

# PLE Chillers and HP with Low GWP refrigerant

Outdoor packaged unit

## PLE 50 - 160 kW



Erp 2021



R-454B  
refrigerant



A2L gas leak  
detection



Scroll  
compressor



Cooling  
only



Heating/Cooling

### PLUS

- » R454B refrigerant (GWP=467)
- » High seasonal efficiency values (ErP 2021 compliant)
- » Electronic expansion valve as standard
- » High configurability of options and accessories
- » Possibility to configure low-noise versions
- » Production of water from -10°C up to 55°C
- » Extension of the working range in the heating mode thanks to the Low Air T option
- » Extremely compact dimensions (up to 38 kW/m<sup>2</sup>)

PLE heat pumps and water chillers are designed for heating or cooling the water to be used in air-conditioning systems for residential, commercial or industrial use.

The use of low-GWP refrigerant ensures compliance with the limits established by the F-GAS regulation regarding gases that potentially contribute to global warming (greenhouse gases).

### Air-water unit with high seasonal efficiency and low-GWP refrigerant

PLE is Galletti's new range of air-cooled packaged chillers and heat pumps for outdoor installation featuring R454B refrigerant. R454B is a next generation A2L refrigerant with a GWP of only 467, one of the lowest on the market.

This GWP value ensures that the PLE range complies with the gradual reduction of greenhouse gas emission required by the F-GAS regulation, down to the stricter limits foreseen for 2030.

The range consists of 10 models with cooling capacities ranging from 50 to 160 kW, available in cooling only or reversible heat pump versions.

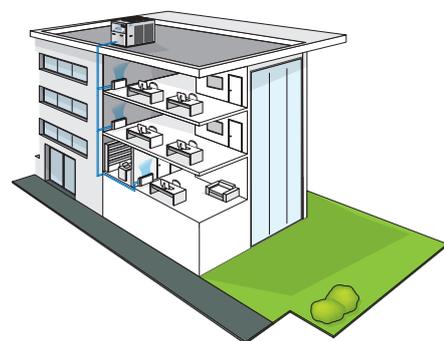
The range's main strength is its high seasonal efficiency, which is designed to permanently reduce annual energy consumption as well as meet the minimum efficiency requirements established by ErP 2021.

In order to increase the efficiency at partial loads, all PLE models are provided with tandem solutions (2 compressors on a single circuit) and equipped with electronic expansion valve as a standard.

The use of top quality components at the cutting edge of technology in the cooling, hydraulic and electrical systems makes PLE chillers state of the art in terms of efficiency, reliability and operating limits. In fact, the ability to produce water from -10°C to 55°C and operate at full load with outdoor air temperatures from -12°C to 46°C is guaranteed.

The range provides high configurability from the point of view of acoustics, with a wide range of accessories designed to reduce noise emissions.

Advanced control, which is always provided across the entire range, allows continuous monitoring of operating parameters, advanced regulation logics and connectivity.



# PLE Chillers and HP with Low GWP refrigerant

## Very low GWP refrigerant

Use of R454B refrigerant with low environmental impact. R454B is a next-generation A2L refrigerant with a GWP of only 467, one of the lowest on the market. This GWP value ensures that the <pimdata/> range complies with the gradual reduction of quotas of greenhouse refrigerants in the European market required by the F-GAS regulation, down to the stricter limits foreseen for 2030

## Scroll compressors

The scroll-type compressors designed to work with R454B, which can be sound insulated, include internal thermal protection of the windings and are installed on special anti-vibration supports. The scroll-type compressors are equipped with an IDV valve. The IDV intermediate delivery valve technology allows the compressor to avoid losses caused by overcompression and, consequently, the additional work the motor has to perform in partial-load operation, thus saving energy and improving seasonal and partial-load efficiency from 3% to 10%.

## Microchannel

The entire Chiller range has microchannel coils as a standard feature. The large heat exchange surface, the absence of a copper-aluminium interface, and the perfect flow of air make it possible to achieve the same performance while reducing the refrigerant charge by up to 40%, with obvious benefits from an ecological point of view. Microchannel coils are made of Long Life Alloy, an aluminium alloy that offers maximum safety in urban and industrial environments.

## Electronic valve

It is standard on the entire range and offers greater responsiveness during transients. The electronics also manage the synergistic operation of compressors and the valve, thereby making it possible to vary overheating and maximize efficiency at partial loads.



The models are completely configurable by selecting the version and the options. To the right is shown an example of configuration.

| Version    | Field | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|------------|-------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| PLE162HS0A |       | A | 1 | S | 0 | E | 0 | 0 | 2 | 0 | 0  | G  | 0  | 1  |

To verify the compatibility of the options, use the selection software or the price list.

## AVAILABLE VERSIONS

### Only cooling versions

|                  |  |
|------------------|--|
| <b>PLE..CS0A</b> | Power supply 400V-3N-50Hz                  |
| <b>PLE..CS2A</b> | Power supply 400V-3N-50Hz+ circuit breaker |
| <b>PLE..CS4A</b> | Power supply 400V-3-50Hz                   |
| <b>PLE..CS5A</b> | Power supply 400V-3-50Hz+ circuit breaker  |

### Reversible heat pump versions

|                  |  |
|------------------|--|
| <b>PLE..HS0A</b> | Power supply 400V-3N-50Hz                  |
| <b>PLE..HS2A</b> | Power supply 400V-3N-50Hz+ circuit breaker |
| <b>PLE..HS4A</b> | Power supply 400V-3-50Hz                   |
| <b>PLE..HSSA</b> | Power supply 400V-3-50Hz+ circuit breaker  |

## CONFIGURATION OPTIONS

|   |   |
|---|---|
| <b>1 Expansion valve</b>  | <b>8 Refrigerant pipework accessories</b>   |
| A Electronic  | 0 Absent  |
| <b>2 Water pump and accessories</b>                                       | 2 Low air T working field extension (Liquid separator on compressor suction + liquid injection) |
| 0 Absent  | <b>9 Remote control / Serial communication</b>  |
| 1 LP pump + expansion vessel  | 0 Absent  |
| 2 LP run and standby double pump + expansion vessel                       | 2 RS485 serial board (Carel / Modbus protocol)  |
| 3 HP pump + expansion vessel  | B BACNET IP / PCOWEB serial board (advanced controller required)                                |
| 4 HP run and standby double pump + expansion vessel                       | G BACNET IP / PCOWEB + SUPERVISOR SOFTWARE (GWeb)   |
| A LP inverter pump + expansion vessel                                     | L LON FTT10 serial board  |
| B LP run and standby double inverter pump + expansion vessel              | S Remote simplified user panel  |
| C LP run and standby double inverter pump + expansion vessel              | X Remote user panel for advanced controller   |
| D HP run and standby double inverter pump + expansion vessel              | <b>10 Special coils / Protective treatments</b>   |
| <b>3 Water buffer tank</b>  | 0 Copper-Alluminium (standard for heat pump)  |
| 0 Absent  | C Cataphoresis  |
| S Present   | E Microchannel in Long Life Alloy (standard for chiller)  |
| <b>4 Partial heat recovery</b>  | I Hydrophilic   |
| 0 Absent  | M Microchannels coil with e-coating treatment   |
| D Desuperheater with water pump free contact                              | P Pre-painted fins with epoxy painting  |
| <b>5 Air flow modulation</b>  | R Copper-copper   |
| A Condensation control with high-head BLDC electronically controlled fans | <b>11 Anti vibration shock mounts</b>   |
| C Condensation control by phase-cut fans                                  | 0 Absent  |
| E Condensation control performed by BLDC electronically controlled fans   | G Rubber anti vibration shock mounts  |
| <b>6 Antifreezing kit</b>   | M Spring anti vibration shock mounts  |
| 0 Absent  | <b>12 Outdoor coil trace heater</b>   |
| E Evaporator  | 0 Absent  |
| P Evaporator and water pump   | 1 Present (solo pdc)  |
| S Evaporator, water pump and water buffer tank                            | <b>13 Onboard controller</b>  |
| <b>7 Acoustic insulation and attenuation</b>                              | 1 Advanced  |
| 0 Absent  |   |
| 3 Compressor compartment acoustic insulation and sound blanket            |   |

## ACCESSORIES

|          |   |          |   |
|----------|---|----------|---|
| <b>A</b> | Outdoor finned coil heat exchanger protection filters                 | <b>L</b> | Water pipes additional insulation                                     |
| <b>B</b> | Outdoor finned coil heat exchanger protection grill                   | <b>M</b> | 0-10 V signal for external user pump control (on-board pump excluded) |
| <b>C</b> | Pair of couplings Victaulic   | <b>N</b> | Compressor tandem/trio isolation valves                               |
| <b>D</b> | ON/OFF status of the compressors                                      | <b>Q</b> | Night-time low-noise  |
| <b>E</b> | Remote control for step capacity limit (advanced controller required) | <b>R</b> | Enabling 2nd set-point / external alarm signaling via digital input   |
| <b>F</b> | Configurable digital alarm board (advanced controller required)       | <b>S</b> | Hot-wire electronic flow switch                                       |
| <b>G</b> | Soft starter  | <b>T</b> | Mains power analyzer for monitoring and reducing power consumption    |
| <b>H</b> | Power factor capacitors   | <b>U</b> | Lifting kit   |
| <b>I</b> | Refrigerant leakage sensor  |          |   |

**PLE C WATER CHILLERS RATED TECHNICAL DATA**

| PLE C                              |     |                 | 52        | 62    | 72    | 82    | 92    |
|------------------------------------|-----|-----------------|-----------|-------|-------|-------|-------|
| Power supply                       |     | V-ph-Hz         | 400-3N-50 |       |       |       |       |
| Cooling capacity                   | (1) | kW              | 52,7      | 58,8  | 66,0  | 71,6  | 87,8  |
| Total power input                  | (1) | kW              | 17,4      | 20,1  | 23,0  | 26,3  | 30,2  |
| EER                                | (1) |                 | 3,03      | 2,92  | 2,87  | 2,73  | 2,91  |
| SEER                               | (2) |                 | 4,42      | 4,23  | 4,15  | 4,12  | 4,45  |
| Water flow                         | (1) | l/h             | 9069      | 10116 | 11365 | 12318 | 15112 |
| Water pressure drop                | (1) | kPa             | 22        | 27    | 27    | 31    | 33    |
| Available pressure head - LP pumps | (1) | kPa             | 164       | 155   | 150   | 140   | 124   |
| Available pressure head - HP pumps | (1) | kPa             | 213       | 204   | 198   | 188   | 183   |
| Maximum current absorption         |     | A               | 48        | 52    | 58    | 64    | 78    |
| Start up current                   |     | A               | 163       | 170   | 184   | 224   | 254   |
| Start up current with soft starter |     | A               | 128       | 133   | 144   | 174   | 200   |
| Compressors / circuits             |     |                 | 2/1       |       |       |       |       |
| Buffer tank volume                 |     | dm <sup>3</sup> | 125       | 125   | 125   | 125   | 190   |
| Sound power levele                 | (3) | dB(A)           | 80        | 81    | 81    | 81    | 84    |
| Sound power level low noise unit   | (3) | dB(A)           | 77        | 78    | 78    | 78    | 81    |

| PLE C                              |     |                 | 102       | 122   | 132   | 142   | 152   |
|------------------------------------|-----|-----------------|-----------|-------|-------|-------|-------|
| Power supply                       |     | V-ph-Hz         | 400-3N-50 |       |       |       |       |
| Cooling capacity                   | (1) | kW              | 96,6      | 108   | 122   | 135   | 145   |
| Total power input                  | (1) | kW              | 34,3      | 39,9  | 42,2  | 49,0  | 56,1  |
| EER                                | (1) |                 | 2,82      | 2,72  | 2,89  | 2,74  | 2,59  |
| SEER                               | (2) |                 | 4,25      | 4,26  | 4,25  | 4,18  | 4,11  |
| Water flow                         | (1) | l/h             | 16625     | 18648 | 20981 | 23169 | 25009 |
| Water pressure drop                | (1) | kPa             | 39        | 35    | 43    | 44    | 50    |
| Available pressure head - LP pumps | (1) | kPa             | 115       | 115   | 156   | 148   | 135   |
| Available pressure head - HP pumps | (1) | kPa             | 173       | 174   | 177   | 170   | 157   |
| Maximum current absorption         |     | A               | 85        | 94    | 105   | 116   | 127   |
| Start up current                   |     | A               | 304       | 304   | 308   | 376   | 376   |
| Start up current with soft starter |     | A               | 239       | 239   | 243   | 296   | 296   |
| Compressors / circuits             |     |                 | 2/1       |       |       |       |       |
| Buffer tank volume                 |     | dm <sup>3</sup> | 190       | 190   | 295   | 295   | 295   |
| Sound power levele                 | (3) | dB(A)           | 84        | 85    | 88    | 88    | 89    |
| Sound power level low noise unit   | (3) | dB(A)           | 81        | 82    | 85    | 85    | 87    |

- (1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2018)  
(2)  $\eta$  efficiency values for heating and cooling are respectively calculated by the following formulas:  $[\eta = SCOP / 2,5 - F(1) - F(2)]$  e  $[\eta = SEER / 2,5 - F(1) - F(2)]$ . For further information, please refer to the technical document "ErP 2009/125/EC DIRECTIVE" in the catalogue introducing pages, or to the EN14825:2017 regulation.  
(3) Sound power level measured according to UNI EN ISO 9614

# PLE Chillers and HP with Low GWP refrigerant

## PLE H HEAT PUMPS RATED TECHNICAL DATA

| PLE H                              |     |                 | 52        | 62    | 72    | 82    | 92    |
|------------------------------------|-----|-----------------|-----------|-------|-------|-------|-------|
| Power supply                       |     | V-ph-Hz         | 400-3N-50 |       |       |       |       |
| Cooling capacity                   | (1) | kW              | 50,1      | 54,9  | 62,5  | 70,5  | 83,8  |
| Total power input                  | (1) | kW              | 18,5      | 21,3  | 24,0  | 27,0  | 30,8  |
| EER                                | (1) |                 | 2,71      | 2,58  | 2,60  | 2,61  | 2,72  |
| SEER                               | (2) |                 | 4,40      | 4,21  | 4,11  | 3,93  | 4,40  |
| Water flow                         | (1) | l/h             | 8624      | 9446  | 10758 | 12140 | 14418 |
| Water pressure drop                | (1) | kPa             | 21        | 24    | 25    | 31    | 28    |
| Available pressure head - LP pumps | (1) | kPa             | 168       | 160   | 151   | 138   | 129   |
| Available pressure head - HP pumps | (1) | kPa             | 218       | 210   | 200   | 186   | 187   |
| Heating capacity                   | (3) | kW              | 58,8      | 65,9  | 75,1  | 84,1  | 99,3  |
| Total power input                  | (3) | kW              | 18,3      | 20,6  | 23,5  | 26,0  | 30,7  |
| COP                                | (3) |                 | 3,21      | 3,20  | 3,20  | 3,24  | 3,23  |
| SCOP                               | (2) |                 | 3,61      | 3,66  | 3,77  | 3,90  | 3,61  |
| Heating energy efficiency class    | (4) |                 | A+        | A+    | A+    | A++   | A++   |
| Water flow                         | (3) | l/h             | 10193     | 11420 | 13026 | 14577 | 17208 |
| Water pressure drop                | (3) | kPa             | 28        | 34    | 35    | 43    | 36    |
| Available pressure head - LP pumps | (3) | kPa             | 160       | 150   | 138   | 118   | 119   |
| Available pressure head - HP pumps | (3) | kPa             | 209       | 199   | 185   | 164   | 177   |
| Maximum current absorption         |     | A               | 48        | 52    | 58    | 64    | 78    |
| Start up current                   |     | A               | 163       | 170   | 184   | 224   | 254   |
| Start up current with soft starter |     | A               | 128       | 133   | 144   | 174   | 200   |
| Compressors / circuits             |     |                 | 2/1       |       |       |       |       |
| Buffer tank volume                 |     | dm <sup>3</sup> | 125       | 125   | 125   | 125   | 190   |
| Sound power levele                 | (5) | dB(A)           | 80        | 81    | 81    | 81    | 84    |
| Sound power level low noise unit   | (5) | dB(A)           | 77        | 78    | 78    | 78    | 81    |

| PLE H                              |     |                 | 102       | 122   | 132   | 142   | 152   |
|------------------------------------|-----|-----------------|-----------|-------|-------|-------|-------|
| Power supply                       |     | V-ph-Hz         | 400-3N-50 |       |       |       |       |
| Cooling capacity                   | (1) | kW              | 92,5      | 107   | 120   | 132   | 143   |
| Total power input                  | (1) | kW              | 36,1      | 41,0  | 44,8  | 49,7  | 56,3  |
| EER                                | (1) |                 | 2,56      | 2,61  | 2,68  | 2,66  | 2,53  |
| SEER                               | (2) |                 | 4,02      | 4,22  | 4,23  | 4,15  | 3,93  |
| Water flow                         | (1) | l/h             | 15927     | 18419 | 20699 | 22745 | 24516 |
| Water pressure drop                | (1) | kPa             | 36        | 34    | 42    | 38    | 44    |
| Available pressure head - LP pumps | (1) | kPa             | 116       | 115   | 158   | 156   | 138   |
| Available pressure head - HP pumps | (1) | kPa             | 175       | 173   | 179   | 177   | 160   |
| Heating capacity                   | (3) | kW              | 111       | 125   | 138   | 157   | 172   |
| Total power input                  | (3) | kW              | 34,7      | 39,1  | 43,1  | 48,4  | 53,8  |
| COP                                | (3) |                 | 3,20      | 3,20  | 3,21  | 3,24  | 3,20  |
| SCOP                               | (2) |                 | 3,61      | 3,84  | 3,73  | 3,79  | 3,73  |
| Heating energy efficiency class    | (4) |                 | A+        | A++   | A+    | A+    | A+    |
| Water flow                         | (3) | l/h             | 19221     | 21658 | 23996 | 27204 | 29845 |
| Water pressure drop                | (3) | kPa             | 51        | 46    | 55    | 51    | 60    |
| Available pressure head - LP pumps | (3) | kPa             | 101       | 96    | 140   | 136   | 111   |
| Available pressure head - HP pumps | (3) | kPa             | 159       | 154   | 162   | 158   | 132   |
| Maximum current absorption         |     | A               | 85        | 94    | 105   | 116   | 127   |
| Start up current                   |     | A               | 304       | 304   | 308   | 376   | 376   |
| Start up current with soft starter |     | A               | 239       | 239   | 243   | 296   | 296   |
| Compressors / circuits             |     |                 | 2/1       |       |       |       |       |
| Buffer tank volume                 |     | dm <sup>3</sup> | 190       | 190   | 295   | 295   | 295   |
| Sound power levele                 | (5) | dB(A)           | 84        | 85    | 88    | 88    | 89    |
| Sound power level low noise unit   | (5) | dB(A)           | 81        | 82    | 85    | 85    | 87    |

(1) Outdoor air temperature 35°C, water temperature 12°C / 7°C (EN14511:2018)

(2)  $\eta$  efficiency values for heating and cooling are respectively calculated by the following formulas:  $[\eta = SCOP / 2,5 - F(1) - F(2)]$  e  $[\eta = SEER / 2,5 - F(1) - F(2)]$ . For further information, please refer to the technical document "ErP 2009/125/EC DIRECTIVE" in the catalogue introducing pages, or to the EN14825:2017 regulation.

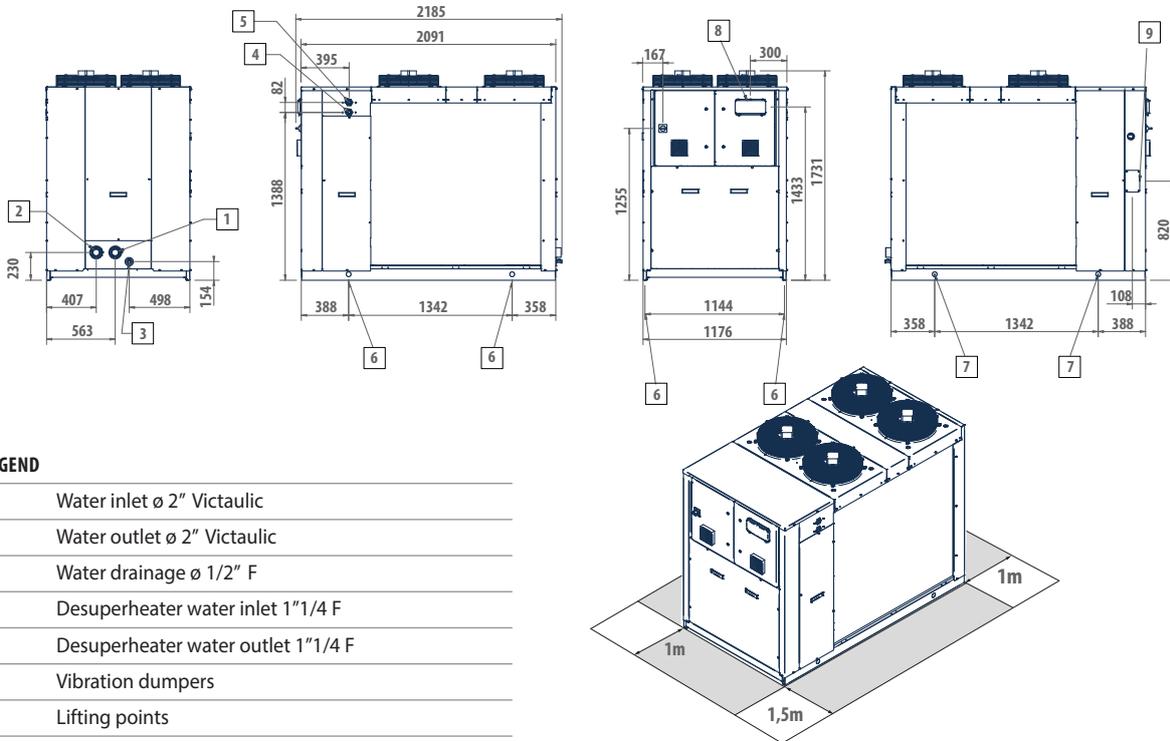
(3) Outdoor air temperature dry bulb 7°C / wet bulb 6°C, water temperature 40°C / 45°C (EN14511:2018)

(4) Seasonal energy efficiency class for LOW TEMPERATURE room heating under AVERAGE climatic conditions [EUROPEAN REGULATION No 811/2013]

(5) Sound power level measured according to UNI EN ISO 9614

DIMENSIONAL DRAWINGS

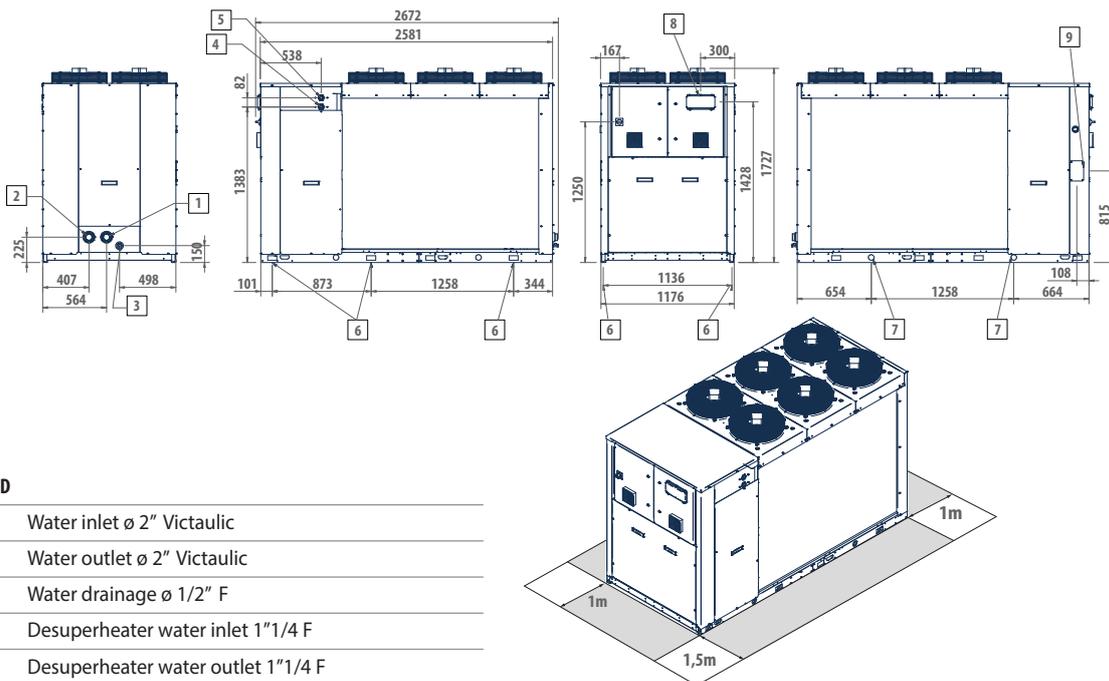
PLE 52 - 82



LEGEND

- |   |   |
|---|---|
| 1 | Water inlet $\varnothing$ 2" Victaulic  |
| 2 | Water outlet $\varnothing$ 2" Victaulic |
| 3 | Water drainage $\varnothing$ 1/2" F     |
| 4 | Desuperheater water inlet 1"1/4 F       |
| 5 | Desuperheater water outlet 1"1/4 F      |
| 6 | Vibration dumpers                       |
| 7 | Lifting points                          |
| 8 | User interface                          |
| 9 | Power supply input                      |

PLE 92 - 122



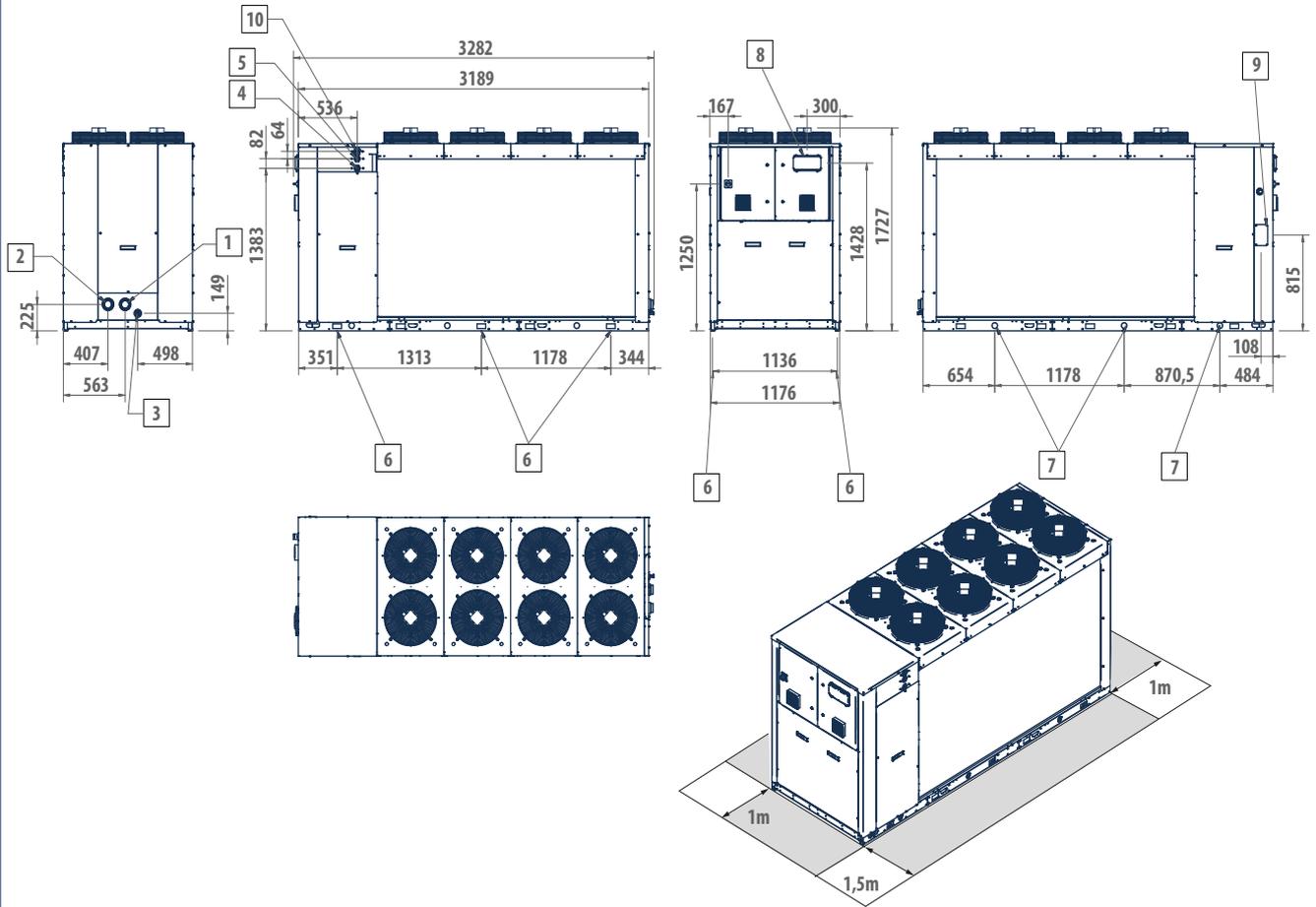
LEGEND

- |   |   |
|---|---|
| 1 | Water inlet $\varnothing$ 2" Victaulic  |
| 2 | Water outlet $\varnothing$ 2" Victaulic |
| 3 | Water drainage $\varnothing$ 1/2" F     |
| 4 | Desuperheater water inlet 1"1/4 F       |
| 5 | Desuperheater water outlet 1"1/4 F      |
| 6 | Vibration dumpers                       |
| 7 | Lifting points                          |
| 8 | User interface                          |
| 9 | Power supply input                      |

# PLE Chillers and HP with Low GWP refrigerant

## DIMENSIONAL DRAWINGS

PLE 132 - 152



### LEGEND

|    |   |
|----|---|
| 1  | Water inlet $\varnothing$ 2" 1/2 Victaulic  |
| 2  | Water outlet $\varnothing$ 2" 1/2 Victaulic |
| 3  | Water drainage $\varnothing$ 1/2" F         |
| 4  | Desuperheater water inlet 1"1/4 F           |
| 5  | Desuperheater water outlet 1"1/4 F          |
| 6  | Vibration dumpers                           |
| 7  | Lifting points                              |
| 8  | User interface                              |
| 9  | Power supply input                          |
| 10 | Safety valve outlet 1"1/4 F NPT             |