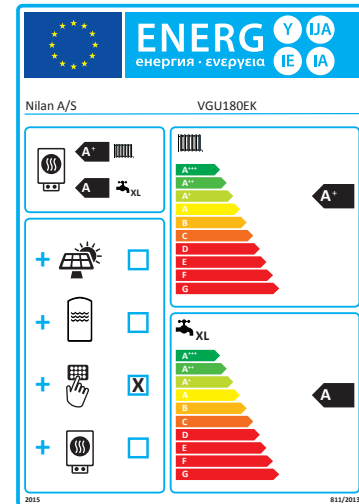


VGU180 EK

Heat pump combination for space heating and domestic hot water production - cold climate

Model	VGU180EK
Air-to-water heat pump	Yes
Water-to-water heat pump	No
Brine-to-water heat pump	No
Low-temperature heat pump	Yes
Equipped with a supplementary heater	Yes
Heat pump combination heater	Yes
Temperature control:	
Model	CTS602
Class	2
Contribution to seasonal space heating energy efficiency	2%



Item	Symbol	Value	Unit
Rated heat output (*)	P_{rated}	2.3	kW
*Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature of T_j			
$T_j = -7\text{ °C}$	P_{dh}	2.092	kW
$T_j = +2\text{ °C}$	P_{dh}	2.103	kW
$T_j = +7\text{ °C}$	P_{dh}	2.112	kW
$T_j = +12\text{ °C}$	P_{dh}	2.096	kW
$T_j =$ bivalent temperature	P_{dh}	2.077	kW
$T_j =$ operation limit temperature	P_{dh}	2.119	kW
Operation limit temperature $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	P_{dh}		kW
Bivalent temperature	T_{div}	-6	°C
Cycling interval capacity for heating	P_{cyc}		kW
Degradation co-efficient	C_{dh}	0.9	
Power consumption in modes other than active mode			
Off mode	P_{OFF}	0.0084	kW
Thermostat off-mode	P_{TO}	0.0253	kW
Standby mode	P_{SB}	0.0084	kW
Crankcase heater mode	P_{CK}	0	kW
Other items			
Capacity control:	Variable compressor Variable indoor temperature adjustment		
	Permanent indoor water flow Permanent outdoor water flow		
Sound power level, indoor	L_{WA}	58,2	dB
Annual energy consumption	Q_{HE}	2148	kWh
Specified consumer profile		XL	
Daily energy consumption	Q_{elec}	7.212	kWh
Annual energy consumption	AEC	1557	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	η_s	147	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
$T_j = -7\text{ °C}$	COP_d	3.82	
$T_j = +2\text{ °C}$	COP_d	3.94	
$T_j = +7\text{ °C}$	COP_d	4.00	
$T_j = +12\text{ °C}$	COP_d	3.95	
$T_j =$ bivalent temperature	COP_d	3.68	
$T_j =$ operation limit temperature	COP_d	3.70	
For air-to-water heat pumps $T_j = -15\text{ °C}$ (if $TOL < -20\text{ °C}$)	COP_d		
For air-to-water heat pumps: Operation limit temperature	TOL		°C
Cycling interval capacity for heating	COP_{cyc}		
Heating water operating limit temperature	WTOL		°C
Supplementary heater			
Rated heat output	P_{sup}	9	kW
Type of energy input	Electric		
For air-to-water heat pumps: Rated air flow rate, outdoors		360	m ³ /h
For water-/brine-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			m ³ /h
Energy efficiency for water heating	η_{wh}	108	%
Daily fuel consumption	Q_{fuel}		kWh