



ENERG Y IJA
 енергия · ενεργεια IE IA

10753302

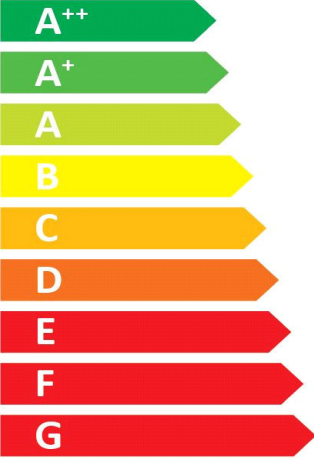
CTA

121350 Aeroheat CS 1-14i-L



55 °C

35 °C



58 dB

56 dB

■ 13	■ 13
■ 14	■ 14
■ 16	■ 16
kW	kW

2015

811/2013



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Y

IJA

IE

IA

55°C

10753302

121350 Aeroheat CS 1-14i-L

CTA



A++

A+++

A++

A++

A+

A

B

C

D

E

F

G

+



+



+



+



Package (heat pumps and combination heater with heat pump)

Seasonal space heating energy efficiency of heat pump (η_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)

η_S % (sup) = - ③ %

$(\eta_S \% (sup) - ①) \times (\alpha_{WE})$

(α_{WE})

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

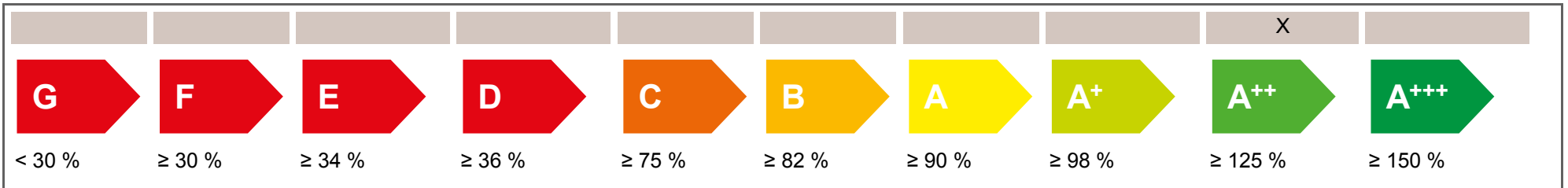
$(V_{Sp} m^3)$ **(standstill heat loss of the storage tank in W)**

(η_{Sp})

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





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.

Product fiche		 AC Cooling Heating		
Manufacturer	CTA AG			
Model	AH CS 1-14i-L			
Information on energy efficiency class and rated output				
	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	
Special precautions during assembly, installation or maintenance				
see installation and maintenance instructions				
Additional information				
	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	
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 1-14i-L						
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	13.71	kW	Seasonal space heating energy efficiency	η_S	126	%			
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	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 _{biv}	-5	°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	50	°C			
Power consumption in modes other than active mode				Supplementary heater						
Off mode	P _{OFF}	0.01	kW	Rated heat output	P _{sup}	4.1	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}	58/56	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 1-14i-L						
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	14.43	kW	Seasonal space heating energy efficiency	η_S	158	%			
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	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 _{biv}	-5	°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	50	°C			
Power consumption in modes other than active mode				Supplementary heater						
Off mode	P _{OFF}	0.01	kW	Rated heat output	P _{sup}	4.3	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}	58/56	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									