




Package (heat pumps and combination heater with heat pump)																															
Seasonal space heating energy efficiency of heat pump (η_S)								1 182 %																							
Rated output of the heat pump (P_{rated} kW)		8.10																													
Temperature control		Class VI (Table 1)		+		2		4 %																							
Supplementary boiler		no						P_{sup} kW (rated output of supplementary heater)																							
Package with hot water storage tank		η_S % (sup)																													
		$(\eta_S \text{ % (sup)} - 1) \times (\alpha_{WE})$		=		-		3 %																							
		(α_{WE})																													
Solar contribution		$(A_{Koll} \text{ m}^2)$		$(\eta_{Koll} \text{ %})$																											
		$(V_{Sp} \text{ m}^3)$						$(standstill \text{ heat loss of the storage tank in W})$																							
								(η_{Sp})																							
								4 %																							
Seasonal space heating energy efficiency of package under average climate								5 186 %																							
								rounded to the nearest integer																							
Seasonal space heating energy efficiency class of package under average climate																															
<table border="1"> <thead> <tr> <th>G</th> <th>F</th> <th>E</th> <th>D</th> <th>C</th> <th>B</th> <th>A</th> <th>A+</th> <th>A++</th> <th>A+++</th> <th>X</th> </tr> </thead> <tbody> <tr> <td>< 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> <td></td> </tr> </tbody> </table>										G	F	E	D	C	B	A	A+	A++	A+++	X	< 30 %	≥ 30 %	≥ 34 %	≥ 36 %	≥ 75 %	≥ 82 %	≥ 90 %	≥ 98 %	≥ 125 %	≥ 150 %	
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	191 %																														
warmer	186 %																														
colder	5	186	-V	-9	=	195	%																								
warmer	5	186	+VI	4	=	190	%																								

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	OH I 4esr TWW W/W			
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	9.50	8.10	kW	
Annual final energy consumption space heating	2720.00	3484.00	kWh	
Annual electricity consumption water heating	1446		kWh	
Seasonal space heating energy efficiency	277	182	%	
Water heating energy efficiency	116		%	
Sound power level indoors	44		dB	
Special precautions during assembly, installation or maintenance				
see installation and maintenance instructions				
Additional information				
	Low temperature	Medium temperature		
Rated heat output colder climate	9.50	8.10	kW	
Rated heat output warmer climate	9.50	8.10	kW	
Annual energy consumption space heating colder climate	3099	3992	kWh	
Annual energy consumption space heating warmer climate	1721	2199	kWh	
Annual electricity consumption water heating colder climate	1446		kWh	
Annual electricity consumption water heating warmer climate	1446		kWh	
Seasonal space heating energy efficiency colder climate	292	191	%	
Seasonal space heating energy efficiency warmer climate	281	186	%	
Water heating energy efficiency colder climate	116		%	
Water heating energy efficiency warmer climate	116		%	
Sound power level outdoors	-		dB	
Technical data of the temperature controller				
Manufacturer	Carel			
Model	c.pCOMini			
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				OH I 4esr TWW 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)				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	8.10	kW	Seasonal space heating energy efficiency	η_S	182	%			
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	7.17	kW	Tj = -7°C	COPd	3.51	-			
Tj = +2°C	Pdh	4.36	kW	Tj = +2°C	COPd	4.67	-			
Tj = +7°C	Pdh	2.80	kW	Tj = +7°C	COPd	5.69	-			
Tj = +12°C	Pdh	2.20	kW	Tj = +12°C	COPd	7.11	-			
Tj = biv	Pdh	8.10	kW	Tj = biv	COPd	3.24	-			
Tj = TOL	Pdh	8.10	kW	Tj = TOL	COPd	3.24	-			
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	0.9	-	Heating water operating limit temperature	WTOL	62	°C			
Power consumption in modes other than active mode				Supplementary heater						
Off mode	P _{OFF}	0.003	kW	Rated heat output	P _{sup}	-	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	variable			Rated air flow rate, outdoors	-	-	m ³ /h			
Sound power level, indoors/outdoors	L _{WA}	44 / -	dB	Rated brine or water flow rate, outdoor heat exchanger	-	1.3	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}	116	%			
Daily electricity consumption	Q _{elec}	6.59	kWh	Daily fuel consumption	Q _{fuel}	-	kWh			
Contact	CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen									

Model				OH I 4esr TWW W/W						
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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)				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	9.50	kW	Seasonal space heating energy efficiency	η_S	277	%			
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	8.40	kW	Tj = -7°C	COPd	6.11	-			
Tj = +2°C	Pdh	5.12	kW	Tj = +2°C	COPd	7.11	-			
Tj = +7°C	Pdh	3.29	kW	Tj = +7°C	COPd	8.04	-			
Tj = +12°C	Pdh	2.60	kW	Tj = +12°C	COPd	8.78	-			
Tj = biv	Pdh	9.50	kW	Tj = biv	COPd	4.70	-			
Tj = TOL	Pdh	9.50	kW	Tj = TOL	COPd	4.70	-			
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	0.9	-	Heating water operating limit temperature	WTOL	62	°C			
Power consumption in modes other than active mode				Supplementary heater						
Off mode	P _{OFF}	0.003	kW	Rated heat output	P _{sup}	-	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	variable			Rated air flow rate, outdoors	-	-	m ³ /h			
Sound power level, indoors/outdoors	L _{WA}	44 / -	dB	Rated brine or water flow rate, outdoor heat exchanger	-	1.3	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}	116	%			
Daily electricity consumption	Q _{elec}	6.59	kWh	Daily fuel consumption	Q _{fuel}	-	kWh			
Contact	CTA AG, Hunzigenstrasse 2, CH-3110 Münsingen									