



# ENERG

енергия · ενεργεια

Y IJA  
IE IA

107546P02

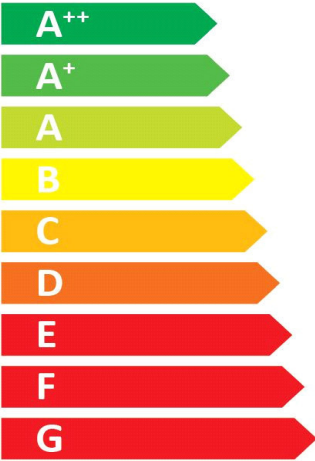
CTA

121361 Aeroheat CS 1-25a



55 °C

35 °C



A<sup>+</sup>

A<sup>++</sup>

- dB

62 dB

|      |      |
|------|------|
| ■ 23 | ■ 23 |
| ■ 25 | ■ 25 |
| ■ 23 | ■ 24 |
| kW   | kW   |

2015

811/2013



# ENERG

енергия · ενέργεια

Y

IJA

IE

IA

55°C

107546P02

121361 Aeroheat CS 1-25a

CTA



A+

A+++

A++

A+

A

B

C

D

E

F

G

A+

+



+



+





+




| Package (heat pumps and combination heater with heat pump)  |          |                                     |          |   |           |          |           |   |                                |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
|---|----------|-------------------------------------|----------|---|-----------|----------|-----------|---|--------------------------------|-----|---|--|--|--|--|--|---|--|--|----------|----------|----------|----------|----------|----------|----------|-----------|------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| Seasonal space heating energy efficiency of heat pump ( $\eta_S$ )  |          |                                     |          |   |           |          | 1         | 122   | %                              |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| Rated output of the heat pump ( $P_{rated}$ kW)   |          |                                     |          |   |           |          | 25.00     |   |                                |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| Temperature control   |          | Class                               |          | III   | (Table 1) | +        | 2         | 1.5   | %                              |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| Supplementary boiler  |          | Package with hot water storage tank |          | no  |           |          |           | $P_{sup}$ kW (rated output of supplementary heater) |                                |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
|   |          |                                     |          | $\eta_S$ % (sup)  |           |          |           |   |                                |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
|   |          |                                     |          | $(\eta_S \text{ % (sup)} - 1) \times (\alpha_{WE})$   |           | =        | -         | 3   | %                              |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
|   |          |                                     |          | $(\alpha_{WE})$   |           |          |           |   |                                |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| Solar contribution  |          |                                     |          | $(A_{Koll} \text{ m}^2)$  |           |          |           | $(\eta_{Koll} \text{ %})$                           |                                |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
|   |          |                                     |          | $(V_{Sp} \text{ m}^3)$  |           |          |           | (standstill heat loss of the storage tank in W)     |                                |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
|   |          |                                     |          |   |           |          |           | $(\eta_{Sp})$                                       |                                |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
|   |          |                                     |          | $((294/(P_{rated} \times 11)) \times (A_{Koll} \text{ m}^2) + (115/(P_{rated} \times 11)) \times (V_{Sp} \text{ m}^3)) \times 0.45 \times ((\eta_{Koll} \text{ %}) / 100) \times (\eta_{Sp})$ |           | =        | +         | 4   | %                              |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| Seasonal space heating energy efficiency of package under average climate   |          |                                     |          |   |           |          | 5         | 124   | %                              |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
|   |          |                                     |          |   |           |          |           |   | rounded to the nearest integer |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| Seasonal space heating energy efficiency class of package under average climate   |          |                                     |          |   |           |          |           |   |                                |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| <table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>X</td><td></td><td></td> </tr> <tr> <td><b>G</b></td><td><b>F</b></td><td><b>E</b></td><td><b>D</b></td><td><b>C</b></td><td><b>B</b></td><td><b>A</b></td><td><b>A+</b></td><td><b>A++</b></td><td><b>A+++</b></td> </tr> <tr> <td>&lt; 30 %</td><td>≥ 30 %</td><td>≥ 34 %</td><td>≥ 36 %</td><td>≥ 75 %</td><td>≥ 82 %</td><td>≥ 90 %</td><td>≥ 98 %</td><td>≥ 125 %</td><td>≥ 150 %</td> </tr> </table> |          |                                     |          |   |           |          |           |   |                                |     |   |  |  |  |  |  | X |  |  | <b>G</b> | <b>F</b> | <b>E</b> | <b>D</b> | <b>C</b> | <b>B</b> | <b>A</b> | <b>A+</b> | <b>A++</b> | <b>A+++</b> | < 30 % | ≥ 30 % | ≥ 34 % | ≥ 36 % | ≥ 75 % | ≥ 82 % | ≥ 90 % | ≥ 98 % | ≥ 125 % | ≥ 150 % |
|   |          |                                     |          |   |           |          | X         |   |                                |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| <b>G</b>  | <b>F</b> | <b>E</b>                            | <b>D</b> | <b>C</b>  | <b>B</b>  | <b>A</b> | <b>A+</b> | <b>A++</b>  | <b>A+++</b>                    |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| < 30 %  | ≥ 30 %   | ≥ 34 %                              | ≥ 36 %   | ≥ 75 %  | ≥ 82 %    | ≥ 90 %   | ≥ 98 %    | ≥ 125 %   | ≥ 150 %                        |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| Seasonal space heating energy efficiency under colder and warmer climate conditions   |          |                                     |          |   |           |          |           |   |                                |     |   |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| colder  | 109      | %                                   |          | colder  | 5         | 124      | -V        | 13  | =                              | 111 | % |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |
| warmer  | 153      | %                                   |          | warmer  | 5         | 124      | +VI       | 31  | =                              | 155 | % |  |  |  |  |  |   |  |  |          |          |          |          |          |          |          |           |            |             |        |        |        |        |        |        |        |        |         |         |

The energy efficiency of the package of products provided for in this fiche may not correspond to its actual energy efficiency once installed in a building, as the efficiency is influenced by further factors such as heat loss in the distribution system and the dimensioning of the products in relation to building size and characteristics.

|  |  |  |     |  |
|--|--|--|-----|--|
| <b>Product fiche</b>   |  | <br><b>AC Cooling Heating</b> |     |  |
| <b>Manufacturer</b>  | CTA AG                                       |  |     |  |
| <b>Model</b>   | AH CS 1-25a                                  |  |     |  |
| <b>Information on energy efficiency class and rated output</b>             |  |  |     |  |
|  | Average /<br>Low temperature                 | Average /<br>Medium temperature  |     |  |
| Space heating energy efficiency class                                      | A++  | A+   | -   |  |
| Rated heat output  | 25.31  | 25.00  | kW  |  |
| Seasonal space heating energy efficiency                                   | 155  | 122  | %   |  |
| Annual final energy consumption space heating                              | 13550  | 16540  | kWh |  |
| Sound power level indoors  |  | -  | dB  |  |
| <b>Special precautions during assembly, installation or maintenance</b>    |  |  |     |  |
| see installation and maintenance instructions                              |  |  |     |  |
| <b>Additional information</b>  |  |  |     |  |
|  | Low temperature                              | Medium temperature   |     |  |
| Rated heat output colder climate   | 22.63  | 22.68  | kW  |  |
| Rated heat output warmer climate   | 23.62  | 23.16  | kW  |  |
| Seasonal space heating energy efficiency colder climate                    | 134  | 109  | %   |  |
| Seasonal space heating energy efficiency warmer climate                    | 200  | 153  | %   |  |
| Annual final energy consumption colder climate                             | 15961  | 19435  | kWh |  |
| Annual final energy consumption warmer climate                             | 6723   | 8302   | kWh |  |
| Sound power level outdoors   |  | 62   | dB  |  |
| <b>Technical data of the temperature controller</b>                        |  |  |     |  |
| <b>Manufacturer</b>  | ait  |  |     |  |
| <b>Model</b>   | Aeroplus 2.0                                 |  |     |  |
| Class of the controller  |  | III  | -   |  |
| Contribution of the controller to seasonal space heating energy efficiency |  | 1.5  | %   |  |
| <b>Contact</b>   | CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen |  |     |  |

|  |  |              |             |  |                   |              |                   |   |  |  |
|--|--|--------------|-------------|--|-------------------|--------------|-------------------|---|--|--|
| <b>Model</b>   |  |              |             | <b>AH CS 1-25a</b>   |                   |              |                   |  |  |  |
| Brine-to-water heat pump: (Yes/No)   |  |              |             | No   |                   |              |                   |   |  |  |
| Water-to-water heat pump: (Yes/No)   |  |              |             | No   |                   |              |                   |   |  |  |
| Air-to-water heat pump: (Yes/No)   |  |              |             | Yes  |                   |              |                   |   |  |  |
| Low temperature heat pump: (Yes/No)  |  |              |             | No   |                   |              |                   |   |  |  |
| Equipped with supplementary heater: (Yes/No)   |  |              |             | Yes  |                   |              |                   |   |  |  |
| Heat pump combination heater: (Yes/No)   |  |              |             | No   |                   |              |                   |   |  |  |
| Application: (Low temperature/Medium temperature)  |  |              |             | Medium temperature   |                   |              |                   |   |  |  |
| Climate: (Colder/Average/Warmer)   |  |              |             | Average  |                   |              |                   |   |  |  |
| <b>Item</b>  | <b>Symbol</b>                                | <b>Value</b> | <b>Unit</b> | <b>Item</b>  | <b>Symbol</b>     | <b>Value</b> | <b>Unit</b>       |   |  |  |
| <b>Rated heat output</b>   | Prated                                       | 25.00        | kW          | <b>Seasonal space heating energy efficiency</b>  | $\eta_S$          | 122          | %                 |   |  |  |
| <b>Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj</b> |  |              |             | <b>Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj</b> |                   |              |                   |   |  |  |
| Tj = -7°C  | Pdh  | 19.20        | kW          | Tj = -7°C  | COPd              | 2.07         | -                 |   |  |  |
| Tj = +2°C  | Pdh  | 23.90        | kW          | Tj = +2°C  | COPd              | 3.02         | -                 |   |  |  |
| Tj = +7°C  | Pdh  | 14.30        | kW          | Tj = +7°C  | COPd              | 4.13         | -                 |   |  |  |
| Tj = +12°C   | Pdh  | 16.80        | kW          | Tj = +12°C   | COPd              | 5.44         | -                 |   |  |  |
| Tj = biv   | Pdh  | 20.20        | kW          | Tj = biv   | COPd              | 2.24         | -                 |   |  |  |
| Tj = TOL   | Pdh  | 17.70        | kW          | Tj = TOL   | COPd              | 1.83         | -                 |   |  |  |
| Tj = -15°C (if TOL < -20°C)  | Pdh  | 15.30        | kW          | Tj = -15°C if TOL < -20°C)   | COPd              | 1.50         | -                 |   |  |  |
| Bivalent temperature   | T <sub>biv</sub>                             | -5           | °C          | Operation limit temperature  | TOL               | -20          | °C                |   |  |  |
| Cycling interval capacity for heating  | P <sub>cy</sub>                              | -            | kW          | Cycling interval efficiency  | COP <sub>cy</sub> | -            | -                 |   |  |  |
| Degradation co-efficient   | Cdh  | 1            | -           | Heating water operating limit temperature  | WTOL              | 70           | °C                |   |  |  |
| <b>Power consumption in modes other than active mode</b>   |  |              |             | <b>Supplementary heater</b>  |                   |              |                   |   |  |  |
| Off mode   | P <sub>OFF</sub>                             | 0.01         | kW          | Rated heat output  | P <sub>sup</sub>  | 7.3          | kW                |   |  |  |
| Thermostat-off mode  | P <sub>TO</sub>                              | 0.01         | kW          | Type of energy input   | electric          |              |                   |   |  |  |
| Standby mode   | P <sub>SB</sub>                              | 0.01         | kW          |  |                   |              |                   |   |  |  |
| Crankcase heater mode  | P <sub>CK</sub>                              | 0            | kW          |  |                   |              |                   |   |  |  |
| <b>Other items</b>   |  |              |             |  |                   |              |                   |   |  |  |
| Capacity control   | fixed  |              |             | Rated air flow rate, outdoors  | -                 | 5000         | m <sup>3</sup> /h |   |  |  |
| Sound power level, indoors/outdoors  | L <sub>WA</sub>                              | -/62         | dB          | Rated brine or water flow rate, outdoor heat exchanger   | -                 | -            | m <sup>3</sup> /h |   |  |  |
| Emissions of nitrogen oxides   | NO <sub>x</sub>                              | -            | mg/kWh      |  |                   |              |                   |   |  |  |
| <b>For heat pump combination heater</b>  |  |              |             |  |                   |              |                   |   |  |  |
| Declared load profile  | -  |              |             | Water heating energy efficiency  | $\eta_{wh}$       | -            | %                 |   |  |  |
| Daily electricity consumption  | Q <sub>elec</sub>                            | -            | kWh         | Daily fuel consumption   | Q <sub>fuel</sub> | -            | kWh               |   |  |  |
| <b>Contact</b>   | CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen |              |             |  |                   |              |                   |   |  |  |

|  |  |              |             |  |                   |              |                   |   |  |  |
|--|--|--------------|-------------|--|-------------------|--------------|-------------------|---|--|--|
| <b>Model</b>   |  |              |             | <b>AH CS 1-25a</b>   |                   |              |                   |  |  |  |
| Brine-to-water heat pump: (Yes/No)   |  |              |             | No   |                   |              |                   |   |  |  |
| Water-to-water heat pump: (Yes/No)   |  |              |             | No   |                   |              |                   |   |  |  |
| Air-to-water heat pump: (Yes/No)   |  |              |             | Yes  |                   |              |                   |   |  |  |
| Low temperature heat pump: (Yes/No)  |  |              |             | No   |                   |              |                   |   |  |  |
| Equipped with supplementary heater: (Yes/No)   |  |              |             | Yes  |                   |              |                   |   |  |  |
| Heat pump combination heater: (Yes/No)   |  |              |             | No   |                   |              |                   |   |  |  |
| Application: (Low temperature/Medium temperature)  |  |              |             | Low temperature  |                   |              |                   |   |  |  |
| Climate: (Colder/Average/Warmer)   |  |              |             | Average  |                   |              |                   |   |  |  |
| <b>Item</b>  | <b>Symbol</b>                                | <b>Value</b> | <b>Unit</b> | <b>Item</b>  | <b>Symbol</b>     | <b>Value</b> | <b>Unit</b>       |   |  |  |
| <b>Rated heat output</b>   | Prated                                       | 25.31        | kW          | <b>Seasonal space heating energy efficiency</b>  | $\eta_S$          | 155          | %                 |   |  |  |
| <b>Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj</b> |  |              |             | <b>Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj</b> |                   |              |                   |   |  |  |
| Tj = -7°C  | Pdh  | 19.40        | kW          | Tj = -7°C  | COPd              | 2.96         | -                 |   |  |  |
| Tj = +2°C  | Pdh  | 24.20        | kW          | Tj = +2°C  | COPd              | 3.77         | -                 |   |  |  |
| Tj = +7°C  | Pdh  | 14.30        | kW          | Tj = +7°C  | COPd              | 5.06         | -                 |   |  |  |
| Tj = +12°C   | Pdh  | 16.90        | kW          | Tj = +12°C   | COPd              | 5.90         | -                 |   |  |  |
| Tj = biv   | Pdh  | 20.40        | kW          | Tj = biv   | COPd              | 3.18         | -                 |   |  |  |
| Tj = TOL   | Pdh  | 17.80        | kW          | Tj = TOL   | COPd              | 2.66         | -                 |   |  |  |
| Tj = -15°C (if TOL < -20°C)  | Pdh  | 15.10        | kW          | Tj = -15°C if TOL < -20°C)   | COPd              | 2.20         | -                 |   |  |  |
| Bivalent temperature   | T <sub>biv</sub>                             | -5           | °C          | Operation limit temperature  | TOL               | -20          | °C                |   |  |  |
| Cycling interval capacity for heating  | P <sub>cy</sub>                              | -            | kW          | Cycling interval efficiency  | COP <sub>cy</sub> | -            | -                 |   |  |  |
| Degradation co-efficient   | Cdh  | 1            | -           | Heating water operating limit temperature  | WTOL              | 70           | °C                |   |  |  |
| <b>Power consumption in modes other than active mode</b>   |  |              |             | <b>Supplementary heater</b>  |                   |              |                   |   |  |  |
| Off mode   | P <sub>OFF</sub>                             | 0.01         | kW          | Rated heat output  | P <sub>sup</sub>  | 7.6          | kW                |   |  |  |
| Thermostat-off mode  | P <sub>TO</sub>                              | 0.01         | kW          | Type of energy input   | electric          |              |                   |   |  |  |
| Standby mode   | P <sub>SB</sub>                              | 0.01         | kW          |  |                   |              |                   |   |  |  |
| Crankcase heater mode  | P <sub>CK</sub>                              | 0            | kW          |  |                   |              |                   |   |  |  |
| <b>Other items</b>   |  |              |             |  |                   |              |                   |   |  |  |
| Capacity control   | fixed  |              |             | Rated air flow rate, outdoors  | -                 | 5000         | m <sup>3</sup> /h |   |  |  |
| Sound power level, indoors/outdoors  | L <sub>WA</sub>                              | -/62         | dB          | Rated brine or water flow rate, outdoor heat exchanger   | -                 | -            | m <sup>3</sup> /h |   |  |  |
| Emissions of nitrogen oxides   | NO <sub>x</sub>                              | -            | mg/kWh      |  |                   |              |                   |   |  |  |
| <b>For heat pump combination heater</b>  |  |              |             |  |                   |              |                   |   |  |  |
| Declared load profile  | -  |              |             | Water heating energy efficiency  | $\eta_{wh}$       | -            | %                 |   |  |  |
| Daily electricity consumption  | Q <sub>elec</sub>                            | -            | kWh         | Daily fuel consumption   | Q <sub>fuel</sub> | -            | kWh               |   |  |  |
| <b>Contact</b>   | CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen |              |             |  |                   |              |                   |   |  |  |