



**ENERG**  
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10753802

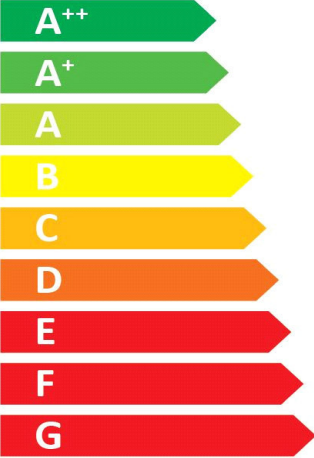
CTA

121289 Aeroheat CS 1-31i



55 °C

35 °C



A+

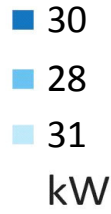
A++



68 dB



55 dB



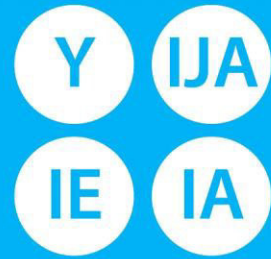
2015

811/2013



# ENERG

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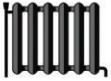








55°C

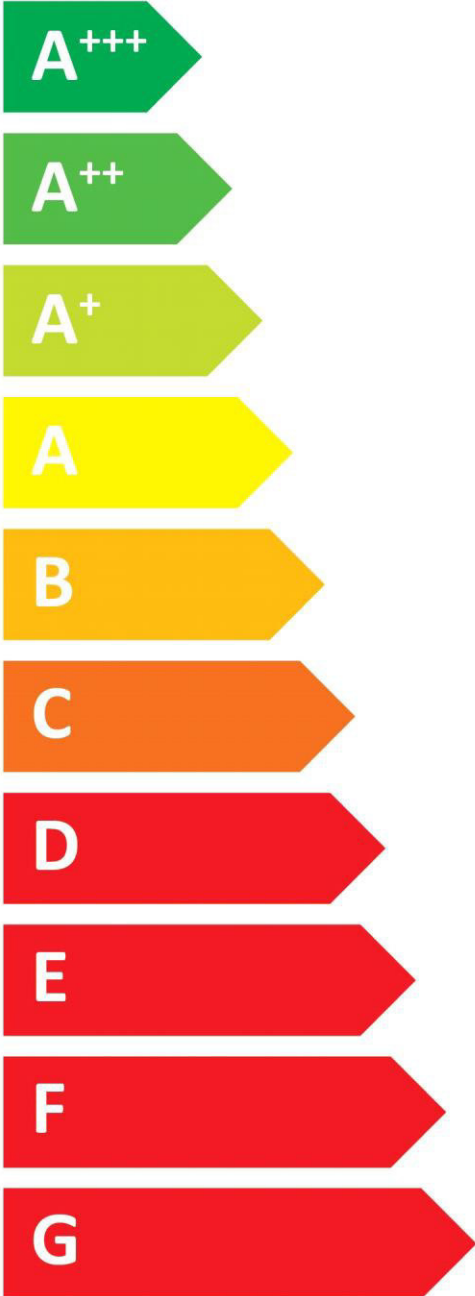

CTA

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121289 Aeroheat CS 1-31i

+		<input type="checkbox"/>
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**Package (heat pumps and combination heater with heat pump)**

Seasonal space heating energy efficiency of heat pump ( $\eta_S$ ) ❶ 122 %

Rated output of the heat pump ( $P_{rated}$  kW) 26.86

Temperature control Class III (Table 1) + ❷ 1.5 %

Supplementary boiler  
 Package with hot water storage tank no  $P_{sup}$  kW (rated output of supplementary heater)

$\eta_S$  % (sup) - ❸

$(\eta_S \% (sup) - \text{❶}) \times (\alpha_{WE}) = -$

$(\alpha_{WE})$  %

Solar contribution  $(A_{Koll} m^2)$   $(\eta_{Koll} \%)$

$(V_{Sp} m^3)$   $(standstill\ heat\ loss\ of\ the\ storage\ tank\ in\ W)$

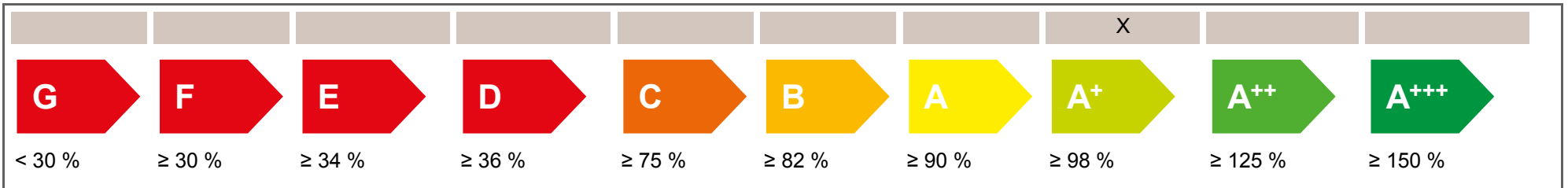
$(\eta_{Sp})$

$((294/(P_{rated} \times 11)) \times (A_{Koll} m^2) + (115/(P_{rated} \times 11)) \times (V_{Sp} m^3)) \times 0.45 \times ((\eta_{Koll} \%) / 100) \times (\eta_{Sp}) = +$  ❹ %

Seasonal space heating energy efficiency of package under average climate ❺ 124 %

*rounded to the nearest integer*


Seasonal space heating energy efficiency class of package under average climate





Seasonal space heating energy efficiency under colder and warmer climate conditions

colder	108 %		colder	❺	124	-V	14	=	110 %
warmer	145 %		warmer	❺	124	+VI	23	=	147 %

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 1-31i			
<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	28.28	26.86	kW	
Seasonal space heating energy efficiency	151	122	%	
Annual final energy consumption space heating	15254	17711	kWh	
Sound power level indoors		68	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	29.62	28.06	kW	
Rated heat output warmer climate	30.72	29.47	kW	
Seasonal space heating energy efficiency colder climate	131	108	%	
Seasonal space heating energy efficiency warmer climate	185	145	%	
Annual final energy consumption colder climate	21689	24994	kWh	
Annual final energy consumption warmer climate	8728	10663	kWh	
Sound power level outdoors		55	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 1-31i</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	26.86	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	23.80	kW	Tj = -7°C	COPd	2.03	-			
Tj = +2°C	Pdh	30.50	kW	Tj = +2°C	COPd	3.02	-			
Tj = +7°C	Pdh	19.10	kW	Tj = +7°C	COPd	4.05	-			
Tj = +12°C	Pdh	21.10	kW	Tj = +12°C	COPd	4.92	-			
Tj = biv	Pdh	23.80	kW	Tj = biv	COPd	2.03	-			
Tj = TOL	Pdh	21.50	kW	Tj = TOL	COPd	1.76	-			
Tj = -15°C (if TOL < -20°C)	Pdh	17.80	kW	Tj = -15°C if TOL < -20°C)	COPd	1.37	-			
Bivalent temperature	T <sub>biv</sub>	-7	°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	58	°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>	5.4	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	-	6000	m <sup>3</sup> /h			
Sound power level, indoors/outdoors	L <sub>WA</sub>	68/55	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 1-31i</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	28.28	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	151	%			
<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	25.00	kW	Tj = -7°C	COPd	2.92	-			
Tj = +2°C	Pdh	31.10	kW	Tj = +2°C	COPd	3.67	-			
Tj = +7°C	Pdh	19.40	kW	Tj = +7°C	COPd	4.86	-			
Tj = +12°C	Pdh	21.20	kW	Tj = +12°C	COPd	5.26	-			
Tj = biv	Pdh	25.00	kW	Tj = biv	COPd	2.92	-			
Tj = TOL	Pdh	22.90	kW	Tj = TOL	COPd	2.63	-			
Tj = -15°C (if TOL < -20°C)	Pdh	19.50	kW	Tj = -15°C if TOL < -20°C)	COPd	2.17	-			
Bivalent temperature	T <sub>biv</sub>	-7	°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	58	°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>	5.4	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	-	6000	m <sup>3</sup> /h			
Sound power level, indoors/outdoors	L <sub>WA</sub>	68/55	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									