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103772HSV941

NOVELAN

LIV 8-HSV 9



Two icons showing sound power levels. The top icon shows a speaker inside a house with the text "48 dB". The bottom icon shows a speaker outside a house with the text "44 dB".



Legend for power consumption in kW:

- Dark blue square: 5 kW
- Medium blue square: 6 kW
- Light blue square: 6 kW

Icon representing energy saving, showing a clock face and a stack of coins with an arrow pointing down.

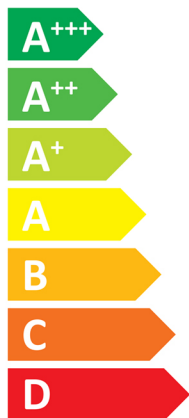


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A++



A

Two icons showing sound power levels. The top icon shows a speaker inside a house with the value 48 dB. The bottom icon shows a speaker outside a house with the value 44 dB.



- 5 kW
- 6 kW
- 6 kW

An icon showing a clock face with a dashed line indicating a cycle, and a stack of coins with an arrow pointing down towards it, symbolizing time and cost.



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103772HSV941

NOVELAN

LIV 8-HSV 9 + WPR-Net 2.1

Energy label for heating system showing a radiator icon, an A++ energy class arrow, a radiator icon, an A energy class arrow, and a tap icon with 'XL' label.

Energy scale for heating system with a radiator icon at the top. The scale shows energy classes A+++ (green), A++ (green), A+ (yellow-green), A (yellow), B (orange), C (orange-red), D (red), E (red), F (red), and G (red). A large black arrow on the right points to the A++ class.

Energy label for water heating system showing a solar panel icon, a water tank icon, a control panel icon, and a radiator icon, each with a plus sign to its left and a square box to its right. The control panel icon has an 'X' in its box.

Energy scale for water heating system with a tap icon and 'XL' label at the top. The scale shows energy classes A+++ (green), A++ (green), A+ (yellow-green), A (yellow), B (orange), C (orange-red), D (red), E (red), F (red), and G (red). A large black arrow on the right points to the A class.

package (heat pumps and combination heater with heat pump) LIV 8-HSV 9 + WPR-Net 2.1

Seasonal space heating energy efficiency of heat pump (η_s) ① 135 %

Rated heat output of the heat pump (P_{rated} kW) 6

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)

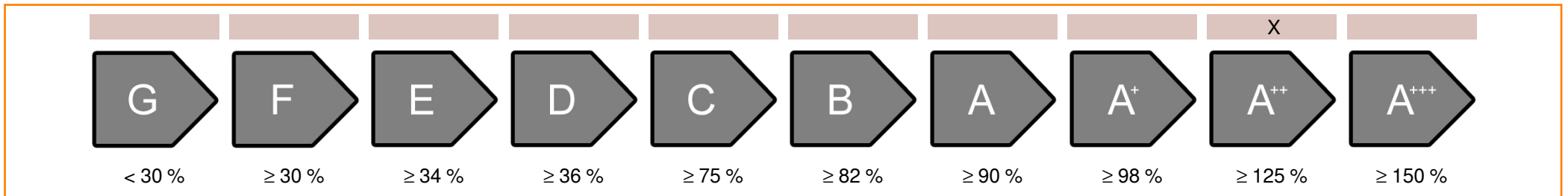
(η_{Sp} : Table 2)

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

Seasonal space heating energy efficiency of package ⑤ 138 %

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 127 %

Seasonal space heating energy efficiency of the heat pump (η_s) under warmer climate conditions 156 %

colder ⑤ 138 -V 7 = 131 warmer ⑤ 138 +VI 22 = 160

heatpump datasheet:			
manufacturer:			
		NOVELAN	
model:			
		LIV 8-HSV 9	
Information concerning energy efficiency class and rated heat output:			
load profile water heating	XL		-
	average / low	average / medium	
energy efficiency class space heater:	A+++	A++	-
energy efficiency class waterheating	A		-
rated heat output:	7	6	kW
annual final energy consumption space heater	3029	3390	kWh
annual electricity consumption waterheating	1948		kWh
energy efficiency space heater:	180	135	%
energy efficiency waterheating	86		%
sound power level indoors	48		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	7	5	kW
rated heat output warmer climate	4	6	kW
annual energy consumption space heater colder climate	4339	3781	kWh
annual energy consumption space heater warmer climate	1009	1844	kWh
ann. Electricity consumption waterheating colder climate	2148		kWh
ann. Electricity consumption waterheating warmer climate	1692		kWh
energy efficiency space heater colder climate	145	127	%
energy efficiency space heater warmer climate	214	156	%
energy efficiency waterheating colder climate	78		%
energy efficiency DHWwarmer climate	99		%
sound power level outdoors	44		dB

technical data of the temperature controller		
manufacturer:	NOVELAN	
model:	WPR-Net 2.1	
controller class	VII	-
contribution of the controller to the energy efficiency space heater	3,5	%

Model				LIV 8-HSV 9			
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)				yes			
application: (low/medium)				medium			
climate: (colder/average/warmer)				average			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	6	kW	Seasonal space heating energy efficiency	η_S	134,7	%
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	5,0	kW	Tj = -7°C	COPd	2,31	-
Tj = +2°C	Pdh	3,5	kW	Tj = +2°C	COPd	3,43	-
Tj = +7°C	Pdh	3,0	kW	Tj = +7°C	COPd	4,86	-
Tj = +12°C	Pdh	3,4	kW	Tj = +12°C	COPd	6,56	-
Tj = bivalent temperature	Pdh	5,0	kW	Tj = bivalent temperature	COPd	2,31	-
Tj = operation limit temperature	Pdh	4,2	kW	Tj = operation limit temperature	COPd	2,12	-
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}	-7	°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	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P _{OFF}	0,031	kW	Rated heat output	P _{sup}	1,4	kW
Thermostat-off mode	P _{TO}	-	kW	Type of energy input	electrical		
Standby mode	P _{SB}	0,031	kW				
Crankcase heater mode	P _{CK}	-	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	2.500	m ³ /h
sound power level, indoors/outdoors	L _{WA}	48 / 44	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	XL			Water heating energy efficiency	η_{wh}	86	%
Daily electricity consumption	Q _{elec}	8,870	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				LIV 8-HSV 9			
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)				yes			
application: (low/medium)				low			
climate: (colder/average/warmer)				average			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output	Prated	7	kW	Seasonal space heating energy efficiency	η_S	179,8	%
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	5,9	kW	Tj = -7°C	COPd	3,26	-
Tj = +2°C	Pdh	3,8	kW	Tj = +2°C	COPd	4,70	-
Tj = +7°C	Pdh	3,3	kW	Tj = +7°C	COPd	5,97	-
Tj = +12°C	Pdh	3,4	kW	Tj = +12°C	COPd	7,92	-
Tj = bivalent temperature	Pdh	5,9	kW	Tj = bivalent temperature	COPd	3,26	-
Tj = operation limit temperature	Pdh	5,1	kW	Tj = operation limit temperature	COPd	3,18	-
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}	-7	°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	60	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P _{OFF}	0,031	kW	Rated heat output	P _{sup}	1,6	kW
Thermostat-off mode	P _{TO}	-	kW	Type of energy input	electrical		
Standby mode	P _{SB}	0,031	kW				
Crankcase heater mode	P _{CK}	-	kW				
Other items							
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	2.500	m ³ /h
sound power level, indoors/outdoors	L _{WA}	48 / 44	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.							