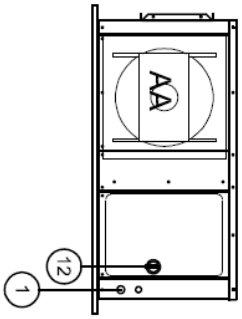


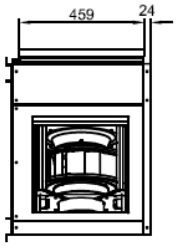
# DIMENSIONS AND WEIGHT
## WITH EC MOTOR FAN
### Models 251 – 401

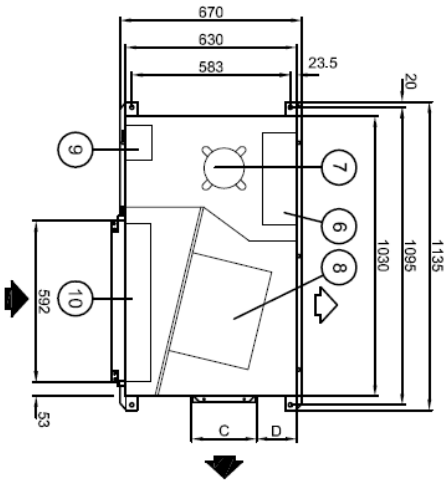
**LEGEND**

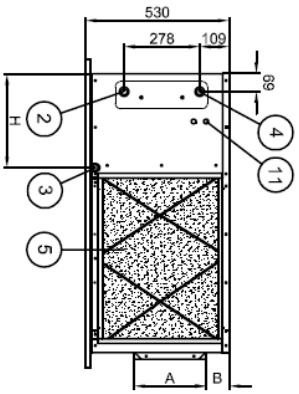
1. Electrical connections
2. Water inlet
3. External drainage Ø ¾" male
4. Water outlet
5. Air filter
6. Electrical panel
7. Compressor
8. EC motor fan
9. Condenser exchanger
10. Evaporator coil
11. Pressure valve connection (optional)
12. General switch

AA Panel access



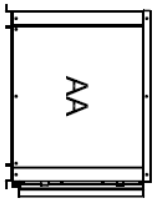



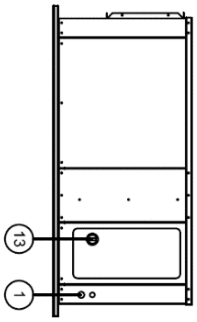




| DIMENSIONS (mm) | | | | |
|---|---|---|---|---|
| MODEL | A | B | C | D |
| 251-351-401 | 352 | 81 | 352 | 88 |

| WEIGHT (kg) | | |
|---|---|---|
| MODEL | NET WEIGHT | PACKED WEIGHT |
| 251 | 90 | 105 |
| 351 | 110 | 125 |
| 401 | 115 | 130 |



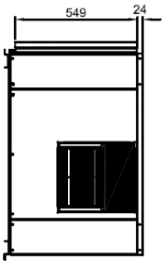
# DIMENSIONS AND WEIGHT
## WITH EC MOTOR FAN
### Models 501 - 751

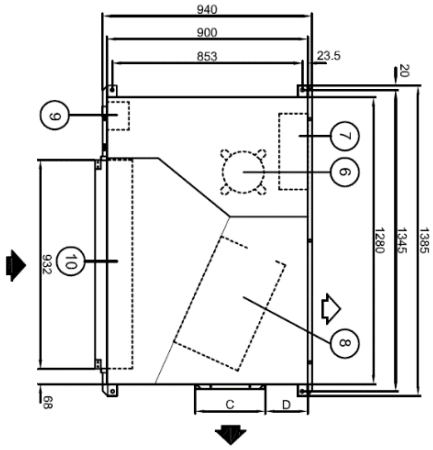


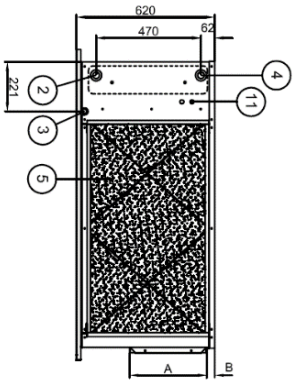

**LEGEND**

1. Electrical connections
2. Water inlet
3. External drainage Ø ¾" male
4. Water outlet
5. Air filter
6. Compressor
7. Electrical panel
8. EC motor fan
9. Condenser exchanger
10. Evaporator coil
11. Pressure valve connection (optional)
12. General switch

AA Panel access

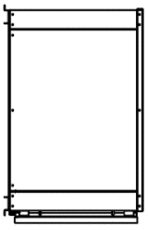



| DIMENSIONS (mm) | | | | |
|---|---|---|---|---|
| MODEL | A | B | C | D |
| 501-701-751 | 502 | 48 | 452 | 222 |

| WEIGHT (kg) | | |
|---|---|---|
| MODEL | NET WEIGHT | PACKED WEIGHT |
| 501 | 160 | 175 |
| 701 | 160 | 175 |
| 751 | 180 | 195 |

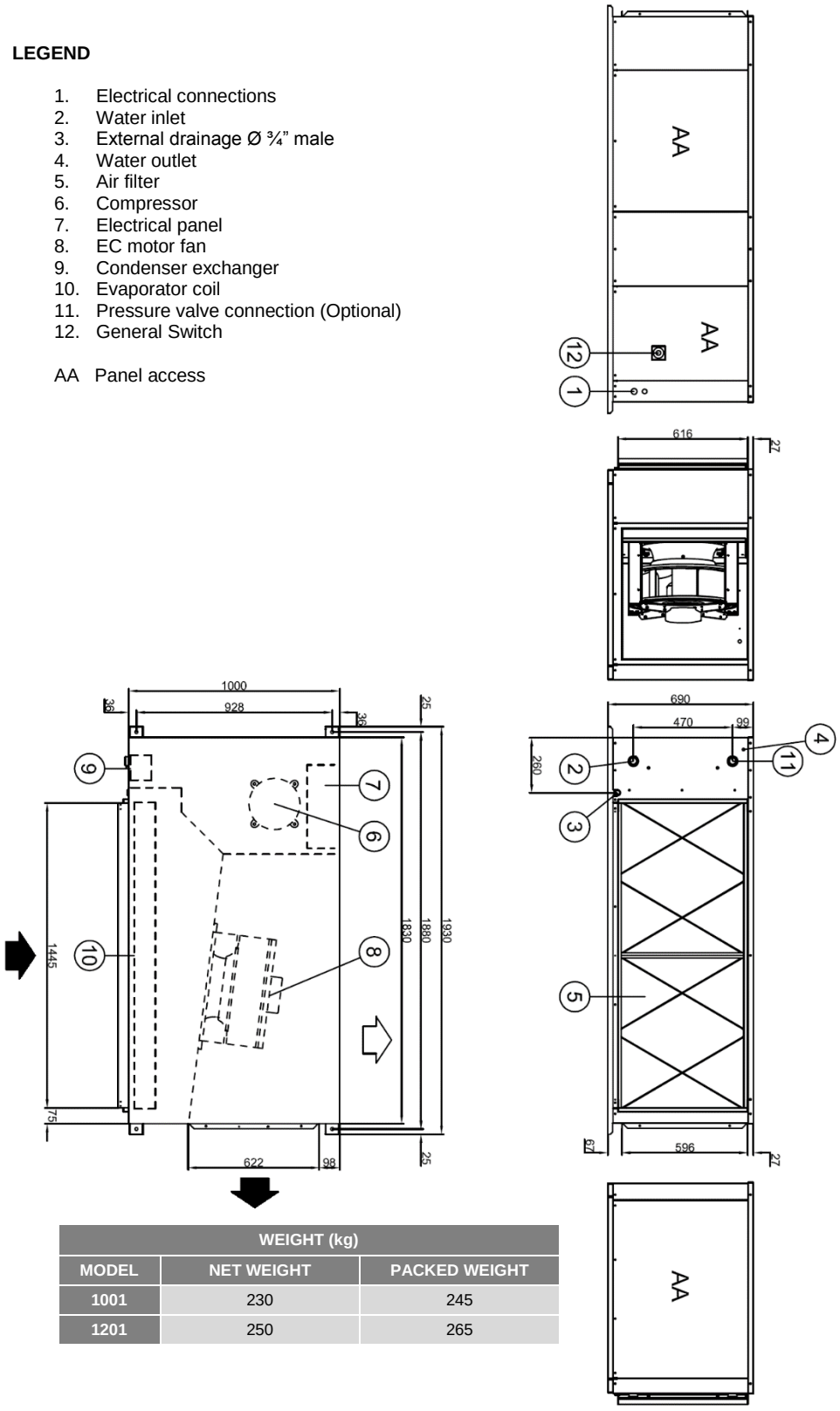


# DIMENSIONS AND WEIGHT
## WITH EC MOTOR FAN
### Models 1001 – 1201

**LEGEND**

1. Electrical connections
2. Water inlet
3. External drainage Ø ¾" male
4. Water outlet
5. Air filter
6. Compressor
7. Electrical panel
8. EC motor fan
9. Condenser exchanger
10. Evaporator coil
11. Pressure valve connection (Optional)
12. General Switch

AA Panel access




| WEIGHT (kg) | | |
|---|---|---|
| MODEL | NET WEIGHT | PACKED WEIGHT |
| 1001 | 230 | 245 |
| 1201 | 250 | 265 |

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