

VITOCAL 150-A

AWO-E-AC 151.A16, AWO-E-AC-AF 151.A16, AWO-M-E-AC 151.A16, AWO-M-E-AC-AF 151.A16

The product data specified meets the requirements of EU Regulations 811/2013 and 813/2013.

Product data	Symbol	Unit	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
Seasonal space heating energy efficiency, medium-temperature application			A++	A++	A++	A++
Rated heat output, medium-temperature application, Average climate conditions	P_{rated}	kW	13	13	13	13
Supplementary heater Rated heat output, Average climate conditions	P_{sup}	kW	2,6	2,6	2,6	2,6
Seasonal space heating energy efficiency, medium-temperature application, Average climate conditions	η_s	%	141	141	141	141
Annual energy consumption	Q_{HE}	kWh	7670	7670	7670	7670
sound power level indoors	L_{WA}	dB	40	40	40	40

For all special precautions to be taken during assembly, installation or maintenance of the space heater, see the service and installation instructions.

Product data	Symbol	Unit	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
Rated heat output, medium-temperature application, Colder climate conditions	P_{rated}	kW	11	11	11	11
Rated heat output, medium-temperature application, Warmer climate conditions	P_{rated}	kW	8	8	8	8
Supplementary heater Rated heat output, Colder climate conditions	P_{sup}	kW	11,2	11,2	11,2	11,2
Supplementary heater Rated heat output, Warmer climate conditions	P_{sup}	kW	0	0	0	0
Seasonal space heating energy efficiency, medium-temperature application, Warmer climate conditions	η_s	%	175	175	175	175
Seasonal space heating energy efficiency, medium-temperature application, Colder climate conditions	η_s	%	117	117	117	117
Annual energy consumption, medium-temperature application, Warmer climate conditions	Q_{HE}	kWh	2266	2266	2266	2266
Annual energy consumption, medium-temperature application, Colder climate conditions	Q_{HE}	kWh	10386	10386	10386	10386
Sound power level, indoors	L_{WA}	dB	56	56	56	56



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Product data	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
Operating mode	-	-	-	-
Mark Master/Slave Heat pump	Master	Master	Master	Master
Equipped with a supplementary heater	Yes	Yes	Yes	Yes
Heat pump combination heater	No	No	No	No
Seasonal space heating energy efficiency, medium-temperature application	A++	A++	A++	A++
Seasonal space heating energy efficiency, Low-temperature application	A+++	A+++	A+++	A+++
Water heating energy efficiency classes	-	-	-	-

Product data	Symbol	Unit	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
Rated heat output, medium-temperature application, Average climate conditions	P_{rated}	kW	13	13	13	13
Rated heat output, medium-temperature application, Colder climate conditions	P_{rated}	kW	11	11	11	11
Rated heat output, medium-temperature application, Warmer climate conditions	P_{rated}	kW	8	8	8	8
Rated heat output, Low-temperature application, Average climate conditions	P_{rated}	kW	14	14	14	14
Rated heat output, Low-temperature application, Colder climate conditions	P_{rated}	kW	12	12	12	12
Rated heat output, Low-temperature application, Warmer climate conditions	P_{rated}	kW	8	8	8	8
Seasonal space heating energy efficiency, medium-temperature application, Average climate conditions	η_s	%	141	141	141	141
seasonal coefficient of performance, medium-temperature application, Average climate conditions	SCOP		3,6	3,6	3,6	3,6
Seasonal space heating energy efficiency, medium-temperature application, Colder climate conditions	η_s	%	117	117	117	117
Seasonal space heating energy efficiency, medium-temperature application, Warmer climate conditions	η_s	%	175	175	175	175
Seasonal space heating energy efficiency, Low-temperature application, Average climate conditions	η_s	%	178	178	178	178
seasonal coefficient of performance, Low-temperature application, Average climate conditions	SCOP		4,52	4,52	4,52	4,52
Seasonal space heating energy efficiency, Low-temperature application, Colder climate conditions	η_s	%	141	141	141	141
Seasonal space heating energy efficiency, Low-temperature application, Warmer climate conditions	η_s	%	239	239	239	239

Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj	Symbol	Unit	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
Tj= -7°C, medium-temperature application, Average climate conditions	Pdh	kW	11,8	11,8	11,8	11,8
Tj= -7°C, medium-temperature application, Colder climate conditions	Pdh	kW	11,7	11,7	11,7	11,7
Tj= -7°C, medium-temperature application, Warmer climate conditions	Pdh	kW	-	-	-	-
Tj= -7°C, Low-temperature application, Average climate conditions	Pdh	kW	12	12	12	12
Tj= -7°C, Low-temperature application, Colder climate conditions	Pdh	kW	12,1	12,1	12,1	12,1
Tj= -7°C, Low-temperature application, Warmer climate conditions	Pdh	kW	-	-	-	-
Tj= +2°C, medium-temperature application, Average climate conditions	Pdh	kW	7,5	7,5	7,5	7,5
Tj= +2°C, medium-temperature application, Colder climate conditions	Pdh	kW	7,5	7,5	7,5	7,5
Tj= +2°C, medium-temperature application, Warmer climate conditions	Pdh	kW	7,6	7,6	7,6	7,6
Tj= +2°C, Low-temperature application, Average climate conditions	Pdh	kW	7,4	7,4	7,4	7,4
Tj= +2°C, Low-temperature application, Colder climate conditions	Pdh	kW	7,6	7,6	7,6	7,6
Tj= +2°C, Low-temperature application, Warmer climate conditions	Pdh	kW	7,5	7,5	7,5	7,5

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Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j	Symbol	Unit	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
T _j = +7°C, medium-temperature application, Average climate conditions	P _{dH}	kW	6,5	6,5	6,5	6,5
T _j = +7°C, medium-temperature application, Colder climate conditions	P _{dH}	kW	6,6	6,6	6,6	6,6
T _j = +7°C, medium-temperature application, Warmer climate conditions	P _{dH}	kW	6,1	6,1	6,1	6,1
T _j = +7°C, Low-temperature application, Average climate conditions	P _{dH}	kW	6,7	6,7	6,7	6,7
T _j = +7°C, Low-temperature application, Colder climate conditions	P _{dH}	kW	6,7	6,7	6,7	6,7
T _j = +7°C, Low-temperature application, Warmer climate conditions	P _{dH}	kW	6,6	6,6	6,6	6,6
T _j = +12°C, medium-temperature application, Average climate conditions	P _{dH}	kW	5,7	5,7	5,7	5,7
T _j = +12°C, medium-temperature application, Colder climate conditions	P _{dH}	kW	5,7	5,7	5,7	5,7
T _j = +12°C, medium-temperature application, Warmer climate conditions	P _{dH}	kW	5,6	5,6	5,6	5,6
T _j = +12°C, Low-temperature application, Average climate conditions	P _{dH}	kW	5,3	5,3	5,3	5,3
T _j = +12°C, Low-temperature application, Colder climate conditions	P _{dH}	kW	5,4	5,4	5,4	5,4
T _j = +12°C, Low-temperature application, Warmer climate conditions	P _{dH}	kW	5,6	5,6	5,6	5,6
T _j = bivalent temperature, medium-temperature application, Average climate conditions	P _{dH}	kW	11,8	11,8	11,8	11,8
T _j = bivalent temperature, medium-temperature application, Colder climateconditions	P _{dH}	kW	9,1	9,1	9,1	9,1
T _j = bivalent temperature, medium-temperature application, Warmer climateconditions	P _{dH}	kW	7,6	7,6	7,6	7,6
T _j = bivalent temperature, Low-temperature application, Average climate conditions	P _{dH}	kW	12,1	12,1	12,1	12,1
T _j = bivalent temperature, Low-temperature application, Colder climateconditions	P _{dH}	kW	9,7	9,7	9,7	9,7
T _j = bivalent temperature, Low-temperature application, Warmer climateconditions	P _{dH}	kW	7,5	7,5	7,5	7,5
T _j = operation limit temperature, medium-temperature application, Averageclimate conditions	P _{dH}	kW	10,7	10,7	10,7	10,7
T _j = operation limit temperature, Low-temperature application, Colderclimate conditions	P _{dH}	kW	8,4	8,4	8,4	8,4
T _j = operation limit temperature, medium-temperature application, Warmerclimate conditions	P _{dH}	kW	7,6	7,6	7,6	7,6
T _j = operation limit temperature, Low-temperature application, Average climate conditions	P _{dH}	kW	11,1	11,1	11,1	11,1
T _j = operation limit temperature, medium-temperature application, Colderclimate conditions	P _{dH}	kW	7,7	7,7	7,7	7,7
T _j = operation limit temperature, Low-temperature application, Warmerclimate conditions	P _{dH}	kW	7,5	7,5	7,5	7,5
For air-to-water heat pumps: T _j = -15°C (if TOL < -20°C)	P _{dH}	kW	-	-	-	-
bivalent temperature, medium-temperature application, Average climate conditions	T _{biv}	°C	-7	-7	-7	-7
bivalent temperature, medium-temperature application, Colder climate conditions	T _{biv}	°C	-15	-15	-15	-15
bivalent temperature, medium-temperature application, Warmer climate conditions	T _{biv}	°C	2	2	2	2
bivalent temperature, Low-temperature application, Average climate conditions	T _{biv}	°C	-7	-7	-7	-7
bivalent temperature, Low-temperature application, Colder climate conditions	T _{biv}	°C	-15	-15	-15	-15
bivalent temperature, Low-temperature application, Warmer climate conditions	T _{biv}	°C	2	2	2	2
Cycling interval capacity for heating, Average climate conditions	P _{cyh}	kW	-	-	-	-
Cycling interval capacity for heating, Colder climate conditions	P _{cyh}	kW	-	-	-	-
Cycling interval capacity for heating, Warmer climate conditions	P _{cyh}	kW	-	-	-	-
Degradation co-efficient medium-temperature application	C _{dH}		1	1	1	1
Degradation co-efficient Low-temperature application	C _{dH}		1	1	1	1

Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j	Symbol	Unit	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
T _j = -7°C, medium-temperature application, Average climate conditions	COP _d		2,3	2,3	2,3	2,3
T _j = -7°C, medium-temperature application, Colder climate conditions	COP _d		2,4	2,4	2,4	2,4

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Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj	Symbol	Unit	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
Tj= -7°C, medium-temperature application, Warmer climate conditions	COPd		-	-	-	-
Tj= -7°C, Low-temperature application, Average climate conditions	COPd		2,9	2,9	2,9	2,9
Tj= -7°C, Low-temperature application, Colder climate conditions	COPd		2,8	2,8	2,8	2,8
Tj= -7°C, Low-temperature application, Warmer climate conditions	COPd		-	-	-	-
Tj= +2°C, medium-temperature application, Average climate conditions	COPd		3,4	3,4	3,4	3,4
Tj= +2°C, medium-temperature application, Colder climate conditions	COPd		3,5	3,5	3,5	3,5
Tj= +2°C, medium-temperature application, Warmer climate conditions	COPd		2,8	2,8	2,8	2,8
Tj= +2°C, Low-temperature application, Average climate conditions	COPd		4,3	4,3	4,3	4,3
Tj= +2°C, Low-temperature application, Colder climate conditions	COPd		4,3	4,3	4,3	4,3
Tj= +2°C, Low-temperature application, Warmer climate conditions	COPd		3,8	3,8	3,8	3,8
Tj= +7°C, medium-temperature application, Average climate conditions	COPd		4,8	4,8	4,8	4,8
Tj= +7°C, medium-temperature application, Colder climate conditions	COPd		5	5	5	5
Tj= +7°C, medium-temperature application, Warmer climate conditions	COPd		3,8	3,8	3,8	3,8
Tj= +7°C, Low-temperature application, Average climate conditions	COPd		6,1	6,1	6,1	6,1
Tj= +7°C, Low-temperature application, Colder climate conditions	COPd		6,1	6,1	6,1	6,1
Tj= +7°C, Low-temperature application, Warmer climate conditions	COPd		5,4	5,4	5,4	5,4
Tj= +12°C, medium-temperature application, Average climate conditions	COPd		6,3	6,3	6,3	6,3
Tj= +12°C, medium-temperature application, Colder climate conditions	COPd		6,5	6,5	6,5	6,5
Tj= +12°C, medium-temperature application, Warmer climate conditions	COPd		5,6	5,6	5,6	5,6
Tj= +12°C, Low-temperature application, Average climate conditions	COPd		7,3	7,3	7,3	7,3
Tj= +12°C, Low-temperature application, Colder climate conditions	COPd		7,3	7,3	7,3	7,3
Tj= +12°C, Low-temperature application, Warmer climate conditions	COPd		7,3	7,3	7,3	7,3
Tj= bivalent temperature, medium-temperature application, Average climate conditions	COPd		2,3	2,3	2,3	2,3
Tj= bivalent temperature, medium-temperature application, Colder climate conditions	COPd		2	2	2	2
Tj= bivalent temperature, medium-temperature application, Warmer climate conditions	COPd		2,8	2,8	2,8	2,8
Tj= bivalent temperature, Low-temperature application, Average climate conditions	COPd		2,9	2,9	2,9	2,9
Tj= bivalent temperature, Low-temperature application, Colder climate conditions	COPd		2,4	2,4	2,4	2,4
Tj= bivalent temperature, Low-temperature application, Warmer climate conditions	COPd		3,8	3,8	3,8	3,8
Tj= operation limit temperature, medium-temperature application, Average climate conditions	COPd		2,1	2,1	2,1	2,1
Tj= operation limit temperature, medium-temperature application, Colder climate conditions	COPd		1,7	1,7	1,7	1,7
Tj= operation limit temperature, medium-temperature application, Warmer climate conditions	COPd		2,8	2,8	2,8	2,8
Tj= operation limit temperature, Low-temperature application, Average climate conditions	COPd		2,6	2,6	2,6	2,6
Tj= operation limit temperature, Low-temperature application, Colder climate conditions	COPd		2,2	2,2	2,2	2,2
Tj= operation limit temperature, Low-temperature application, Warmer climate conditions	COPd		3,8	3,8	3,8	3,8
For air-to-water heat pumps: Tj= -15°C (if TOL < -20°C)	COPd		-	-	-	-
For air-to-water heat pumps: operation limit temperature, medium-temperature application, Average climate conditions	TOL	°C	-10	-10	-10	-10
For air-to-water heat pumps: operation limit temperature, Low-temperature application, Average climate conditions	TOL	°C	-10	-10	-10	-10
Cycling interval efficiency, Average climate conditions	COPcyc		-	-	-	-
Cycling interval efficiency, Colder climate conditions	COPcyc		-	-	-	-
Cycling interval efficiency, Warmer climate conditions	COPcyc		-	-	-	-
Heating water operating limit temperature	WTOL	°C	70	70	70	70

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The product data specified meets the requirements of EU Regulations 811/2013 and 813/2013.

Power consumption in operating modes other than the operating state	Symbol	Unit	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
Power consumption in modes other than active mode Off mode	P_{OFF}	kW	0	0	0	0
Power consumption in modes other than active mode Thermostat-off mode	P_{TO}	kW	0,014	0,014	0,014	0,014
Power consumption in modes other than active mode Standby mode	P_{SB}	kW	0,016	0,016	0,016	0,016
Power consumption in modes other than active mode Crankcase heater mode	P_{CK}	kW	0	0	0	0

Auxiliary heating appliances	Symbol	Unit	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
Supplementary heater Rated heat output, Average climate conditions	P_{SUP}	kW	2,6	2,6	2,6	2,6
Type of energy input			Electrical	Electrical	Electrical	Electrical

Other details	Symbol	Unit	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
Capacity control			variable	variable	variable	variable
sound power level indoors	L_{WA}	dB	40	40	40	40
Sound power level, indoors	L_{WA}	dB	56	56	56	56
Annual energy consumption	Q_{HE}	kWh	7670	7670	7670	7670
Annual energy consumption, medium-temperature application, Colder climate conditions	Q_{HE}	kWh	10386	10386	10386	10386
Annual energy consumption, medium-temperature application, Warmer climate conditions	Q_{HE}	kWh	2266	2266	2266	2266
Annual energy consumption, Low-temperature application, Average climate conditions	Q_{HE}	kWh	6242	6242	6242	6242
Annual energy consumption, medium-temperature application, Colder climate conditions	Q_{HE}	kWh	8080	8080	8080	8080
Annual energy consumption, medium-temperature application, Warmer climate conditions	Q_{HE}	kWh	1662	1662	1662	1662
For air-to-water heat pumps: Rated air flow rate, outdoors		m ³ /h	5393	5393	5393	5393
For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger, medium-temperature application		m ³ /h	-	-	-	-
For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger, Low-temperature application		m ³ /h	-	-	-	-

For combination heaters with heat pump	Symbol	Unit	AWO-E-A C 151.A16	AWO-E-A C-AF 151.A16	AWO-M-E -AC 151.A16	AWO-M-E -AC-AF 151.A16
Declared load profile			-	-	-	-
Daily electricity consumption, Average climate conditions	Q_{elec}	kWh	-	-	-	-
Daily electricity consumption, Colder climate conditions	Q_{elec}	kWh	-	-	-	-
Daily electricity consumption, Warmer climate conditions	Q_{elec}	kWh	-	-	-	-
Annual electricity consumption	AEC	kWh	-	-	-	-
Annual electricity consumption, Colder climate conditions	AEC	kWh	-	-	-	-
Annual electricity consumption, Warmer climate conditions	AEC	kWh	-	-	-	-
Water heating energy efficiency, Average climate conditions	η_{wh}	%	-	-	-	-
Water heating energy efficiency, Colder climate conditions	η_{wh}	%	-	-	-	-
Water heating energy efficiency, Warmer climate conditions	η_{wh}	%	-	-	-	-

Product fiche Energy efficiency category temperature controller

The product data specified meets the requirements of EU Regulations 811/2013.

Criterion	Energy efficiency category, temperature controller	Contribution, central heating energy efficiency
<ul style="list-style-type: none">• Room thermostat which switches the heat source on/off	1	1 %
<ul style="list-style-type: none">• Weather-compensated control• Modulating heat source	2	2 %
<ul style="list-style-type: none">• Weather-compensated control• Non-modulating heat source	3	1,5 %
<ul style="list-style-type: none">• Room thermostat with TPI (Time Proportional Integral) properties• Non-modulating heat source	4	2 %
<ul style="list-style-type: none">• Modulating room thermostat• Modulating heat source	5	3 %
<ul style="list-style-type: none">• Weather compensation, control unit• Modulating heat source• Room temperature sensor in conjunction with room hook-up	6	4 %
<ul style="list-style-type: none">• Weather compensation, control unit• Non-modulating heat source• Room temperature sensor in conjunction with room hook-up	7	3,5 %
<ul style="list-style-type: none">• Individual room control with min. 3 room temperature sensors• Modulating heat source	8	5 %