



## TECHNICAL DATA

INDUSTRIAL GEOTHERMAL HEAT PUMPS IGLU® Max



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## Technical data of IGLU® Max 24÷90 kW fixed capacity brine/water heat pumps

	Units	24 kW	36 kW	45 kW	70 kW	90 kW
<b>Brine/water used</b>						
Thermal power (B0/W35) <sup>1)</sup>	kW	24,85	35,5	44,95	71,08	87,3
Thermal power (B0/W45) <sup>1)</sup>	kW	23,59	33,7	42,65	66,15	82,5
COP (B0/W35) <sup>1)</sup>	-	4,54	4,65	4,45	4,58	4,53
COP (B0/W45) <sup>1)</sup>	-	3,37	3,74	3,59	3,52	3,48
SCOP (B0/W35)	-	5,71	5,76	5,77	5,75	5,66
SCOP (B0/W45)	-	4,14	4,22	4,30	4,42	4,22
Refrigeration capacity (B24/W10) <sup>2)</sup>	kW	26,0	40,1	49,4	80,8	108,0
<b>Brine circuit</b>						
Rated flow (DT = 3K) <sup>3)</sup>	m <sup>3</sup> /h	8	9	12	17	23
Permissible external pressure drop <sup>3)</sup>	kPa	23	16	16	16	12
Maximum pressure	bar	4				
Volume (internal)	l	7			22	
Operating temperature	°C	from -10 to +20				
Connection (Cu)	mm	28		35	50	
<b>Compressor</b>						
Type		Spiral "Scroll"				
Mass of refrigerant R 410A <sup>4)</sup>	kg	-	-	-	12,8	15,30
Mass of refrigerant R 407C <sup>4)</sup>		2,8	3,5	3,8	-	-
Maximum pressure	bar	45			48	
Rated flow (DT = 7K)	m <sup>3</sup> /h	4	6	6,4	10	13
Min. flow temperature	°C	15				
Max. flow temperature	°C	60				
Max. permissible operating pressure	bar	4,0				
Connection (Cu)	mm	28		35	50	
<b>Power network connection values</b>						
Electrical connections		3/N/PE 400V/ 50Hz				
Inertial fuse; with electric heater 3kW/ 6kW/ 9kW	A					
Compressor rated power (B0/W35)	kW	5,2	7,6	10,1	14,65	19,25
Max. current with inrush current limiter	A	25	32	32	48,7	65,4
Type of protection	IP	X1				
<b>General information</b>						
Permissible ambient temperatures	°C	from +10 to +35				
Sound power level <sup>5)</sup>	dBA	55	56	56	72	81
Dimensions (width x depth x height)	mm	620 x 800 x 1200			1300 x 900 x 1200	
Weight (without packaging)	kg	150	170	220	475	520

1) With internal pump according to EN 14511

2) On models with an active cooling module

3) With ethylene glycol

4) Greenhouse potential, GWP100 = 1774

5) According to EN 3743-1

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## Technical data of IGLU® Max 120÷240 kW two-stage brine/water heat pumps

	Units	120 kW	150 kW	180 kW	240 kW
<b>Brine/water used</b>					
Thermal power (B0/W35) <sup>1)</sup>	kW	119,8	145,0	181,9	231,8
COP (B0/W35) <sup>1)</sup>	-	4,69	4,69	4,67	4,75
Refrigeration capacity (B24/W10) <sup>2)</sup>	kW	135,4	163,9	205,6	261,9
<b>Brine circuit</b>					
Rated flow (DT = 3K) <sup>3)</sup>	m <sup>3</sup> /h	27,9	35,6	43,5	57,6
Permissible external pressure drop <sup>3)</sup>	kPa	30	34	38	51
Maximum pressure	bar	4			
Volume (internal)	l	29,4	38,6	48,3	62,6
Operating temperature	°C	from -10 to +20			
Connection (Cu)	mm	65			
<b>Compressor</b>					
Type		Spiral "Scroll"			
Mass of refrigerant R 410A <sup>4)</sup>	kg	23,6	27,6	36,0	48,4
Maximum pressure	bar	42			
Rated flow (DT = 7K)	m <sup>3</sup> /h	14,1	18,5	23,8	31,9
Min. flow temperature	°C	15			
Max. flow temperature	°C	60			
Max. permissible operating pressure	bar	6			
Connection (Cu)	mm	65			
<b>Power network connection values</b>					
Electrical connections		3/N/PE 400V/50Hz	3/N/PE 415V /50Hz		
Compressor rated power (B0/W35)	kW	25,56	30,9	38,9	48,8
Max. current with inrush current limiter	A	98	112	144	182
Type of protection	IP	IP20			
<b>General information</b>					
Permissible ambient temperatures	°C	from +10 to +35			
Sound power level <sup>5)</sup>	dBA	62	65	65	66
Dimensions (width x depth x height)	mm	910x2500x1600			
Weight (without packaging)	kg	830	1160	1220	1380

1) With internal pump according to EN 14511

2) On models with an active cooling module

3) With ethylene glycol

4) Greenhouse potential, GWP100 = 1774

5) According to EN 3743-1

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# Annex to the technical characteristics according to European Commission Regulation No 813/2013

## Technical data of IGLU® Max 24 fixed capacity heat pump

Model	IGLU Max 24
Air-to-water heat pump	No
Water-to-water heat pump	No
Ground-to-water heat pump	Yes
Low temperature heat pump	No
Equipped with supplementary heater	No
Supplementary heater is used	No

Parameters applied using average temperature are declared. Parameters are declared under average climatic conditions.

Parameter	Conventional representation	Value	Measurement unit
Rated thermal power	$P_{rated}$	24,85	kW
Declared part load heating capacity at 20 °C indoor temperature and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	$P_{dh}$	24,07	kW
$T_j = +2\text{ °C}$	$P_{dh}$	24,64	kW
$T_j = +7\text{ °C}$	$P_{dh}$	25,18	kW
$T_j = +12\text{ °C}$	$P_{dh}$	25,85	kW
$T_j = (T_{iv})$ - bivalent temperature mode	$P_{dh}$	-	kW
$T_j$ = operating limit temperature	$P_{dh}$	-	kW
Air-to-water heat pump: $T_j = -15\text{ °C}$ (where TOL < -20°C)	$P_{dh}$	-	kW
Bivalent temperature	$T_{biv}$	-	°C
Power in cyclic heating mode	$P_{cyc}$	-	kW
Decreased efficiency in cyclic mode	$C_{dh}$	0.99	—
<b>Power consumption in modes other than active mode</b>			
Off mode	$P_{OFF}$	0.009	kW
Thermostat-off mode	$P_{TO}$	0.009	kW
Standby mode	$P_{SB}$	0.064	kW
Crankcase heater mode	$P_{CK}$	-	kW
<b>Other parameters</b>			
Capacity control	fixed		
Sound power level, indoors/outdoors	$L_{WA}$	55	dB
Emissions of nitrogen oxides	$NO_x$	-	mg/kWh
Contact details	IGLU TECH UAB		

Parameter	Conventional representation	Value	Measurement unit
Seasonal energy efficiency for space heating	$\eta_s$	151	%
Declared efficiency coefficient or ratio of primary energy to radiant heat output at room temperature 20 °C and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	$COP_d$ or $PER_d$	4,56	—
$T_j = +2\text{ °C}$	$COP_d$ or $PER_d$	4,65	—
$T_j = +7\text{ °C}$	$COP_d$ or $PER_d$	4,79	—
$T_j = +12\text{ °C}$	$COP_d$ or $PER_d$	4,98	—
$T_j = (T_{biv})$ - bivalent temperature mode	$COP_d$ or $PER_d$	-	—
$T_j$ = operating limit temperature	$COP_d$ or $PER_d$	-	°C
Air-to-water heat pump: $T_j = -15\text{ °C}$ (where TOL < -20°C)	$COP_d$ arba $PER_d$	-	—
Air-to-water heat pump: operating limit temperature	TOL	-	°C
Cyclical efficiency	$COP_{cyc}$ or $PER_{cyc}$	-	— or %
Heating water limit operating temperature	WTOL	60	°C
<b>Supplementary heater</b>			
Rated thermal power	$P_{sup}$	-	kW
Type of energy input	Electricity		
Air-to-water heat pump: rated air flow rate, outdoor	—	-	m <sup>3</sup> /h
Ground-to-water heat pump: water flow, outdoor heat exchanger	-	8	m <sup>3</sup> /h
Contact details	Ozo str. 12A-1, Vilnius, Lithuania		

## Technical data of IGLU® Max 36 fixed capacity heat pump

Model	IGLU Max 36
Air-to-water heat pump	No
Water-to-water heat pump	No
Ground-to-water heat pump	Yes
Low temperature heat pump	No
Equipped with supplementary heater	No
Supplementary heater is used	No

Parameters applied using average temperature are declared. Parameters are declared under average climatic conditions.

Parameter	Conventional representation	Value	Measurement unit
Rated thermal power	$P_{rated}$	35,5	kW
Declared part load heating capacity at 20 °C indoor temperature and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	$P_{dh}$	35,01	kW
$T_j = +2\text{ °C}$	$P_{dh}$	35,33	kW
$T_j = +7\text{ °C}$	$P_{dh}$	35,54	kW
$T_j = +12\text{ °C}$	$P_{dh}$	35,67	kW
$T_j = (T_{biv})$ - bivalent temperature mode	$P_{dh}$	-	kW
$T_j$ = operating limit temperature	$P_{dh}$	-	kW
Air-to-water heat pump: $T_j = -15\text{ °C}$ (where TOL < -20°C)	$P_{dh}$	-	kW
Bivalent temperature	$T_{biv}$	-	°C
Power in cyclic heating mode	$P_{cych}$	-	kW
Decreased efficiency in cyclic mode	$C_{dh}$	0.99	—
<b>Power consumption in modes other than active mode</b>			
Off mode	$P_{OFF}$	0.009	kW
Thermostat-off mode	$P_{TO}$	0.009	kW
Standby mode	$P_{SB}$	0.064	kW
Crankcase heater mode	$P_{CK}$	-	kW
<b>Other parameters</b>			
Capacity control	fixed		
Sound power level, indoors/outdoors	$L_{WA}$	56	dB
Emissions of nitrogen oxides	$NO_x$	-	mg/kWh
Contact details	IGLU TECH UAB		

  

Parameter	Conventional representation	Value	Measurement unit
Seasonal energy efficiency for space heating	$\eta_s$	154	%
Declared efficiency coefficient or ratio of primary energy to radiant heat output at room temperature 20 °C and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	$COP_d$ arba $PER_d$	4,50	—
$T_j = +2\text{ °C}$	$COP_d$ arba $PER_d$	4,61	—
$T_j = +7\text{ °C}$	$COP_d$ arba $PER_d$	4,76	—
$T_j = +12\text{ °C}$	$COP_d$ arba $PER_d$	4,84	—
$T_j = (T_{biv})$ - bivalent temperature mode	$COP_d$ arba $PER_d$	-	—
$T_j$ = operating limit temperature	$COP_d$ arba $PER_d$	-	°C
Air-to-water heat pump: $T_j = -15\text{ °C}$ (where TOL < -20°C)	$COP_d$ arba $PER_d$	-	—
Air-to-water heat pump: operating limit temperature	TOL	-	°C
Cyclical efficiency	$COP_{cyc}$ or $PER_{cyc}$	-	— or %
Heating water limit operating temperature	WTOL	60	°C
<b>Supplementary heater</b>			
Rated thermal power	$P_{sup}$	-	kW
Type of energy input	Electricity		
Air-to-water heat pump: rated air flow rate, outdoor	—	-	m <sup>3</sup> /h
Ground-to-water heat pump: water flow, outdoor heat exchanger	-	9	m <sup>3</sup> /h
Contact details	Ozo str. 12A-1, Vilnius, Lithuania		

# Technical data of IGLU® Max 45 fixed capacity heat pump

Model	IGLU Max 45
Air-to-water heat pump	No
Water-to-water heat pump	No
Ground-to-water heat pump	Yes
Low temperature heat pump	No
Equipped with supplementary heater	No
Supplementary heater is used	No

Parameters applied using average temperature are declared. Parameters are declared under average climatic conditions.

Parameter	Conventional representation	Value	Measurement unit
Rated thermal power	$P_{rated}$	44,95	kW
Declared part load heating capacity at 20 °C indoor temperature and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	$P_{dh}$	44,37	kW
$T_j = +2\text{ °C}$	$P_{dh}$	44,78	kW
$T_j = +7\text{ °C}$	$P_{dh}$	44,96	kW
$T_j = +12\text{ °C}$	$P_{dh}$	45,37	kW
$T_j = (T_{biv})$ - bivalent temperature mode	$P_{dh}$	-	kW
$T_j$ = operating limit temperature	$P_{dh}$	-	kW
Air-to-water heat pump: $T_j = -15\text{ °C}$ (where TOL < -20°C)	$P_{dh}$	-	kW
Bivalent temperature	$T_{biv}$	-	°C
Power in cyclic heating mode	$P_{cych}$	-	kW
Decreased efficiency in cyclic mode	$C_{dh}$	0.99	—
<b>Power consumption in modes other than active mode</b>			
Off mode	$P_{OFF}$	0.009	kW
Thermostat-off mode	$P_{TO}$	0.009	kW
Standby mode	$P_{SB}$	0.064	kW
Crankcase heater mode	$P_{CK}$	-	kW
<b>Other parameters</b>			
Capacity control	fixed		
Sound power level, indoors/outdoors	$L_{WA}$	56	dB
Emissions of nitrogen oxides	$NO_x$	-	mg/kWh
Contact details	IGLU TECH UAB		

  

Parameter	Conventional representation	Value	Measurement unit
Seasonal energy efficiency for space heating	$\eta_s$	142	%
Declared efficiency coefficient or ratio of primary energy to radiant heat output at room temperature 20 °C and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	$COP_d$ arba $PER_d$	4,61	—
$T_j = +2\text{ °C}$	$COP_d$ arba $PER_d$	4,72	—
$T_j = +7\text{ °C}$	$COP_d$ arba $PER_d$	4,88	—
$T_j = +12\text{ °C}$	$COP_d$ arba $PER_d$	4,97	—
$T_j = (T_{biv})$ - bivalent temperature mode	$COP_d$ arba $PER_d$	-	—
$T_j$ = operating limit temperature	$COP_d$ arba $PER_d$	-	°C
Air-to-water heat pump: $T_j = -15\text{ °C}$ (where TOL < -20°C)	$COP_d$ arba $PER_d$	-	—
Air-to-water heat pump: operating limit temperature	TOL	-	°C
Cyclical efficiency	$COP_{cyc}$ or $PER_{cyc}$	-	— or %
Heating water limit operating temperature	WTOL	60	°C
<b>Supplementary heater</b>			
Rated thermal power	$P_{sup}$	-	kW
Type of energy input	Electricity		
Air-to-water heat pump: rated air flow rate, outdoor	—	-	m <sup>3</sup> /h
Ground-to-water heat pump: water flow, outdoor heat exchanger	-	12	m <sup>3</sup> /h
Contact details	Ozo str. 12A-1, Vilnius, Lithuania		

# Technical data of IGLU® Max 70 fixed capacity heat pump

Model	IGLU Max 70
Air-to-water heat pump	No
Water-to-water heat pump	No
Ground-to-water heat pump	Yes
Low temperature heat pump	No
Equipped with supplementary heater	No
Supplementary heater is used	No

Parameters applied using average temperature are declared. Parameters are declared under average climatic conditions.

Parameter	Conventional representation	Value	Measurement unit
Rated thermal power	$P_{rated}$	70	kW
Declared part load heating capacity at 20 °C indoor temperature and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	$P_{dh}$	70,04	kW
$T_j = +2\text{ °C}$	$P_{dh}$	70,60	kW
$T_j = +7\text{ °C}$	$P_{dh}$	71,16	kW
$T_j = +12\text{ °C}$	$P_{dh}$	71,78	kW
$T_j = (T_{biv})$ - bivalent temperature mode	$P_{dh}$	-	kW
$T_j$ = operating limit temperature	$P_{dh}$	-	kW
Air-to-water heat pump: $T_j = -15\text{ °C}$ (where $TOL < -20\text{ °C}$ )	$P_{dh}$	-	kW
Bivalent temperature	$T_{biv}$	-	°C
Power in cyclic heating mode	$P_{cyc}$	-	kW
Decreased efficiency in cyclic mode	$C_{dh}$	0.99	—
<b>Power consumption in modes other than active mode</b>			
Off mode	$P_{OFF}$	0.009	kW
Thermostat-off mode	$P_{TO}$	0.009	kW
Standby mode	$P_{SB}$	0.064	kW
Crankcase heater mode	$P_{CK}$	-	kW
<b>Other parameters</b>			
Capacity control	fixed		
Sound power level, indoors/outdoors	$L_{WA}$	72	dB
Emissions of nitrogen oxides	$NO_x$	-	mg/kWh
Contact details	IGLU TECH UAB		

  

Parameter	Conventional representation	Value	Measurement unit
Seasonal energy efficiency for space heating	$\eta_s$	135	%
Declared efficiency coefficient or ratio of primary energy to radiant heat output at room temperature 20 °C and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	$COP_d$ arba $PER_d$	4,59	—
$T_j = +2\text{ °C}$	$COP_d$ arba $PER_d$	4,64	—
$T_j = +7\text{ °C}$	$COP_d$ arba $PER_d$	4,78	—
$T_j = +12\text{ °C}$	$COP_d$ arba $PER_d$	4,97	—
$T_j = (T_{biv})$ - bivalent temperature mode	$COP_d$ arba $PER_d$	-	—
$T_j$ = operating limit temperature	$COP_d$ arba $PER_d$	-	°C
Air-to-water heat pump: $T_j = -15\text{ °C}$ (where $TOL < -20\text{ °C}$ )	$COP_d$ arba $PER_d$	-	—
Air-to-water heat pump: operating limit temperature	TOL	-	°C
Cyclical efficiency	$COP_{cyc}$ or $PER_{cyc}$	-	— or %
Heating water limit operating temperature	WTOL	60	°C
<b>Supplementary heater</b>			
Rated thermal power	$P_{sup}$	-	kW
Type of energy input	Electricity		
Air-to-water heat pump: rated air flow rate, outdoor	—		m <sup>3</sup> /h
Ground-to-water heat pump: water flow, outdoor heat exchanger		17	m <sup>3</sup> /h
Contact details	Ozo str. 12A-1, Vilnius, Lithuania		



## Technical data of IGLU® Max 90 fixed capacity heat pump

Model	IGLU Max 90
Air-to-water heat pump	No
Water-to-water heat pump	No
Ground-to-water heat pump	Yes
Low temperature heat pump	No
Equipped with supplementary heater	No
Supplementary heater is used	No

Parameters applied using average temperature are declared.

Parameters are declared under average climatic conditions.

Parameter	Conventional representation	Value	Measurement unit
Rated thermal power	$P_{rated}$	87	kW
Declared part load heating capacity at 20 °C indoor temperature and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	$P_{dh}$	87,03	kW
$T_j = +2\text{ °C}$	$P_{dh}$	87,35	kW
$T_j = +7\text{ °C}$	$P_{dh}$	87,55	kW
$T_j = +12\text{ °C}$	$P_{dh}$	87,63	kW
$T_j = (T_{biv})$ - bivalent temperature mode	$P_{dh}$	-	kW
$T_j$ = operating limit temperature	$P_{dh}$	-	kW
Air-to-water heat pump: $T_j = -15\text{ °C}$ (where TOL < -20°C)	$P_{dh}$	-	kW
Bivalent temperature	$T_{biv}$	-	°C
Power in cyclic heating mode	$P_{cych}$	-	kW
Decreased efficiency in cyclic mode	$C_{dh}$	0.99	—
<b>Power consumption in modes other than active mode</b>			
Off mode	$P_{OFF}$	0.009	kW
Thermostat-off mode	$P_{TO}$	0.009	kW
Standby mode	$P_{SB}$	0.064	kW
Crankcase heater mode	$P_{CK}$	-	kW
<b>Other parameters</b>			
Capacity control	fixed		
Sound power level, indoors/outdoors	$L_{WA}$	81	dB
Emissions of nitrogen oxides	$NO_x$	-	mg/kWh
Contact details	IGLU TECH UAB		

  

Parameter	Conventional representation	Value	Measurement unit
Seasonal energy efficiency for space heating	$\eta_s$	131	%
Declared efficiency coefficient or ratio of primary energy to radiant heat output at room temperature 20 °C and outdoor temperature $T_j$			
$T_j = -7\text{ °C}$	COP <sub>d</sub> arba PER <sub>d</sub>	4,51	—
$T_j = +2\text{ °C}$	COP <sub>d</sub> arba PER <sub>d</sub>	4,62	—
$T_j = +7\text{ °C}$	COP <sub>d</sub> arba PER <sub>d</sub>	4,74	—
$T_j = +12\text{ °C}$	COP <sub>d</sub> arba PER <sub>d</sub>	4,81	—
$T_j = (T_{biv})$ - bivalent temperature mode	COP <sub>d</sub> arba PER <sub>d</sub>	-	—
$T_j$ = operating limit temperature	COP <sub>d</sub> arba PER <sub>d</sub>	-	°C
Air-to-water heat pump: $T_j = -15\text{ °C}$ (where TOL < -20°C)	COP <sub>d</sub> arba PER <sub>d</sub>	-	—
Air-to-water heat pump: operating limit temperature	TOL	-	°C
Cyclical efficiency	COP <sub>cyc</sub> or PER <sub>cyc</sub>	-	— or %
Heating water limit operating temperature	WTOL	60	°C
<b>Supplementary heater</b>			
Rated thermal power	$P_{sup}$	-	kW
Type of energy input	Electricity		
Air-to-water heat pump: rated air flow rate, outdoor	—	—	m <sup>3</sup> /h
Ground-to-water heat pump: water flow, outdoor heat exchanger	—	23	m <sup>3</sup> /h
Contact details	Ozo str. 12A-1, Vilnius, Lithuania		