

Indoor Unit Model	Vitocal 151-A AWOT-M-E-AC-AF 151.A10
Outdoor Unit Model	Vitocal 15X-A ODU 230V A10 AF
Equipped with a supplementary heater	yes
Heat pump combination heater	yes



Application	Low temperature
Climate conditions	Average

Rated heat output	Prated	10	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = - 7 °C	Pdh	8.7	kW
Tj = + 2 °C	Pdh	5.4	kW
Tj = + 7 °C	Pdh	5.8	kW
Tj = + 12 °C	Pdh	5.5	kW
Tj = bivalent temperature	Pdh	8.7	kW
Tj = operation limit temperature	Pdh	10.1	kW
Tj = - 15 °C (if TOL < -20 °C)	Pdh	-	kW
Bivalent temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation coefficient	Cdh	1	
Power consumption in modes other than active mode			
Off mode	P <sub>OFF</sub>	0.000	kW
Thermostat-off mode	P <sub>TO</sub>	0.014	kW
Standby mode	P <sub>SB</sub>	0.016	kW
Crankcase heater mode	P <sub>CK</sub>	0.000	kW
Other items			
Capacity control		variable	
Sound power level, indoors/outdoors	L <sub>WA</sub>	40/56	dB
Annual energy consumption	Q <sub>HE</sub>	5672	kWh

Seasonal space heating energy efficiency	η <sub>se</sub>	190	%
Declared coefficient of performance for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = - 7 °C	COP <sub>d</sub>	3.1	
Tj = + 2 °C	COP <sub>d</sub>	4.8	
Tj = + 7 °C	COP <sub>d</sub>	6.0	
Tj = + 12 °C	COP <sub>d</sub>	7.3	
Tj = bivalent temperature	COP <sub>d</sub>	3.1	
Tj = operation limit temperature	COP <sub>d</sub>	2.9	
Tj = - 15 °C (if TOL < -20 °C)	COP <sub>d</sub>	-	
Operation limit temperature	TOL	-10	°C
Cycling interval efficiency	COP <sub>pcyc</sub>	-	
Heating water operating limit temperature	WTOL	70	°C
Supplementary heater			
Rated heat output	P <sub>sup</sub>	2.3	kW
Type of energy input		Electric	
Rated air flow rate, outdoors			
		4045	m <sup>3</sup> /h

For heat pump combination heater			
<b>Declared load profile</b>			
Daily electric consumption	Q <sub>elec</sub>	5788	kWh
Annual electricity consumption	AEC	1273	kWh
Standby cylinder heat loss		1200	Wh/day

<b>Water heating energy efficiency</b>			
Daily fuel consumption	Q <sub>fuel</sub>	130	%
Annual fuel consumption	AFC	-	kWh
Reference hot water temperature		52.5	°C
DHW volume accounted for in test		260	l

Application	Medium temperature
Climate conditions	Average

Rated heat output	Prated	9	kW
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = - 7 °C	Pdh	8.3	kW
Tj = + 2 °C	Pdh	5.2	kW
Tj = + 7 °C	Pdh	5.7	kW
Tj = + 12 °C	Pdh	5.7	kW
Tj = bivalent temperature	Pdh	8.3	kW
Tj = operation limit temperature	Pdh	7.5	kW
Tj = - 15 °C (if TOL < -20 °C)	Pdh	-	kW
Bivalent temperature	Tbiv	-7	°C
Cycling interval capacity for heating	Pcych	-	kW
Degradation coefficient	Cdh	1	
Power consumption in modes other than active mode			
Off mode	P <sub>OFF</sub>	0.000	kW
Thermostat-off mode	P <sub>TO</sub>	0.014	kW
Standby mode	P <sub>SB</sub>	0.016	kW
Crankcase heater mode	P <sub>CK</sub>	0.000	kW
Other items			
Capacity control		variable	
Sound power level, indoors/outdoors	L <sub>WA</sub>	40/56	dB
Annual energy consumption	Q <sub>HE</sub>	6944	kWh

Seasonal space heating energy efficiency	η <sub>se</sub>	145%	%
Declared coefficient of performance for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = - 7 °C	COP <sub>d</sub>	2.4	
Tj = + 2 °C	COP <sub>d</sub>	3.7	
Tj = + 7 °C	COP <sub>d</sub>	4.6	
Tj = + 12 °C	COP <sub>d</sub>	6.0	
Tj = bivalent temperature	COP <sub>d</sub>	2.4	
Tj = operation limit temperature	COP <sub>d</sub>	2.1	
Tj = - 15 °C (if TOL < -20 °C)	COP <sub>d</sub>	-	
Operation limit temperature	TOL	-10	°C
Cycling interval efficiency	COP <sub>pcyc</sub>	-	
Heating water operating limit temperature	WTOL	70	°C
Supplementary heater			
Rated heat output	P <sub>sup</sub>	2.3	kW
Type of energy input		Electric	
Rated air flow rate, outdoors			
		4045	m <sup>3</sup> /h

For heat pump combination heater			
<b>Declared load profile</b>			
Daily electric consumption	Q <sub>elec</sub>	5788	kWh
Annual electricity consumption	AEC	1273	kWh
Standby cylinder heat loss		1200	Wh/day

<b>Water heating energy efficiency</b>			
Daily fuel consumption	Q <sub>fuel</sub>	130%	%
Annual fuel consumption	AFC	-	kWh
Reference hot water temperature		52.5	°C
DHW volume accounted for in test		260	l