



ENERG

енергия · ενεργεια



10053402

alpha innotec

LW 180



55 °C

35 °C



A+

A++



59 dB



54 dB

- 15
- **19**
- 16

kW

- 17
- **20**
- 17

kW





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10053402

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LW 180



55 °C

35 °C



A⁺

A⁺⁺



59 dB



54 dB

- 15
- **19**
- 16

kW

- 17
- **20**
- 17

kW





ENERG

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Y

IJA

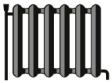
IE

IA

10053402

alpha innotec

LW 180 + Luxtronik 2.0



A⁺

A⁺⁺⁺

A⁺⁺

A⁺

A

B

C

D

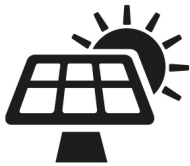
E

F

G

A⁺

+



+



+



+



package (heat pumps and combination heater with heat pump) - LW 180 + Luxtronik 2.0

Seasonal space heating energy efficiency of heat pump (η_s)

① 118 %

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

19

Temperature control

Class

III (Table 1)

+

② 1,5 %

Supplementary boiler

package with hot water storage tank

no

P_{sup} kW (rated heat output of supplementary heater)

η_s % (σ_{π})

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

(α_{WE} : see Table 3)

(α_{WE})

solar contribution

(A_{Koll} m²)

(η_{Koll} %)

(V_{Sp} m³)

(standstill heat loss of the hot water storage tank in W)

(η_{Sp} : Table 2)

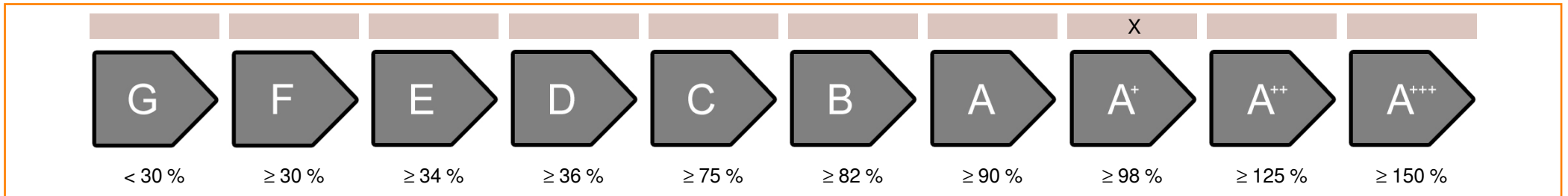
$((294/P_{rated} \times 11) \times (A_{Koll} \text{ m}^2) + (115/P_{rated} \times 11) \times (V_{Sp} \text{ m}^3)) \times 0,45 \times ((\eta_{Koll} \%)/100) \times (\eta_{Sp}) = +$ ④ %

Seasonal space heating energy efficiency of package

⑤ 119 %

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 (η_s) under colder climate conditions

107 %

Seasonal space heating energy efficiency of the heat pump (η_s) under warmer climate conditions

150 %

colder ⑤ 119 -V 10 = 109 warmer ⑤ 119 +VI 32 = 151

heatpump datasheet:			
manufacturer:	alpha innotec		
model:	LW 180		
Information concerning energy efficiency class and rated heat output:			
	average / low	average / medium	
energy efficiency class space heater:	A++	A+	-
rated heat output:	20	19	kW
energy efficiency space heater:	158	118	%
annual final energy consumption space heater	10262	12643	kWh
sound power level indoors		59	dB
special precautions concerning assembly, installation or maintenance			
All instructional work in this manual may only be carried out by qualified specialist personnel in compliance with local regulations.			
additional information	low	medium	
rated heat output colder climate	17	15	kW
rated heat output warmer climate	17	16	kW
energy efficiency space heater colder climate	139	107	%
energy efficiency space heater warmer climate	200	150	%
annual energy consumption space heater colder climate	12110	13578	kWh
annual energy consumption space heater warmer climate	4546	5671	kWh
sound power level outdoors		54	dB

technical data of the temperature controller		
manufacturer:	alpha innotec	
model:	Luxtronik 2.0	
controller class	III	-
contribution of the controller to the energy efficiency space heater	1,5	%

Model				LW 180			
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)				yes			
combination heater with: (yes/no)				no			
application: (low/medium)				medium			
climate: (colder/average/warmer)				average			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	19	kW	Seasonal space heating energy efficiency	η_S	117,9	%
Declared coefficient of performance 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	12,8	kW	Tj = -7°C	COPd	1,94	-
Tj = +2°C	Pdh	16,9	kW	Tj = +2°C	COPd	2,93	-
Tj = +7°C	Pdh	10,1	kW	Tj = +7°C	COPd	4,21	-
Tj = +12°C	Pdh	12,9	kW	Tj = +12°C	COPd	5,39	-
Tj = bivalent temperature	Pdh	14,2	kW	Tj = bivalent temperature	COPd	2,23	-
Tj = operation limit temperature	Pdh	11,3	kW	Tj = operation limit temperature	COPd	1,68	-
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 _{biv}	-4	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P _{cyh}	-	kW	Cycling interval efficiency	COP _{cyh}	-	-
Degradation co-efficient (**)	Cdh	1,0	-	Heating water operating limit temperature	WTOL	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P _{OFF}	0,010	kW	Rated heat output	P _{sup}	7,2	kW
Thermostat-off mode	P _{TO}	0,010	kW	Type of energy input	electrical		
Standby mode	P _{SB}	0,010	kW				
Crankcase heater mode	P _{CK}	-	kW				
Other items							
Capacity control	fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	5.600	m ³ /h
sound power level, indoors/outdoors	L _{WA}	59 / 54	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	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	Q _{fuel}	-	kWh
Contact details	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.							

Model				LW 180			
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)				yes			
combination heater with: (yes/no)				no			
application: (low/medium)				low			
climate: (colder/average/warmer)				average			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	20	kW	Seasonal space heating energy efficiency	η_S	158,3	%
Declared coefficient of performance 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	14,3	kW	Tj = -7°C	COPd	2,94	-
Tj = +2°C	Pdh	17,5	kW	Tj = +2°C	COPd	3,94	-
Tj = +7°C	Pdh	10,1	kW	Tj = +7°C	COPd	5,38	-
Tj = +12°C	Pdh	12,9	kW	Tj = +12°C	COPd	5,96	-
Tj = bivalent temperature	Pdh	15,4	kW	Tj = bivalent temperature	COPd	3,30	-
Tj = operation limit temperature	Pdh	13,2	kW	Tj = operation limit temperature	COPd	2,65	-
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 _{biv}	-4	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P _{cyh}	-	kW	Cycling interval efficiency	COP _{cyh}	-	-
Degradation co-efficient (**)	Cdh	1,0	-	Heating water operating limit temperature	WTOL	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P _{OFF}	0,010	kW	Rated heat output	P _{sup}	6,9	kW
Thermostat-off mode	P _{TO}	0,010	kW	Type of energy input	electrical		
Standby mode	P _{SB}	0,010	kW				
Crankcase heater mode	P _{CK}	-	kW				
Other items							
Capacity control	fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	5.600	m ³ /h
sound power level, indoors/outdoors	L _{WA}	59 / 54	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	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	Q _{fuel}	-	kWh
Contact details	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.							