



ENERG
енергия · ενεργεια



107545P02

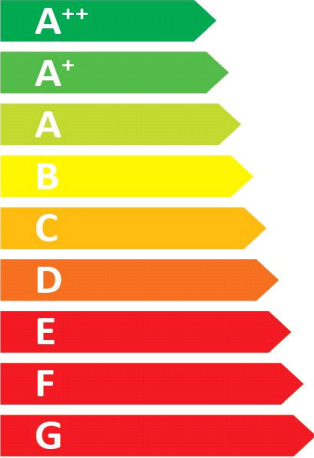
CTA

121360 Aeroheat CS 1-18a



55 °C

35 °C



A+

A++

- dB

57 dB

| | |
|------|------|
| ■ 15 | ■ 17 |
| ■ 19 | ■ 20 |
| ■ 16 | ■ 17 |
| kW | kW |

2015

811/2013



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Y

IJA

IE

IA

55°C

107545P02

121360 Aeroheat CS 1-18a

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 (η_S) | | | | | | | | 1 | 118 | % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated output of the heat pump (P_{rated} kW) | | | | | | | | | 18.50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | η_S % (sup) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | $(\eta_S \text{ % (sup)} - 1) \times (\alpha_{WE})$ | | | | = | - | 3 | % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | (α_{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) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | (η_{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 | 120 | % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | rounded to the nearest integer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Seasonal space heating energy efficiency class of package under average climate | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th colspan="10">X</th> </tr> </thead> <tbody> <tr> <td>G</td> <td>F</td> <td>E</td> <td>D</td> <td>C</td> <td>B</td> <td>A</td> <td>A+</td> <td>A++</td> <td>A+++</td> </tr> <tr> <td>< 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> </tbody> </table> | | | | | | | | | | X | | | | | | | | | | G | F | E | D | C | B | A | A+ | A++ | A+++ | < 30 % | ≥ 30 % | ≥ 34 % | ≥ 36 % | ≥ 75 % | ≥ 82 % | ≥ 90 % | ≥ 98 % | ≥ 125 % | ≥ 150 % |
| X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G | F | E | D | C | B | A | A+ | A++ | A+++ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| < 30 % | ≥ 30 % | ≥ 34 % | ≥ 36 % | ≥ 75 % | ≥ 82 % | ≥ 90 % | ≥ 98 % | ≥ 125 % | ≥ 150 % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Seasonal space heating energy efficiency under colder and warmer climate conditions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| colder | 106 | % | | colder | 5 | 120 | -V | 12 | = | 108 | % | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| warmer | 149 | % | | warmer | 5 | 120 | +VI | 31 | = | 151 | % | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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.

| | | | |
|--|--|--|-----|
| Product fiche | |  AC Cooling Heating | |
| Manufacturer | CTA AG | | |
| Model | AH CS 1-18a | | |
| Information on energy efficiency class and rated output | | | |
| | Average / Low temperature | Average / Medium temperature | |
| Space heating energy efficiency class | A++ | A+ | - |
| Rated heat output | 20.03 | 18.50 | kW |
| Seasonal space heating energy efficiency | 159 | 118 | % |
| Annual final energy consumption space heating | 10900 | 12821 | kWh |
| Sound power level indoors | - | | dB |
| Special precautions during assembly, installation or maintenance | | | |
| see installation and maintenance instructions | | | |
| Additional information | | | |
| | Low temperature | Medium temperature | |
| Rated heat output colder climate | 17.39 | 15.21 | kW |
| Rated heat output warmer climate | 16.88 | 16.20 | kW |
| Seasonal space heating energy efficiency colder climate | 139 | 106 | % |
| Seasonal space heating energy efficiency warmer climate | 194 | 149 | % |
| Annual final energy consumption colder climate | 5332 | 13413 | kWh |
| Annual final energy consumption warmer climate | 5332 | 6417 | kWh |
| Sound power level outdoors | | 57 | dB |
| Technical data of the temperature controller | | | |
| Manufacturer | ait | | |
| Model | Aeroplus 2.0 | | |
| Class of the controller | | III | - |
| Contribution of the controller to seasonal space heating energy efficiency | | 1.5 | % |
| Contact | CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen | | |

| | | | | | | | | | | |
|--|--|--------------|-------------|--|-------------------|--------------|-------------------|---|--|--|
| Model | | | | AH CS 1-18a | | | |  | | |
| 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 | | | | | | |
| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit | | | |
| Rated heat output | Prated | 18.50 | kW | Seasonal space heating energy efficiency | η_S | 118 | % | | | |
| Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj | | | | Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj | | | | | | |
| Tj = -7°C | Pdh | 12.80 | kW | Tj = -7°C | COPd | 1.94 | - | | | |
| Tj = +2°C | Pdh | 16.90 | kW | Tj = +2°C | COPd | 2.93 | - | | | |
| Tj = +7°C | Pdh | 10.10 | kW | Tj = +7°C | COPd | 4.21 | - | | | |
| Tj = +12°C | Pdh | 12.90 | kW | Tj = +12°C | COPd | 5.39 | - | | | |
| Tj = biv | Pdh | 14.20 | kW | Tj = biv | COPd | 2.23 | - | | | |
| Tj = TOL | Pdh | 11.30 | kW | Tj = TOL | COPd | 1.68 | - | | | |
| Tj = -15°C (if TOL < -20°C) | Pdh | 8.70 | kW | Tj = -15°C if TOL < -20°C) | COPd | 1.29 | - | | | |
| Bivalent temperature | T _{biv} | -4 | °C | Operation limit temperature | TOL | -20 | °C | | | |
| Cycling interval capacity for heating | P _{cy} | - | kW | Cycling interval efficiency | COP _{cy} | - | - | | | |
| Degradation co-efficient | Cdh | 1 | - | Heating water operating limit temperature | WTOL | 60 | °C | | | |
| Power consumption in modes other than active mode | | | | Supplementary heater | | | | | | |
| Off mode | P _{OFF} | 0.01 | kW | Rated heat output | P _{sup} | 7.2 | kW | | | |
| Thermostat-off mode | P _{TO} | 0.01 | kW | Type of energy input | electric | | | | | |
| Standby mode | P _{SB} | 0.01 | kW | | | | | | | |
| Crankcase heater mode | P _{CK} | 0 | kW | | | | | | | |
| Other items | | | | | | | | | | |
| Capacity control | fixed | | | Rated air flow rate, outdoors | - | 5600 | m ³ /h | | | |
| Sound power level, indoors/outdoors | L _{WA} | -57 | dB | Rated brine or water flow rate, outdoor heat exchanger | - | - | m ³ /h | | | |
| Emissions of nitrogen oxides | NO _x | - | mg/kWh | | | | | | | |
| For heat pump combination heater | | | | | | | | | | |
| Declared load profile | - | | | Water heating energy efficiency | η_{wh} | - | % | | | |
| Daily electricity consumption | Q _{elec} | - | kWh | Daily fuel consumption | Q _{fuel} | - | kWh | | | |
| Contact | CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen | | | | | | | | | |

| | | | | | | | | | | |
|--|--|--------------|-------------|--|-------------------|--------------|-------------------|---|--|--|
| Model | | | | AH CS 1-18a | | | |  | | |
| 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 | | | | | | |
| Item | Symbol | Value | Unit | Item | Symbol | Value | Unit | | | |
| Rated heat output | Prated | 20.03 | kW | Seasonal space heating energy efficiency | η_S | 159 | % | | | |
| Declared capacity for heating for part load at indoor temperature 20°C and outdoor temperature Tj | | | | Declared coefficient of performance for part load at indoor temperature 20°C and outdoor temperature Tj | | | | | | |
| Tj = -7°C | Pdh | 14.30 | kW | Tj = -7°C | COPd | 2.94 | - | | | |
| Tj = +2°C | Pdh | 17.50 | kW | Tj = +2°C | COPd | 3.94 | - | | | |
| Tj = +7°C | Pdh | 10.10 | kW | Tj = +7°C | COPd | 5.38 | - | | | |
| Tj = +12°C | Pdh | 12.90 | kW | Tj = +12°C | COPd | 5.96 | - | | | |
| Tj = biv | Pdh | 15.40 | kW | Tj = biv | COPd | 3.30 | - | | | |
| Tj = TOL | Pdh | 13.20 | kW | Tj = TOL | COPd | 2.65 | - | | | |
| Tj = -15°C (if TOL < -20°C) | Pdh | 11.30 | kW | Tj = -15°C if TOL < -20°C) | COPd | 2.19 | - | | | |
| Bivalent temperature | T _{biv} | -4 | °C | Operation limit temperature | TOL | -20 | °C | | | |
| Cycling interval capacity for heating | P _{cy} | - | kW | Cycling interval efficiency | COP _{cy} | - | - | | | |
| Degradation co-efficient | Cdh | 1 | - | Heating water operating limit temperature | WTOL | 60 | °C | | | |
| Power consumption in modes other than active mode | | | | Supplementary heater | | | | | | |
| Off mode | P _{OFF} | 0.01 | kW | Rated heat output | P _{sup} | 6.9 | kW | | | |
| Thermostat-off mode | P _{TO} | 0.01 | kW | Type of energy input | electric | | | | | |
| Standby mode | P _{SB} | 0.01 | kW | | | | | | | |
| Crankcase heater mode | P _{CK} | 0 | kW | | | | | | | |
| Other items | | | | | | | | | | |
| Capacity control | fixed | | | Rated air flow rate, outdoors | - | 5600 | m ³ /h | | | |
| Sound power level, indoors/outdoors | L _{WA} | -57 | dB | Rated brine or water flow rate, outdoor heat exchanger | - | - | m ³ /h | | | |
| Emissions of nitrogen oxides | NO _x | - | mg/kWh | | | | | | | |
| For heat pump combination heater | | | | | | | | | | |
| Declared load profile | - | | | Water heating energy efficiency | η_{wh} | - | % | | | |
| Daily electricity consumption | Q _{elec} | - | kWh | Daily fuel consumption | Q _{fuel} | - | kWh | | | |
| Contact | CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen | | | | | | | | | |