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енергия · ενεργεια



100602HMD02

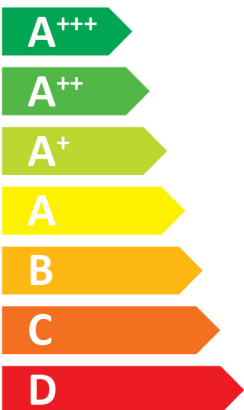
alpha innotec

LWD 70A-HMD



55 °C

35 °C



44 dB



57 dB





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100602HMD02

alpha innotec

LWD 70A-HMD



55 °C

35 °C



A⁺⁺

A⁺⁺



44 dB



57 dB

■ 5
■ 8
■ 9
kW

■ 6
■ 9
■ 9
kW





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Y

IJA

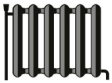
IE

IA

100602HMD02

alpha innotec

LWD 70A-HMD + Luxtronik 2.1



A⁺⁺

A⁺⁺⁺

A⁺⁺

A⁺⁺

A⁺

A

B

C

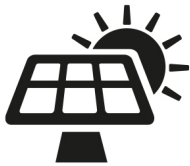
D

E

F

G

+



+



+



+



package (heat pumps and combination heater with heat pump) - LWD 70A-HMD + Luxtronik 2.1

Seasonal space heating energy efficiency of heat pump (η_s) ① 127 %

Rated heat output of the heat pump (P_{rated} kW) 8

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

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

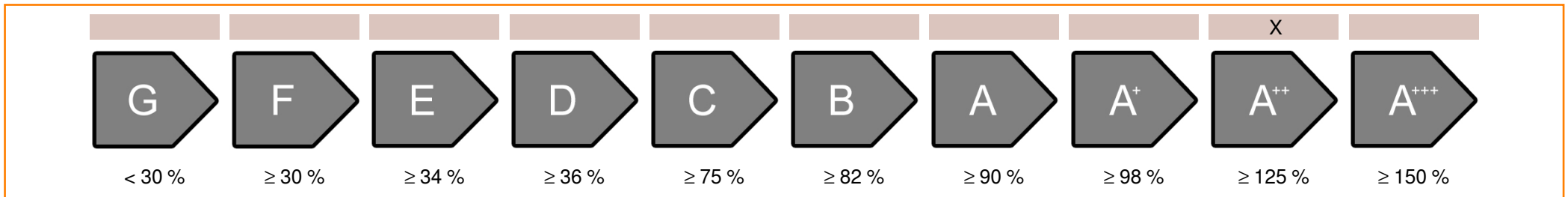
$(A_{Koll} \text{ m}^2)$ $(\eta_{Koll} \%)$
 $(V_{Sp} \text{ m}^3)$ **(standstill heat loss of the hot water storage tank in W)**
 $(\eta_{Sp}: \text{Table 2})$

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

Seasonal space heating energy efficiency of package ⑤ 130 %

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 116 %

Seasonal space heating energy efficiency of the heat pump (η_s) under warmer climate conditions 159 %

colder ⑤ 130 -V 11 = 119 warmer ⑤ 130 +VI 32 = 162

heatpump datasheet:			
manufacturer:	alpha innotec		
model:	LWD 70A-HMD		
Information concerning energy efficiency class and rated heat output:			
	average / low	average / medium	
energy efficiency class space heater:	A++	A++	-
rated heat output:	9	8	kW
energy efficiency space heater:	158	127	%
annual final energy consumption space heater	4549	5278	kWh
sound power level indoors		44	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	6	5	kW
rated heat output warmer climate	9	9	kW
energy efficiency space heater colder climate	144	116	%
energy efficiency space heater warmer climate	193	159	%
annual energy consumption space heater colder climate	4000	4484	kWh
annual energy consumption space heater warmer climate	2558	2938	kWh
sound power level outdoors		57	dB

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

Model				LWD 70A-HMD			
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	8	kW	Seasonal space heating energy efficiency	η_S	126,6	%
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	5,8	kW	Tj = -7°C	COPd	2,21	-
Tj = +2°C	Pdh	7,5	kW	Tj = +2°C	COPd	3,25	-
Tj = +7°C	Pdh	8,5	kW	Tj = +7°C	COPd	4,20	-
Tj = +12°C	Pdh	11,5	kW	Tj = +12°C	COPd	6,21	-
Tj = bivalent temperature	Pdh	6,4	kW	Tj = bivalent temperature	COPd	2,52	-
Tj = operation limit temperature	Pdh	5,2	kW	Tj = operation limit temperature	COPd	1,92	-
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	70	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P _{OFF}	0,015	kW	Rated heat output	P _{sup}	3,1	kW
Thermostat-off mode	P _{TO}	0,015	kW	Type of energy input	electrical		
Standby mode	P _{SB}	0,015	kW				
Crankcase heater mode	P _{CK}	-	kW				
Other items							
Capacity control	fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	3.000	m ³ /h
sound power level, indoors/outdoors	L _{WA}	44 / 57	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				LWD 70A-HMD			
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	9	kW	Seasonal space heating energy efficiency	η_S	157,8	%
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	6,3	kW	Tj = -7°C	COPd	3,28	-
Tj = +2°C	Pdh	7,8	kW	Tj = +2°C	COPd	4,09	-
Tj = +7°C	Pdh	8,5	kW	Tj = +7°C	COPd	4,81	-
Tj = +12°C	Pdh	11,5	kW	Tj = +12°C	COPd	6,21	-
Tj = bivalent temperature	Pdh	6,8	kW	Tj = bivalent temperature	COPd	3,60	-
Tj = operation limit temperature	Pdh	5,7	kW	Tj = operation limit temperature	COPd	2,95	-
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	70	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P _{OFF}	0,015	kW	Rated heat output	P _{sup}	3,2	kW
Thermostat-off mode	P _{TO}	0,015	kW	Type of energy input	electrical		
Standby mode	P _{SB}	0,015	kW				
Crankcase heater mode	P _{CK}	-	kW				
Other items							
Capacity control	fixed			For air-to-water heat pumps: Rated air flow rate, outdoors	-	3.000	m ³ /h
sound power level, indoors/outdoors	L _{WA}	44 / 57	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.							