



ENERG

енергия · ενεργεια



100699HDV1201

alpha innotec

LWDV 91-1/3-HDV 12-3



55 °C

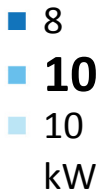
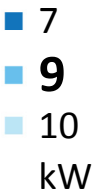
35 °C



46 dB



54 dB





ENERGY

100699HDV1201

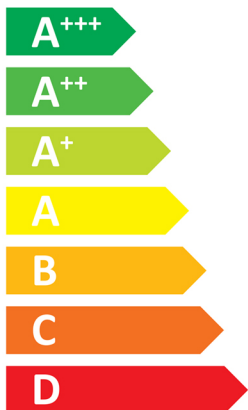
alpha innotec

LWDV 91-1/3-HDV 12-3



55 °C

35 °C



A⁺⁺

A⁺⁺⁺



46 dB



54 dB

■ 7
■ 9
■ 10
kW

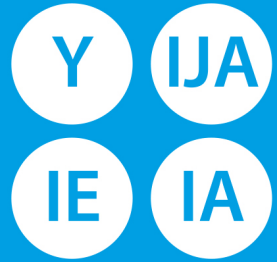
■ 8
■ 10
■ 10
kW





ENERG

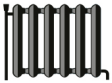


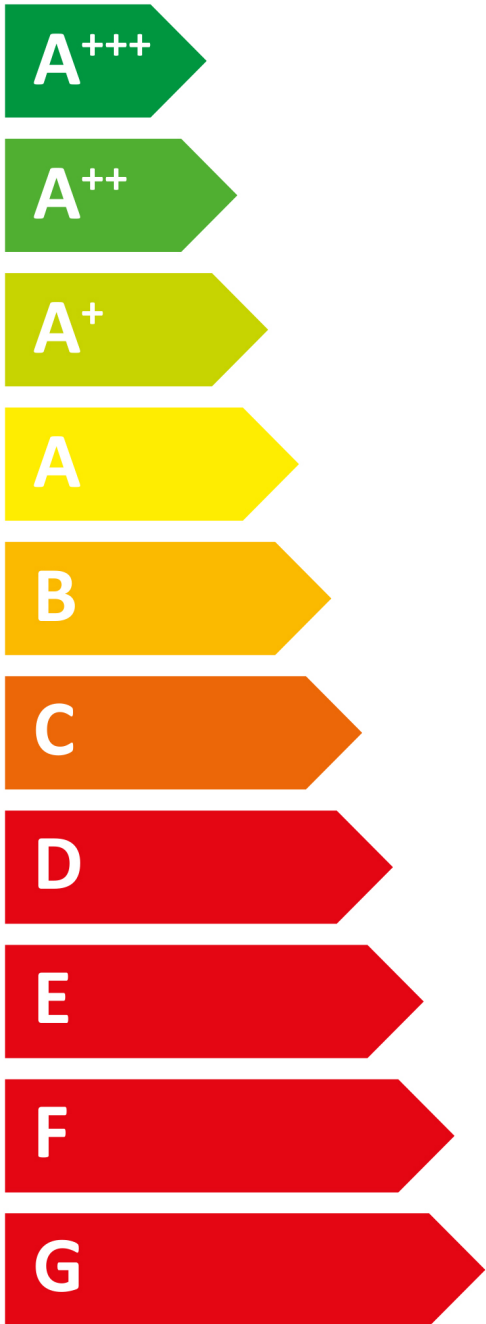
енергия · ενεργεια

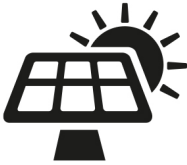





100699HDV1201

alpha innotec

LWDV 91-1/3-HDV 12-3 + Luxtronik 2.1


+		<input type="checkbox"/>
+		<input type="checkbox"/>
+		<input checked="" type="checkbox"/>
+		<input type="checkbox"/>

package (heat pumps and combination heater with heat pump) - LWDV 91-1/3-HDV 12-3 + Luxtronik 2.1

Seasonal space heating energy efficiency of heat pump (η_s)

① 147 %

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

9

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} m²)

(η_{Koll} %)

(V_{Sp} m³)

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

(η_{Sp} : Table 2)

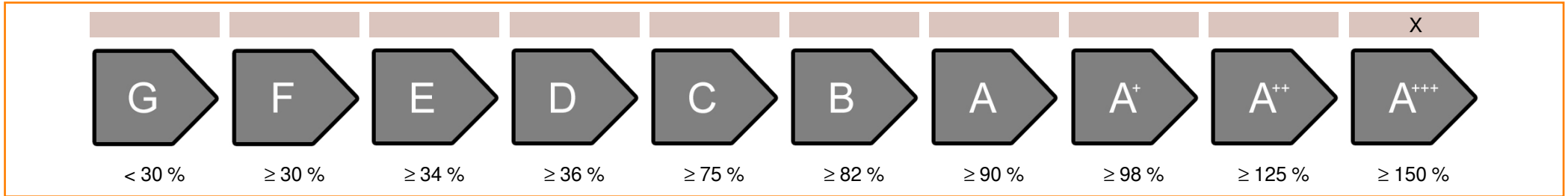
$((294/P_{rated} \times 11) \times (A_{Koll} \text{ m}^2) + (115/P_{rated} \times 11) \times (V_{Sp} \text{ m}^3)) \times 0,45 \times ((\eta_{Koll} \%)/100) \times (\eta_{Sp}) = +$ ④ %

Seasonal space heating energy efficiency of package

⑤ 150 %

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

118 %

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

171 %

colder ⑤ 150 -V 29 = 121 warmer ⑤ 150 +VI 24 = 174

heatpump datasheet:			
manufacturer:	alpha innotec		
model:	LWDV 91-1/3-HDV 12-3		
Information concerning energy efficiency class and rated heat output:			
	average / low	average / medium	
energy efficiency class space heater:	A+++	A++	-
rated heat output:	10	9	kW
energy efficiency space heater:	187	147	%
annual final energy consumption space heater	4135	4904	kWh
sound power level indoors		46	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	8	7	kW
rated heat output warmer climate	10	10	kW
energy efficiency space heater colder climate	160	118	%
energy efficiency space heater warmer climate	218	171	%
annual energy consumption space heater colder climate	4541	5277	kWh
annual energy consumption space heater warmer climate	2295	2910	kWh
sound power level outdoors		54	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				LWDV 91-1/3-HDV 12-3			
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	9	kW	Seasonal space heating energy efficiency	η_S	147,0	%
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	7,1	kW	Tj = -7°C	COPd	2,19	-
Tj = +2°C	Pdh	4,9	kW	Tj = +2°C	COPd	3,93	-
Tj = +7°C	Pdh	3,2	kW	Tj = +7°C	COPd	5,36	-
Tj = +12°C	Pdh	3,2	kW	Tj = +12°C	COPd	6,77	-
Tj = bivalent temperature	Pdh	7,5	kW	Tj = bivalent temperature	COPd	2,35	-
Tj = operation limit temperature	Pdh	6,8	kW	Tj = operation limit temperature	COPd	2,07	-
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}	-6	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
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}	0,022	kW	Rated heat output	P _{sup}	2,1	kW
Thermostat-off mode	P _{TO}	-	kW	Type of energy input	electrical		
Standby mode	P _{SB}	0,022	kW				
Crankcase heater mode	P _{CK}	0,030	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	3.500	m ³ /h
sound power level, indoors/outdoors	L _{WA}	46 / 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				LWDV 91-1/3-HDV 12-3			
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	10	kW	Seasonal space heating energy efficiency	η_S	186,9	%
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	7,3	kW	Tj = -7°C	COPd	2,96	-
Tj = +2°C	Pdh	5,4	kW	Tj = +2°C	COPd	5,17	-
Tj = +7°C	Pdh	3,4	kW	Tj = +7°C	COPd	6,90	-
Tj = +12°C	Pdh	3,3	kW	Tj = +12°C	COPd	8,22	-
Tj = bivalent temperature	Pdh	7,7	kW	Tj = bivalent temperature	COPd	3,11	-
Tj = operation limit temperature	Pdh	7,6	kW	Tj = operation limit temperature	COPd	3,05	-
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}	-5	°C	For air-to-water heat pumps: Operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	Pcyc	-	kW	Cycling interval efficiency	COPcyc	-	-
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}	0,022	kW	Rated heat output	P _{sup}	1,9	kW
Thermostat-off mode	P _{TO}	-	kW	Type of energy input	electrical		
Standby mode	P _{SB}	0,022	kW				
Crankcase heater mode	P _{CK}	0,030	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	3.500	m ³ /h
sound power level, indoors/outdoors	L _{WA}	46 / 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.							