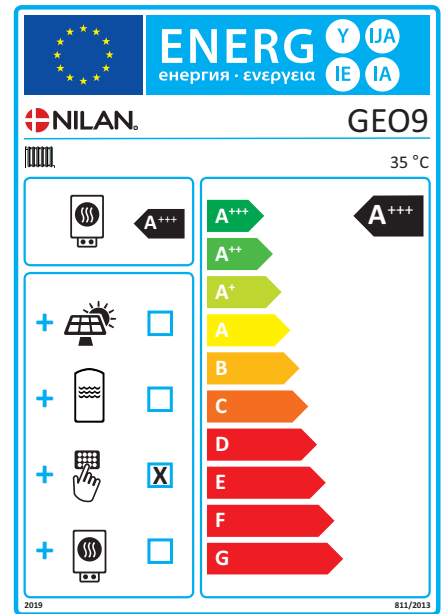


# GEO 9

## Heating pump system for space heating



|  |        |
|--|--------|
| Model  | GEO 9  |
| Air-to-water heat pump                                   | No     |
| Water-to-water heat pump                                 | No     |
| Brine-to-water heat pump                                 | Yes    |
| Low-temperature heat pump                                | Yes    |
| Equipped with a supplementary heater                     | Yes    |
| Heat pump combination heater                             | No     |
| <b>Temperature control:</b>                              |        |
| Model  | CTS602 |
| Class  | 2      |
| Contribution to seasonal space heating energy efficiency | 2%     |

| Item              | Symbol      | Value | Unit |
|-------------------|-------------|-------|------|
| Rated heat output | $P_{rated}$ | 9,05  | kW   |

Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature of  $T_j$

|  |           |           |    |
|--|-----------|-----------|----|
| $T_j = -7\text{ °C}$   | $P_{dh}$  | 8,01      | kW |
| $T_j = +2\text{ °C}$   | $P_{dh}$  | 4,87      | kW |
| $T_j = +7\text{ °C}$   | $P_{dh}$  | 3,13      | kW |
| $T_j = +12\text{ °C}$  | $P_{dh}$  | 1,39      | kW |
| $T_j = \text{bivalent temperature}$  | $P_{dh}$  | 9,05      | kW |
| $T_j = \text{operation limit temperature}$                                       | $P_{dh}$  |           | kW |
| For air-water-heating pumps<br>$T_j = -15\text{ °C}$ (if TOL < $-20\text{ °C}$ ) | $P_{dh}$  |           | kW |
| Bivalent temperature   | $T_{biv}$ | -10       | °C |
| Cycling interval capacity for heating  | $P_{cyc}$ |           | kW |
| Degradation co-efficient   | $C_{dh}$  | 0,94-0,99 |    |

Power consumption in modes other than active mode

|                       |           |       |    |
|-----------------------|-----------|-------|----|
| Off mode              | $P_{OFF}$ | 0,010 | kW |
| Thermostat off-mode   | $P_{TO}$  | 0,015 | kW |
| Standby mode          | $P_{SB}$  | 0,010 | kW |
| Crankcase heater mode | $P_{CK}$  | 0,010 | kW |

Other items

|                              |   |  |     |
|------------------------------|---|--|-----|
| Capacity control:            | Variable compressor<br>Variable indoor temperature adjustment |  |     |
|                              | Fixed indoor water flow<br>Fixed outdoor water flow           |  |     |
| Sound power level, indoors   | $L_{WA}$  |  | dB  |
| Emissions of nitrogen oxides | $Q_{HE}$  |  | kWh |

| Item                                     | Symbol   | Value | Unit |
|--|----------|-------|------|
| Seasonal space heating energy efficiency | $\eta_s$ | 232   | %    |

Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature  $T_j$

|   |             |      |    |
|---|-------------|------|----|
| $T_j = -7\text{ °C}$  | $COP_d$     | 4,42 |    |
| $T_j = +2\text{ °C}$  | $COP_d$     | 5,33 |    |
| $T_j = +7\text{ °C}$  | $COP_d$     | 5,96 |    |
| $T_j = +12\text{ °C}$   | $COP_d$     | 5,96 |    |
| $T_j = \text{bivalent temperature}$   | $COP_d$     | 4,16 |    |
| $T_j = \text{operation limit temperature}$  | $COP_d$     |      |    |
| For air-to-water heat pumps:<br>$T_j = -15\text{ °C}$ (if TOL < $-20\text{ °C}$ ) | $COP_d$     |      |    |
| For air-to-water heat pumps:<br>Operation limit temperature                       | TOL         |      | °C |
| Cycling interval efficiency   | $COP_{cyc}$ |      |    |
| Heating water operating limit temperature   | WTOL        |      | °C |

Supplementary heater

|                      |            |  |    |
|----------------------|------------|--|----|
| Rated heat output    | $P_{sup}$  |  | kW |
| Type of energy input | Electrical |  |    |

|   |  |      |                   |
|---|--|------|-------------------|
| For air-to-water heat pumps:<br>Rated air flow rate, outdoors                                 |  |      | m <sup>3</sup> /h |
| For water-/ brine-water heat pumps:<br>Rated brine or water flow rate, outdoor heat exchanger |  | 1,53 | m <sup>3</sup> /h |