

## Heat Pump Datasheet

|                |              |              |
|----------------|--------------|--------------|
| Models:        | EMB-4480-2-4 | EMB-4480-2-7 |
| Refrigerants:  | R-1234ze     | R-515B       |
| Certification: | CE           | CE           |
| Safety class:  | A2L          | A1           |

The Energy Machines™ EMB models are designed for space heating, warm tap water production, and comfort cooling. They contain either one or two refrigerant circuits with two compressors in each.

The EMB models operate with either one or two heat source circuits containing brine. These circuits have an integrated circulation pump and switch between the production of hot tap water and the production of heat.

The EMB comes as a completely reversible heat pump in one unit.



## Characteristics

| Model characteristics |                              |
|-----------------------|------------------------------|
| Energy source         | Ground, water, or waste heat |
| Compressor type       | Scroll                       |
| Capacity control      | 4-Stepped                    |
| Features              | Internal pumps               |

## Performance

| Heating mode           |       | Cooling mode           |       |
|------------------------|-------|------------------------|-------|
| Heating capacity (kW)  | 350   | Heating capacity (kW)  | 544   |
| Cooling capacity (kW)  | 228   | Cooling capacity (kW)  | 440   |
| Elec. comp. total (kW) | 122.1 | Elec. comp. total (kW) | 104.6 |
| COP                    | 2.87  | COP                    | 4.21  |

COP = Coefficient of performance

## Design temperatures

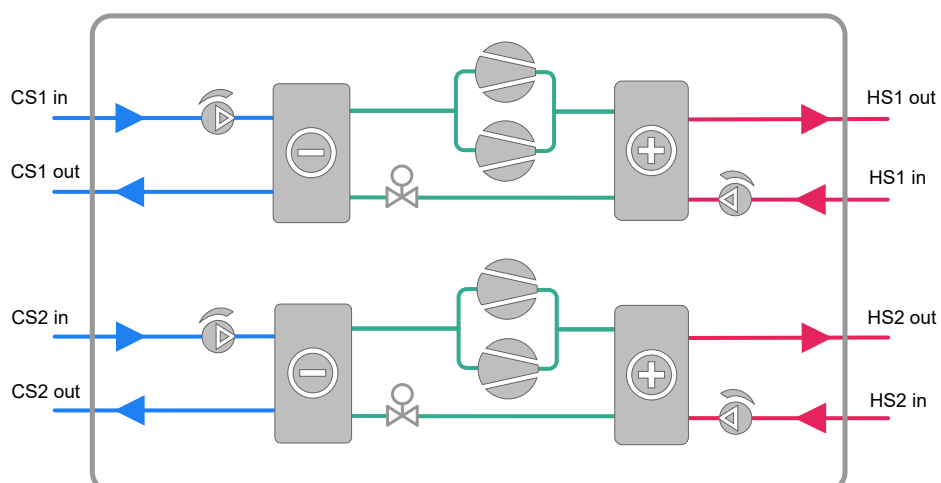
| Heating mode           |             | Cooling mode           |             |
|------------------------|-------------|------------------------|-------------|
| Heated fluid (in/out)  | 47°C / 53°C | Heated fluid (in/out)  | 37°C / 43°C |
| Chilled fluid (in/out) | 1°C / -3°C  | Chilled fluid (in/out) | 15°C / 10°C |

Heated fluid: Water, Chilled fluid: Ethanol 26%

## Flow and pressure

| Heating mode             |              |               | Cooling mode             |              |               |
|--------------------------|--------------|---------------|--------------------------|--------------|---------------|
|                          | Heated fluid | Chilled fluid |                          | Heated fluid | Chilled fluid |
| Flow (l/s)               | 14.5         | 14.0          | Flow (l/s)               | 21.7         | 21.5          |
| Pressure drop (kPa)      | 5            | 12            | Pressure drop (kPa)      | 12           | 25            |
| Available pressure (kPa) | 106          | 110           | Available pressure (kPa) | 62           | 74            |

## Flow diagram

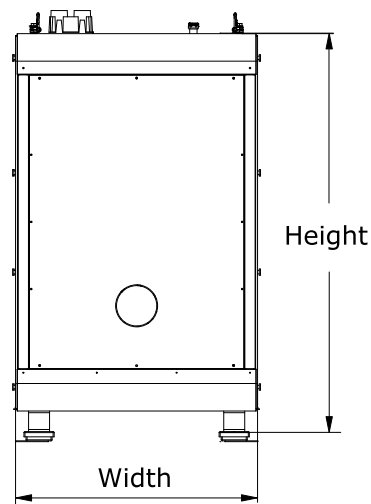
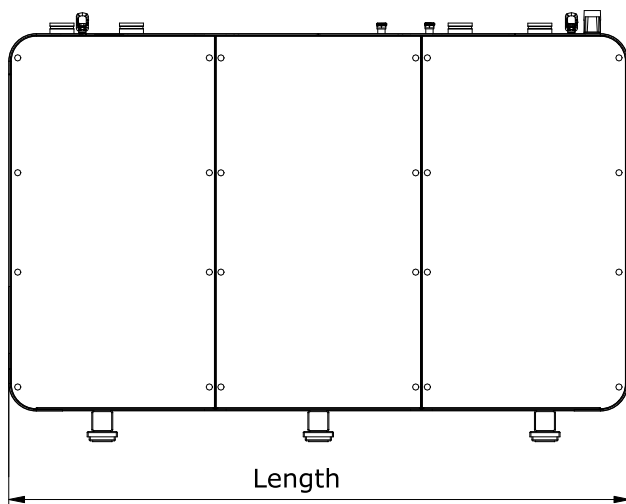


### Specifications

| Refrigerant |          |        |
|-------------|----------|--------|
| Type        | R-1234ze | R-515B |
| GWP         | 1.37     | 293    |
| Charge (kg) | 15+15    |        |

| Ventilated enclosure*               |    |
|-------------------------------------|----|
| Minimum airflow [Qmin] (l/s)        | 54 |
| Pressure difference (Pa) shall be ≥ | 20 |

\*Ventilation fan is not provided. Pressure difference is between enclosure interior and exterior. Applies only to units with A2L refrigerants.



| Electricity                 |     |
|-----------------------------|-----|
| Power supply voltage (VAC)  | 400 |
| Power supply frequency (Hz) | 50  |
| Power supply phase (ϕ)      | 3   |
| Rated power input (kW)      | 189 |
| Rated current (A)           | 330 |
| Rated start current (A)     | 444 |
| Fuse (A)                    | 400 |

| Dimensions**  |      |
|---|------|
| Length (mm)   | 2950 |
| Width (mm)  | 1140 |
| Height (mm)   | 1845 |
| Dry weight (kg)                                       | 2510 |
| Commissioned weight (kg)                              | 3000 |
| **See dimensional drawings for clearance requirements |      |

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