



# POLYTROPIC

Pool Heating Solutions



# MASTER-INVERTER

The intelligent swimming pool heat pump!

  
POLYCONNECT  
INSIDE



MASTER INVERTER L and L+

MASTER INVERTER XXS, XS,  
S and S+


MASTER INVERTER  
M and XM

## THE INTELLIGENT POOL HEATING SYSTEM!

Control your heat pump in silence with this swimming pool heat pump with integrated full-Inverter technology.




# Technical specifications

1-PHASE MODEL	Master-Inverter XXS	Master-Inverter XS	Master-Inverter S	Master-Inverter S+	Master-Inverter M	Master-Inverter XM	Master-Inverter L	Master-Inverter L+
Recommended pool size*	15-35 m <sup>3</sup>	35-45 m <sup>3</sup>	45-55 m <sup>3</sup>	55-70 m <sup>3</sup>	70-85 m <sup>3</sup>	85-105 m <sup>3</sup>	105-130 m <sup>3</sup>	130-160 m <sup>3</sup>
<b>Air 26°C / Water 26°C / Humidity 80%</b>								
Energy Output BOOST mode	7,3 kW	9,3 kW	10,6 kW	13,1 kW	16,1 kW	20,4 kW	24,2 kW	27,8 kW
COP BOOST mode	5,9	5,5	5,4	5,6	5,1	5,2	5,4	5,2
Energy Output SMART mode	7,3 ~ 3,2 kW	9,8 ~ 3,5 kW	10,6 ~ 3,9 kW	13,1 ~ 4,2 kW	16,1 ~ 5,5 kW	20,4 ~ 6,5 kW	24,2 ~ 7,8 kW	27,8 ~ 10,5 kW
COP SMART mode	10,8 ~ 5,9	10,8 ~ 5,5	10,8 ~ 5,4	11,2 ~ 5,6	10,8 ~ 5,1	10,1 ~ 5,2	10,8 ~ 5,4	10,1 ~ 5,2
Energy Output ECO-Silent mode	3,2 kW	3,5 kW	3,9 kW	4,2 kW	5,5 kW	6,5 kW	7,8 kW	10,5 kW
COP ECO-Silent mode	10,8	10,8	10,8	11,2	10,8	10,1	10,8	10,1
<b>Air 15°C / Water 26°C / Humidity 70%**</b>								
Energy Output BOOST mode	5,6 kW	6,6 kW	7,8 kW	9,8 kW	11,5 Kw	14,8 kW	18,2 kW	22,8 kW
COP BOOST mode	5,3	5,6	5,2	4,7	4,4	4,5	4,4	4,2
Energy Output SMART mode	5,6 ~ 2,6 kW	6,6 ~ 3,2 kW	7,8 ~ 3,5 kW	9,8 ~ 3,7 kW	11,5 ~ 4,2 kW	14,8 ~ 4,9 kW	18,2 ~ 6,8 kW	22,8 ~ 8,1 kW
COP SMART mode	6,7 ~ 5,3	6,7 ~ 5,6	7,1 ~ 5,2	7,0 ~ 4,7	6,7 ~ 4,4	6,6 ~ 4,5	6,7 ~ 4,4	6,5 ~ 4,2
Energy Output ECO-Silent mode	2,6 kW	3,2 kW	3,5 kW	3,7 kW	4,2 kW	4,9 kW	6,8 kW	8,1kW
COP ECO-Silent mode	6,7	6,7	7,1	7,0	6,7	6,6	6,7	6,5
<b>Air -7°C / Water 26°C / Humidity 0%</b>								
Energy Output BOOST mode	2,8 kW	3,4 kW	4,7 kW	5,5 kW	5,8 kW	8,3 kW	9,7 kW	12,0 kW
COP BOOST mode	2,9	2,8	4,0	3,6	2,8	3,0	3,0	2,8
Noise level min-max (at 10 m) CTTM certified***	22 ~ 26 dB(a)	22 ~ 28 dB(a)	26 ~ 30 dB(a)	26 ~ 31 dB(a)	27 ~ 33 dB(a)	27 ~ 33 dB(a)	28 ~ 34 dB(a)	28 ~ 34 dB(a)
Noise level min-max (10 m) acc. EN ISO 3744 : 2010	21 ~ 23 dB(a)	21 ~ 25 dB(a)	22 ~ 26 dB(a)	23 ~ 28 dB(a)	25 ~ 30 dB(a)	25 ~ 30 dB(a)	26 ~ 31 dB(a)	26 ~ 32 dB(a)
Temperature working range	-15°C -> 38°C							
<b>Components</b>								
Compressor	2D Technology 							
Expansion valve	Electronic							
Exchanger	Optimal Twist							
Housing	UV resistant ABS housing panels, sound insulation of the panels							
Refrigerant	R32							
<b>Installation</b>								
Hydraulic connections	1,5" / 50 mm							
Power	230V / 1~+N / 50 Hz							
Circuit breaker and cable size (for 20m)	C 10 A (3G2,5 mm <sup>2</sup> )	C 10 A (3G2,5 mm <sup>2</sup> )	C 16 A (3G2,5 mm <sup>2</sup> )	C 16 A (3G2,5 mm <sup>2</sup> )	C 20 A (3G4 mm <sup>2</sup> )	C 25 A (3G6 mm <sup>2</sup> )	C 25 A (3G6 mm <sup>2</sup> )	C 25 A (3G6 mm <sup>2</sup> )
Power Input Max (air 28°C)	1,3 kW	1,8 kW	2,0 kW	2,4 kW	3,2 kW	3,8 kW	4,5 kW	5,4 kW
Minimum water flow	4 m <sup>3</sup> /h			5 m <sup>3</sup> /h			6 m <sup>3</sup> /h	
Dimensions in mm (L x l x h)	967 x 358 x 593	967 x 358 x 593	967 x 358 x 593	967 x 358 x 593	1070 x 430 x 690	1070 x 430 x 690	1110 x 530 x 830	1120 x 530 x 830
Weight (net)	45 kg	46 kg	48 kg	49 kg	60 kg	63 kg	93 kg	94 kg

\* May to September with cover.

\*\* Tests run with air temperature of 15°C, water inlet temperature of 26°C and water outlet temperature of 28°C in order to define the required water flow, heating capacity and consumption. In accordance with FPP recommendations (French Pool Federation).

\*\*\*The BOOST and ECO mode noise levels at 10 m are certified by the independent testing laboratory of Centre de Transfert de Technologie du Mans (CTTM) according to EN ISO 3741 : 2010.

3-PHASE MODEL	Master-Inverter M Tri	Master-Inverter XM Tri	Master-Inverter L Tri	Master-Inverter L+Tri	Master-Inverter XL Tri
Recommended pool size*	70-85 m <sup>3</sup>	85-105 m <sup>3</sup>	105-130 m <sup>3</sup>	130-160 m <sup>3</sup>	160-190 m <sup>3</sup>
<b>Air 26°C / Water 26°C / Humidity 80%</b>					
Energy Output BOOST Mode	16,1 kW	20,4 kW	24,2 kW	27,8 kW	33,2 kW
COP BOOST mode	5,1	5,2	5,4	5,2	4,8
Energy Output SMART mode	16,1 ~ 5,5 kW	20,4 ~ 6,5 kW	24,2 ~ 7,8 kW	27,8 ~ 10,5 kW	33,2 ~ 12,4 kW
COP SMART mode	10,8 ~ 5,1	10,1 ~ 5,2	10,8 ~ 5,4	10,1 ~ 5,2	9,8 ~ 4,8
Energy Output ECO-Silent mode	5,5 kW	6,5 kW	7,8 kW	10,5 kW	12,4 kW
COP ECO-Silent mode	10,8	10,1	10,8	10,1	9,8
<b>Air 15°C / Water 26°C / Humidity 70%**</b>					
Energy Output BOOST mode	11,5 kW	14,8 kW	18,2 kW	22,8 kW	28,0 Kw
COP BOOST mode	4,4	4,5	4,4	4,2	4,0
Energy Output SMART mode	11,5 ~ 4,2 kW	14,8 ~ 4,9 kW	18,2 ~ 6,8 kW	22,8 ~ 8,1 kW	28,0 ~ 9,6 kW
COP SMART mode	6,7 ~ 4,2	6,6 ~ 4,5	6,7 ~ 4,4	6,5 ~ 4,2	6,2 ~ 4,0
Energy Output ECO-Silent mode	4,2 kW	4,9 kW	6,8 kW	8,1 kW	9,6 kW
COP ECO-Silent mode	6,7	6,6	6,7	6,5	6,2
<b>Air -7°C / Water 26°C / Humidity 0%</b>					
Energy Output BOOST mode	5,8 kW	8,3 kW	9,7 kW	12,0 kW	14,7 kW
COP BOOST mode	2,8	3,0	3,0	2,8	2,7
Noise level min-max (at 10 m) CTTM certified***	27 ~ 33 dB(a)	27 ~ 33 dB(a)	28 ~ 34 dB(a)	28 ~ 34 dB(a)	35 ~ 41 dB(a)
Noise level min-max (10 m) acc. EN ISO 3744 : 2010	25 ~ 30 dB(a)	25 ~ 30 dB(a)	26 ~ 31 dB(a)	26 ~ 32 dB(a)	32 ~ 38 dB(a)
Temperature working range	-15°C -> 38°C				
<b>Components</b>					
Compressor	2D Technology 				
Expansion valve	Electronic				
Exchanger	Optimal Twist				
Housing	UV resistant ABS housing panels, sound insulation of the panels				Galvanized Steel
Réfrigérant	R32				
<b>Installation</b>					
Hydraulic connections	1,5" / 50 mm				
Power	380V / 3~+N / 50 Hz				
Circuit breaker and cable size (for 20m)	C 16 A (5G2,5 mm <sup>2</sup> )				
Power Input Max (air 28°C)	3,2 kW	3,8 kW	4,5 kW	5,4 kW	6,9 kW
Minimum water flow	6 m <sup>3</sup> /h				7 m <sup>3</sup> /h
Dimensions in mm (L x l x h)	1070 x 430 x 690	1070 x 430 x 690	1110 x 530 x 830	1110 x 530 x 830	1220 x 470 x 1175
Weight (net)	60 kg	63 kg	93 kg	94 kg	96 kg

\* May to September with cover.

\*\* Tests run with air temperature of 15°C, water inlet temperature of 26°C and water outlet temperature of 28°C in order to define the required water flow, heating capacity and consumption. In accordance with FPP recommendations (French Pool Federation).

\*\*\*The BOOST and ECO mode noise levels at 10 m are certified by the independent testing laboratory of Centre de Transfert de Technologie du Mans (CTTM) according to EN ISO 3741 : 2010.



The **exclusive intelligent system** integrated into Master-Inverter heat pumps regulates the output in relation to the water temperature but also takes into consideration the outside air temperature. This guarantees **heating performance at the best COP\* level and lowest noise level!**

- Very low noise levels.
- \*COP: 30 to 40% more efficient.
- 3 operating modes: BOOST, SMART and ECO-Silence.



MASTER INVERTER XL 3-phase



Mode BOOST

this mode uses 85 to 100% of the pump's capacity in order to ensure quick heating of the swimming pool,



Mode SMART

the output and the noise levels are automatically optimized considering the air and the water temperature,



Mode ECO-SILENT

this mode uses 25 to 60% of the pump's capacity, the fan works at the minimal necessary speed to minimize noise level and the compressor prioritises the COP.

e.g.: simplified operation of the Master-Inverter heat pump in SMART mode

	Power	COP	Noise levels
Cold air and cold water	high	standard	standard
Cold air and warm water	average	average	low
Warm air and warm water	minimum	maximum	minimum

## Aquavariation software

Choosing the right power for your heat pump means, above all, **optimising your energy consumption, controlling your budget and maximising your enjoyment.**

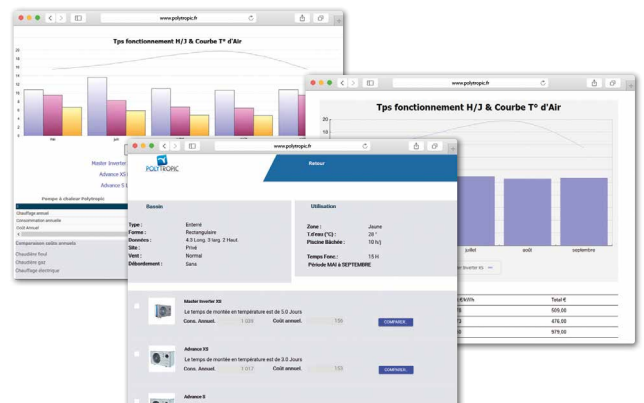
We have developed **thermodynamic calculation software** based on heat transfer equations to precisely determine the pool's thermal losses. This **allows you to compare and choose the most suitable heat pump for your customer's pool.**

Thanks to our Aquavariation software, **you can also estimate the energy consumption of the selected heat pump.**

Available online, Aquavariation is easy to use on **tablets, PCs and smartphones.**



AQUAVARIATION



# Features and benefits



## SIMPLE AND INTUITIVE OPERATION

Color digital touch screen.

**Three operating modes:**

**Heating, Cooling and Automatic.**

## OPTIMAL PERFORMANCES



**Optimal Twist:** Titanium exchanger in a PVC housing, efficient and corrosion resistant.



**2D Technology:** inverter compressor, higher COP thanks to the Hz by Hz variable speed motor.



**DC Brushless:** variable speed fan motor ensures optimal performances.



## INTELLIGENT OPERATING MODE

**PolySmart Control:** the heat pump autoregulates its output depending on the water and air temperature.



## LOW NOISE LEVELS

Noise reduction insulation on all panels and rotation speed of the compressor and fan automatically adjusted to reduce noise to the minimum.



## CONNECTED SOLUTION

**PolyConnect inside :** WiFi included. Remote management with a smartphone and supervision by our TechniCenter.



## EXCLUSIVE «LOW TEMPERATURE» SYSTEM

- Reverse-cycle defrosting,
- Preheating of the compressor housing,
- Antifreeze system for the evaporators condensation,
- Automatic piloting of the 'low temperature' system.

**INCLUDED ACCESSORIES :** winter cover, 50 mm hydraulic connection kit, 4 «Silent block» anti-vibration pads, condensate drainage kit, multilingual user and maintenance manual.

# PolySmart Control: a sizeable asset

## EXCLUSIVE REGULATION AND ENERGY SAVINGS

- **Optimization of the power required for maintaining the temperature of the pool** by cross-referencing air temperature with water temperature data
- **Anticipation of the pool's energy needs** thanks to an advanced double-entry regulation.
- **An overall higher COP** during the season and **lower noise levels.**
- Inverter compressor with «oversized» exchangers = higher COP.
- Brushless variable speed fan = lower noise levels
- Combination of the Inverter compressor and the Brushless fan motor = **automatic regulation of the power when the pool does not require full power.**

## 3 OPERATING MODES



BOOST

*The heat pump will raise its heating capacity to near full capacity in order to heat the pool water rapidly.*



SMART

*The output and the noise levels are automatically optimized considering the air and the water temperature.*



ECO-SILENT

*the maximum power output is limited in order to prioritize noise over heating power.*

HIGHER COP



LOWER electricity bill



LOWER noise levels



BETTER user comfort



# Colour touch screen

## A LARGE AND HIGHLY RESPONSIVE COLOR TOUCH SCREEN

- High capacitive **TFT touch screen** and large size for **good readability**: L 72 x H 68 mm, 4" diagonal (over 10.5 cm) .
- Protected by a **layer of thermal toughened glass** to ensure **maximal resistance**.
- The transparent protective door protects the display from climatic conditions, dust and scratches. The screen and internal components are protected from damage.

# Intuitive user interface

## THE MULTILINGUAL CONTROL INTERFACE

Clear operations and intuitive navigation:



Access the 3 intuitive operating modes in a single gesture!



Alarm messages, diagnostics and problem resolutions, hotline contact



Access to the last 50 log-book events



Easily **connect** the heat pump by scanning the QR code, **control** via the free app and **get secure remote monitoring for preventive maintenance and remote diagnosis by Polytronic technicians**.



The Polyconnect application offers an additional **2 Year warranty on all parts \***



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