

## Subtype ecoGEO+ HP1 400 20-85

|                     |   |
|---------------------|---|
| Certificate Holder  | Ecoforest Geotermia S.L.                              |
| Address             | Rúa das Pontes, 25                                    |
| ZIP                 | 36350   |
| City                | Nigrán (Pontevedra)                                   |
| Country             | ES  |
| Certification Body  | DIN CERTCO Gesellschaft für Konformitätsbewertung mbH |
| Subtype title       | ecoGEO+ HP1 400 20-85                                 |
| Registration number | 011-1W0917  |
| Heat Pump Type      | Brine/Water   |
| Refrigerant         | R410A   |
| Mass of Refrigerant | 10 kg   |
| Certification Date  | 19.11.2024  |
| Testing basis       | HP KEYMARK certification scheme rules rev. 14         |

## Model ecoGEO+ HP1 400 20-85

|                                     |  |
|-------------------------------------|--|
| Model name                          | ecoGEO+ HP1 400 20-85                          |
| Application                         | Heating (medium temp)                          |
| Units                               | Indoor   |
| Climate zone (for heating)          | Colder, Warmer, Warmer Climate, Colder Climate |
| Heat Source                         | Brine  |
| Cooling mode application (optional) | n/a  |
| Any additional heat sources         | n/a  |

## General data

|                  |             |
|------------------|-------------|
| Power supply     | 3x400V 50Hz |
| Off-peak product | n/a         |

## Brine/Water

### EN 14511-4 | Heating

|  |        |
|--|--------|
| Shutting off the heat transfer medium flow | passed |
| Complete power supply failure              | passed |
| Defrost test                               | passed |
| Starting and operating test                | passed |

### EN 14511-2 | Heating

|             | Low temperature | Medium temperature |
|-------------|-----------------|--------------------|
| Heat output | 33.91 kW        | 39.67 kW           |
| El input    | 7.46 kW         | 14.17 kW           |
| COP         | 4.55            | 2.80               |

### EN 12102-1 | Average Climate

|                          | Low temperature | Medium temperature |
|--------------------------|-----------------|--------------------|
| Sound power level indoor | 65 dB(A)        | 65 dB(A)           |

### EN 14825 | Average Climate

|  | Low temperature | Medium temperature |
|--|-----------------|--------------------|
| P <sub>designh</sub>                   | 85.00 kW        | 81.00 kW           |
| η <sub>s</sub>                         | 193 %           | 142 %              |
| P <sub>rated</sub>                     | 85.00 kW        | 81.00 kW           |
| SCOP                                   | 5.05            | 3.75               |
| T <sub>biv</sub>                       | -10 °C          | -10 °C             |
| TOL                                    | -10 °C          | -10 °C             |
| P <sub>dh</sub> T <sub>j</sub> = -7°C  | 74.74 kW        | 70.27 kW           |
| COP T <sub>j</sub> = -7°C              | 4.17            | 2.79               |
| C <sub>dh</sub> T <sub>j</sub> = -7 °C | 0.900           | 0.900              |
| P <sub>dh</sub> T <sub>j</sub> = +2°C  | 45.21 kW        | 42.92 kW           |
| COP T <sub>j</sub> = +2°C              | 4.99            | 3.70               |
| C <sub>dh</sub> T <sub>j</sub> = +2 °C | 0.900           | 0.900              |

|   |             |             |
|---|-------------|-------------|
| Pdh Tj = +7°C                                       | 29.18 kW    | 28.20 kW    |
| COP Tj = +7°C                                       | 5.60        | 4.36        |
| Cdh Tj = +7 °C                                      | 0.900       | 0.900       |
| Pdh Tj = 12°C                                       | 21.54 kW    | 21.11 kW    |
| COP Tj = 12°C                                       | 6.14        | 5.10        |
| Cdh Tj = +12 °C                                     | 0.900       | 0.900       |
| Pdh Tj = Tbiv                                       | 84.79 kW    | 81.32 kW    |
| COP Tj = Tbiv                                       | 4.00        | 2.78        |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 84.79 kW    | 81.32 kW    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.00        | 2.78        |
| WTOL  | 60 °C       | 60 °C       |
| Poff  | 20 W        | 20 W        |
| PTO   | 20 W        | 20 W        |
| PSB   | 20 W        | 20 W        |
| PCK   | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input          | Electricity | Electricity |
| Supplementary Heater: PSUP                          | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe                       | 34876 kWh   | 44671 kWh   |

#### EN 12102-1 | Colder Climate

|                          | Low temperature | Medium temperature |
|--------------------------|-----------------|--------------------|
| Sound power level indoor | 65 dB(A)        | 65 dB(A)           |

#### EN 14825 | Colder Climate

|                 | Low temperature | Medium temperature |
|-----------------|-----------------|--------------------|
| Pdesignh        | 85.00 kW        | 81.00 kW           |
| ηs              | 201 %           | 148 %              |
| Prated          | 85.00 kW        | 81.00 kW           |
| SCOP            | 5.24            | 3.91               |
| Tbiv            | -22 °C          | -22 °C             |
| TOL             | -22 °C          | -22 °C             |
| Pdh Tj = -7°C   | 51.22 kW        | 48.94 kW           |
| COP Tj = -7°C   | 4.91            | 3.49               |
| Cdh Tj = -7 °C  | 0.900           | 0.900              |
| Pdh Tj = +2°C   | 30.92 kW        | 29.75 kW           |
| COP Tj = +2°C   | 5.59            | 4.24               |
| Cdh Tj = +2 °C  | 0.900           | 0.900              |
| Pdh Tj = +7°C   | 21.47 kW        | 20.96 kW           |
| COP Tj = +7°C   | 5.94            | 4.82               |
| Cdh Tj = +7 °C  | 0.900           | 0.900              |
| Pdh Tj = 12°C   | 21.54 kW        | 21.26 kW           |
| COP Tj = 12°C   | 6.14            | 5.42               |
| Cdh Tj = +12 °C | 0.900           | 0.900              |

|   |             |             |
|---|-------------|-------------|
| Pdh Tj = Tbiv                                       | 84.79 kW    | 81.32 kW    |
| COP Tj = Tbiv                                       | 4.00        | 2.78        |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 84.79 kW    | 81.32 kW    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.00        | 2.78        |
| WTOL  | 60 °C       | 60 °C       |
| Poff  | 20 W        | 20 W        |
| PTO   | 20 W        | 20 W        |
| PSB   | 20 W        | 20 W        |
| PCK   | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input          | Electricity | Electricity |
| Supplementary Heater: PSUP                          | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe                       | 40012 kWh   | 51098 kWh   |

#### EN 12102-1 | Warmer Climate

|                          | Low temperature | Medium temperature |
|--------------------------|-----------------|--------------------|
| Sound power level indoor | 65 dB(A)        | 65 dB(A)           |

#### EN 14825 | Warmer Climate

|   | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| Pdesignh  | 85.00 kW        | 81.00 kW           |
| $\eta_s$  | 198 %           | 145 %              |
| Prated  | 85.00 kW        | 81.00 kW           |
| SCOP  | 5.18            | 3.84               |
| Tbiv  | 2 °C            | 2 °C               |
| TOL   | 2 °C            | 2 °C               |
| Pdh Tj = +2°C                                       | 84.79 kW        | 81.32 kW           |
| COP Tj = +2°C                                       | 4.00            | 2.78               |
| Cdh Tj = +2 °C                                      | 0.900           | 0.900              |
| Pdh Tj = +7°C                                       | 54.43 kW        | 51.65 kW           |
| COP Tj = +7°C                                       | 4.74            | 3.32               |
| Cdh Tj = +7 °C                                      | 0.900           | 0.900              |
| Pdh Tj = 12°C                                       | 24.03 kW        | 23.35 kW           |
| COP Tj = 12°C                                       | 5.78            | 4.58               |
| Cdh Tj = +12 °C                                     | 0.900           | 0.900              |
| Pdh Tj = Tbiv                                       | 84.79 kW        | 81.32 kW           |
| COP Tj = Tbiv                                       | 4.00            | 2.78               |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 84.79 kW        | 81.32 kW           |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.00            | 2.78               |
| WTOL  | 60 °C           | 60 °C              |
| Poff  | 20 W            | 20 W               |
| PTO   | 20 W            | 20 W               |
| PSB   | 20 W            | 20 W               |

|  |             |             |
|--|-------------|-------------|
| PCK  | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Q <sub>he</sub>  | 22041 kWh   | 28257 kWh   |

## Model ecoGEO+ HP1 400 20-85 HTR

|                                     |  |
|-------------------------------------|--|
| Model name                          | ecoGEO+ HP1 400 20-85 HTR                      |
| Application                         | Heating (medium temp)                          |
| Units                               | Indoor   |
| Climate zone (for heating)          | Colder, Warmer, Warmer Climate, Colder Climate |
| Heat Source                         | Brine  |
| Cooling mode application (optional) | n/a  |
| Any additional heat sources         | n/a  |

## General data

|                  |             |
|------------------|-------------|
| Power supply     | 3x400V 50Hz |
| Off-peak product | n/a         |

## Brine/Water

### EN 14511-4 | Heating

|  |        |
|--|--------|
| Shutting off the heat transfer medium flow | passed |
| Complete power supply failure              | passed |
| Defrost test                               | passed |
| Starting and operating test                | passed |

### EN 14511-2 | Heating

|             | Low temperature | Medium temperature |
|-------------|-----------------|--------------------|
| Heat output | 33.91 kW        | 39.67 kW           |
| El input    | 7.46 kW         | 14.17 kW           |
| COP         | 4.55            | 2.80               |

### EN 12102-1 | Average Climate

|                          | Low temperature | Medium temperature |
|--------------------------|-----------------|--------------------|
| Sound power level indoor | 65 dB(A)        | 65 dB(A)           |

### EN 14825 | Average Climate

|  | Low temperature | Medium temperature |
|--|-----------------|--------------------|
| P <sub>designh</sub>                   | 85.00 kW        | 81.00 kW           |
| η <sub>s</sub>                         | 193 %           | 142 %              |
| P <sub>rated</sub>                     | 85.00 kW        | 81.00 kW           |
| SCOP                                   | 5.05            | 3.75               |
| T <sub>biv</sub>                       | -10 °C          | -10 °C             |
| TOL                                    | -10 °C          | -10 °C             |
| P <sub>dh</sub> T <sub>j</sub> = -7°C  | 74.74 kW        | 70.27 kW           |
| COP T <sub>j</sub> = -7°C              | 4.17            | 2.79               |
| C <sub>dh</sub> T <sub>j</sub> = -7 °C | 0.900           | 0.900              |
| P <sub>dh</sub> T <sub>j</sub> = +2°C  | 45.21 kW        | 42.92 kW           |
| COP T <sub>j</sub> = +2°C              | 4.99            | 3.70               |
| C <sub>dh</sub> T <sub>j</sub> = +2 °C | 0.900           | 0.900              |

|   |             |             |
|---|-------------|-------------|
| Pdh Tj = +7°C                                       | 29.18 kW    | 28.20 kW    |
| COP Tj = +7°C                                       | 5.60        | 4.36        |
| Cdh Tj = +7 °C                                      | 0.900       | 0.900       |
| Pdh Tj = 12°C                                       | 21.54 kW    | 21.11 kW    |
| COP Tj = 12°C                                       | 6.14        | 5.10        |
| Cdh Tj = +12 °C                                     | 0.900       | 0.900       |
| Pdh Tj = Tbiv                                       | 84.79 kW    | 81.32 kW    |
| COP Tj = Tbiv                                       | 4.00        | 2.78        |
| Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh | 84.79 kW    | 81.32 kW    |
| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.00        | 2.78        |
| WTOL  | 60 °C       | 60 °C       |
| Poff  | 20 W        | 20 W        |
| PTO   | 20 W        | 20 W        |
| PSB   | 20 W        | 20 W        |
| PCK   | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input          | Electricity | Electricity |
| Supplementary Heater: PSUP                          | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe                       | 34876 kWh   | 44671 kWh   |

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| Tbiv            | -22 °C          | -22 °C             |
| TOL             | -22 °C          | -22 °C             |
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| Pdh Tj = +2°C   | 30.92 kW        | 29.75 kW           |
| COP Tj = +2°C   | 5.59            | 4.24               |
| Cdh Tj = +2 °C  | 0.900           | 0.900              |
| Pdh Tj = +7°C   | 21.47 kW        | 20.96 kW           |
| COP Tj = +7°C   | 5.94            | 4.82               |
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|   |             |             |
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| WTOL  | 60 °C       | 60 °C       |
| Poff  | 20 W        | 20 W        |
| PTO   | 20 W        | 20 W        |
| PSB   | 20 W        | 20 W        |
| PCK   | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input          | Electricity | Electricity |
| Supplementary Heater: PSUP                          | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Qhe                       | 40012 kWh   | 51098 kWh   |

#### EN 12102-1 | Warmer Climate

|                          | Low temperature | Medium temperature |
|--------------------------|-----------------|--------------------|
| Sound power level indoor | 65 dB(A)        | 65 dB(A)           |

#### EN 14825 | Warmer Climate

|   | Low temperature | Medium temperature |
|---|-----------------|--------------------|
| Pdesignh  | 85.00 kW        | 81.00 kW           |
| $\eta_s$  | 198 %           | 145 %              |
| Prated  | 85.00 kW        | 81.00 kW           |
| SCOP  | 5.18            | 3.84               |
| Tbiv  | 2 °C            | 2 °C               |
| TOL   | 2 °C            | 2 °C               |
| Pdh Tj = +2°C                                       | 84.79 kW        | 81.32 kW           |
| COP Tj = +2°C                                       | 4.00            | 2.78               |
| Cdh Tj = +2 °C                                      | 0.900           | 0.900              |
| Pdh Tj = +7°C                                       | 54.43 kW        | 51.65 kW           |
| COP Tj = +7°C                                       | 4.74            | 3.32               |
| Cdh Tj = +7 °C                                      | 0.900           | 0.900              |
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| Pdh Tj = Tbiv                                       | 84.79 kW        | 81.32 kW           |
| COP Tj = Tbiv                                       | 4.00            | 2.78               |
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| COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh | 4.00            | 2.78               |
| WTOL  | 60 °C           | 60 °C              |
| Poff  | 20 W            | 20 W               |
| PTO   | 20 W            | 20 W               |
| PSB   | 20 W            | 20 W               |



|  |             |             |
|--|-------------|-------------|
| PCK  | 0 W         | 0 W         |
| Supplementary Heater: Type of energy input | Electricity | Electricity |
| Supplementary Heater: PSUP                 | 0.00 kW     | 0.00 kW     |
| Annual energy consumption Q <sub>he</sub>  | 22041 kWh   | 28257 kWh   |