

EVAstream

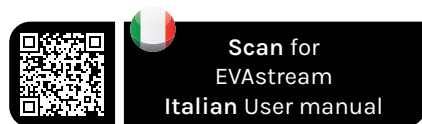
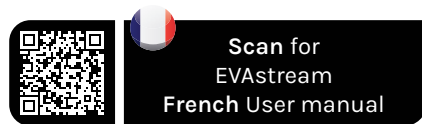


USER MANUAL

A step-by-step user's guide to getting started

TABLE OF CONTENTS

1	Important safety instructions	4
2	Overview EVAstream installation	6
3	Create the best swimming zone	12
4	Cleaning and maintenance	14
5	Remote control	15
6	EVA Experience Web App	16
7	Safety standards	17
8	General safety instructions	18
9	When the EVAstream should not be used	19
10	Using the EVAstream safely	20
11	Water values	22
12	Environmental conditions for EVAstream use	23



1. IMPORTANT SAFETY INSTRUCTIONS

Important safety instructions: rotating parts

The EVAstream Move is a powerful machine with rotating parts. Safety measures have been taken to ensure the safety of fingers, toes and also to prevent hair entanglement. Nevertheless, you should always maintain a safe distance from the machine.

Despite the safety measures implemented to prevent hair entanglement, every EVAstream user is advised to wear a swim cap. EVAstream complies with the following safety standards: DIN EN16582-1/2/3, EN16713-2 (residential pools) and EN13451-1/3 (commercial pools).

Important safety instructions: child supervision and safety

The EVAstream should not be used by children under 8 years old. Children under 16 years of age should never use EVAstream without adult supervision. The EVAstream Move may only be placed in the pool by an adult.

The EVAstream Move is not a toy. Keep your distance from the machine and absolutely do not hang from, pull on or sit on top of the turbine.



Never use or store the EVAstream in a room/area where the temperature is below the freezing point.

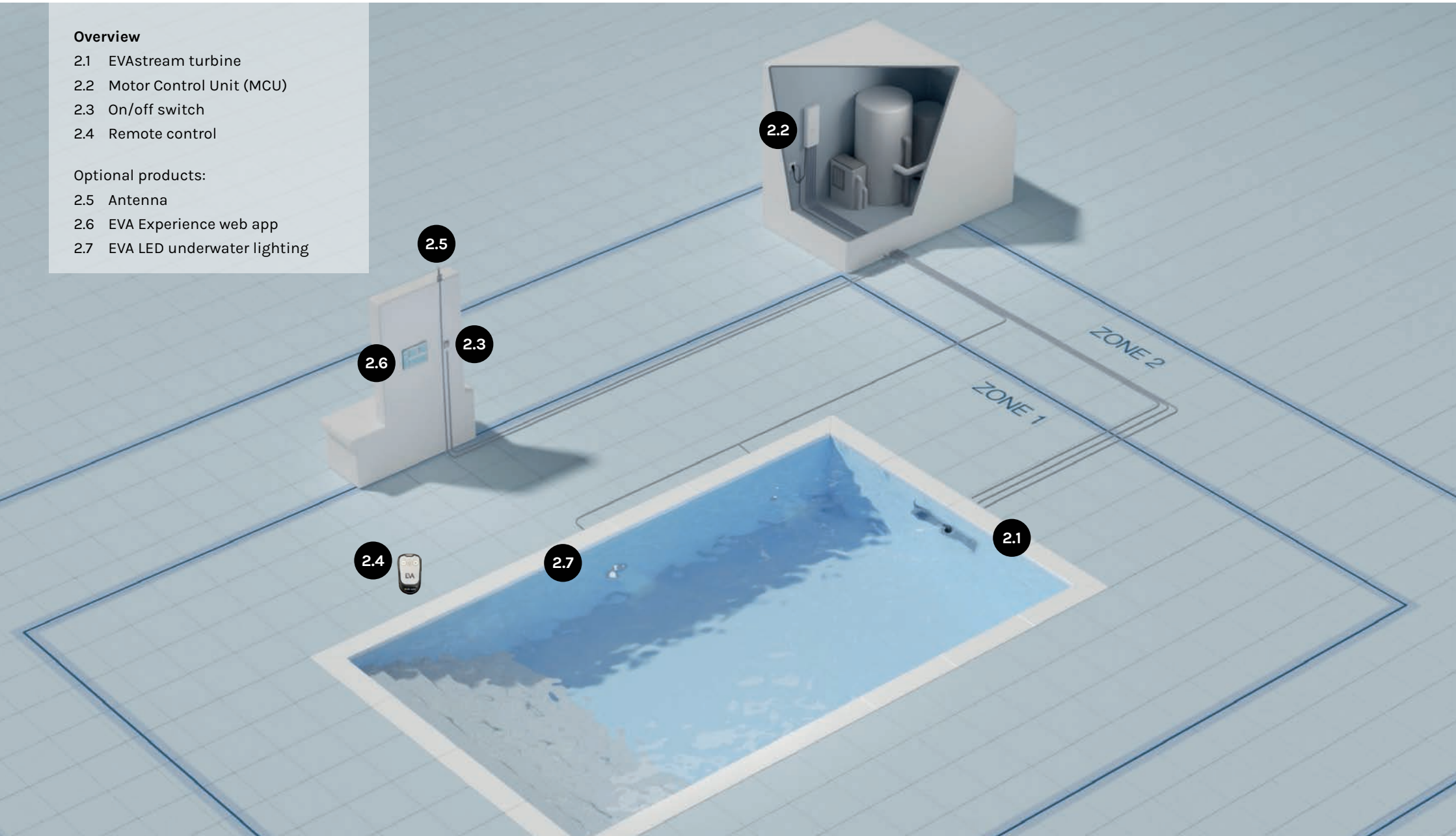
2. OVERVIEW EVASTREAM INSTALLATION

Overview

- 2.1 EVAstream turbine
- 2.2 Motor Control Unit (MCU)
- 2.3 On/off switch
- 2.4 Remote control

Optional products:

- 2.5 Antenna
- 2.6 EVA Experience web app
- 2.7 EVA LED underwater lighting



2.1 EVAstream Turbine



EVAstream FIT



EVAstream PRO



EVAstream MAX

The EVAstream is a counter-current machine. Water suction takes place through the grids around the machine. Always make sure that the suction parts are completely free of obstacles. These parts of the machine must not be closed or blocked in any way.

General specifications

Power input	230 VAC; 11A
Cable motor	5 m, 16 mm ² <ul style="list-style-type: none"> Extend with max 20m using 25mm² cable Extend with max 25m using 35mm² cable (Flexible cable of fine copper wire strands)

Electrical specifications - AC/DC Power Supply / INPUT

Voltage range	180-264 Vac		
	254-370VDC		
Frequency range	47-63Hz		
AC current (230VAC)	FIT: 5.5A	PRO: 9A	MAX: 11A
Nominal power	FIT: 1200VA	PRO: 2000VA	MAX: 2400VA
Power factor (type)	>0.9		

Electrical specifications - AC/DC Power Supply / OUTPUT

DC bus voltage (stabilized)	FIT: 26Vdc	PRO: 28Vdc	MAX: 28Vdc
DC current	FIT: 46A	PRO: 71A	MAX: 86A

Protections

Short circuit, overload, over voltage, over temperature.

Safety standards

SELV, UL62368-1, CSA C22.2 No. 62368-1, TUV EN62368-1 + A11, EAC TP TC 004, BSMI CNS14336-1 approved, EN55032 (CISPR32) Class A/B, EN61000-3-2/3, EN61000-4-2/3/4/5/6/8/11, EN55024, EN61204-3, EN61000-6-2, BSMI CNS13438.

2.2 Motor Control Unit (MCU)

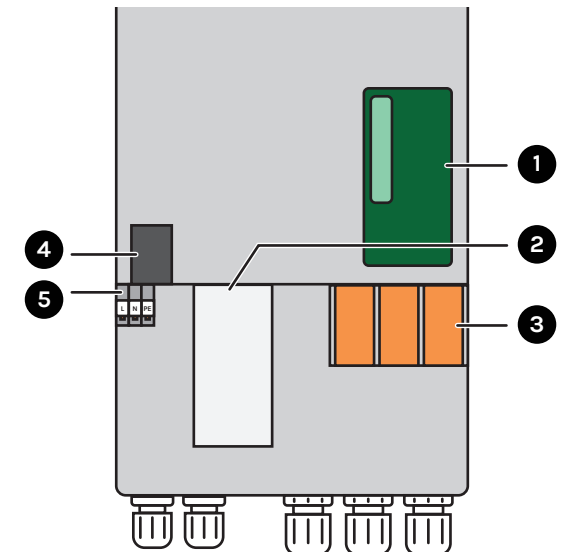
The motor control unit (MCU) of the EVAstream is placed in the technical area near the pool (a dry and condensation-free environment, zone 2).



Image: Motor Control Unit (MCU) >

Connections MCU

1. Control print (32 pins)
2. Remote receiver
3. EVAstream turbine connection
4. UTP connector
5. Power connection



Electrical specifications - MCU

Control input	DMX512
Motor PMSM 3xDC Output	RPM range - 10-100%
IP rating	IP20
EVAstream Max dimensions	660x224x116 mm (cable gland on bottom)
EVAstream Pro/Fit dimensions	660x186x116 mm (cable gland on bottom)

Working temperature

Max. 32°C, mount in a dry and condensation-free area. Provide space around the MCU for efficient heat management. Sides at least 5 cm and top bottom at least 10 cm.

Safety measures

EVA Torque control, Voltage/current control and Mosfet temperature control.

2.3 On/off switch

If the EVAstream is permanently connected to 230V mains the installation must additionally be equipped with an on/off switch mounted near the swimming pool where the EVAstream is located.

After use, the power has to be switched off.

2.4 Remote control**Electrical specifications - Receiver**

Radio frequency band	433.92 MHz
Antenna	BNC connector, external antenna optional (preferably dipole antenna for DIN-receivers and 1/2 - or 1/4 antenna for wall mounting The antenna is supplied as standard with a 10 m. cable.

Electrical specifications - Remote control

Radio frequency band	433.92 MHz
On/off switch	included
IP-rating	IP67
Environmental conditions	-20°C to +55°C / -4°F to +130°F
Moisture	10-90%
Dimensions	65x 112 x 35 mm / 2.6 x 4.4 x 1.4 inch

OPTIONAL PRODUCTS**2.5 Antenna**

If the remote control has insufficient range, the supplied antenna can be installed.

General specifications

Frequency	433.92 MHz
Weight	426 grams
Dimensions	33x195x33 mm
Range	50 m, in open field

2.6 EVA Experience web app

Use the EVA Experience web app to manage the EVAstream.

For instructions on how to set up the tablet environment, please refer to chapter 6.

2.7 EVA LED underwater lighting

The EVA RGBW LED underwater pool lighting complete the counter current pool experience.

The underwater lighting guides you through the training.

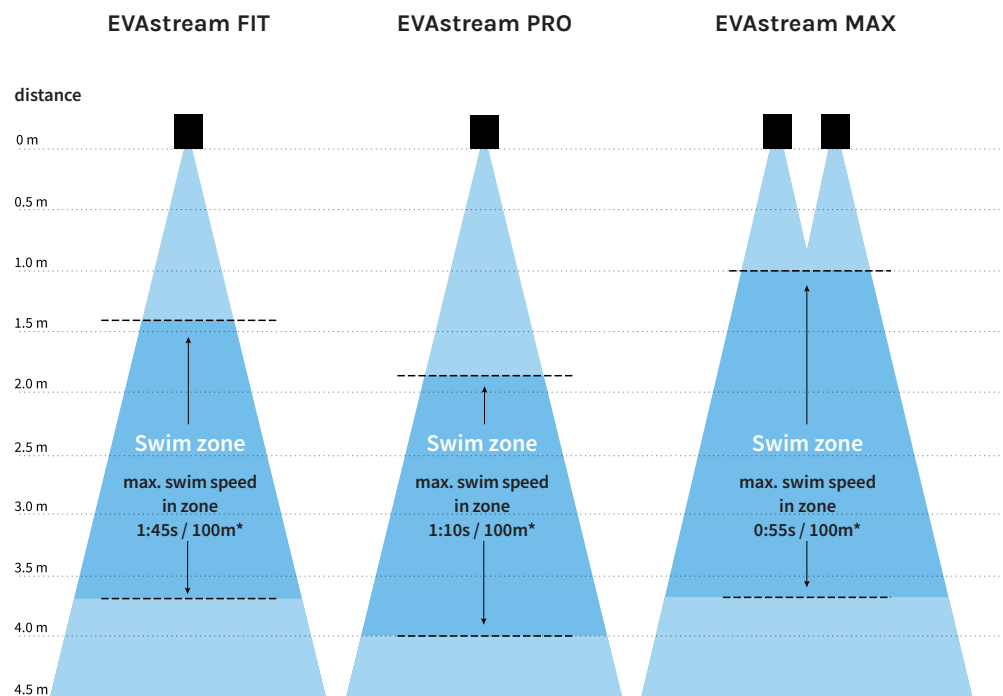


Scan the QR-code
to go to the manual

3. CREATE THE BEST SWIMMING ZONE

1. Determine swimming zone

You start by determining your swimming zone, see the image below:

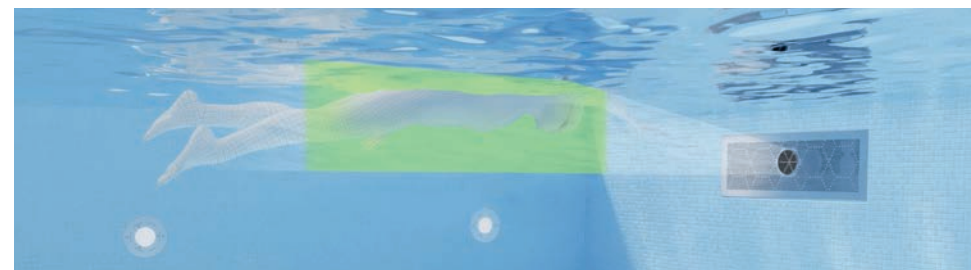


*Measurements based on an adult professional swimmer.
Body size and mass affect swim speed.



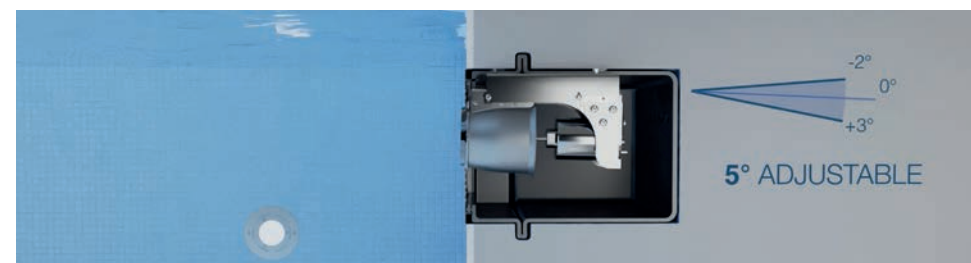
2. Turbine placement of the EVAstream at 250 mm

We advise that you position the turbine 250 millimetres (measured from the centre of the turbine) below water level. Mount the EVAstream centred horizontally, in the middle of the wall.



3. Check the swimming zone

The flow is directed at the torso and not at the head, so that there is free breathing space while swimming. The current is also wide and stable enough to encompass the entire body. When you swim over the water flow, or you get water in your face, the turbine has to be adjusted.



4. Adjust the turbine if necessary

If the customer requests it, you can adjust the angle of the turbine a little higher or lower with the adjustment jig. The turbine can be adjusted a maximum of 2 degrees downwards or 3 degrees upwards using the adjustment bolts on the side. This way you ensure that every customer has an optimal swimming experience.

4. CLEANING AND MAINTENANCE

4.1 Read before cleaning

WARNING

You should first make sure that the installation is completely voltage-free by removing the plug from the socket. If the installation is permanently connected to 230V mains, switch off the main switch/isolation switch (mounted in the technical space near the Motor Control Unit) before you start working. It is not enough to use the on/off switch, as this does not make the installation completely voltage-free. You must use the isolation switch to de-energise the entire installation!

4.2 Cleaning after use, winter storage and maintenance

NOTICE

- The EVAstream comes equipped with a connection cable with a power plug. Before carrying out any maintenance, you must remove the plug from the socket, disconnecting the installation from the power supply.
- The flexible surface-mounted version (mounted with EVA-SM-A00/A01/A02/A03) of the EVAstream can easily be attached to the pool wall before use and removed again after use. We advise you to remove the machine from the pool when you are not using it.
- If you do not heat the pool during the autumn/winter period, remove the EVAstream (turbine) from the pool. The EVAstream turbine must remain frost-free. If the EVAstream or parts of it are frozen, it can cause irreparable damage to the machine.
- It is not permitted to use the EVAstream if the power cable is damaged. Always ensure the safety of yourself and other users, especially when using electrical devices in and near water.
- Never clean the machine with concentrated cleaning agents.
- At the end of the life cycle of the EVAstream, the device/parts must be sent, in accordance with your local guidelines, to the appropriate collection points.

5. REMOTE CONTROL

The Remote control is automatically connected to the EVAstream.

If you also want to control the lighting with the remote control, this group must be switched on manually. You can enable this in the EVA Experience web app (chapter 6).

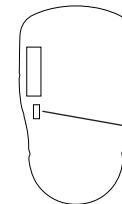
The Remote control has the following control options:

1. EVA Remote control options



ON/OFF button	EVAstream ON/OFF
Button +	
Short press:	increase intensity 5%
Long press:	increase intensity as long as you press for a stepless increase in speed
Button -	
Short press:	decrease intensity 5%
Long press:	decrease intensity as long as you press for a stepless decrease in speed

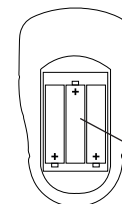
2. On/off Switch



The remote control has an on/off switch on the back. The on/off switch disconnects power from the battery. In the 0/off position, the remote control will not function.

The on/off switch has 2 positions:
1 = on
0 = off

3. Replacing the batteries



1. Remove the back piece (3 screws).
2. Remove the batteries.
3. Insert the new batteries.
4. Replace the back piece (3 screws).

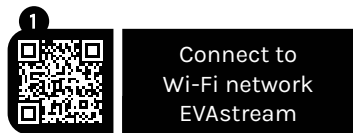
Battery type: 2x AAA 1.5 V Alkaline
Remove the batteries during long-term storage.

6. EVA EXPERIENCE WEB APP

By default, the EVAstream is controlled with the included remote control. In addition, the EVA Experience web app can be added for an enhanced swimming experience.

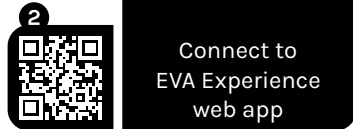
We have developed a complete training program for swimmers of every age and every skill level. The workouts consist of interval, sprint and endurance elements and increase in duration and intensity. Use the EVA Experience web app as your very own personal swimming trainer!

For installing and setting up the web app, scan the QR codes below:



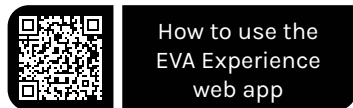
1
Connect to
Wi-Fi network
EVAstream

SSID: EVAstream
Password: U1yW5mdM



2
Connect to
EVA Experience
web app

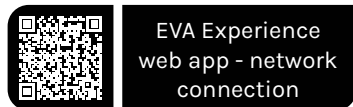
IP-address: 192.168.4.1 (Android)
Local-host: evacontroller.local (IOS)



How to use the
EVA Experience
web app



If you are unable to connect to the EVAstream Wi-Fi network (step 1), please visit the step-by-step overview on our website for alternate connection options:



EVA Experience
web app - network
connection

7. SAFETY STANDARDS

The EVAstream swimming machine is an extra low voltage (ELV) system. Due to the very low voltage, the machine is suitable for use in both private and public swimming pools. Due to the very low voltage, the EVAstream swimming machines fall well outside of the scope of both the Machinery Directive 2006/42/EC (1000Vac/1500Vdc or higher) and the Low Voltage Directive 2014/35/EU (50Vac/75Vdc - 1000Vac/1500Vdc). Although the EVAstream (with a maximum of 30Vdc) falls well outside of the scope of these standards, all EVAstream models meet the relevant safety requirements as stated in both guidelines.

Specific safety standards for swimming pool products and installations

All EVAstream models comply with the following specific standards and guidelines for use in swimming pools. These standards focus, among other things, on electrical safety, electromagnetic interference and protection against hair entanglement (hair safety).

NEN-EN 16582-1/2/3:2015+A1:2021

Swimming pools for private use -

Part 1: General requirements, including safety requirements and test methods

Part 2: Specific requirements, including safety requirements and test methods for inground swimming pools

Part 3: Specific requirements, including safety requirements and test methods, for above-ground swimming pools

NEN-EN 16713-2:2016

Swimming pools for private use - Water systems -

Part 2: Circulation systems - Requirements and test methods

NEN-EN 13451-1:2020

Swimming pool equipment -

Part 1: General safety requirements and test methods

for swimming pool equipment installed in public swimming pools

NEN-EN 13451-3:2022

Swimming pool equipment -

Part 3: Additional specific safety requirements and test methods for swimming water inlets and outlets and for water/air based water attractions

EN 60364-7-702/ DIN VDE 0100-702:2012-03

Low-voltage electrical installations -
Part 7-702: Requirements for special installations, rooms and areas -
Swimming pools and fountains

Directive 2014/30/EU

Electromagnetic Compatibility (EMC)

Battery charging system

IEC EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2: 2013

IEC EN 55022:2010+AC:2011

IEC EN 55024:2010+A1:2015

IEC EN 61000-3-2:2019

IEC EN 61000-3-3:2013+A1:2019

IEC EN 61000-4-2/3/4/5/6/11

IEC EN 55032:2015

IEC EN 55035:2017

UN 38.3

UN 3481

IEC EN 62133

8. GENERAL SAFETY INSTRUCTIONS**8.1 Read before use**

- Follow the directions for electrical installation and use carefully.
- Failure to comply or inadequate compliance with these important instructions can result in serious personal injury or property damage.
- We do not accept any claim under warranty and/or liability for material and/or intangible damage as a result of failure to comply with these regulations regarding installation, mounting, and use.
- The general terms and conditions of EVA Tech B.V. apply to all our offers and agreements. EVA Tech B.V. expressly rejects the applicability of the general (purchasing) conditions of counterparties. The warranty provisions of the EVAstream and the general terms and of EVA Tech B.V. apply to all our offers and agreements.

8.2 Important general information

- EVAstream is a powerful machine. The machine includes a very powerful motor with rotating parts. As with any machine, always consider your safety and the safety of others when using it.
- The EVAstream Move is a powerful machine with rotating parts. Safety measures have been taken to ensure the safety of fingers, toes and also to prevent hair entanglement. Nevertheless, you should always maintain a safe distance from the machine.
- Despite the safety measures implemented to prevent hair entanglement, every EVAstream user is advised to wear a swim cap. EVAstream complies with the following safety standards: DIN EN16582-1/2/3, EN16713-2 (residential pools) and EN13451-1/3 (commercial pools).

9. WHEN SHOULD THE EVASTREAM NOT BE USED

People who do not have an official certificate of swimming proficiency (swimming diploma) may under no circumstances use the EVAstream.

- The EVAstream should not be used by children under 8 years old.
- Children under 16 years of age should never use EVAstream without adult supervision.
- Never leave children alone when the EVAstream is on or can be easily turned on.
- Always keep your attention on the swimmer.
- The EVAstream should not be used by persons with limited physical and/or sensory, or mental capabilities unless they are under the supervision of a qualified person responsible for their safety.
- Using the EVAstream if you have consumed alcohol, drugs, or medication that affects your ability to react is not permitted.
- Not for use in potentially explosive areas.
- Not for use in any aggressive environments (in the presence of gases, acids, vapours, substances, oils).
- Not for use in dirty water.
- The turbine should never be used outside of the water. Doing so will void the warranty.

10. USING THE EVASTREAM SAFELY

10.1 Read before use

- Every user and operator of the EVAstream must read the operating instructions in full, in advance. The regulations must be followed carefully at all times.
- Make sure that there are no people near the suction and outflow area of the turbine before turning on the EVAstream.
- The machine may only be operated under water. The machine must always be fully submerged before use. Serious and permanent damage to the machine can occur if the EVAstream is not submerged during use.
- The water (water values) and surroundings must meet the requirements for environmental conditions.
- Installation depth: the EVAstream can be placed at a maximum of 50 cm below water level.
- The machine and the pool in which it is placed must be free of obstacles before turning on the machine. Small objects and toys must be removed from the water and from the bottom to avoid damage to the machine.
- The EVAstream is only intended to be used as a counter-current swimming machine.
- Use for any other purpose must be discussed with the manufacturer in advance and must be documented in writing.
- Make sure that EVAstream users always read these instructions before use.
- Store these operating instructions in an easily accessible place near the machine.

10.2 Rules for a safe use

- Despite the safety measures implemented to prevent hair entanglement, every EVAstream user is advised to wear a swim cap. Wearing a swim cap enhances your safety and swimming experience.
- Make sure that there are no people near the suction and outflow area of the turbine before turning on the EVAstream.
- The suction of water takes place around the machine.
Always make sure that the suction parts are completely free of obstacles. These parts of the machine must never be closed or blocked in any way. This not only provides an adequate supply of water, but it also ensures that the suction power always remains within the required levels (EN 13451-1/3).
- When operating the EVAstream, always ensure that the machine and pool in which it is located are in sight.
- Make sure that toys and small parts have been removed from the water and the bottom of the pool before switching on the EVAstream.
- Always maintain a sufficient distance from the EVAstream for your safety. Sufficient distance is at least 50 cm on both the front and the sides.
- Consider the force of the flow when using the EVAstream.
Adjust the speed to the strength and skill of the user.
- Ensure that no people stand, sit, or otherwise place weight on the machine.
- Never submerge the battery control unit of the EVAstream. The battery control unit should always be kept dry.

11. WATER VALUES

The user of the EVAstream is responsible for providing the right conditions for an optimal product life cycle. To fulfil the warranty conditions, the EVAstream should only be used in pools with a water composition within the following limits:

- Water temperature: +1°C to +35°C
- pH value: 6.8 – 7.8
- Maximum chlorine levels for water:
 - Indoor swimming pool – Free available chlorine (FAC): $0.5 \leq \text{VBC} \leq 1.5 \text{ mg/l}$
 - Open-air swimming pool $\geq 20 \text{ m}^2$ – Free available chlorine (FAC): $0.5 \leq \text{VBC} \leq 3.0 \text{ mg/l}$
 - Open-air swimming pool $< 20 \text{ m}^2$ – Free available chlorine (FAC): $0.5 \leq \text{VBC} \leq 5.0 \text{ mg/L}$
 - All basins – Bound available chlorine: $< 0.6 \text{ mg/l}$
- The basin and the available accessories must be free of electrolysis.
- Installation housing must be properly earthed to prevent electrolysis.
- Cyanuric acid: $\leq 100 \text{ mg/l}$
- Metals: $\approx 0 \text{ mg/l}$
- Carbonate hardness: $\geq 2^\circ\text{dH}$ ($^\circ\text{dH} = \text{mmol/l} \times 2.8$); ($^\circ\text{eH} = \text{mmol/l} \times 3.5$); ($^\circ\text{fH} = \text{mmol/l} \times 5.0$)
- Ozone: 0 mg/l
- Chlorite + chlorate: $\leq 30 \text{ mg/l}$
- Redox potential: $\geq 700 \text{ mV}$

12. ENVIRONMENTAL CONDITIONS FOR EVASTREAM USE

12.1 Ambient temperature of power supply box
(mounted in a dry, condensation-free room)
0°C to 32°C

12.2 Water temperature
+1°C to +35°C



EVA Tech B.V.

de Velde 1

8064 PH Zwartsluis

The Netherlands

+31 (0)38 - 33 75 067

info@evaoptic.com

evaoptic.com