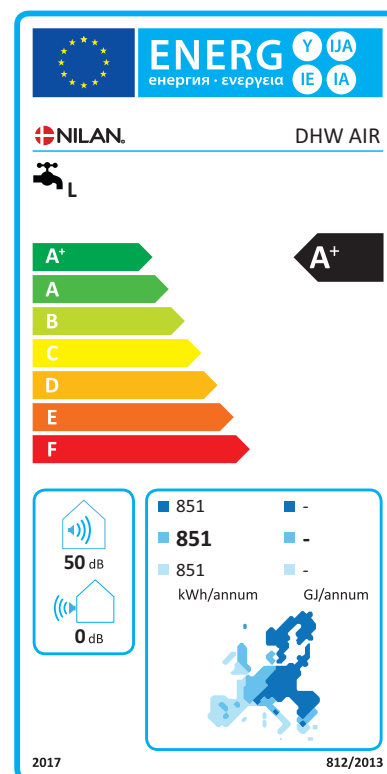


# DHW AIR

## Hot water production

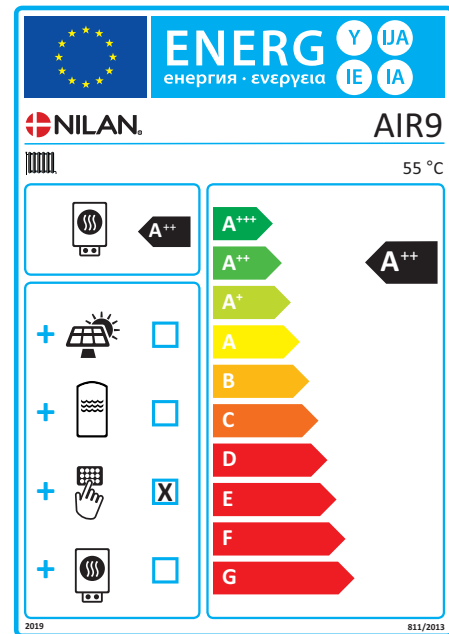
Consumer profile, water heater	L (Large)
Energy efficiency class	A+
Energy efficiency for water heating - average climate	120 %
Annual electricity consumption - average climate	851 kWh/annum
Temperature settings on the thermostat	10 - 65 °C
Sound power level $L_{WA}$	50 dB(A)
The water heater can function outside peak load periods (Smart-grid)	Yes
Guidelines for assembly, installation and maintenance	See installation instructions
Energy efficiency for water heating - cold climate	120 %
Energy efficiency for water heating - warm climate	120 %
Annual electricity production - cold climate	851 kWh/annum
Annual electricity consumption - warm climate	851 kWh/annum



# AIR9 (Average-temperature heat pump)

## Heat pump for space heating

Model	AIR9
Air-to-water heat pump	Yes
Water-to-water heat pump	No
Brine-to-water heat pump	No
Low-temperature heat pump	No
Equipped with a supplementary heater	Yes
Heat pump combination heater	Yes
<b>Temperature control:</b>	
Model	CTS602
Class	2
Contribution to seasonal space heating energy efficiency	2%



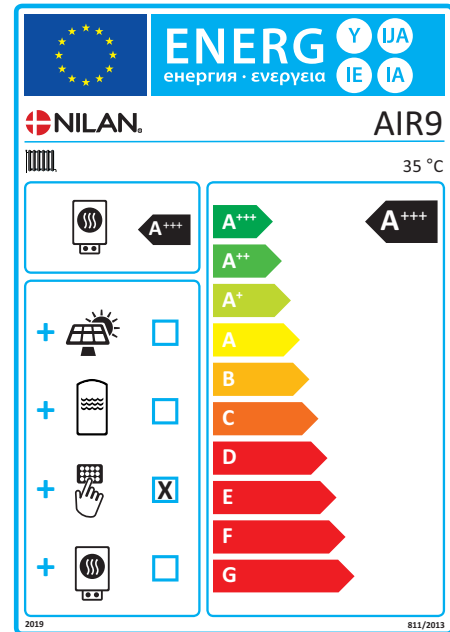
Item	Symbol	Value	Unit
Rated heat output	$P_{rated}$	4,7	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature of $T_j$			
$T_j = -7\text{ °C}$	$P_{dh}$	4,01	kW
$T_j = +2\text{ °C}$	$P_{dh}$	2,44	kW
$T_j = +7\text{ °C}$	$P_{dh}$	1,64	kW
$T_j = +12\text{ °C}$	$P_{dh}$	1,83	kW
$T_j = \text{bivalent temperature}$	$P_{dh}$	4,66	kW
$T_j = \text{operation limit temperature}$	$P_{dh}$	4,66	kW
For air-water-heating pumps $T_j = -15\text{ °C}$ (if TOL < $-20\text{ °C}$ )	$P_{dh}$		kW
Bivalent temperature	$T_{div}$	-10	°C
Cycling interval capacity for heating	$P_{cyc}$		kW
Degradation co-efficient	$C_{dh}$	0,99	
Power consumption in modes other than active mode			
Off mode	$P_{OFF}$	0,002	kW
Thermostat off-mode	$P_{TD}$	0,002	kW
Standby mode	$P_{SB}$	0,002	kW
Crankcase heater mode	$P_{CK}$	0,002	kW
Other items			
Capacity control:	Variable compressor Variable indoor water flow		
	Variable indoor temperature adjustment		
Sound power level, outdoors	$L_{WA}$	50	dB
Annual energy consumption	$Q_{HE}$	2597	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	$\eta_s$	146,6	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	$COP_d$	2,28	
$T_j = +2\text{ °C}$	$COP_d$	3,65	
$T_j = +7\text{ °C}$	$COP_d$	4,79	
$T_j = +12\text{ °C}$	$COP_d$	5,92	
$T_j = \text{bivalent temperature}$	$COP_d$	2,07	
$T_j = \text{operation limit temperature}$	$COP_d$	2,07	
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	-10	°C
Cycling interval efficiency	$COP_{cyc}$		
Heating water operating limit temperature	WTOL	-	°C
Supplementary heater			
Rated heat output	$P_{sup}$	0,00	kW
Type of energy input	Electrical		
For air-to-water heat pumps: Rated air flow rate, outdoors		3000	m <sup>3</sup> /h
For water-/ brine-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			m <sup>3</sup> /h

# AIR9 (Low-temperature heat pump)

## Heat pump for space heating

Model	AIR9
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	No
<b>Temperature control:</b>	
Model	CTS602
Class	2
Contribution to seasonal space heating energy efficiency	2%



Item	Symbol	Value	Unit
Rated heat output	$P_{rated}$	5,21	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature of $T_j$			
$T_j = -7\text{ °C}$	$P_{dh}$	4,79	kW
$T_j = +2\text{ °C}$	$P_{dh}$	2,88	kW
$T_j = +7\text{ °C}$	$P_{dh}$	1,90	kW
$T_j = +12\text{ °C}$	$P_{dh}$	2,12	kW
$T_j = \text{bivalent temperature}$	$P_{dh}$	5,21	kW
$T_j = \text{operation limit temperature}$	$P_{dh}$	0	kW
For air-water-heating pumps $T_j = -15\text{ °C}$ (if TOL < $-20\text{ °C}$ )	$P_{dh}$		kW
Bivalent temperature	$T_{div}$	-10	°C
Cycling interval capacity for heating	$P_{cyc}$		kW
Degradation co-efficient	$C_{dh}$	0,94-0,99	
Power consumption in modes other than active mode			
Off mode	$P_{OFF}$	0,01	kW
Thermostat off-mode	$P_{TD}$	0,005	kW
Standby mode	$P_{SB}$	0,01	kW
Crankcase heater mode	$P_{CK}$	0	kW
Other items			
Capacity control:	Variable compressor Variable indoor water flow		
	Variable indoor temperature adjustment		
Sound power level, outdoors	$L_{WA}$	46	dB
Annual energy consumption	$Q_{HE}$	1464	kWh

Item	Symbol	Value	Unit
Seasonal space heating energy efficiency	$\eta_s$	206	%
Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	$COP_{dh}$	3,20	
$T_j = +2\text{ °C}$	$COP_{dh}$	4,95	
$T_j = +7\text{ °C}$	$COP_{dh}$	6,53	
$T_j = +12\text{ °C}$	$COP_{dh}$	9,69	
$T_j = \text{bivalent temperature}$	$COP_{dh}$	2,83	
$T_j = \text{operation limit temperature}$	$COP_{dh}$	0	
For air-to-water heat pumps: $T_j = -15\text{ °C}$ (if TOL < $-20\text{ °C}$ )	$COP_{dh}$		
For air-to-water heat pumps: Operation limit temperature	TOL	-22	°C
Cycling interval efficiency	$COP_{cyc}$		
Heating water operating limit temperature	WTOL	45	°C
Supplementary heater			
Rated heat output	$P_{sup}$	6	kW
Type of energy input	Electrical		
For air-to-water heat pumps: Rated air flow rate, outdoors		3000	m <sup>3</sup> /h
For water-/ brine-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger			m <sup>3</sup> /h