



# ENERG

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I - Klima - Kälte - Wärme || OH 1-72e Duo - S/W Art.Nr.: B11117



55 °C

35 °C



**72** dB



--- dB

■ 66  
■ **66**  
■ 66  
kW

■ 73  
■ **73**  
■ 73  
kW



### Package (heat pumps and combination heater with heat pump)

Seasonal space heating energy efficiency of heat pump ( $\eta_S$ ) 1 129 %

Rated output of the heat pump ( $P_{rated}$  kW) 65.40

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) = - 3 %

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

$(\alpha_{WE})$

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

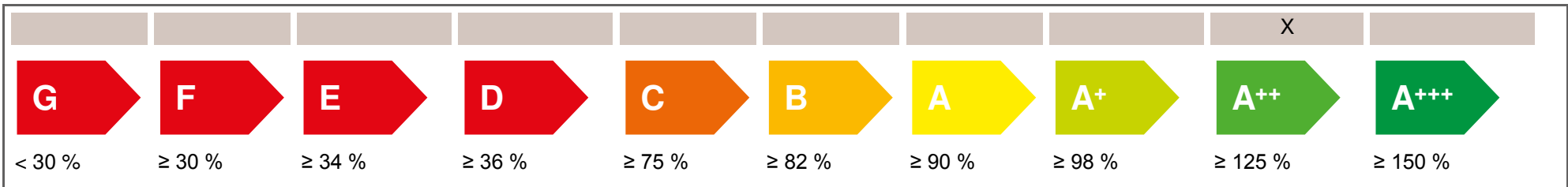
$(V_{Sp} m^3)$   $(standstill\ heat\ loss\ of\ the\ storage\ tank\ in\ W)$

$(\eta_{Sp})$

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

Seasonal space heating energy efficiency of package under average climate 5 133 %  
*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	131 %		colder	5	133	-V	-2	=	135 %
warmer	130 %		warmer	5	133	+VI	1	=	134 %

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 1-72e 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	72.10	65.40	kW
Seasonal space heating energy efficiency	183	129	%
Annual final energy consumption space heating	31208	39327	kWh
Sound power level indoors	72		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	72.10	65.40	kW
Rated heat output warmer climate	72.10	65.40	kW
Seasonal space heating energy efficiency colder climate	185	131	%
Seasonal space heating energy efficiency warmer climate	185	130	%
Annual final energy consumption colder climate	36742	46476	kWh
Annual final energy consumption warmer climate	19901	25303	kWh
Sound power level outdoors		-	dB
<b>Technical data of the temperature controller</b>			
<b>Manufacturer</b>	<b>Siemens</b>		
<b>Model</b>	<b>RVS 61</b>		
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 1-72e 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	65.40	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	129	%			
<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	66.40	kW	Tj = -7°C	COPd	3.06	-			
Tj = +2°C	Pdh	69.70	kW	Tj = +2°C	COPd	3.84	-			
Tj = +7°C	Pdh	71.70	kW	Tj = +7°C	COPd	4.49	-			
Tj = +12°C	Pdh	73.80	kW	Tj = +12°C	COPd	5.35	-			
Tj = biv	Pdh	65.40	kW	Tj = biv	COPd	2.87	-			
Tj = TOL	Pdh	65.40	kW	Tj = TOL	COPd	2.87	-			
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>psych</sub>	-	kW	Cycling interval efficiency	COP <sub>psych</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>	0.003	kW	Rated heat output	P <sub>sup</sub>	-	kW			
Thermostat-off mode	P <sub>TO</sub>	0.012	kW	Type of energy input	-					
Standby mode	P <sub>SB</sub>	0.003	kW							
Crankcase heater mode	P <sub>CK</sub>	0.003	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>	72 / -	dB	Rated brine or water flow rate, outdoor heat exchanger	-	14.7	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 1-72e 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	72.10	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	183	%			
<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	72.40	kW	Tj = -7°C	COPd	4.75	-			
Tj = +2°C	Pdh	73.80	kW	Tj = +2°C	COPd	5.35	-			
Tj = +7°C	Pdh	74.90	kW	Tj = +7°C	COPd	5.90	-			
Tj = +12°C	Pdh	75.60	kW	Tj = +12°C	COPd	6.31	-			
Tj = biv	Pdh	72.10	kW	Tj = biv	COPd	4.62	-			
Tj = TOL	Pdh	72.10	kW	Tj = TOL	COPd	4.62	-			
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>psych</sub>	-	kW	Cycling interval efficiency	COP <sub>psych</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>	0.003	kW	Rated heat output	P <sub>sup</sub>	-	kW			
Thermostat-off mode	P <sub>TO</sub>	0.012	kW	Type of energy input	-					
Standby mode	P <sub>SB</sub>	0.003	kW							
Crankcase heater mode	P <sub>CK</sub>	0.003	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>	72 / -	dB	Rated brine or water flow rate, outdoor heat exchanger	-	14.7	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									