



# ENERG

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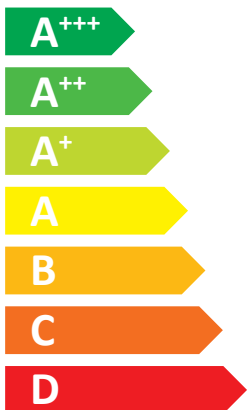


|| Klima · Kälte · Wärme || B11118 OH 1-85e Duo S/W



55 °C

35 °C



**73** dB





--- dB




Package (heat pumps and combination heater with heat pump)																													
Seasonal space heating energy efficiency of heat pump ( $\eta_S$ )							1	146	%																				
Rated output of the heat pump ( $P_{rated}$ kW)								77.00																					
Temperature control		Class		VII	(Table 1)	+	2	3.5	%																				
Supplementary boiler																													
Package with hot water storage tank																													
		no				$P_{sup}$ kW (rated output of supplementary heater)																							
				$\eta_S$ % (sup)																									
				$(\eta_S \text{ % (sup)} - 1) \times (\alpha_{WE})$		=	-	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	150	%																				
<i>rounded to the nearest integer</i>																													
Seasonal space heating energy efficiency class of package under average climate																													
X																													
<table border="0" style="width: 100%; text-align: center;"> <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>										<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 %
<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	147	%		colder	5	150	-V	-1	=	151	%																		
warmer	143	%		warmer	5	150	+VI	-3	=	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>	OH 1-85e Duo B/W			
<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	84.80	77.00	kW	
Seasonal space heating energy efficiency	189	146	%	
Annual final energy consumption space heating	35522	41212	kWh	
Sound power level indoors		73	dB	
<b>Special precautions during assembly, installation or maintenance</b>				
All instructional work in the installation and maintenance manual may only be carried out by qualified specialist personnel in compliance with local regulations. Any special precautions can be found in the manual on the website <a href="http://www.cta.ch">www.cta.ch</a>				
<b>Additional information</b>				
	Low temperature	Medium temperature		
Rated heat output colder climate	84.80	77.00	kW	
Rated heat output warmer climate	84.80	77.00	kW	
Seasonal space heating energy efficiency colder climate	195	147	%	
Seasonal space heating energy efficiency warmer climate	191	143	%	
Annual final energy consumption colder climate	41053	49070	kWh	
Annual final energy consumption warmer climate	22704	27264	kWh	
Sound power level outdoors		-	dB	
<b>Technical data of the temperature controller</b>				
<b>Manufacturer</b>	Siemens			
<b>Model</b>	RVS 61			
Class of the controller		VII	-	
Contribution of the controller to seasonal space heating energy efficiency		3.5	%	
<b>Contact</b>	CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen			

<b>Model</b>				<b>OH 1-85e Duo B/W</b>						
Brine-to-water heat pump: (Yes/No)				Yes						
Water-to-water heat pump: (Yes/No)				No						
Air-to-water heat pump: (Yes/No)				No						
Low temperature heat pump: (Yes/No)				No						
Equipped with supplementary heater: (Yes/No)				No						
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	77.00	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	146	%			
<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	78.30	kW	Tj = -7°C	COPd	3.07	-			
Tj = +2°C	Pdh	41.00	kW	Tj = +2°C	COPd	3.83	-			
Tj = +7°C	Pdh	41.90	kW	Tj = +7°C	COPd	4.26	-			
Tj = +12°C	Pdh	42.80	kW	Tj = +12°C	COPd	4.79	-			
Tj = biv	Pdh	77.60	kW	Tj = biv	COPd	2.95	-			
Tj = TOL	Pdh	77.60	kW	Tj = TOL	COPd	2.95	-			
Tj = -15°C (if TOL < -20°C)	Pdh	-	kW	Tj = -15°C if TOL < -20°C)	COPd	-	-			
Bivalent temperature	T <sub>biv</sub>	-10	°C	Operation limit temperature	TOL	-10	°C			
Cycling interval capacity for heating	P <sub>cy</sub>	-	kW	Cycling interval efficiency	COP <sub>cy</sub>	-	-			
Degradation co-efficient	Cdh	0.9	-	Heating water operating limit temperature	WTOL	60	°C			
<b>Power consumption in modes other than active mode</b>				<b>Supplementary heater</b>						
Off mode	P <sub>OFF</sub>	0.015	kW	Rated heat output	P <sub>sup</sub>	-	kW			
Thermostat-off mode	P <sub>TO</sub>	0.015	kW	Type of energy input	-					
Standby mode	P <sub>SB</sub>	0.015	kW							
Crankcase heater mode	P <sub>CK</sub>	0	kW							
<b>Other items</b>										
Capacity control	fixed			Rated air flow rate, outdoors	-	-	m <sup>3</sup> /h			
Sound power level, indoors/outdoors	L <sub>WA</sub>	73 / -	dB	Rated brine or water flow rate, outdoor heat exchanger	-	17.2	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>OH 1-85e Duo B/W</b>						
Brine-to-water heat pump: (Yes/No)				Yes						
Water-to-water heat pump: (Yes/No)				No						
Air-to-water heat pump: (Yes/No)				No						
Low temperature heat pump: (Yes/No)				No						
Equipped with supplementary heater: (Yes/No)				No						
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	84.80	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	189	%			
<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	85.20	kW	Tj = -7°C	COPd	4.67	-			
Tj = +2°C	Pdh	85.60	kW	Tj = +2°C	COPd	4.80	-			
Tj = +7°C	Pdh	43.40	kW	Tj = +7°C	COPd	5.22	-			
Tj = +12°C	Pdh	43.60	kW	Tj = +12°C	COPd	5.38	-			
Tj = biv	Pdh	84.80	kW	Tj = biv	COPd	4.55	-			
Tj = TOL	Pdh	84.80	kW	Tj = TOL	COPd	4.55	-			
Tj = -15°C (if TOL < -20°C)	Pdh	-	kW	Tj = -15°C if TOL < -20°C)	COPd	-	-			
Bivalent temperature	T <sub>biv</sub>	-10	°C	Operation limit temperature	TOL	-10	°C			
Cycling interval capacity for heating	P <sub>cy</sub>	-	kW	Cycling interval efficiency	COP <sub>cy</sub>	-	-			
Degradation co-efficient	Cdh	0.9	-	Heating water operating limit temperature	WTOL	60	°C			
<b>Power consumption in modes other than active mode</b>				<b>Supplementary heater</b>						
Off mode	P <sub>OFF</sub>	0.015	kW	Rated heat output	P <sub>sup</sub>	-	kW			
Thermostat-off mode	P <sub>TO</sub>	0.015	kW	Type of energy input	-					
Standby mode	P <sub>SB</sub>	0.015	kW							
Crankcase heater mode	P <sub>CK</sub>	0	kW							
<b>Other items</b>										
Capacity control	fixed			Rated air flow rate, outdoors	-	-	m <sup>3</sup> /h			
Sound power level, indoors/outdoors	L <sub>WA</sub>	73 / -	dB	Rated brine or water flow rate, outdoor heat exchanger	-	17.2	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									