# Heat pump combination heater

## Indoor unit sound power (*)
- **[dB(A)]**: 42.0
- **[dB(A)]**: 51.0

## Outdoor unit sound power (*)
- **[dB(A)]**: 61.0

## Average climate (Design temperature = –10°C)

### Water heating
- **Declared load profile**: XL
- **Energy efficiency class**: A

### Space heating
- **Energy efficiency class**: 55°C (High temp. app.)

### Outdoor unit sound power (*)
- **[dB(A)]**: 61.0

### Indoor unit sound power (*)
- **[dB(A)]**: 42.0

## Off peak operation function integrated in Heat pump
- **Y/N**: no

## Colder climate (Design temperature = –22°C)

### Water heating
- **Water heating energy efficiency (\(\eta_{WH}\))**: [kW] 95.8
- **Annual electricity consumption (AEC)**: [kWh] 0.00

### Space heating
- **P_rated (declared heating capacity) @ –22°C**: [kW] 2.10
- **Seasonal space heating efficiency (\(\eta_S\))**: [%] 102
- **Annual energy consumption**: [kWh] 1,960

## Warmer climate (Design temperature = 2°C)

### Water heating
- **Water heating energy efficiency (\(\eta_{WH}\))**: [kW] 95.8
- **Annual electricity consumption (AEC)**: [kWh] 0.00

### Space heating
- **P_rated (declared heating capacity) @ –22°C**: [kW] 2.10
- **Seasonal space heating efficiency (\(\eta_S\))**: [%] 102
- **Annual energy consumption**: [kWh] 1,960

## Ecodesign technical data

### Product description
- **Air-to-water heat pump**: Y/N Yes
- **Water-to-water heat pump**: Y/N no
- **Brine-to-water heat pump**: Y/N no
- **Low-temperature heat pump**: Y/N no
- **Equipped with a supplementary heater**: Y/N Yes
- **Heat pump combination heater**: Y/N Yes

### Capacity control
- **Capacity control**: Inverter

### Part load conditions space heating average climate

#### (A) condition (-7°C)
- **P_{dh} (declared heating capacity)**: [kW] 3.30
- **COP_d (declared COP)**: - 2.38
- **Cdh (degradation coefficient)**: - 1.00

#### (B) condition (2°C)
- **P_{dh} (declared heating capacity)**: [kW] 2.00
- **COP_d (declared COP)**: - 3.08
- **Cdh (degradation coefficient)**: - 1.00

#### (C) condition (7°C)
- **P_{dh} (declared heating capacity)**: [kW] 2.80
- **COP_d (declared COP)**: - 4.27
- **Cdh (degradation coefficient)**: - 1.00

#### (D) (0) condition (12°C)
- **P_{dh} (declared heating capacity)**: [kW] 2.70
- **COP_d (declared COP)**: - 3.33
- **Cdh (degradation coefficient)**: - 1.00

#### (E) Tol (temperature operating limit)
- **T_{tol} (temperature operating limit)**: [°C] 10.0
- **P_{dh} (declared heating capacity)**: [kW] 3.80
- **COP_d (declared COP)**: - 2.38
- **WTOL (Heating water Operation Limit)**: [°C] 55.0

#### (F) Tbivalent temperature
- **T_{blv}**: [°C] 2.00
- **P_{dh} (declared heating capacity)**: [kW] 2.00
- **COP_d (declared COP)**: - 3.08

### Capacity of the back-up heater integrated in the unit
- **P back-up heater (T_{designh:} –10°C)**: [kW] 27.0
<table>
<thead>
<tr>
<th>$P_{\text{sup}}$ back-up heater ($@T_{\text{design}}: -10^\circ\text{C}$)</th>
<th>Supplementary capacity at $P_{\text{design}}$</th>
<th>$P_{\text{sup}}$ ($@T_{\text{design}}: -10^\circ\text{C}$)</th>
<th>kW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>27.0</td>
<td></td>
</tr>
</tbody>
</table>
Parameters shall be declared for medium-temperature application, except for low-temperature heat pumps. For low-temperature heat pumps, parameters shall be declared for low-temperature application.

Parameters shall be declared for average, colder and warmer climate conditions.

<table>
<thead>
<tr>
<th>Item</th>
<th>Symbol</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated heat output</td>
<td>$Prated$</td>
<td>3.70</td>
<td>kW</td>
</tr>
</tbody>
</table>

Declared capacity for heating for part load at indoor temperature $20^\circ C$ and outdoor temperature $T_j$:

- $T_j = -7^\circ C$: $P_{dth} = 3.30$ kW
- $T_j = +2^\circ C$: $P_{dth} = 2.00$ kW
- $T_j = +7^\circ C$: $P_{dth} = 2.80$ kW
- $T_j = +12^\circ C$: $P_{dth} = 2.70$ kW
- $T_j =$ bivalent temperature: $P_{dth} = 2.00$ kW
- $T_j =$ operation limit temperature: $P_{dth} = 3.80$ kW

For air-to-water heat pumps: $T_j = -15^\circ C$ (if $TOL < -20^\circ C$): $P_{dth} = kW$

Bivalent temperature: $T_{biv} = 2.00$ °C

Cycling interval capacity for heating: $P_{cycch} = kW$

Degradation co-efficient: $C_{dh} = 1.00$ —

Power consumption in modes other than active mode:
- Off mode: $P_{OFF} = 0.013$ kW
- Thermostat-off mode: $P_{TO} = 0.006$ kW
- Standby mode: $P_{SB} = 0.013$ kW
- Crankcase heater mode: $P_{CK} = 0.000$ kW

Other items:
- Capacity control: fixed/variable
- Sound power level, indoors/outdoors: $L_{WA} = 61.0 / 42.0$ dB
- Annual energy consumption: $Q_{HE} = 2.280 / 0.057$ kWh or GJ

For heat pump combination heater:

<table>
<thead>
<tr>
<th>Item</th>
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<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declared load profile</td>
<td>$XL$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily electricity consumption</td>
<td>$Q_{elec}$</td>
<td>kWh</td>
<td></td>
</tr>
<tr>
<td>Annual electricity consumption</td>
<td>$AEC$</td>
<td>kWh</td>
<td></td>
</tr>
</tbody>
</table>

Water heating energy efficiency: $\eta_{wh} = \%$

- Daily fuel consumption: $Q_{fuel} = kWh$
- Annual fuel consumption: $AFC = GJ$

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(*) For heat pump space heaters and heat pump combination heaters, the rated heat output $Prated$ is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater $P_{sup}$ is equal to the supplementary capacity for heating $sup(Tj)$.

(+) If $C_{dh}$ is not determined by measurement then the default degradation coefficient is $C_{dh} = 0.9$. 

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Model(s): EHYHBH05AAV3U / EVLQ05CAV3

Air-to-water heat pump: Yes
Water-to-water heat pump: no
Brine-to-water heat pump: no
Low-temperature heat pump: no
Equipped with a supplementary heater: Yes
Heat pump combination heater: Yes