ENERG

енергия · ενεργεια

Y IJA
IE IA

10368742

NOVELAN · SIC 19.2H3

55 °C · 35 °C

A⁺⁺⁺
A⁺⁺
A⁺
A
B
C
D

A⁺⁺ · **A⁺⁺⁺**

50 dB

- 19
- **19**
- 20
kW

- 21
- **21**
- 22
kW

- dB

2019 · 811/2013

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SIC 19.2H3

55 °C 35 °C

A⁺⁺⁺

A⁺⁺

A⁺

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B

C

D

A⁺⁺

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50 dB

19
19
20
kW

21
21
22
kW

- dB

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NOVELAN

SIC 19.2H3 + WPR-Net 2.1

A++

A+++
A++
A+
A
B
C
D
E
F
G

A++
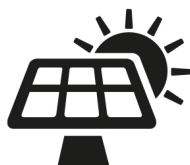
package (heat pumps and combination heater with heat pump) - SIC 19.2H3 + WPR-Net 2.1				

Seasonal space heating energy efficiency of heat pump (ηs)		❶	143	%
Rated heat output of the heat pump (Prated kW)	19			
Temperature control	Class	VII	*(Table 1)* +	❷ 3,5 %

Supplementary boiler

package with hot water storage tank	no			Psup kW (rated heat output of supplementary heater)
		ησ % (συπ)		
		(ηs % *(sup)* - ❶) **x** (α$_{WP}$) =	-	❸ %
(αWE: see Table 3)	(α$_{WE}$)			

solar contribution

	(A$_{Koll}$ m^2)		(ηKoll %)
	(V$_{Sp}$ m^3)		(standstill heat loss of the hot water storage tank in W)
			(ηSp: Table 2)

$$((294/P_{rated} \times 11) \times (A_{Koll}\ m^2) + (115/P_{rated} \times 11) \times (V_{Sp}\ m^3)) \times 0.45 \times ((\eta_{Koll}\ \%)/100) \times (\eta_{Sp}) = \quad + \quad ❹ \quad \%$$

Seasonal space heating energy efficiency of package	❺	146	%
		rounded to the nearest integer	

Seasonal space heating energy efficiency class of package

G	F	E	D	C	B	A	A$^+$	A^{++} X	A^{+++}
< 30 %	≥ 30 %	≥ 34 %	≥ 36 %	≥ 75 %	≥ 82 %	≥ 90 %	≥ 98 %	≥ 125 %	≥ 150 %
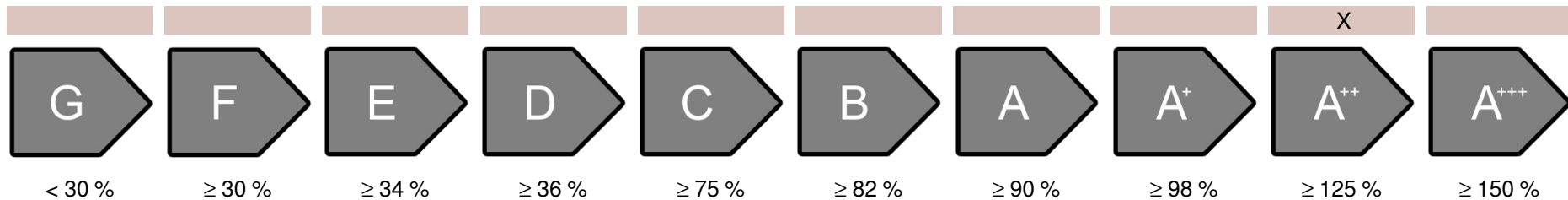
Seasonal space heating energy efficiency under colder or warmer climate conditions

Seasonal space heating energy efficiency of the heat pump (ηs) under colder climate conditions				148	%
Seasonal space heating energy efficiency of the heat pump (ηs) under warmer climate conditions				144	%

colder ❺	146	-V	-5	=	151	warmer ❺	146	+VI	1	=	147

heatpump datasheet:

manufacturer:	**NOVELAN**
model:	**SIC 19.2H3**

Information concerning energy efficiency class and rated heat output:

	average / low	average / medium	
energy efficiency class space heater:	A+++	A++	-
rated heat output:	21	19	kW
energy efficiency space heater:	205	143	%
annual final energy consumption space heater	8139	10328	kWh

sound power level indoors	50	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	21	19	kW
rated heat output warmer climate	22	20	kW
energy effiency space heater colder climate	212	148	%
energy effiency space heater warmer climate	207	144	%
annual energy consumption space heater colder climate	9334	11851	kWh
annual energy consumption space heater warmer climate	5394	6864	kWh

sound power level outdoors	-	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				SIC 19.2H3			
Air-to-water heat pump: (yes/no)				no			
Brine-to-water heat pump: (yes/no)				yes			
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**	ηS	142,8	%
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	16,7	kW	Tj = -7°C	COPd	3,09	-
Tj = +2°C	Pdh	17,5	kW	Tj = +2°C	COPd	3,75	-
Tj = +7°C	Pdh	18,0	kW	Tj = +7°C	COPd	4,25	-
Tj = +12°C	Pdh	18,5	kW	Tj = +12°C	COPd	4,81	-
Tj = bivalent temperature	Pdh	16,7	kW	Tj = bivalent temperature	COPd	3,09	-
Tj = operation limit temperature	Pdh	16,4	kW	Tj = operation limit temperature	COPd	2,88	-
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	Pcych	-	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}	0,015	kW	Rated heat output	Psup	2,5	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	-	-	m³/h
sound power level, indoors/outdoors	L_{WA}	50 / -	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	4	m³/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	Qelec	-	kWh	Daily fuel consumption	Qfuel	-	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				SIC 19.2H3			
Air-to-water heat pump: (yes/no)				no			
Brine-to-water heat pump: (yes/no)				yes			
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	21	kW	**Seasonal space heating energy efficiency**	ηS	205,1	%
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	18,6	kW	Tj = -7°C	COPd	5,04	-
Tj = +2°C	Pdh	18,8	kW	Tj = +2°C	COPd	5,35	-
Tj = +7°C	Pdh	19,0	kW	Tj = +7°C	COPd	5,67	-
Tj = +12°C	Pdh	19,2	kW	Tj = +12°C	COPd	5,95	-
Tj = bivalent temperature	Pdh	18,6	kW	Tj = bivalent temperature	COPd	5,04	-
Tj = operation limit temperature	Pdh	18,5	kW	Tj = operation limit temperature	COPd	4,88	-
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	Pcych	-	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}	0,015	kW	Rated heat output	Psup	2,5	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	-	-	m³/h
sound power level, indoors/outdoors	L_{WA}	50 / -	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	4	m³/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	Qfuel	-	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.							