

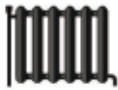


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CTA Aeroheat CM 18a



55 °C

35 °C



A⁺⁺

A⁺⁺⁺

- dB

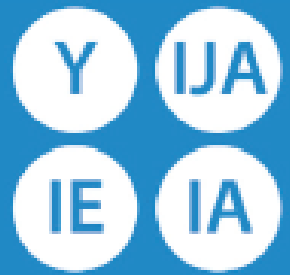
55dB

■ 12	■ 13
■ 9	■ 9
■ 13	■
kW	kW










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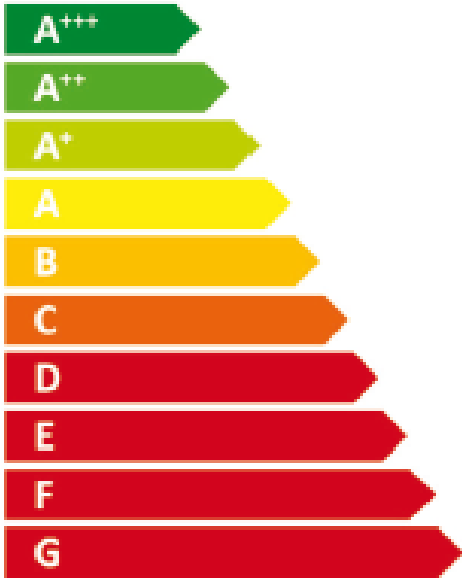

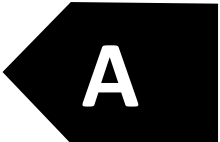

CTA Aeroheat CM 18a + CTA Hydraulic Tower HT12







Package (heat pumps and combination heater with heat pump)

Seasonal space heating energy efficiency of heat pump (η_S) ① 148 %

Rated output of the heat pump (P_{rated} kW) 9

Temperature control Class VI (Table 1) + ② 4 %

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)**

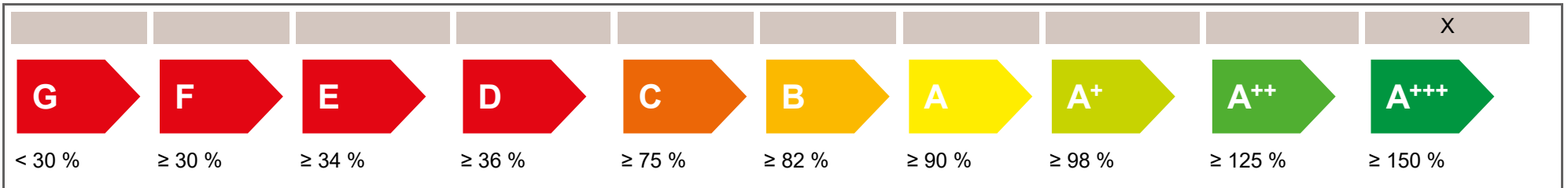
(η_{Sp})

$((294/(P_{rated} \times 11)) \times (A_{Koll} m^2) + (115/(P_{rated} \times 11)) \times (V_{Sp} m^3)) \times 0.45 \times ((\eta_{Koll} \%) / 100) \times (\eta_{Sp})$ = + ④ %

Seasonal space heating energy efficiency of package under average climate ⑤ 152 %

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	136	%		colder	⑤ 152	-V	12	=	140	%
warmer	183	%		warmer	⑤ 152	+VI	35	=	187	%

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 CM 18a and CM HT 12			
Information on energy efficiency class and rated output				
	Average / Low temperature	Average / Medium temperature		
Load profile water heating	XL		-	
Space heating energy efficiency class	A+++	A++	-	
Water heating energy efficiency class	A		-	
Rated heat output	9	9	kW	
Annual final energy consumption space heating	3567.00	4656.00	kWh	
Annual electricity consumption water heating	1720		kWh	
Seasonal space heating energy efficiency	194	148	%	
Water heating energy efficiency	98		%	
Sound power level indoors			- dB	
Special precautions during assembly, installation or maintenance				
All instructional work in the installation and maintenance manual may only be carried out by qualified specialist personnel in compliance with local regulations.				
Additional information				
	Low temperature	Medium temperature		
Rated heat output colder climate	13	12	kW	
Rated heat output warmer climate	13	13	kW	
Annual energy consumption space heating colder climate	7225	8159	kWh	
Annual energy consumption space heating warmer climate	2804	3746	kWh	
Annual electricity consumption water heating colder climate	2037		kWh	
Annual electricity consumption water heating warmer climate	1504		kWh	
Seasonal space heating energy efficiency colder climate	168	136	%	
Seasonal space heating energy efficiency warmer climate	245	183	%	
Water heating energy efficiency colder climate	82		%	
Water heating energy efficiency warmer climate	112		%	
Sound power level outdoors			55 dB	
Technical data of the temperature controller				
Manufacturer	CTC			
Model	CM WR			
Class of the controller	VI		-	
Contribution of the controller to seasonal space heating energy efficiency	4		%	
Contact	CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen			

Model				AH CM 18a and CM HT 12						
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)				Yes						
Application: (Low temperature/Medium temperature)				Medium temperature						
Climate: (Colder/Average/Warmer)				Average						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit			
Rated heat output	Prated	9	kW	Seasonal space heating energy efficiency	η_S	148	%			
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	7.50	kW	Tj = -7°C	COPd	2.41	-			
Tj = +2°C	Pdh	4.60	kW	Tj = +2°C	COPd	3.81	-			
Tj = +7°C	Pdh	4.70	kW	Tj = +7°C	COPd	4.76	-			
Tj = +12°C	Pdh	5.60	kW	Tj = +12°C	COPd	6.15	-			
Tj = biv	Pdh	8.70	kW	Tj = biv	COPd	1.99	-			
Tj = TOL	Pdh	8.70	kW	Tj = TOL	COPd	1.99	-			
Tj = -15°C (if TOL < -20°C)	Pdh	-	kW	Tj = -15°C if TOL < -20°C)	COPd	-	-			
Bivalent temperature	T _{biv}	-10	°C	Operation limit temperature	TOL	-10	°C			
Cycling interval capacity for heating	P _{cy}	-	kW	Cycling interval efficiency	COP _{cy}	-	-			
Degradation co-efficient	Cdh	0.98	-	Heating water operating limit temperature	WTOL	55	°C			
Power consumption in modes other than active mode				Supplementary heater						
Off mode	P _{OFF}	0.012	kW	Rated heat output	P _{sup}	-	kW			
Thermostat-off mode	P _{TO}	0.012	kW	Type of energy input	electric					
Standby mode	P _{SB}	0.012	kW							
Crankcase heater mode	P _{CK}	0	kW							
Other items										
Capacity control	variable			Rated air flow rate, outdoors	-	4200	m ³ /h			
Sound power level, indoors/outdoors	L _{WA}	-/55	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	XL			Water heating energy efficiency	η_{wh}	98	%			
Daily electricity consumption	Q _{elec}	7.816	kWh	Daily fuel consumption	Q _{fuel}	-	kWh			
Contact	CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen									

Model				AH CM 18a and CM HT 12						
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)				Yes						
Application: (Low temperature/Medium temperature)				Low temperature						
Climate: (Colder/Average/Warmer)				Average						
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit			
Rated heat output	Prated	9	kW	Seasonal space heating energy efficiency	η_S	194	%			
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	7.80	kW	Tj = -7°C	COPd	3.53	-			
Tj = +2°C	Pdh	4.50	kW	Tj = +2°C	COPd	4.97	-			
Tj = +7°C	Pdh	4.80	kW	Tj = +7°C	COPd	5.94	-			
Tj = +12°C	Pdh	5.60	kW	Tj = +12°C	COPd	7.35	-			
Tj = biv	Pdh	8.80	kW	Tj = biv	COPd	3.04	-			
Tj = TOL	Pdh	8.80	kW	Tj = TOL	COPd	3.04	-			
Tj = -15°C (if TOL < -20°C)	Pdh	-	kW	Tj = -15°C if TOL < -20°C)	COPd	-	-			
Bivalent temperature	T _{biv}	-10	°C	Operation limit temperature	TOL	-10	°C			
Cycling interval capacity for heating	P _{cy}	-	kW	Cycling interval efficiency	COP _{cy}	-	-			
Degradation co-efficient	Cdh	0.98	-	Heating water operating limit temperature	WTOL	55	°C			
Power consumption in modes other than active mode				Supplementary heater						
Off mode	P _{OFF}	0.012	kW	Rated heat output	P _{sup}	-	kW			
Thermostat-off mode	P _{TO}	0.012	kW	Type of energy input	electric					
Standby mode	P _{SB}	0.012	kW							
Crankcase heater mode	P _{CK}	0	kW							
Other items										
Capacity control	variable			Rated air flow rate, outdoors	-	4200	m ³ /h			
Sound power level, indoors/outdoors	L _{WA}	-/55	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	XL			Water heating energy efficiency	η_{wh}	98	%			
Daily electricity consumption	Q _{elec}	7.816	kWh	Daily fuel consumption	Q _{fuel}	-	kWh			
Contact	CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen									