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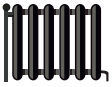
CTA Klima Kälte Wärme

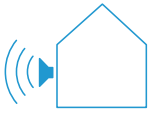
I II OP 130ed - W/W Art.Nr.: B10872



	55 °C	35 °C
	A++	A++

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

77 dB



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	151	169
	151	**169**
	151	169
	kW	kW

2015

811/2013

Package (heat pumps and combination heater with heat pump)

Seasonal space heating energy efficiency of heat pump (ηS)						❶ 166	%
Rated output of the heat pump (Prated kW)		150.40					
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 m²)***		***(η Koll %)***			
		(V Sp m³)		***(standstill heat loss of the storage tank in W)***			
				(η Sp)			
((294/(P_{rated} x 11)) x **(A_{Koll} m²)** + (115/(P_{rated} x 11)) x **(V_{Sp} m³)**) x 0.45 x ((**η_{Koll} %**) /100) x **(η_{Sp})**					=	+	❹	%
Seasonal space heating energy efficiency of package under average climate						❺ 170	%
						rounded to the nearest integer	

Seasonal space heating energy efficiency class of package under average climate

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

Seasonal space heating energy efficiency under colder and warmer climate conditions

colder	167	%	colder ❺	170	-V	-1	=	171	%
warmer	166	%	warmer ❺	170	+VI	0	=	170	%

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	**Optipro 130ed W/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	168.80	150.40	kW
Seasonal space heating energy efficiency	231	166	%
Annual final energy consumption space heating	58245	71553	kWh
Sound power level indoors		77	dB

Special precautions during assembly, installation or maintenance

see installation and maintenance instructions

Additional information	Low temperature	Medium temperature	
Rated heat output colder climate	168.80	150.40	kW
Rated heat output warmer climate	168.80	150.40	kW
Seasonal space heating energy efficiency colder climate	234	167	%
Seasonal space heating energy efficiency warmer climate	234	166	%
Annual final energy consumption colder climate	68739	84584	kWh
Annual final energy consumption warmer climate	37193	46040	kWh
Sound power level outdoors		-	dB

Technical data of the temperature controller

Manufacturer	**Carel**
Model	**pCO5+**

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				**Optipro 130ed W/W**			
Brine-to-water heat pump: (Yes/No)				No			
Water-to-water heat pump: (Yes/No)				Yes			
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	150.40	kW	**Seasonal space heating energy efficiency**	ηS	166	%
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	153.20	kW	Tj = -7°C	COPd	3.88	-
Tj = +2°C	Pdh	162.40	kW	Tj = +2°C	COPd	4.88	-
Tj = +7°C	Pdh	167.90	kW	Tj = +7°C	COPd	5.69	-
Tj = +12°C	Pdh	173.40	kW	Tj = +12°C	COPd	6.73	-
Tj = biv	Pdh	150.40	kW	Tj = biv	COPd	3.64	-
Tj = TOL	Pdh	150.40	kW	Tj = TOL	COPd	3.64	-
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	63	°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	staged			Rated air flow rate, outdoors	-	-	m^3/h
Sound power level, indoors/outdoors	L_{WA}	77 / -	dB	Rated brine or water flow rate, outdoor heat exchanger	-	34.5	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				**Optipro 130ed W/W**			
Brine-to-water heat pump: (Yes/No)				No			
Water-to-water heat pump: (Yes/No)				Yes			
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	168.80	kW	**Seasonal space heating energy efficiency**	ηS	231	%
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	169.70	kW	Tj = -7°C	COPd	6.01	-
Tj = +2°C	Pdh	173.40	kW	Tj = +2°C	COPd	6.73	-
Tj = +7°C	Pdh	176.10	kW	Tj = +7°C	COPd	7.37	-
Tj = +12°C	Pdh	177.90	kW	Tj = +12°C	COPd	7.86	-
Tj = biv	Pdh	168.80	kW	Tj = biv	COPd	5.85	-
Tj = TOL	Pdh	168.80	kW	Tj = TOL	COPd	5.85	-
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	63	°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	staged			Rated air flow rate, outdoors	-	-	m^3/h
Sound power level, indoors/outdoors	L_{WA}	77 / -	dB	Rated brine or water flow rate, outdoor heat exchanger	-	34.5	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						