ENERG
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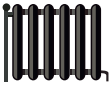
Y IJA IE IA

CTA Klima Kälte Wärme

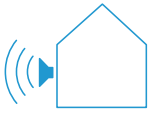
I II OH 1-85e Duo - S/W Art.Nr.: B11118



	55 °C	35 °C
	A++	A++

A++
A+
A
B
C
D
E
F
G

73 dB



--- dB

	78	85
	78	**85**
	78	85
	kW	kW

2015

811/2013

Package (heat pumps and combination heater with heat pump)

Seasonal space heating energy efficiency of heat pump (ηS)						❶ 128	%
Rated output of the heat pump (Prated kW)		77.20					
Temperature control	Class	VII	***(Table 1)***	+	❷ 3.5	%	
Supplementary boiler							
Package with hot water storage tank	no			*Psup kW (rated output of supplementary heater)*			
		ηs % (sup)					
		(ηs % ***(sup)*** - ❶) x (α_{WE})		=	-	❸	%
		(α_{WE})					
Solar contribution		***(A_{Koll} m^2)***	***(η Koll %)***				
		(V_{Sp} m^3)	***(standstill heat loss of the storage tank in W)***				
			(η Sp)				
((294/(P_{rated} x 11)) x **(A_{Koll} m^2)** + (115/(P_{rated} x 11)) x **(V_{Sp} m^3)**) x 0.45 x ((**η_{Koll} %**) /100) x **(η_{Sp})**				=	+	❹	%
Seasonal space heating energy efficiency of package under average climate						❺ 132	%
						rounded to the nearest integer	

Seasonal space heating energy efficiency class of package under average climate

G	F	E	D	C	B	A	A+	A++	A+++
								X	
< 30 %	≥ 30 %	≥ 34 %	≥ 36 %	≥ 75 %	≥ 82 %	≥ 90 %	≥ 98 %	≥ 125 %	≥ 150 %

Seasonal space heating energy efficiency under colder and warmer climate conditions

colder	130	%	colder ❺	132	-V	-2	=	134	%
warmer	129	%	warmer ❺	132	+VI	1	=	133	%

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.

CTA AC Cooling Heating

Product fiche

Manufacturer	**CTA AG**
Model	**OH 1-85e Duo B/W**

Information on energy efficiency class and rated output

	Average / Low temperature	Average / Medium temperature	
Space heating energy efficiency class	A++	A++	-
Rated heat output	84.80	77.20	kW
Seasonal space heating energy efficiency	178	128	%
Annual final energy consumption space heating	37675	46752	kWh
Sound power level indoors		73	dB

Special precautions during assembly, installation or maintenance

see installation and maintenance instructions

Additional information	Low temperature	Medium temperature	
Rated heat output colder climate	84.80	77.20	kW
Rated heat output warmer climate	84.80	77.20	kW
Seasonal space heating energy efficiency colder climate	180	130	%
Seasonal space heating energy efficiency warmer climate	180	129	%
Annual final energy consumption colder climate	44460	55315	kWh
Annual final energy consumption warmer climate	24051	30126	kWh
Sound power level outdoors		-	dB

Technical data of the temperature controller

Manufacturer	**Siemens**
Model	**RVS 61**

Class of the controller	VII	-
Contribution of the controller to seasonal space heating energy efficiency	3.5	%

Contact	CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen

Model				**OH 1-85e Duo B/W**			
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			
Item	**Symbol**	**Value**	**Unit**	**Item**	**Symbol**	**Value**	**Unit**
Rated heat output	Prated	77.20	kW	**Seasonal space heating energy efficiency**	ηS	128	%
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	78.30	kW	Tj = -7°C	COPd	3.07	-
Tj = +2°C	Pdh	82.00	kW	Tj = +2°C	COPd	3.82	-
Tj = +7°C	Pdh	84.40	kW	Tj = +7°C	COPd	4.43	-
Tj = +12°C	Pdh	86.80	kW	Tj = +12°C	COPd	5.22	-
Tj = biv	Pdh	77.20	kW	Tj = biv	COPd	2.89	-
Tj = TOL	Pdh	77.20	kW	Tj = TOL	COPd	2.89	-
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	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient	Cdh	0.9	-	Heating water operating limit temperature	WTOL	60	°C
Power consumption in modes other than active mode				**Supplementary heater**			
Off mode	P_{OFF}	0.003	kW	Rated heat output	Psup	-	kW
Thermostat-off mode	P_{TO}	0.012	kW	Type of energy input	-		
Standby mode	P_{SB}	0.003	kW				
Crankcase heater mode	P_{CK}	0.003	kW				
Other items							
Capacity control	fixed			Rated air flow rate, outdoors	-	-	m^3/h
Sound power level, indoors/outdoors	L_{WA}	73 / -	dB	Rated brine or water flow rate, outdoor heat exchanger	-	17.2	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	Qfuel	-	kWh
Contact	CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen						

Model				**OH 1-85e Duo B/W**			
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			
Item	**Symbol**	**Value**	**Unit**	**Item**	**Symbol**	**Value**	**Unit**
Rated heat output	Prated	84.80	kW	**Seasonal space heating energy efficiency**	ηS	178	%
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	85.20	kW	Tj = -7°C	COPd	4.67	-
Tj = +2°C	Pdh	86.80	kW	Tj = +2°C	COPd	5.22	-
Tj = +7°C	Pdh	88.00	kW	Tj = +7°C	COPd	5.72	-
Tj = +12°C	Pdh	88.80	kW	Tj = +12°C	COPd	6.09	-
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_{biv}	-10	°C	Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcych	-	kW	Cycling interval efficiency	COPcyc	-	-
Degradation co-efficient	Cdh	0.9	-	Heating water operating limit temperature	WTOL	60	°C
Power consumption in modes other than active mode				**Supplementary heater**			
Off mode	P_{OFF}	0.003	kW	Rated heat output	Psup	-	kW
Thermostat-off mode	P_{TO}	0.012	kW	Type of energy input	-		
Standby mode	P_{SB}	0.003	kW				
Crankcase heater mode	P_{CK}	0.003	kW				
Other items							
Capacity control	fixed			Rated air flow rate, outdoors	-	-	m^3/h
Sound power level, indoors/outdoors	L_{WA}	73 / -	dB	Rated brine or water flow rate, outdoor heat exchanger	-	17.2	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	Qfuel	-	kWh
Contact	CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen						