



# ENERG

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100750LUXP02

alpha innotec

LWP 450-LUX



55 °C

35 °C



**A+**

**A+**



- dB



**63** dB

■ 40  
■ **38**  
■ 25  
kW

■ 38  
■ **36**  
■ 27  
kW





# ENERGY

100750LUXP02

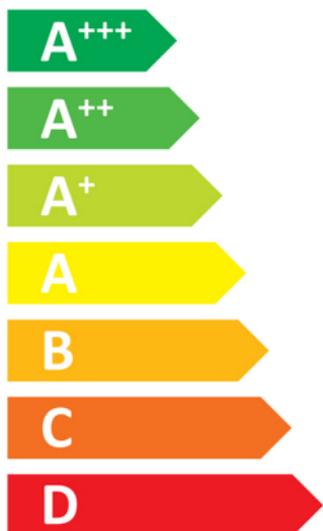
alpha innotec

LWP 450-LUX



55 °C

35 °C



A<sup>+</sup>

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- dB



63 dB

■ 40  
■ **38**  
■ 25  
kW

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■ **36**  
■ 27  
kW





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Y

IJA

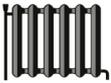
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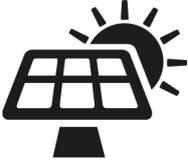
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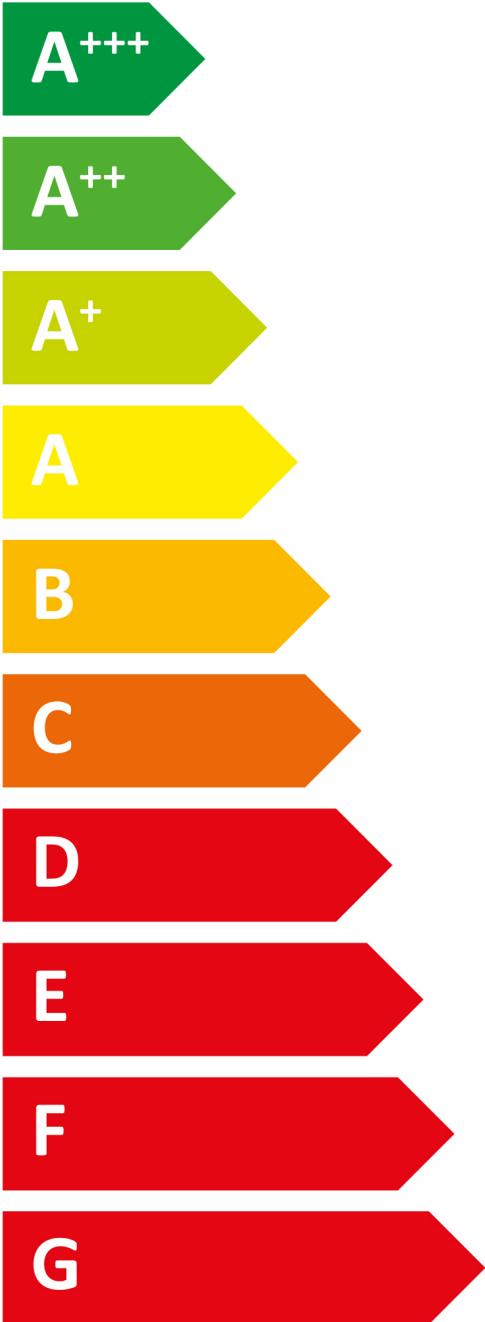
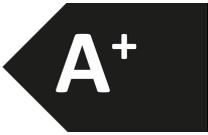
alpha innotec

LWP 450-LUX + Luxtronik 2.1-P





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**package (heat pumps and combination heater with heat pump) - LWP 450-LUX + Luxtronik 2.1-P**

Seasonal space heating energy efficiency of heat pump ( $\eta_s$ ) ① 121 %

**Rated heat output of the heat pump ( $P_{rated}$  kW)** 38

Temperature control Class VII (Table 1) + ② 3,5 %

Supplementary boiler  
package with hot water storage tank no P<sub>sup</sub> kW (rated heat output of supplementary heater)

$\eta_s$  % ( $\sigma_{\pi}$ )  $(\eta_s \% (sup) - ①) \times (\alpha_{WP}) =$  - ③   %

( $\alpha_{WE}$ : see Table 3)   ( $\alpha_{WE}$ )

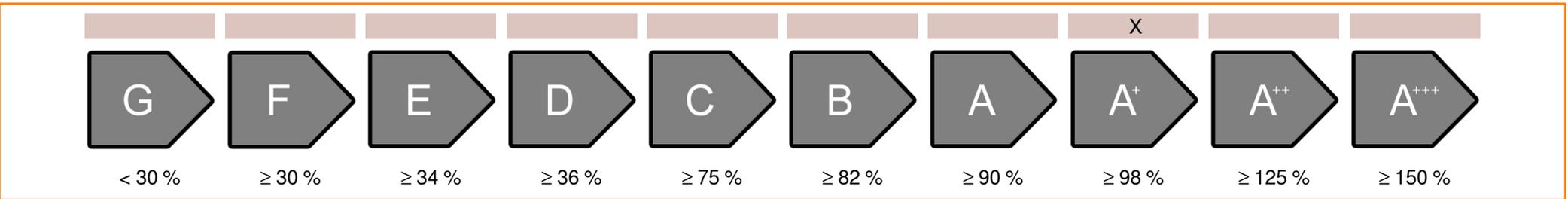
solar contribution   ( $A_{Koll}$  m<sup>2</sup>)   ( $\eta_{Koll}$  %)  
  ( $V_{Sp}$  m<sup>3</sup>)   (standstill heat loss of the hot water storage tank in W)  
  ( $\eta_{Sp}$ : Table 2)

$((294/P_{rated} \times 11) \times (A_{Koll} \text{ m}^2) + (115/P_{rated} \times 11) \times (V_{Sp} \text{ m}^3)) \times 0,45 \times ((\eta_{Koll} \%)/100) \times (\eta_{Sp}) =$  + ④   %

Seasonal space heating energy efficiency of package ⑤ 124 %

*rounded to the nearest integer*

Seasonal space heating energy efficiency class of package



Seasonal space heating energy efficiency under colder or warmer climate conditions

**Seasonal space heating energy efficiency of the heat pump ( $\eta_s$ ) under colder climate conditions** 117 %

**Seasonal space heating energy efficiency of the heat pump ( $\eta_s$ ) under warmer climate conditions** 141 %

colder ⑤ 124 -V 3 = 121 warmer ⑤ 124 +VI 20 = 144

<b>heatpump datasheet:</b>			
<b>manufacturer:</b>	alpha innotec		
<b>model:</b>	LWP 450-LUX		
<b>Information concerning energy efficiency class and rated heat output:</b>			
	average / low	average / medium	
energy efficiency class space heater:	A+	A+	-
rated heat output:	36	38	kW
energy efficiency space heater:	147	121	%
annual final energy consumption space heater	19924	25529	kWh
sound power level indoors		-	dB
<b>special precautions concerning assembly, installation or maintenance</b>			
All instructional work in this manual may only be carried out by qualified specialist personnel in compliance with local regulations.			
<b>additional information</b>	low	medium	
rated heat output colder climate	38	40	kW
rated heat output warmer climate	27	25	kW
energy efficiency space heater colder climate	139	117	%
energy efficiency space heater warmer climate	164	141	%
annual energy consumption space heater colder climate	26449	32793	kWh
annual energy consumption space heater warmer climate	8710	9296	kWh
sound power level outdoors		63	dB

<b>technical data of the temperature controller</b>		
<b>manufacturer:</b>	<b>alpha innotec</b>	
<b>model:</b>	<b>Luxtronik 2.1-P</b>	
controller class	VII	-
contribution of the controller to the energy efficiency space heater	3,5	%

<b>Model</b>				<b>LWP 450-LUX</b>			
Air-to-water heat pump: (yes/no)				yes			
Brine-to-water heat pump: (yes/no)				no			
Water-to-water heat pump: (yes/no)				no			
Low-temperature heat pump: (yes/no)				no			
Equipped with supplementary heater: (yes/no)				no			
combination heater with: (yes/no)				no			
application: (low/medium)				medium			
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	38	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	120,7	%
<b>Declared coefficient of performance 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	40,4	kW	Tj = -7°C	COPd	2,28	-
Tj = +2°C	Pdh	26,7	kW	Tj = +2°C	COPd	3,27	-
Tj = +7°C	Pdh	24,9	kW	Tj = +7°C	COPd	3,31	-
Tj = +12°C	Pdh	35,3	kW	Tj = +12°C	COPd	4,82	-
Tj = bivalent temperature	Pdh	38,2	kW	Tj = bivalent temperature	COPd	2,15	-
Tj = operation limit temperature	Pdh	38,2	kW	Tj = operation limit temperature	COPd	2,15	-
For air-to-water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd	-	-
Bivalent temperature	T <sub>biv</sub>	-10	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P <sub>cyh</sub>	-	kW	Cycling interval efficiency	COP <sub>cyh</sub>	-	-
Degradation co-efficient (**)	Cdh	1,0	-	Heating water operating limit temperature	WTOL	65	°C
<b>Power consumption in modes other than active mode</b>				<b>Supplementary heater</b>			
Off mode	P <sub>OFF</sub>	0,107	kW	Rated heat output	P <sub>sup</sub>	-	kW
Thermostat-off mode	P <sub>TO</sub>	0,122	kW	Type of energy input	electrical		
Standby mode	P <sub>SB</sub>	0,107	kW				
Crankcase heater mode	P <sub>CK</sub>	-	kW				
<b>Other items</b>							
Capacity control	fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	9.000	m <sup>3</sup> /h
sound power level, indoors/outdoors	L <sub>WA</sub>	- / 63	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	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 details</b>	ait deutschland GmbH Industriestr. 3 95359 Kasendorf Germany						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							

<b>Model</b>				<b>LWP 450-LUX</b>			
Air-to-water heat pump: (yes/no)				yes			
Brine-to-water heat pump: (yes/no)				no			
Water-to-water heat pump: (yes/no)				no			
Low-temperature heat pump: (yes/no)				no			
Equipped with supplementary heater: (yes/no)				no			
combination heater with: (yes/no)				no			
application: (low/medium)				low			
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	36	kW	<b>Seasonal space heating energy efficiency</b>	$\eta_S$	146,7	%
<b>Declared coefficient of performance 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	39,3	kW	Tj = -7°C	COPd	2,97	-
Tj = +2°C	Pdh	24,8	kW	Tj = +2°C	COPd	3,72	-
Tj = +7°C	Pdh	28,4	kW	Tj = +7°C	COPd	4,49	-
Tj = +12°C	Pdh	36,6	kW	Tj = +12°C	COPd	5,74	-
Tj = bivalent temperature	Pdh	36,1	kW	Tj = bivalent temperature	COPd	2,81	-
Tj = operation limit temperature	Pdh	36,1	kW	Tj = operation limit temperature	COPd	2,81	-
For air-to-water heat pumps: Tj = -15°C (if TOL < -20°C)	Pdh	-	kW	For air-to-water heat pumps: Tj = -15°C (if TOL < -20°C)	COPd	-	-
Bivalent temperature	T <sub>biv</sub>	-10	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P <sub>cyh</sub>	-	kW	Cycling interval efficiency	COP <sub>cyh</sub>	-	-
Degradation co-efficient (**)	Cdh	1,0	-	Heating water operating limit temperature	WTOL	65	°C
<b>Power consumption in modes other than active mode</b>				<b>Supplementary heater</b>			
Off mode	P <sub>OFF</sub>	0,107	kW	Rated heat output	P <sub>sup</sub>	-	kW
Thermostat-off mode	P <sub>TO</sub>	0,122	kW	Type of energy input	electrical		
Standby mode	P <sub>SB</sub>	0,107	kW				
Crankcase heater mode	P <sub>CK</sub>	-	kW				
<b>Other items</b>							
Capacity control	fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	9.000	m <sup>3</sup> /h
sound power level, indoors/outdoors	L <sub>WA</sub>	- / 63	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	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 details</b>	ait deutschland GmbH Industriestr. 3 95359 Kasendorf Germany						
(*) For heat pump space heaters and heat pump combination heaters, the rated heat output Prated is equal to the design load for heating Pdesignh, and the rated heat output of a supplementary heater Psup is equal to the supplementary capacity for heating sup(Tj).							
(**) If Cdh is not determined by measurement then the default degradation coefficient is Cdh = 0,9.							