

EVAstream

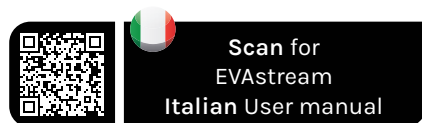
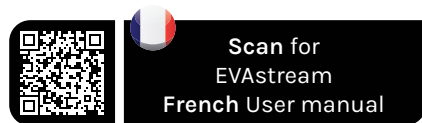


## **USER MANUAL**

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

## TABLE OF CONTENTS

|          |  |           |
|----------|--|-----------|
| <b>1</b> | <b>Important safety instructions</b>               | <b>5</b>  |
| <b>2</b> | <b>Overview EVAstream installation</b>             | <b>6</b>  |
| 2.1      | EVAstream turbine + MCU                            | 8         |
| 2.2      | EVAstream turbine + MCU                            | 10        |
| 2.3      | ECA Control  | 14        |
| 2.4      | On/off switch                                      | 16        |
| 2.5      | Remote control                                     | 16        |
| 2.6      | Antenna  | 17        |
| 2.8      | EVA LED underwater lighting                        | 17        |
| <b>3</b> | <b>Create the best swimming zone</b>               | <b>18</b> |
| <b>4</b> | <b>Cleaning and maintenance</b>                    | <b>21</b> |
| 4.1      | Read before cleaning                               | 21        |
| 4.2      | Cleaning after use, winter storage and maintenance | 21        |
| <b>5</b> | <b>Remote control</b>                              | <b>22</b> |



|           |   |           |
|-----------|---|-----------|
| <b>6</b>  | <b>EVA Experience Web App</b>                     | <b>23</b> |
| <b>7</b>  | <b>Safety standards</b>                           | <b>24</b> |
| <b>8</b>  | <b>General safety instructions</b>                | <b>26</b> |
| 8.1       | Read before use                                   | 26        |
| 8.2       | Important general information                     | 26        |
| <b>9</b>  | <b>When the EVAstream should not be used</b>      | <b>27</b> |
| <b>10</b> | <b>Using the EVAstream safely</b>                 | <b>28</b> |
| 10.1      | Read before use                                   | 28        |
| 10.2      | Rules for a safe use                              | 29        |
| <b>11</b> | <b>Water values</b>                               | <b>30</b> |
| <b>12</b> | <b>Environmental conditions for EVAstream use</b> | <b>31</b> |

## 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.

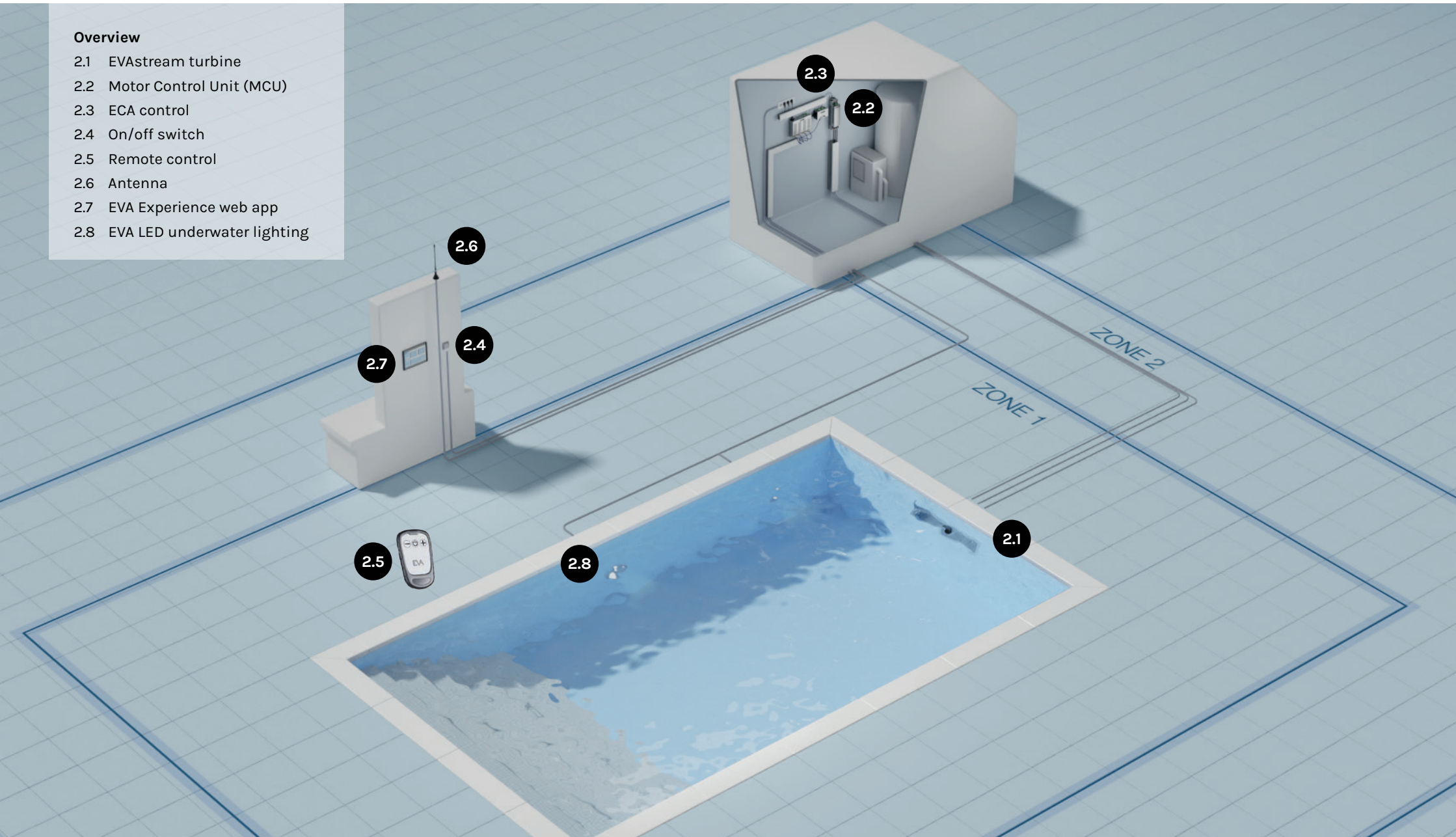


Never use or store the EVAstream in a room/area where the temperature is below the freezing point.

## 2. OVERVIEW EVASTREAM INSTALLATION

### Overview

- 2.1 EVAstream turbine
- 2.2 Motor Control Unit (MCU)
- 2.3 ECA control
- 2.4 On/off switch
- 2.5 Remote control
- 2.6 Antenna
- 2.7 EVA Experience web app
- 2.8 EVA LED underwater lighting



## 2.1 + 2.2 EVAstream turbine + MCU

Recreational swimmer

**EVAstream NEXT 175**



**EVAstream NEXT 225**



|                                      |   |   |
|--------------------------------------|---|---|
| <b>Recommended use</b>               | Recreational swimmer                            | Recreational swimmer                            |
| <b>Water flow capacity</b>           | 35 - 175 m <sup>3</sup> /h<br>(adjustable flow) | 45 - 225 m <sup>3</sup> /h<br>(adjustable flow) |
| <b>Volume displacement</b>           | 0,8 - 4,3 m/s                                   | 1,1 - 5,5 m/s                                   |
| <b>Max. waterflow speed swimzone</b> | 2:15 sec. per 100 meter                         | 1:40 sec. per 100 meter                         |
| <b>Minimum pool dimensions</b>       | 4,5 x 2,5 meter (lxb)                           | 4,5 x 2,5 meter (lxb)                           |
| <b>Warranty</b>                      | 2-3 years factory warranty*                     | 2-3 years factory warranty*                     |

\* Register your product at [www.evaoptic.com](http://www.evaoptic.com) for 3 years warranty

|                           |                                       |                                       |
|---------------------------|---------------------------------------|---------------------------------------|
| <b>Turbine</b>            |                                       |                                       |
| <b>Number of turbines</b> | 1 turbine                             | 1 turbine                             |
| <b>Cable type</b>         | 3x1x16 mm <sup>2</sup>                | 3x1x16 mm <sup>2</sup>                |
| <b>Cable length</b>       | 8 meter, extendable to max. 35 meters | 8 meter, extendable to max. 35 meters |
| <b>IP rating</b>          | IPX8                                  | IPX8                                  |
| <b>Motor type</b>         | Brushless motor                       | Brushless motor                       |
| <b>Water temperature</b>  | 5°C to 35°C                           | 5°C to 35°C                           |

### Motor Control Unit

|                            |  |   |
|----------------------------|--|---|
| <b>Dimensions</b>          | 284 x 90 x 82 mm (lxbxh)   | 290 x 105 x 91 mm (lxbxh)                     |
| <b>IP rating</b>           | IP 20  | IP 20   |
| <b>Working temperature</b> | -20°C to 32°C, dry and condensation-free area  | -20°C to 32°C, dry and condensation-free area |
| <b>Safety measures</b>     | Short circuit, overload, over voltage, over temperature, EVA Torque control, Voltage/current control, Mosfet temperature control |   |

### Electrical specifications input

|  |            |            |
|--|------------|------------|
| <b>Connection voltage (Vac)</b>            | 90-264 Vac | 90-264 Vac |
| <b>Frequency range</b>                     | 47 - 63 Hz | 47 - 63 Hz |
| <b>Nominal current (A)</b>                 | 3A 230 Vac | 4A 230 Vac |
| <b>Power consumption VA (PF &gt; 0.95)</b> | 600W       | 900W       |
| <b>Standby power consumption (W)</b>       | 5W         | 5W         |
| <b>PPM input</b>                           | PPM1       | PPM2       |

### Electrical specifications output

|  |                        |                        |
|--|------------------------|------------------------|
| <b>Turbine output</b>                  | BLDC                   | BLDC                   |
| <b>Turbine connection power supply</b> | 3x1x16 mm <sup>2</sup> | 3x1x16 mm <sup>2</sup> |
| <b>Nominal voltage (Vdc)</b>           | 24 Vdc                 | 24 Vdc                 |
| <b>Nominal current (A)</b>             | 23A                    | 35A                    |
| <b>Output power sharing</b>            | Not available          | Not available          |



## 2.1 + 2.2 EVAstream turbine + MCU

Experienced swimmer

**EVAstream NEXT 275**



**EVAstream NEXT 450**



|                                      |   |   |
|--------------------------------------|---|---|
| <b>Recommended use</b>               | Experienced swimmer                             | Experienced swimmer                             |
| <b>Water flow capacity</b>           | 55 - 275 m <sup>3</sup> /h<br>(adjustable flow) | 90 - 450 m <sup>3</sup> /h<br>(adjustable flow) |
| <b>Volume displacement</b>           | 1,3 - 6,7 m/s                                   | 2x 1,1 - 5,5 m/s                                |
| <b>Max. waterflow speed swimzone</b> | 1:25 sec. per 100 meter                         | 1:15 sec. per 100 meter                         |
| <b>Minimum pool dimensions</b>       | 4,5 x 2,5 meter (lxb)                           | 4,5 x 2,5 meter (lxb)                           |
| <b>Warranty</b>                      | 2-3 years factory warranty*                     | 2-3 years factory warranty*                     |

\* Register your product at [www.evaoptic.com](http://www.evaoptic.com) for 3 years warranty

|                           |                                       |                                       |
|---------------------------|---------------------------------------|---------------------------------------|
| <b>Turbine</b>            |                                       |                                       |
| <b>Number of turbines</b> | 1 turbine                             | 2 turbines                            |
| <b>Cable type</b>         | 3x1x16 mm <sup>2</sup>                | 3x1x16 mm <sup>2</sup>                |
| <b>Cable length</b>       | 8 meter, extendable to max. 30 meters | 8 meter, extendable to max. 25 meters |
| <b>IP rating</b>          | IPX8                                  | IPX8                                  |
| <b>Motor type</b>         | Brushless motor                       | Brushless motor                       |
| <b>Water temperature</b>  | 5°C to 35°C                           | 5°C to 35°C                           |

### Motor Control Unit

|                            |  |   |
|----------------------------|--|---|
| <b>Dimensions</b>          | 380 x 90 x 96 mm (lxbxh)   | 360 x 182 x 117 mm (lxbxh)                    |
| <b>IP rating</b>           | IP 20  | IP 20   |
| <b>Working temperature</b> | -20°C to 32°C, dry and condensation-free area  | -20°C to 32°C, dry and condensation-free area |
| <b>Safety measures</b>     | Short circuit, overload, over voltage, over temperature, EVA Torque control, Voltage/current control, Mosfet temperature control |   |

### Electrical specifications input

|  |            |             |
|--|------------|-------------|
| <b>Connection voltage (Vac)</b>            | 90-264 Vac | 180-264 Vac |
| <b>Frequency range</b>                     | 47 - 63 Hz | 47 - 63 Hz  |
| <b>Nominal current (A)</b>                 | 6A 230 Vac | 9A 230 Vac  |
| <b>Power consumption VA (PF &gt; 0.95)</b> | 1300W      | 1800W       |
| <b>Standby power consumption (W)</b>       | 40W        | 80W         |
| <b>PPM input</b>                           | PPM2       | PPM2        |

### Electrical specifications output

|  |                        |                        |
|--|------------------------|------------------------|
| <b>Turbine output</b>                  | BLDC                   | BLDC                   |
| <b>Turbine connection power supply</b> | 3x1x16 mm <sup>2</sup> | 3x1x16 mm <sup>2</sup> |
| <b>Nominal voltage (Vdc)</b>           | 24 Vdc                 | 24 Vdc                 |
| <b>Nominal current (A)</b>             | 50A                    | 2x 35A                 |
| <b>Output power sharing</b>            | 24 Vdc 100W            | 24 Vdc 100W            |

## 2.1 + 2.2 EVAstream turbine + MCU

Professional swimmer

**EVAstream NEXT 350**



**EVAstream NEXT 550**



|                                      |   |  |
|--------------------------------------|---|--|
| <b>Recommended use</b>               | Professional swimmer                            | Professional swimmer                             |
| <b>Water flow capacity</b>           | 70 - 350 m <sup>3</sup> /h<br>(adjustable flow) | 110 - 550 m <sup>3</sup> /h<br>(adjustable flow) |
| <b>Volume displacement</b>           | 1,7 - 8,6 m/s                                   | 2x 1,3 - 6,7 m/s                                 |
| <b>Max. waterflow speed swimzone</b> | 1:10 sec. per 100 meter                         | 1:05 sec. per 100 meter                          |
| <b>Minimum pool dimensions</b>       | 4,5 x 2,5 meter (lxb)                           | 4,5 x 2,5 meter (lxb)                            |
| <b>Warranty</b>                      | 2-3 years factory warranty*                     | 2-3 years factory warranty*                      |

\* Register your product at [www.evaoptic.com](http://www.evaoptic.com) for 3 years warranty

|                           |                                       |                                       |
|---------------------------|---------------------------------------|---------------------------------------|
| <b>Turbine</b>            |                                       |                                       |
| <b>Number of turbines</b> | 1 turbine                             | 2 turbines                            |
| <b>Cable type</b>         | 3x1x16 mm <sup>2</sup>                | 3x1x16 mm <sup>2</sup>                |
| <b>Cable length</b>       | 8 meter, extendable to max. 25 meters | 8 meter, extendable to max. 25 meters |
| <b>IP rating</b>          | IPX8                                  | IPX8                                  |
| <b>Motor type</b>         | Brushless motor                       | Brushless motor                       |
| <b>Water temperature</b>  | 5°C to 35°C                           | 5°C to 35°C                           |

### Motor Control Unit

|                            |  |   |
|----------------------------|--|---|
| <b>Dimensions</b>          | 380 x 90 x 96 mm (lxbxh)   | 360 x 182 x 117 mm (lxbxh)                    |
| <b>IP rating</b>           | IP 20  | IP 20   |
| <b>Working temperature</b> | -20°C to 32°C, dry and condensation-free area  | -20°C to 32°C, dry and condensation-free area |
| <b>Safety measures</b>     | Short circuit, overload, over voltage, over temperature, EVA Torque control, Voltage/current control, Mosfet temperature control |   |

### Electrical specifications input

|  |            |             |
|--|------------|-------------|
| <b>Connection voltage (Vac)</b>            | 90-264 Vac | 180-264 Vac |
| <b>Frequency range</b>                     | 47 - 63 Hz | 47 - 63 Hz  |
| <b>Nominal current (A)</b>                 | 8A 230 Vac | 12A 230 Vac |
| <b>Power consumption VA (PF &gt; 0.95)</b> | 1700W      | 2600W       |
| <b>Standby power consumption (W)</b>       | 40W        | 80W         |
| <b>PPM input</b>                           | PPM2       | PPM2        |

### Electrical specifications output

|  |                        |                        |
|--|------------------------|------------------------|
| <b>Turbine output</b>                  | BLDC                   | BLDC                   |
| <b>Turbine connection power supply</b> | 3x1x16 mm <sup>2</sup> | 3x1x16 mm <sup>2</sup> |
| <b>Nominal voltage (Vdc)</b>           | 24 Vdc                 | 24 Vdc                 |
| <b>Nominal current (A)</b>             | 65A                    | 2x 50A                 |

### Safety standards EVAstream turbine

EVAstream was built for speed and safety. Safety measures were taken to ensure safety of fingers, toes and also hair. EVAstream complies to safety standards DIN EN16582-1/2/3, EN16713-2 (residential pools) and EN13451-1/3 (commercial pools).

### Safety standards Power Supply Unit

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.

### 2.3 ECA Control

#### ECA Control Eco



EVAsream  
NEXT 175

#### ECA Control 1 Essential



EVAsream  
NEXT 225 - 275 - 350  
EVAsream  
NEXT 450 - 550

#### ECA Control 2 Training



EVAsream  
NEXT 225 - 275 - 350  
EVAsream  
NEXT 450 - 550

#### ECA Control 3 ProTrainer



EVAsream  
NEXT 225 - 275 - 350  
EVAsream  
NEXT 450 - 550

Suitable for  
EVAsream type

Available  
EVA web app functions

Connection EVA LED  
underwater lighting

Connection EVA  
Remote control

#### ECA Unit

Dimensions

IP rating

Working temperature

Warranty

#### Electrical specifications (input)

Connection voltage (Vac)

Pulse input (piezo-ready)

#### Electrical specifications (output)

PPM output

Lighting control output

Fan output 5W  
(power box ventilation)

Start / stop  
Speed / timer

Not available

Optional  
(extension)

158 x 119 x 75 mm (lxbxh)

IP20

-20°C tot 32°C, dry/  
condensation-free

2 years factory warranty

Start / stop  
Speed / timer

Optional  
(extension)

Optional  
(extension)

158 x 119 x 75 mm (lxbxh)

IP20

-20°C tot 32°C, dry/  
condensation-free

2 years factory warranty

Start / stop  
Speed / timer  
3 swim workouts

Optional (extension)  
Compatible with  
swim workouts

Optional  
(extension)

158 x 119 x 75 mm (lxbxh)

IP20

-20°C tot 32°C, dry/  
condensation-free

2 years factory warranty

Start / stop  
Speed / timer  
20 swim workouts

Optional (extension)  
Compatible with  
swim workouts

Optional  
(extension)

158 x 119 x 75 mm (lxbxh)

IP20

-20°C tot 32°C, dry/  
condensation-free

2 years factory warranty

230 Vac 10W

3x Piezo ready

PPM 2

DMX - EVA

24 Vdc 5W

230 Vac 10W

3x Piezo ready

PPM 2

DMX - EVA

24 Vdc 5W



## 2.4 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 must be switched off.**

## 2.5 Remote control

### Electrical specifications - Receiver

|                      |  |
|----------------------|--|
| Radio frequency band | 433.92 MHz   |
| Antenna              | BNC connector, external antenna optional<br>(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-metre 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 (humidity 10-90%) |
| Moisture                 | 10-90%  |
| Dimensions               | 65x 112 x 35 mm / 2.6 x 4.4 x 1.4 inch            |

## 2.6 Antenna

### General specifications

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

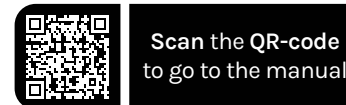
## 2.7 EVA Experience web app

Use the EVA Experience web app to manage the EVAstream.

For instructions on how to set up the tablet environment, please refer to chapter 7.

## 2.8 EVA LED underwater lighting

The EVA RGBW LED underwater pool lighting completes the counter current pool experience. The underwater lighting guides you through the training. For instructions on how to set up the underwater lighting, please refer to the mounting & installation manual of the EVA LED underwater lighting.



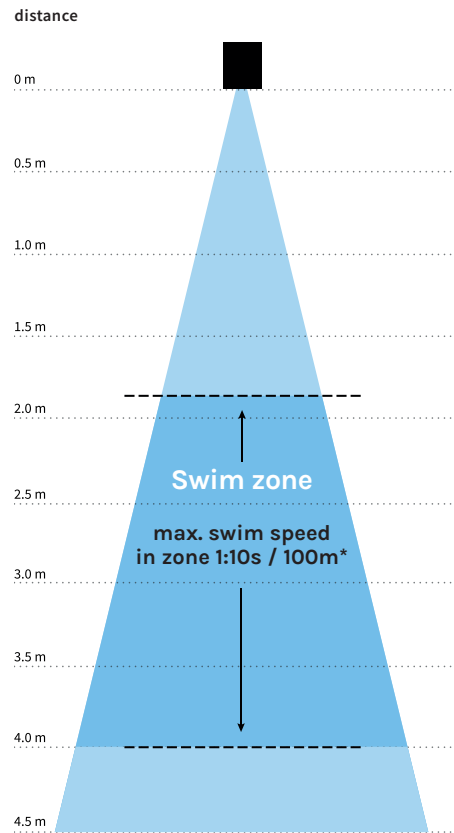
### 3. CREATE THE BEST SWIMMING ZONE

#### 1. Determine swimming zone

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

#### EVAstream Next 175/225/275/350

Single engine machine recessed



Example EVAstream Next 350

#### EVAstream Next 175

|                         |                       |
|-------------------------|-----------------------|
| Flow capacity:          | 175 m <sup>3</sup> /u |
| Max. water flow speed:  | 4,3 m/s               |
| Max. speed in zwemzone: | 2:15 s/100m           |

#### EVAstream Next 225

|                         |                       |
|-------------------------|-----------------------|
| Flow capacity:          | 225 m <sup>3</sup> /u |
| Max. water flow speed:  | 5,5 m/s               |
| Max. speed in zwemzone: | 1:40 s/100m           |

#### EVAstream Next 275

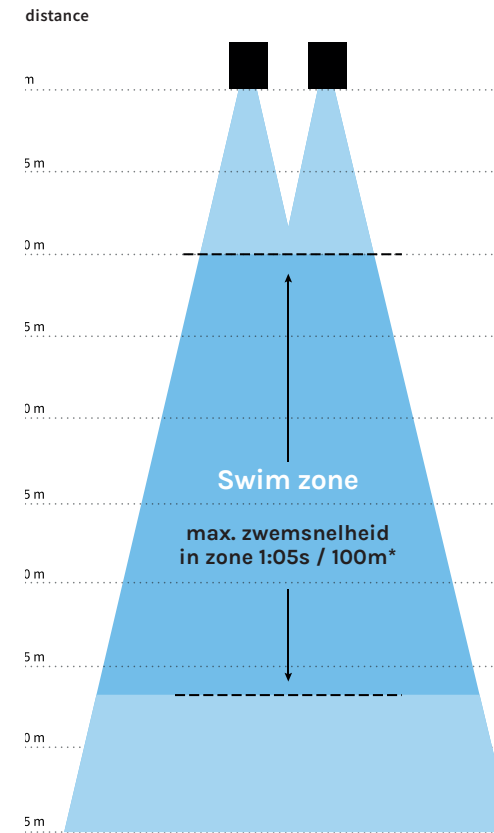
|                         |                       |
|-------------------------|-----------------------|
| Flow capacity:          | 275 m <sup>3</sup> /u |
| Max. water flow speed:  | 6,7 m/s               |
| Max. speed in zwemzone: | 1:25 s/100m           |

#### EVAstream Next 350

|                         |                       |
|-------------------------|-----------------------|
| Flow capacity:          | 350 m <sup>3</sup> /u |
| Max. water flow speed:  | 8,6 m/s               |
| Max. speed in zwemzone: | 1:10 s/100m           |

#### EVAstream Next 450/550

Double engine machine recessed



Example EVAstream Next 550

#### EVAstream Next 450

|                         |                                   |
|-------------------------|-----------------------------------|
| Flow capacity:          | 450 m <sup>3</sup> /u<br>(2x 225) |
| Max. water flow speed:  | 2x 5,5 m/s                        |
| Max. speed in zwemzone: | 1:15s/100m                        |

#### EVAstream Next 550

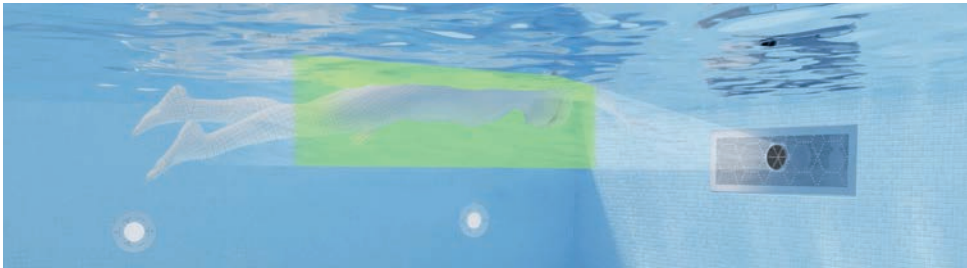
|                         |                                   |
|-------------------------|-----------------------------------|
| Flow capacity:          | 550 m <sup>3</sup> /u<br>(2x 275) |
| Max. water flow speed:  | 2x 6,7 m/s                        |
| Max. speed in zwemzone: | 1:05s/100m                        |

\*Measurements of an adult professional swimmer.  
Body size and mass influence swimming speed.



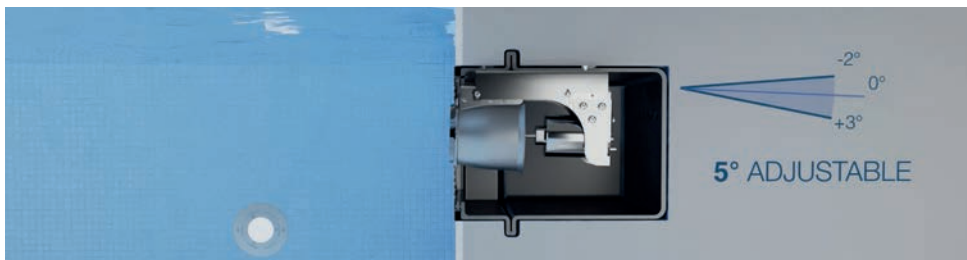
### 2. Turbine placement of the EVAstream at 250 mm

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).

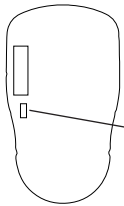
The Remote control has the following control options:

### 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<br>for a stepless increase in speed |
| Button -      |   |
| Short press:  | decrease intensity 5%   |
| Long press:   | decrease intensity as long as you press<br>for a stepless decrease in speed |

### 2. On/off Switch

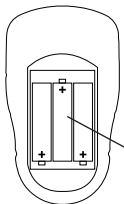


The remote control has an on/off switch on the back. The on/off switch disconnects power from the battery. In the 0/off position, the remote control will not function.

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

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  $>= 20 \text{ m}^2$  – 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:  $0 \text{ mg/l}$
- 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](mailto:info@evaoptic.com)

[evaoptic.com](http://evaoptic.com)