

# TECHNICAL DOCUMENTATION

according Directive 2010/30/EU and corresponding Regulation (EU) No. 811/2013 (Energy Labelling),

Directive 2009/125/EC and corresponding Regulation (EU) No. 813/2013 (Ecodesign)



Model:	<b>AERO SLM 3-11</b>
Type of heat pump:	Air-to-water heat pump
Low-temperature heat pump: (Yes/No)	No
Temperature application: (35°C/55°C)	low temperature (35°C)
Equipped with supplementary heater: (Yes/No)	Yes
Heat pump combination heater: (Yes/No)	Yes

	$P_{rated}$	Climate condition			kW
		cold	average	warm	
<b>Rated heat output</b>		<b>9,9</b>	<b>8,9</b>	<b>9,1</b>	
Outdoor temperature $T_j$	Declared capacity for part load (indoor temperature = 20 °C)				
$T_j = -15\text{ °C}$	$P_{dh}$	8,1	-	-	kW
$T_j = -7\text{ °C}$	$P_{dh}$	6,3	8,6	-	kW
$T_j = +2\text{ °C}$	$P_{dh}$	3,7	5,1	9,1	kW
$T_j = +7\text{ °C}$	$P_{dh}$	3,1	3,1	5,8	kW
$T_j = +12\text{ °C}$	$P_{dh}$	3,2	3,2	3,3	kW
$T_j = \text{Bivalenz temperature } (T_{biv})$	$P_{dh}$	8,1	9,3	9,1	kW
$T_j = \text{Operation limit temperature } (TOL)$	$P_{dh}$	7,0	9,3	9,1	kW
Bivalenz temperature ( $T_{biv}$ )	$T_{biv}$	-15,0	-10,0	2,0	°C
Cycling interval capacity for heating	$P_{cyeh}$				kW
Degradation co-efficient	$C_{dh}$	0,9	0,9		---
Power consumption in modes other than active mode					
Thermostat-off mode	$P_{TO}$	0,026	0,026	0,026	kW
Standby mode	$P_{SB}$	0,026	0,026	0,026	kW
Off-mode	$P_{OFF}$	0,026	0,026	0,026	kW
Crankcase heater mode	$P_{CK}$	0	0	0	kW
Other items					
Capacity control		variable			
Sound power levels, indoors/outdoors	$L_{WA}$	45 / 50	45 / 50	45 / 50	dB
Annual energy consumption	$Q_{HE}$	6.388	4.114	2.329	kWh
For heat pump combination heater:					
Declared load profile		n.a.			
Daily electricity consumption	$Q_{elec}$	n.a.			kWh
Annual electricity consumption	AEC	n.a.			kWh

## Contact details:

IDM-Energiesysteme, Seblas 16-18, 9971 Matrei i.O., Austria

	$\eta_s$	Climate condition			%
		cold	average	warm	
<b>Seasonal space heating efficiency</b>		<b>150</b>	<b>176</b>	<b>219</b>	
Outdoor temperature $T_j$	Declared capacity for part load (indoor temperature = 20 °C)				
$T_j = -15\text{ °C}$	$COP_d$	2,37	-	-	---
$T_j = -7\text{ °C}$	$COP_d$	3,53	2,92	-	---
$T_j = +2\text{ °C}$	$COP_d$	4,83	4,86	3,17	---
$T_j = +7\text{ °C}$	$COP_d$	5,07	3,13	5,74	---
$T_j = +12\text{ °C}$	$COP_d$	6,61	3,23	3,25	---
$T_j = \text{Bivalenz temperature } (T_{biv})$	$COP_d$	2,37	2,53	3,17	---
$T_j = \text{Operation limit temperature } (TOL)$	$COP_d$	2,35	2,53	3,17	---
Operation limit temperature	TOL	-18,0	-10,0	2,0	°C
Cycling interval capacity for heating	$COP_{cyc}$				---
Heating water operating limit temperature	WTOL	62	62	62	°C
Supplementary heater					
Rated heat output (*)	$P_{sup}$	1-6	1-6	1-6	kW
Type of energy input		electrical			
For air-to-water heat pumps:					
Rated air flow rate, outdoors		---	3.600	3.600	3.600 m <sup>3</sup> /h
For water- or brine-to-water heat pumps:					
Rated brine or water flow rate, outdoor heat exchanger		---	n.a.	n.a.	n.a. m <sup>3</sup> /h
Water heating energy efficiency					
	$\eta_{wh}$	100			%
Daily fuel consumption	$Q_{fuel}$	n.a.			kWh
Annual fuel consumption	AFC	n.a.			GJ

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Model:	<b>AERO SLM 3-11</b>
Type of heat pump:	Air-to-water heat pump
Low-temperature heat pump: (Yes/No)	No
Temperature application: (35°C/55°C)	high temperature (55°C)
Equipped with supplementary heater: (Yes/No)	Yes
Heat pump combination heater: (Yes/No)	Yes

	$P_{rated}$	Climate condition			kW
		cold	average	warm	
<b>Rated heat output</b>		<b>8,9</b>	<b>8,1</b>	<b>9,9</b>	
Outdoor temperature $T_j$	Declared capacity for part load (indoor temperature = 20 °C)				
$T_j = -15\text{ °C}$	$P_{dh}$	7,2	-	-	kW
$T_j = -7\text{ °C}$	$P_{dh}$	5,5	7,5	-	kW
$T_j = +2\text{ °C}$	$P_{dh}$	3,3	4,4	9,9	kW
$T_j = +7\text{ °C}$	$P_{dh}$	3,1	3,0	6,4	kW
$T_j = +12\text{ °C}$	$P_{dh}$	3,4	3,4	3,2	kW
$T_j$ = Bivalenz temperature ( $T_{biv}$ )	$P_{dh}$	7,2	8,5	9,9	kW
$T_j$ = Operation limit temperature (TOL)	$P_{dh}$	6,9	8,5	9,9	kW
Bivalenz temperature ( $T_{biv}$ )	$T_{biv}$	-15,0	-10,0	2,0	°C
Cycling interval capacity for heating	$P_{cych}$				kW
Degradation co-efficient	$C_{dh}$	0,9	0,9	0,9	---
Power consumption in modes other than active mode					
Thermostat-off mode	$P_{TO}$	0,026	0,026	0,026	kW
Standby mode	$P_{SB}$	0,026	0,026	0,026	kW
Off-mode	$P_{OFF}$	0,026	0,026	0,026	kW
Crankcase heater mode	$P_{CK}$	0	0	0	kW
Other items					
Capacity control		variable			
Sound power levels, indoors/outdoors	$L_{WA}$	45 / 50	45 / 50	45 / 50	dB
Annual energy consumption	$Q_{HE}$	7.104	4.887	3.108	kWh
For heat pump combination heater:					
Declared load profile		n.a.			
Daily electricity consumption	$Q_{elec}$	n.a.			kWh
Annual electricity consumption	AEC	n.a.			kWh

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	$\eta_s$	Climate condition			%
		cold	average	warm	
<b>Seasonal space heating efficiency</b>		<b>120</b>	<b>135</b>	<b>175</b>	
Outdoor temperature $T_j$	Declared capacity for part load (indoor temperature = 20 °C)				
$T_j = -15\text{ °C}$	$COP_d$	1,95	-	-	---
$T_j = -7\text{ °C}$	$COP_d$	2,68	2,30	-	---
$T_j = +2\text{ °C}$	$COP_d$	3,70	3,58	2,36	---
$T_j = +7\text{ °C}$	$COP_d$	4,93	3,00	3,93	---
$T_j = +12\text{ °C}$	$COP_d$	6,03	3,39	3,19	---
$T_j$ = Bivalenz temperature ( $T_{biv}$ )	$COP_d$	1,95	2,02	2,36	---
$T_j$ = Operation limit temperature (TOL)	$COP_d$	1,82	2,02	2,36	---
Operation limit temperature	TOL	-18,0	-10,0	2,0	°C
Cycling interval capacity for heating	$COP_{cyc}$				---
Heating water operating limit temperature	WTOL	62	62	62	°C
Supplementary heater					
Rated heat output (*)	$P_{sup}$	1-6	1-6	1-6	kW
Type of energy input		electrical			
For air-to-water heat pumps:					
Rated air flow rate, outdoors	---	3.600	3.600	3.600	m <sup>3</sup> /h
For water- or brine-to-water heat pumps:					
Rated brine or water flow rate, outdoor heat exchanger	---	n.a.	n.a.	n.a.	m <sup>3</sup> /h
Water heating energy efficiency					
	$\eta_{wh}$	100			%
Daily fuel consumption	$Q_{fuel}$	n.a.	n.a.	n.a.	kWh
Annual fuel consumption	AFC	n.a.	n.a.	n.a.	GJ