



# ENERG

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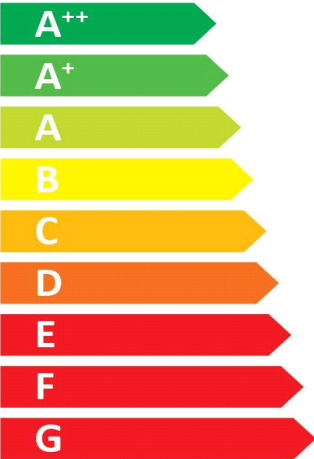
CTA

121349 Aeroheat CS 1-14i



55 °C

35 °C



A<sup>++</sup>

A<sup>++</sup>



58 dB



56 dB

■ 13  
■ 14  
■ 16  
kW

■ 13  
■ 14  
■ 16  
kW



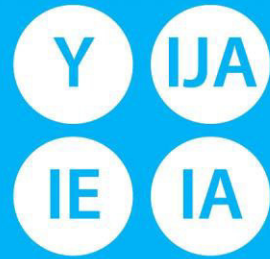
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# ENERG

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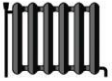




55°C

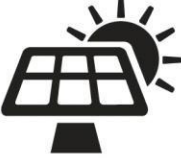



CTA

10753202

121349 Aeroheat CS 1-14i










+		<input type="checkbox"/>
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Package (heat pumps and combination heater with heat pump)																																							
Seasonal space heating energy efficiency of heat pump ( $\eta_S$ )								①	126	%																													
Rated output of the heat pump ( $P_{rated}$ kW)									13.71																														
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)																																			
				$(\eta_S \text{ % (sup)} - \text{①}) \times (\alpha_{WE})$		=	-	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	128	%																													
										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></td> <td>X</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	114	%		colder	⑤	128	-V	12	=	116	%																												
warmer	154	%		warmer	⑤	128	+VI	28	=	156	%																												

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>		 <b>AC Cooling Heating</b>		
<b>Manufacturer</b>	CTA AG			
<b>Model</b>	AH CS 1-14i			
<b>Information on energy efficiency class and rated output</b>				
	Average / Low temperature	Average / Medium temperature		
Space heating energy efficiency class	A++	A++	-	
Rated heat output	14.43	13.71	kW	
Seasonal space heating energy efficiency	158	126	%	
Annual final energy consumption space heating	7418	8808	kWh	
Sound power level indoors		58	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	13.15	12.60	kW	
Rated heat output warmer climate	16.43	15.64	kW	
Seasonal space heating energy efficiency colder climate	141	114	%	
Seasonal space heating energy efficiency warmer climate	192	154	%	
Annual final energy consumption colder climate	9002	10624	kWh	
Annual final energy consumption warmer climate	4531	5354	kWh	
Sound power level outdoors		56	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 1-14i</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	13.71	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	126	%			
<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	10.40	kW	Tj = -7°C	COPd	2.16	-			
Tj = +2°C	Pdh	13.50	kW	Tj = +2°C	COPd	3.10	-			
Tj = +7°C	Pdh	14.40	kW	Tj = +7°C	COPd	4.28	-			
Tj = +12°C	Pdh	16.30	kW	Tj = +12°C	COPd	5.27	-			
Tj = biv	Pdh	11.10	kW	Tj = biv	COPd	2.34	-			
Tj = TOL	Pdh	9.60	kW	Tj = TOL	COPd	1.96	-			
Tj = -15°C (if TOL < -20°C)	Pdh	8.30	kW	Tj = -15°C if TOL < -20°C)	COPd	1.67	-			
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	50	°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>	4.1	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	-	5600	m <sup>3</sup> /h			
Sound power level, indoors/outdoors	L <sub>WA</sub>	58/56	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 1-14i</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>	
Rated heat output	Prated	14.43	kW	Seasonal space heating energy efficiency	$\eta_S$	158	%	
<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	11.00	kW	Tj = -7°C	COPd	3.13	-	
Tj = +2°C	Pdh	13.90	kW	Tj = +2°C	COPd	3.94	-	
Tj = +7°C	Pdh	14.50	kW	Tj = +7°C	COPd	4.94	-	
Tj = +12°C	Pdh	16.40	kW	Tj = +12°C	COPd	5.43	-	
Tj = biv	Pdh	11.70	kW	Tj = biv	COPd	3.34	-	
Tj = TOL	Pdh	10.20	kW	Tj = TOL	COPd	2.87	-	
Tj = -15°C (if TOL < -20°C)	Pdh	8.80	kW	Tj = -15°C if TOL < -20°C)	COPd	2.47	-	
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	50	°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>	4.3	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	-	5600	m <sup>3</sup> /h	
Sound power level, indoors/outdoors	L <sub>WA</sub>	58/56	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							