Leisure applications
POOL & JACUZZI

small change, BIG DIFFERENCE

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+420 602 758 775
www.LIFETECHozone.com
sales@lifetechozone.com

Lifetech
Ozone, UV and AOP Expert

small change, BIG DIFFERENCE

Catalogue 2019
LIFETECH creates products to ease your final decision making. We design and produce a full range of low pressure and medium pressure UVs, as well as ozone generators and AOP equipment to be your single source for water and air purification. By having an experience of more than 30 years in this sector and our own R&D centre, we’ve developed detailed technical knowledge and manufacturing precision, so you can rely on us when making a decision. We focus on the highest quality while taking into account your budget. We aim to offer the best quality / price ratio on the market.

A choice of Those, who always look for a better way.

OZONE, UV AND AOP EXPERT
MORE THAN 30 YEARS EXPERIENCE IN OZONE, UV AND AOP

UV
LifeUVL®
LifeUVM®

OZONE
Exclusive EP
Exclusive 12.EP

AOP
Combi Ozone/UV .EP
Combi Ozone/UV 12.EP
LifeOX® M .EP

UV
UVL - Low Pressure UV
UVM - Medium Pressure UV
UV power from Watts to tens of kW

OZONE
Ozone production from g O₃/h to 20 g O₃/h

AOP
From m³/h to tens of thousands m³/h of treated water by AOP

LIFETECH Manufacturer

(SECURITY HEADER)

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(AOP = Advanced Oxidation Processes)
All product photos and visualizations are for reference only. Subject to change.
## SELECTION GUIDE FOR POOL WATER TREATMENT TECHNOLOGY

### EXPLANATION:

- **OK**: Recommended technology is considered appropriate for the application.
- **Recommended**: Technology that is recommended by the manufacturer for the specific application.
- **TOP**: Technology that is considered the best available technology (BAT) for the specific application.
- **Best Available Technology**: Technology that is recommended by the manufacturer as the best available technology (BAT) for the specific application.

### Low Pressure UV

<table>
<thead>
<tr>
<th>Model</th>
<th>LifeUVM®</th>
<th>LifeUVL®</th>
<th>Ozone</th>
<th>AOP (Advanced Oxidation Process)</th>
<th>AOP (Advanced Oxidation Process)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private pool</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Luxury private pool</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private jacuzzi</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public pool</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Medium Pressure UV

### AOP (Advanced Oxidation Process)

### AOP (Advanced Oxidation Process)

### Heavily polluted pools & jacuzzi:
- Public jacuzzi, relaxation pool, toddler swimming pool

## RECOMMENDED EQUIPMENT FOR PUBLIC POOLS AND JACUZZI (based on water flow):

### Best Available Technology (BAT) for public pools and jacuzzi: AOP LifeOX® M .EP

<table>
<thead>
<tr>
<th>Water Flow</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 270 m³/h</td>
<td>LifeOX® M90.EP</td>
</tr>
<tr>
<td>up to 84 m³/h</td>
<td>LifeOX® M40.EP</td>
</tr>
<tr>
<td>up to 33 m³/h</td>
<td>LifeOX® M90.EP, CHARM - LifeUVM0106-25-AW-AEP-TS-D</td>
</tr>
<tr>
<td>up to 22 m³/h</td>
<td>LifeOX® M90.EP, CHARM - LifeUVM0104-25-AW-AEP-LD</td>
</tr>
</tbody>
</table>

## RECOMMENDED EQUIPMENT FOR PRIVATE POOLS AND JACUZZI (based on capacity):

### Best Available Technology (BAT) for luxury private pools and jacuzzi: AOP LifeOX® M .EP

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>from 270 m³</td>
<td>LifeOX® M10.EP, CHARM - LifeUVM0104-13-AW-AEP-LD</td>
</tr>
<tr>
<td>up to 270 m³</td>
<td>LifeOX® M40.EP, CHARM - LifeUVM0106-25-AW-AEP-LD</td>
</tr>
<tr>
<td>up to 200 m³</td>
<td>LifeOX® M40.EP, CHARM - LifeUVM0104-25-AW-AEP-LD, ProfiPure 200</td>
</tr>
<tr>
<td>up to 100 m³</td>
<td>LifeOX® M10.EP, CHARM - LifeUVM0104-13-AW-AEP-LD, ProfiPure 100</td>
</tr>
</tbody>
</table>
MEDIUM PRESSURE UV SYSTEM
PROFIPURE UVM
Revolution in private pool water purification

FIRST MEDIUM PRESSURE UV FOR THE PRICE OF LOW PRESSURE UV–C
VERIFIED by German norm DIN 19643 as the only reliable UV technology for pools

• New UV standard for swimming pools and spa
• Water disinfection
• Destruction of harmful trichloramines
• Prevents swimmers from allergy and asthma, skin and eye irritation
• Pool without the typical chlorine smell
• Building without corrosion

All in one compact LifeUVM® system from company LIFETECH

POOL WATER DISINFECTION
- Disinfection
- REDUCTION OF TRICHLORAMINES (part of bound chlorine)
- Asthma
- Skin irritation and drying
- Chlorine pool smell
- Allergies
- Eye redness

Bound chlorine & trichloramines reduced up to 99% with ProfiPure

LIFEOX® M .EP
WORLD’S MOST COMPACT AOP SYSTEM WITH OZONE AND MEDIUM PRESSURE UV

ADVANTAGES OF THE LIFEOX® M .EP SYSTEM
• Technology: Advanced Oxidation Process (AOP)
• The highest disinfection available
• The most powerful oxidation of treated water
• Compact System - significantly lower space requirement, extremely fast & easy installation

APPLICATION:
Pool water
versions: 10 m³/h, 40 m³/h and 90 m³/h
and their multiples thanks to the modular system

MODULAR SYSTEM
Examples of the modularity

99% with ProfiPure

*more information on page 25

*more information on page 50
LOW PRESSURE UV SYSTEMS

LIFETECH UV systems offer customers green alternative to environmentally harmful chemicals used for disinfection including chlorine, chlorine dioxide, and hypochlorite. Germicidal lamps generate energy in the UV spectrum to destroy bacteria, fungi and viruses (microorganisms). Microorganisms include several distinct groups of disease causing germs (viruses, bacteria, fungi, algae and protozoa). UV is highly effective against cryptosporidium and giardia – organisms resistant to chlorine that are a major risk to human health. Another advantage of UV is the absence of taste and odour.

The target of UV disinfection is the genetic material, nucleic acid. As the UV penetrates through the cell and is absorbed by the nucleic acids, a rearrangement of the genetic information occurs, interfering with the cell's ability to reproduce. A cell that cannot reproduce is considered dead; since it is unable to multiply to infectious numbers within a host.

Low Pressure UV

The maximum absorption of UV light by the nucleic acid, DNA, occurs at a wavelength of 260 nm. The low-pressure germicidal lamp emits single UV wavelength at 254 nm that is very close to the optimized wavelength for maximum absorption by nucleic acids.

Medium Pressure UV

Medium pressure lamps diffuse a broadband UV-C radiation, rather than a single line. That gives UVMs big advantages in both pool water treatment and industrial water treatment: UVMs lead to permanent disinfection of treated water and removal of combined chlorine. Medium pressure UV lamps are very intense radiation sources. Due to this they require much less space compared to low pressure UV systems.
## OVERVIEW OF STANDARD LIFEUVL® MODELS

<table>
<thead>
<tr>
<th>Model</th>
<th>NW-EB</th>
<th>NW-AEB</th>
<th>NW-AEB</th>
<th>MW-AEB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private and semi-public pools and spa max. flow (m³/h)volume (m³)</td>
<td>29/87</td>
<td>29/87</td>
<td>64/230</td>
<td>64/320</td>
</tr>
<tr>
<td>Single lamp / Multi lamps</td>
<td>Single</td>
<td>Single</td>
<td>Multi</td>
<td>Multi</td>
</tr>
<tr>
<td>Electronic Ballast</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced Electronic Ballast</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No wiper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual wiper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LifeUVL® Lamp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quartz sleeve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>316L Stainless Steel reactor with interior UV mirror</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## CHOOSING THE RIGHT TYPE OF LAMP:

**EXPLANATION:**

1. LifeUVL® lamp
2. Quartz sleeve
3. 316L stainless steel reactor with interior UV mirror

**LifeUVL0287-MW-AEB**

- 2 UV lamps
- Low pressure
- 87 W lamp
- Advanced Electronic Ballast
- Manual Wiper
- Electronic Ballast
- Advanced Electronic Ballast

**MORE THAN 30 YEARS EXPERIENCE IN OZONE, UV AND AOP**

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**small change, BIG DIFFERENCE**
LOW PRESSURE UV SYSTEM
LIFEUVL® - NW - EB (ONE LAMP)

13 000 hours
Expected lamp lifetime

1.
Electronic Ballast
No wiper
EB
AEB
NW
MW

2.
LifeUVL® lamp
Quartz sleeve

3.
316L stainless steel reactor with interior UV mirror

Private pools and jacuzzis
Connection Pool flow m³/h Pool size m³ Total lamp power (W) /phase
LifeUVL0148-NW-EB 2* 24 48 48 / l
LifeUVL0187-NW-EB 2* 29 87 87 / l

Displayed PVC flanges are included in the supply of the LifeUVL.

LOW PRESSURE UV SYSTEM
LIFEUVL® - NW - AEB (ONE LAMP)

13 000 hours
Expected lamp lifetime

1.
Advanced Electronic Ballast
No wiper
EB
AEB
NW
MW

2.
LifeUVL® lamp
Quartz sleeve

3.
316L stainless steel reactor with interior UV mirror

Private pools and jacuzzis
Connection Pool flow m³/h Pool size m³ Total lamp power (W) /phase
LifeUVL0148-NW-AEB 2* 24 48 48 / l
LifeUVL0187-NW-AEB 2* 29 87 87 / l

Displayed PVC flanges are included in the supply of the LifeUVL.
LOW PRESSURE UV SYSTEM
LIFEUVL® - NW - AEB (MULTI LAMPS)

Expected lamp lifetime
13,000 hours

Advanced Electronic Ballast
No wiper
EB
LifeUVL® lamp
Quartz sleeve
1 3
316L stainless steel reactor with interior UV mirror

*one lamp / one ballast

Private pools and jacuzzis

Flange DN Natural gas consumption Pool size Total lamp power (W)/phase
LifeUVL0287-NW-AEB DN 65 33 100 174 / l
LifeUVL0387-NW-AEB DN 80 52 240 261 / l
LifeUVL0487-NW-AEB DN 100 64 320 348 / l

LOW PRESSURE UV SYSTEM
LIFEUVL® - MW - AEB (MULTI LAMPS)

Expected lamp lifetime
13,000 hours

Advanced Electronic Ballast
Manual wiper
EB
LifeUVL® lamp
Quartz sleeve
1 3
316L stainless steel reactor with interior UV mirror

*one lamp / one ballast

Private pools and jacuzzis

Flange DN Natural gas consumption Pool size Total lamp power (W)/phase
LifeUVL0287-MW-AEB DN 65 33 100 174 / l
LifeUVL0387-MW-AEB DN 80 52 240 261 / l
LifeUVL0487-MW-AEB DN 100 64 320 348 / l
WHAT IS THE DIFFERENCE BETWEEN LOW PRESSURE UV AND MEDIUM PRESSURE UV LAMPS?

OVERVIEW OF STANDARD LIFEUV® MODELS

PROFIPURE UV - LIFEUV® - MP - LE
TINY - LIFEUV® - MP - LD
CHARM - LIFEUV® - AEP - LD
ECO - LIFEUV® - MP - LD - D
CLEAR - LIFEUV® - MP - TS - D
TOP - LIFEUV® - AEP - TS - D

MEDIUM PRESSURE UV SYSTEMS

UVMs are:
PREVENTING reactivation of bacteria -> permanent disinfection of treated water
DISINFECTION of water and removal of combined chlorine simultaneously
DUE TO unique LifeAGE® technology lamp lifetime can reach up to 18 000 operating hours

It is well known that bacteria and other microorganisms are capable of repairing their DNA damaged by ultraviolet (UV) radiation. Known as 'reactivation', it is a natural defense mechanism that has evolved over millions of years. This self-repair ability possesses obvious problems when UV disinfection technology is used to treat potable water, swimming pool water, effluent or other liquids. A study proved that polychromatic medium pressure UV radiation causes permanent damage to bacteria and microorganisms, while monochromatic low pressure UV does not. For any industry where UV is used to disinfect water or effluent, the operator needs to be sure that the treatment is permanent – that is the reason why to use medium pressure UV systems!

The last version of DIN 19643 Norm clearly states:
Only UV-M (medium pressure UV) systems can properly disinfect swimming pool water and lower the level of combined chlorine. Low-pressure UV systems are therefore not appropriate to be used for these purposes.
WHAT IS THE DIFFERENCE BETWEEN LOW PRESSURE UV AND MEDIUM PRESSURE UV LAMPS?

Both low pressure and medium pressure UV systems exploit the power of UV radiation. However, there is a huge difference in their technology and effects they have on the treated water. In this article we aim to explain why UV is not always the same UV and also why it is crucial to distinguish these two technologies. As producers of both technologies, low pressure and medium pressure UVs, we can provide an independent view.

Both low pressure and medium pressure UV target the DNA of microorganisms. When the UV gets to the DNA it basically cuts it into pieces and the genetic information is rearranged. As a result, the cell is not able to reproduce and thus, is considered dead (unable to multiply to infectious amount).

The basic difference between low pressure and medium pressure UV is the UV radiation they emit. Simply put, UV radiation has some wavelengths it consists of and the broader the spectrum of wavelengths is, the more effective the UV disinfection. It is because each organism or substance is destroyed and decomposed by a certain wavelength.

Low pressure lamps emit a single wavelength at 254 nm whereas medium pressure UVs emit a broad spectrum of wavelengths all over the germicidal UV areas – from 200 to 600 nm. You can see the wavelength spectrum in the graph below. The blue line represents low pressure UV and the purple line represents medium pressure UV.

In the graph, you can also see the wavelengths at which chloramines are eliminated. Chloramines are an issue in pool and Jacuzzi water. But not all chloramines are bad. Trichloramines, main part of bound chlorine (sometimes called combined chlorine) are what needs to be eliminated. They are the source of the typical chlorine pool smell, asthma, eye redness, allergies, skin irritation or drying. And as the graph suggests, trichloramines can only be eliminated by medium pressure UV systems.

It works similarly with other microorganisms and particles in water. Medium pressure UVs remove what low pressure UV does plus much more.

SO WHY ARE MEDIUM PRESSURE UV SYSTEMS BETTER THAN LOW PRESSURE UVS?

- More disinfection per square cm than low pressure UV.
- Use much less UV energy than low pressure systems in virus inactivation – Adenovirus requires half the dose than with low pressure systems.
- Permanent disinfection of treated water as UVM prevents reactivation of bacteria and UVL does not – there is no risk that your product will not be compromised by bacteria later on.
- Easily inactivates microorganisms resistant to other disinfection methods such as chlorine, heat or low-pressure UV.
- Water disinfection and removal of bound chlorine from pool water at the same time.
- Removal of much larger range of chemicals and particles from water.
- Works effectively in both cold and warm water – unlike low pressure UV.
- Fewer UV lamps needed – 60 low pressure UV lamps might be in some cases replaced by 3 medium pressure UV lamps.
- Lamp lifetime of medium pressure UVs can reach up to 18 000 hours due to unique technology LifeAGE®

PERMANENT DISINFECTION

It is well-known that bacteria and other microorganisms are capable of repairing their DNA after being damaged by ultraviolet (UV) radiation. This phenomenon known as ‘reactivation’ is a natural defense mechanism that has evolved over millions of years. This self-repair ability poses obvious problems when UV disinfection technology is used to treat potable water, swimming pool water, effluent or other liquids.

A study number 1 proved that polychromatic medium pressure UV radiation causes irreparable (permanent) damage to bacteria and microorganisms, whereas monochromatic low pressure UV does not. For any industry where UV is used to disinfect water or effluent, the operator needs to be sure that the water treatment is permanent – that is reason why to use medium pressure UV systems!

LIFETECH produces medium pressure UV systems from 250 W to 18 kW. Other types on request.

BOUND CHLORINE REMOVAL IN SWIMMING POOLS

In chlorinated pools the content of chloramines, namely bound or combined chlorine, is used as the parameter of water quality. The less of bound chlorine, the better quality the swimming pool or Jacuzzi water has. Exactly this combined chlorine is the particular responsible for the known unpleasant chlorine smell and is drying skin, causing eye redness and respiratory problems.

Furthermore, especially trichloramine, is a known cause for an eventual increased incidence of asthma for children which are regularly swimming in chlorinated pools. Moreover, the staff of the swimming pool such as lifeguards and instructors can easily get these health problems if the level of bound chlorine is high in the long-run. A last thing not to forget is that trichloramines are also causing corrosion so its presence in the swimming pool water can lead to damages of the building construction.

Therefore the reduction of chloramines in the pool water protects the health of all and protects the building construction itself resulting in cost savings for dilution water or building repairs.

The last version of German Norm DIN 19643 clearly states: Only UVM (medium pressure UV) systems can properly disinfect swimming pool water and lower the level of bound (combined) chlorine. Low pressure UV systems are therefore not appropriate to be used for these effects!

LIFEAGE® UV SYSTEM – A BREAKTHROUGH IN MEDIUM PRESSURE UV TECHNOLOGY

One of the main reasons why a lot of main institutions were not using medium pressure UV technology was a short life cycle of the lamps. Now with expected 18 000 hours of UV lamp lifetime, we can forget about this worry.

2) The latest version of the German NORM for pools DIN 19643, November 2012
OVERVIEW OF STANDARD LIFEUVM® MODELS

<table>
<thead>
<tr>
<th>Model</th>
<th>PROFIPURE</th>
<th>TINY</th>
<th>CHARM</th>
<th>ECO</th>
<th>CLEAR</th>
<th>TOP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected lifetime of LifeUVM® lamps is up to</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LifeAGE® technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public pools and spa max. flow m³/h</td>
<td>4.7</td>
<td>33</td>
<td>33</td>
<td>616</td>
<td>616</td>
<td>9100</td>
</tr>
<tr>
<td>Private and semi-public pools and spa max. flow m³/h</td>
<td>23/200</td>
<td>42/270</td>
<td>42/270</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

| Magnetic Power Source       |           |      |       |     |       |     |
| Advanced Electronic Power Source |           |      |       |     |       |     |
| No wiper                     |           |      |       |     |       |     |
| Manual wiper                 |           |      |       |     |       |     |
| Automatic wiper              |           |      |       |     |       |     |

316L stainless steel reactor with interior UV mirror
Quartz sleeve
LifeUVM® Lamp
Temperature sensor
UV sensor
Modbus connection

Public pools and Jacuzzi – UV dose 60 ml/cm²

CHOOSE THE RIGHT TYPE OF LAMP:

- Chamber diameter 30 cm
- 1 UV lamp
- Medium pressure
- kw lamp
- LifeUVM0120-30-AEP-TS-D-DN150
- Advanced Electronic Power Source LifeAGE® technology
- Direct series (classic series has no letter at the end)

MP - Magnetic Power Source
AEP - Advanced Electronic Power Source
LifeAGE® technology
LE - LED Indication
LO - LED Display
TS - Touch Screen

MORE THAN 30 YEARS EXPERIENCE IN OZONE, UV AND AOP

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**THE TECHNOLOGY**

LIFETECH developed unique LifeAGE® technology exploiting advanced electronic power (AEP). Which in synergy with our profound knowledge of UV technology allows you to enjoy the lowest operating costs available today.

**WIPER OF QUARTZ SLEEVES**

It is necessary to periodically clean the surface of quartz sleeves. There are 3 options:

- (no wiper so you need to put the quartz sleeve out and clean it with a piece of cloth and your hand)
- (recommended for: private pools and jacuzzies)
- (recommended for: public pools and jacuzzies, drinking and waste water plants)

**MAGNETIC POWER**

<table>
<thead>
<tr>
<th>Expected UV lamp lifetime:</th>
<th>4 000 – 12 000 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating COSTS:</td>
<td>6 000 – 18 000 hours</td>
</tr>
</tbody>
</table>

Lowest operating costs available today - savings estimation 30% (compared to magnetic power)

User & environmentally friendly

**UVM DISINFECTS AND ALSO REDUCES TRICHLORAMINES & BOUND CHLORINE:**

Best UV water disinfection (significantly better than by UVL)

**RETURN ON INVESTMENT**

8 to 16 months

- savings of fresh water & heating
- enhanced atmosphere, no chlorine smell
- eventually suitable for babies and people with asthma
- more customers & happier customers

**MEDIUM PRESSURE UV SYSTEMS**

**PROFIPURE UV - LIFEUVM® - MP - LE**

**CLASSIC SERIES**

- LED Indication
- Magnetic Power
- No wiper

316L stainless steel reactor with interior UV mirror

Temperature sensor

UV sensor

Modbus connection

**Public pools and jacuzzis**

<table>
<thead>
<tr>
<th>Connection</th>
<th>Pool w. flow m³/h</th>
<th>Pool capacity m³</th>
<th>Total Lamp Power (kW) / phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProfiPure 100</td>
<td>1 ½”</td>
<td>4.7</td>
<td>0.25 / l</td>
</tr>
<tr>
<td>ProfiPure 200</td>
<td>2”</td>
<td>4.7</td>
<td>0.25 / l</td>
</tr>
</tbody>
</table>

**Private pools and jacuzzis**

<table>
<thead>
<tr>
<th>Connection</th>
<th>Pool w. flow m³/h</th>
<th>Pool capacity m³</th>
<th>Total Lamp Power (kW) / phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProfiPure 100</td>
<td>1 ½”</td>
<td>12</td>
<td>0.25 / l</td>
</tr>
<tr>
<td>ProfiPure 200</td>
<td>2”</td>
<td>23</td>
<td>0.25 / l</td>
</tr>
</tbody>
</table>

*more information on page 8

**MEDIUM PRESSURE UVM**

Medium pressure UVM is the only UV technology to eliminate bound chlorine in pools - proven by German norm (DIN 19643).
MEDIUM PRESSURE UV SYSTEMS
TINY - LIFEUVM® - MP - LD

CLASSIC SERIES

4 000 hours
Expected lamp lifetime

316L stainless steel reactor with interior UV mirror
Quartz sleeve
LifeUVM® Lamp

Temperature sensor
Modbus connection

LED Indicator
Magnetic Power
No wiper

LE LD TS
MP AEP NW MW AW

316L stainless steel reactor with interior UV mirror
Quartz sleeve
LifeUVM® Lamp

Temperature sensor
Modbus connection

LED Indicator
Magnetic Power
Manual wiper

LE LD TS
MP AEP NW MW AW

Public pools and jacuzzis

<table>
<thead>
<tr>
<th>Model</th>
<th>Connection</th>
<th>Pool w. flow m³/h</th>
<th>Pool capacity m³</th>
<th>Total Lamp Power (kW) / phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>LifeUVM0104-13-NW-MP-LD</td>
<td>2&quot;</td>
<td>9</td>
<td>90</td>
<td>0.4 / I</td>
</tr>
<tr>
<td>LifeUVM0104-25-NW-MP-LD</td>
<td>3&quot;</td>
<td>27</td>
<td></td>
<td>0.4 / I</td>
</tr>
<tr>
<td>LifeUVM0106-25-NW-MP-LD</td>
<td>3&quot;</td>
<td>33</td>
<td></td>
<td>0.6 / I</td>
</tr>
<tr>
<td>LifeUVM0104-13-MW-MP-LD</td>
<td>2&quot;</td>
<td>18</td>
<td>90</td>
<td>0.4 / I</td>
</tr>
<tr>
<td>LifeUVM0104-25-MW-MP-LD</td>
<td>3&quot;</td>
<td>38</td>
<td>250</td>
<td>0.4 / I</td>
</tr>
<tr>
<td>LifeUVM0106-25-MW-MP-LD</td>
<td>3&quot;</td>
<td>42</td>
<td>270</td>
<td>0.6 / I</td>
</tr>
</tbody>
</table>

Displayed PVC flanges are included in the supply of LifeUVM Tiny.
**MEDIUM PRESSURE UV SYSTEMS**

**CHARM - LIFEUVM® - AEP – LD**

**CLASSIC SERIES**

---

### Public pools and jacuzzis

<table>
<thead>
<tr>
<th>Model</th>
<th>Connection</th>
<th>Pool w. flow m³/h</th>
<th>Total lamp power (kW) /phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>LifeUVM0104-13-MW-AEP-LD</td>
<td>2&quot;</td>
<td>9</td>
<td>0.4 / I</td>
</tr>
<tr>
<td>LifeUVM0104-25-MW-AEP-LD</td>
<td>3&quot;</td>
<td>27</td>
<td>0.4 / I</td>
</tr>
<tr>
<td>LifeUVM0106-25-MW-AEP-LD</td>
<td>3&quot;</td>
<td>33</td>
<td>0.6 / I</td>
</tr>
</tbody>
</table>

---

### Private pools and jacuzzis

<table>
<thead>
<tr>
<th>Model</th>
<th>Connection</th>
<th>Pool w. flow m³/h</th>
<th>Total lamp power (kW) /phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>LifeUVM0104-13-MW-AEP-LD</td>
<td>2&quot;</td>
<td>18</td>
<td>0.4 / I</td>
</tr>
<tr>
<td>LifeUVM0104-25-MW-AEP-LD</td>
<td>3&quot;</td>
<td>38</td>
<td>0.4 / I</td>
</tr>
<tr>
<td>LifeUVM0106-25-MW-AEP-LD</td>
<td>3&quot;</td>
<td>42</td>
<td>0.6 / I</td>
</tr>
</tbody>
</table>

---

**Expected lamp lifetime: 6,000 hours**

---

**Display PVC flanges are included in the supply of LifeUVM Charm.**
### MEDIUM PRESSURE UV SYSTEMS

**ECO - LIFEUV® - MP - LD - D**

**DIRECT SERIES**

#### 316L stainless steel reactor with interior UV mirror
- Connection: 1 to 3 UV lamps
- Total lamp power (kW) / phase

<table>
<thead>
<tr>
<th>Model</th>
<th>Pool w. flow m³/h</th>
<th>Total lamp power (kW) / phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>LifeUVM0110-13-MW-MP-LD-D-DN125</td>
<td>33</td>
<td>1/I</td>
</tr>
<tr>
<td>LifeUVM0110-16-MW-MP-LD-D-DN150</td>
<td>46</td>
<td>1/I</td>
</tr>
<tr>
<td>LifeUVM0120-16-MW-MP-LD-D-DN150</td>
<td>63</td>
<td>2/III</td>
</tr>
<tr>
<td>LifeUVM0130-21-MW-MP-LD-D-DN200</td>
<td>84</td>
<td>2/III</td>
</tr>
<tr>
<td>LifeUVM0120-21-MW-MP-LD-D-DN150</td>
<td>84</td>
<td>2/III</td>
</tr>
<tr>
<td>LifeUVM0320-32-MW-MP-LD-D-DN300</td>
<td>315</td>
<td>6/III</td>
</tr>
<tr>
<td>LifeUVM0420-32-MW-MP-LD-D-DN300</td>
<td>385</td>
<td>8/III</td>
</tr>
<tr>
<td>LifeUVM0620-32-MW-MP-LD-D-DN300</td>
<td>616</td>
<td>12/III</td>
</tr>
</tbody>
</table>

---

**LED Display**
**Magnetic Power**
**Manual wiper**
**Quartz sleeve**
**LifeUV® Lamp**
**Temperature sensor**
**Modbus connection**

** nghĩa :** small change,
**BIG DIFFERENCE**

**+420 602 413 980**
**www.LIFETECHzone.com**
**sales@lifetechzone.com**
MEDIUM PRESSURE UV SYSTEMS
CLEAR - LIFEUV® - MP - TS - D

**DIRECT SERIES**

8 000 hours
Expected lamp lifetime

1 to 3 UV lamps
3-6 UV lamps

1 4
2 3
5 6

316L stainless steel reactor
with interior UV mirror
Quartz sleeve
LifeUV® Lamp

Temperature sensor
UV sensor
Modbus connection

Touch Screen
Magnetic Power
Manual wiper

LE LD TS
MP AEP NW MW AW

**Pool w. flow (m³/h)**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Total lamp power (kW) / phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>LifeUV0110-13-MW-MP-TS-D-DN125</td>
<td>33 1/I</td>
</tr>
<tr>
<td>LifeUV0110-16-MW-MP-TS-D-DN150</td>
<td>46 1/I</td>
</tr>
<tr>
<td>LifeUV0120-16-MW-MP-TS-D-DN150</td>
<td>63 2/III</td>
</tr>
<tr>
<td>LifeUV0120-21-MW-MP-TS-D-DN200</td>
<td>84 2/III</td>
</tr>
<tr>
<td>LifeUV0120-21-MW-MP-TS-D-DN150</td>
<td>84 2/III</td>
</tr>
<tr>
<td>LifeUV0320-32-MW-MP-TS-D-DN300</td>
<td>315 6/III</td>
</tr>
<tr>
<td>LifeUV0420-32-MW-MP-TS-D-DN300</td>
<td>385 8/III</td>
</tr>
<tr>
<td>LifeUV0620-32-MW-MP-TS-D-DN300</td>
<td>616 12/III</td>
</tr>
</tbody>
</table>

**Pool w. flow (m³/h)**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Total lamp power (kW) / phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>LifeUV0110-13-AW-MP-TS-D-DN125</td>
<td>33 1/I</td>
</tr>
<tr>
<td>LifeUV0110-16-AW-MP-TS-D-DN150</td>
<td>46 1/I</td>
</tr>
<tr>
<td>LifeUV0120-16-AW-MP-TS-D-DN150</td>
<td>63 2/III</td>
</tr>
<tr>
<td>LifeUV0120-21-AW-MP-TS-D-DN200</td>
<td>84 2/III</td>
</tr>
<tr>
<td>LifeUV0120-21-AW-MP-TS-D-DN150</td>
<td>84 2/III</td>
</tr>
<tr>
<td>LifeUV0320-32-AW-MP-TS-D-DN300</td>
<td>315 6/III</td>
</tr>
<tr>
<td>LifeUV0420-32-AW-MP-TS-D-DN300</td>
<td>385 8/III</td>
</tr>
<tr>
<td>LifeUV0620-32-AW-MP-TS-D-DN300</td>
<td>616 12/III</td>
</tr>
</tbody>
</table>

Temperature sensor
UV sensor
Modbus connection

Touch Screen
Magnetic Power
Automatic wiper

LE LD TS
MP AEP NW MW AW

316L stainless steel reactor
with interior UV mirror
Quartz sleeve
LifeUV® Lamp

Temperature sensor
UV sensor
Modbus connection

Touch Screen
Magnetic Power
Manual wiper

LE LD TS
MP AEP NW MW AW

**Liftech**

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sales@lifetechozone.com
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+420 602 758 775

small change,
BIG DIFFERENCE
MEDIUM PRESSURE UV SYSTEMS
TOP - LIFEUVM® - AEP - TS - D

DIRECT SERIES

18,000 hours

Expected lamp lifetime

1 to 3 UV lamps

3-6 UV lamps

316L stainless steel reactor
with interior UV mirror

Quartz sleeve

LifetUV® Lamp

1 4

Temperature sensor

Advanced Electronic Power Source LifeAGE® technology

Manual wiper

LE LD TS

MP AEP NW MW AW

1 2 3 4 5 6

Temperature sensor

Automatic wiper

Advanced Electronic Power Source LifeAGE® technology

Modbus connection

AW

Pool w. flow m³/h Total lamp power (kW) /phase

LifeUVM0110-13-MW-AEP-TS-D-DN125 33 1/I
LifeUVM0110-16-MW-AEP-TS-D-DN150 46 1/I
LifeUVM0120-16-MW-AEP-TS-D-DN200 63 2/I
LifeUVM0120-21-MW-AEP-TS-D-DN200 84 2/I
LifeUVM0120-21-MW-AEP-TS-D-DN150 84 2/I
LifeUVM0430-32-MW-AEP-TS-D-DN300 616 12/I
LifeUVM0430-40-MW-AEP-TS-D-DN400 644 12/I
LifeUVM0530-40-MW-AEP-TS-D-DN400 770 15/I
LifeUVM0530-40-MW-AEP-TS-D-DN350 770 15/I
LifeUVM0630-40-MW-AEP-TS-D-DN400 910 18/I

LifeUVM0110-13-AW-AEP-TS-D-DN125 33 1/I
LifeUVM0110-16-AW-AEP-TS-D-DN150 46 1/I
LifeUVM0120-21-AW-AEP-TS-D-DN200 84 2/I
LifeUVM0120-21-AW-AEP-TS-D-DN150 84 2/I
LifeUVM0430-32-AW-AEP-TS-D-DN300 616 12/I
LifeUVM0430-40-AW-AEP-TS-D-DN400 644 12/I
LifeUVM0530-40-AW-AEP-TS-D-DN400 770 15/I
LifeUVM0630-40-AW-AEP-TS-D-DN400 910 18/I
OZONE WATER TREATMENT

Ozone is one of the strongest oxidizing agents, and has been used for treatment of drinking water and wastewater for many years. Moreover, ozone is one of the most advanced ways of pool water treatment. The main advantage of ozone is that harmful substances, microorganisms, odours or colours are destroyed by oxidation, without the formation of harmful, chlorinated by-products. Ozone is used for disinfection and improvement of the aesthetic qualities of water, as well as clarification processes. Ozone limits the formation of haloform precursors, reduces iron and manganese, and promotes the destruction of microorganisms such as algae. Ozone is also used in water bleaching processes, such as paper bleaching, as well as in other chemical oxidation processes.
OVERVIEW OF OZONE SYSTEMS

Low Ozone Dose Technology

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ozone output (gO₃/h)</td>
<td>2 - 4</td>
<td>12.5</td>
</tr>
<tr>
<td>Max. pool size - Public pools and spa (m³)</td>
<td>200</td>
<td>600</td>
</tr>
<tr>
<td>Max. Private and semi-public pools and spa (m³)</td>
<td>400</td>
<td>1 200</td>
</tr>
<tr>
<td>Ozone production technology</td>
<td>Corona discharge</td>
<td>Corona discharge</td>
</tr>
<tr>
<td>Process</td>
<td>Slip stream (part water flow)</td>
<td>Slip stream (part water flow)</td>
</tr>
<tr>
<td>Compact Unit (ozone generator, booster pump, injector, contact/degassing tank, vent ozone destruction)</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Material</td>
<td>PVC-U</td>
<td>PVC-U</td>
</tr>
</tbody>
</table>

Disinfection - Reduction of organic pollutants incl. chloramines and trihalomethanes - Removal of Contaminants - Decoloration - Deodorization

Ozone is hundred times more powerful than chemical treatment.

Ozone is even effective against chlorine resistant organisms, algae, bacteria and viruses.

Ozone is making your water crystal clear, odor free and safe again.

THE NEW 6TH+ GENERATION

Human kind has gone a long way from the first usage of ozone for water treatment in 1893 in the Netherlands. After this breakthrough moment more than 12 decades ago, we can now present you the 6th+ generation of LIFETECH ozone units. Based on our experience we can now optimize water treatment according to your needs easily.

TURN-KEY LIFETECH SOLUTION

LIFETECH is your single source for design, production and delivery of advanced water treatment technologies.

Ozone is a highly active form of oxygen in the form of gas. Ozone is a few hundred times more powerful and efficient than chemical water treatment (e.g. chlorine). Ozone oxidises the urea/ammonia responsible for chloramine production as well as chloramines formed. This precursor reduction also leads to reductions in THM levels.

Ozone is always generated on-site and the ozone dissolved in water kills all bacteria and viruses leaving water with the highest level of clarity and brightness, free from odour and taste.

Chloramines are toxic:
Chlorine water treatment + pool water = chlorine + ammonia (urea, sweat)

Ozone is making your water crystal clear, odor free and safe again.

Crystal clear natural water, free from toxicity

www.LIFETECHzone.com
sales@lifetechzone.com
+420 602 413 980
+420 602 758 775
EXCLUSIVE .EP
Compact, solid, elegant.
Intelligent design - economy version from PVC-U

HIGHLIGHTS:
- Compact design
- Compact Unit including ozone generator, booster pump, injector, contact/degassing tank & vent ozone destructor
- Unique continuous output regulation from 10% to 100%
- Highly effective corona discharge ozone generator with integrated air dryer
- Less space requirement
- Extremely fast & easy installation
  - Plug&Play system

<table>
<thead>
<tr>
<th>Model</th>
<th>Ozone output (gO$_3$/h)</th>
<th>Pool size (m$^3$)</th>
<th>Power (kW)</th>
<th>Dimensions (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive 2.EP</td>
<td>2.0</td>
<td>up to 200</td>
<td>1.0</td>
<td>550x455x1 100</td>
<td>55</td>
</tr>
<tr>
<td>Exclusive 4.EP</td>
<td>4.0</td>
<td>up to 400</td>
<td>1.1</td>
<td>550x455x1 100</td>
<td>57</td>
</tr>
</tbody>
</table>

EXCLUSIVE 12.EP
Compact, medium output ozone generator.
Intelligent design - economy version from PVC-U

HIGHLIGHTS:
- Compact design
- Compact unit on a frame including ozone generator, oxygen concentrator, booster pump, injector, contact/degassing tank & vent ozone destructor
- Unique continuous output regulation from 10% to 100%
- Highly effective corona discharge ozone generator with integrated ozone concentrator
- Less space requirement
- Extremely fast & easy installation
  - Plug&Play system

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<tr>
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<th>Power (kW)</th>
<th>Dimensions (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive 12.EP</td>
<td>12.5</td>
<td>up to 1200</td>
<td>1.6</td>
<td>100x500x1 200</td>
<td>121</td>
</tr>
</tbody>
</table>
LifeOX® state-of-the-art Advanced Oxidation Process (AOP) developed by LIFETECH exploits three proven water treatment technologies - ozone, low pressure UV or medium pressure UV and hydrogen peroxide to create OH-radicals. OH-radicals have much higher oxidation potential than ozone or hydrogen peroxide itself. OH-radicals react at least 1 million times faster than ozone. Thanks to this extremely fast disinfection and oxidation, disinfection stages take up tremendously less space than standard ozone technology.

Urban wastewaters are increasingly contaminated with organic substances such as biocides, personal care products (PCP’s), fuel additives, endocrine disruptors (EDCs), pharmaceutical products, fuel additives, and other emerging pollutants, that cannot be removed by standardly used technologies. AOPs have proved to be the most efficient solution for the removal of those toxic and persistent compounds such as: carbamazepine, ibuprofen, hormones, geosmin, mib (2-methylisoborneol), 1,4 dioxane, mtbe (methyl tertiary-butyl ether), ndma (n-nitrosodimethylamine), atrazine, diuron, diclofenac,…

LifeOX®-M technology is also the best available technology for the removal of combined chlorine from pool water. Combined chlorine is responsible for red eyes, dry skin and asthma of swimmers, corrosion of pool hall and the typical pool smell.
OVERVIEW OF STANDARD AOP MODELS

<table>
<thead>
<tr>
<th>Model</th>
<th>AOP technology</th>
<th>Ozone production technology</th>
<th>UV lamp</th>
<th>Max. pool size</th>
<th>Process</th>
<th>Compact Unit</th>
<th>Easy installation - Intelligent Design</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMBI OZONE/UV .EP</td>
<td>Ozone + UV</td>
<td>Corona discharge</td>
<td>Low Pressure LifeUVL</td>
<td>600</td>
<td>Slip stream</td>
<td>Yes</td>
<td>Yes</td>
<td>PVC-U</td>
</tr>
<tr>
<td>LIFEOX® M .EP</td>
<td>Ozone + UV</td>
<td>Corona discharge</td>
<td>Medium Pressure LifeUVM</td>
<td>not limited - modular system</td>
<td>Full flow or Slip stream</td>
<td>Yes</td>
<td>Yes</td>
<td>Stainless Steel 316L, PVC-U</td>
</tr>
</tbody>
</table>

ADDITIONAL TECHNOLOGY.

High oxidation potential of ozone can be greatly enhanced by its combination with UV treatment or hydrogen peroxide dosing, i.e. by an approach known as Advanced Oxidation or Ultraviolet Oxidation. LIFETECH uses both processes and supplies its own LifeOX® technology based on optimized synergic action of ozone and UV radiation.

The Advanced Oxidation Process (AOP) is the best water treatment technology now available. AOP is based on creating OH-radicals in water. Those OH-radicals have considerably higher oxidation potential compared to other oxidants for water treatment. What it means is that OH-radicals (thus AOP technology) are able to oxidize particles in water much faster and more efficiently. See the graph below for comparison.

OH-radicals have higher oxidation potential than hydrogen peroxide or ozone. The higher the oxidation potential, the better the disinfection and purification.

AOPs have proved to be the most efficient solution for the removal of those toxic and persistent compounds such as: carbamazepine, ibuprofene, hormones, geosmin, mib (2-methylisoborneol), 1.4 dioxane, mtbe (methyl tertiary-butyl ether), ndma (N-nitroso-dimethylamine), atrazine, diuron, diclofenac, ...

As seen in the figure below, when dissolved ozone (1) is irradiated by UV radiation in a UV reactor (2), then OH-radicals are created. Lifetime of OH-radicals is extremely short, the entire treatment process takes place inside of the UV reactor within milliseconds. Treated water (3) is then free of OH-radicals.

Traditional use of ozone or UV technology alone cannot guarantee complete removal of water micropollutants.

The AOP process is ideal for their removal.
COMPARISON OF MATTERS AND POLLUTANTS REMOVED BY EACH TECHNOLOGY

LIFEOX® INSIDE

We enhanced the high oxidation potential of ozone and UV radiation beyond its limits. By making them work together synergically it is now possible to experience water quality of the future. LIFEOX® is a unique AOP technology developed by LIFETECH.

HIGHLY EFFICIENT ADVANCED OXIDATION PROCESS FOR WATER TREATMENT AND REDUCTION OF COMBINED CHLORINE IN POOLS

Real data. Measurement and testing took place in a public swimming pool in Bismo, Norway.
COMBI OZONE/UV .EP
Compact, solid, precisely engineered. Intelligent design - economy version from PVC-U

HIGHLIGHTS
- Compact design
- Compact Unit including ozone generator, low pressure LifeUVL, booster pump, injector, contact/degassing tank & vent ozone destructor
- Highly efficient Advanced Oxidation Process for water treatment and reduction of combined/bound chlorine
- Less space requirement
- Extremely fast & easy installation - Plug&Play system
- Highly effective corona discharge ozone generator with integrated air dryer
- Unique continuous output regulation from 10% to 100%

<table>
<thead>
<tr>
<th>Model</th>
<th>Ozone output (gO₃/h)</th>
<th>Pool size (m³)</th>
<th>Power (kW)</th>
<th>Dimensions (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combi Ozone/UV 2.EP</td>
<td>2.0</td>
<td>up to 200</td>
<td>up to 100</td>
<td>1.1</td>
<td>550x450x100</td>
</tr>
<tr>
<td>Combi Ozone/UV 4.EP</td>
<td>4.0</td>
<td>up to 400</td>
<td>up to 200</td>
<td>1.2</td>
<td>550x450x100</td>
</tr>
</tbody>
</table>

COMBI OZONE/UV 12.EP
Compact, medium output AOP equipment. Intelligent design - economy version from PVC-U

HIGHLIGHTS
- Compact design
- Compact Unit including ozone generator, oxygen concentrator, low pressure LifeUVL, booster pump, injector, contact/degassing tank & vent ozone destructor
- Highly efficient Advanced Oxidation Process for water treatment and reduction of combined/bound chlorine
- Less space requirement
- Extremely fast & easy installation - Plug&Play system
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<th>Power (kW)</th>
<th>Dimensions (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combi Ozone/UV 12.EP</td>
<td>12.5</td>
<td>up to 1200</td>
<td>up to 600</td>
<td>1.9</td>
<td>1300x750x100</td>
</tr>
</tbody>
</table>
LIFEOX® M .EP
World's Most Compact AOP System with Ozone and Medium Pressure UV

Traditional use of ozone or UV technology alone cannot guarantee complete removal of water micropollutants. The AOP process is ideal for micropollutants removal.

ADVANTAGES OF THE LIFEOX® M SYSTEM
• The highest disinfection and the most powerful oxidation of treated water
• Significantly less space required in comparison to standard Ozone Disinfection Stage
• Extremely fast & easy installation - Plug&Play system
• Modular system suitable for any pool size

COMPACT AOP UNITS LIFEOX® M CAN TREAT ANY WATER FLOW THANKS TO ITS MODULARITY-INSTALLATION OPTIONS ON PAGE 9

WATER QUALITY, HEALTH & ENVIRONMENT SAFETY BY TECHNOLOGIES

Combination of ozone & Combi Ozone/UV
• Slip stream (Partial Flow)
• Advanced oxidation process

LifeUVM® Medium pressure UV technology
• with chlorination

Ozone generator Exclusive® low ozone dose with chlorination
• Slip stream (Partial Flow)

AOP EQUIPMENT - LIFEOX® M
Full flow
• Advanced oxidation process with chlorination

HEALTH & ENVIRONMENT SAFETY - FREE OF:
Cryptosporidium
Asthma Causes
Corrosion
Building Destruction

LIFTECH ADVANCED OXIDATION PROCESS - LIFEOX® M
## COMPARISON OF TECHNOLOGIES

<table>
<thead>
<tr>
<th>REQUIREMENT</th>
<th>Chlorination(1)</th>
<th>Chlorine + Low pressure UVL</th>
<th>Chlorine + Medium pressure UVM</th>
<th>Hydrogen peroxide(3) (+chlorine)</th>
<th>Ionizer(3) (+chlorine)</th>
<th>Ozone +chlorine</th>
<th>LifeOX® (+chlorine)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloramines removal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chloramines removal</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Bacteria removal</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Destruction of resistant pathogens</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxidation power</td>
<td></td>
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<td>Removal of inorganic pollutants</td>
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<td>Discoloration, deodorization</td>
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<td>Turbidity reduction</td>
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<td>COD reduction</td>
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<td>TOC reduction</td>
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<td>Destruction of urine components</td>
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### BEST TECHNOLOGIES

- Chlorination(1)
- Chlorine + Medium pressure UVM
- Ozone +chlorine

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1. Incl. of chlorine electrolytic generation (salt and sea water pools)
2. At usual hydrogen peroxide concentrations in the pool
3. Electrolytic generation of copper and silver cations combined with chlorine dosing

COD - Chemical Oxidation Demand
TOC - Total Organic Carbon content

- none
- poor
- low
- good
- very good
- excellent
REFERENCE SWIMMING POOLS AND JACUZZIS:

- **Aquapark Olympic center Luzhniki** (Moscow, Russia)
  - Pool type: Technology supplier to the biggest waterpark in Russia
  - Supply: 16 pcs of LifeUVMs and 11 pcs of OZAST® M technology

- **Swimming pool in Bismo** (Norway)
  - Pool type: 25m swimming pool
  - Total flow: 360 m³
  - Total power: LifeOX® M technology 3 kW

- **Grand Hotel Kempinski High Tatras**
  - Pool type: relaxation pool and whirlpool
  - Supply: LifeOX® technology

- **Science Centre Cardiovascular Surgery Bakuleva, Russia**
  - Pool type: Therapeutic pool equipped
  - Supply: Combi Ozone/UV 4.0

- **Baby Centre Šikuľa, České Budějovice City, Czech Republic**
  - Pool type: toddler swimming pool
  - Supply: LifeOX® technology

- **Centre oceanography and marine biology 'Moskvarium', Russia**
  - Pool type: Special swimming pool for mammals equipped LifeUVM 0120
  - Supply: LifeOX® technology

- **Wellness & Swimming Centre Tipport Laguna Beroun**
  - Pool type: children's pool, whirlpool, swimming pool, recreational pool
  - Capacity: total capacity 830 m³
  - Supply: LifeOX® technology

- **Aquapark Kohoutovice** (Brno, Czech Republic)
  - Return on investment in 8 months
  - Supply: LifeOX® M technology

- **X-BIONIC® SPHERE Resort (Samorin, Slovakia)**
  - Pool type: relaxation pools
  - Supply: ozone technology

REFERENCE DRINKING WATER

- **Vodovody a Kanalizace Jazni Cechy**, the Czech Republic
  - 3 waste water plants in Studena, Tabor and Prachatice
  - Equipped with ozone generators OZAST® 300, OZAST® 400 and OZAST® 500 as well as ozone mixing systems, vent ozone destructors and control systems

- **Veolia Water Bochnia, Poland**
  - 3 OZAST® 2000 ozone generators, each of 1.2 kgO₂/h at 12 wt%, vent ozone destructors, and a control unit
  - Veolia Water water treatment plant extension and modernization
  - Ozone is used for pre-ozonation and main disinfection

- **Bottling Plant Application, Belgium**
  - Ozone generator OZAST® 100 with one OG-20 oxygen concentrator installed in a bottling plant
  - Total water flow around 25 m³/h - 1.5 PPM in 25 m³/h can be managed
  - Two purposes: disinfection of the bottles and dosage of a small amount of ozone in the water itself (the water used to fill the bottles)

REFERENCE WASTE WATER

- **G. Modiano Ltd - Nejdeč Wool Combing**, the Czech Republic
  - Ozone generator OZAST® with 3.3 kgO₂/h at 12 wt%, oxygen generator, contact chambers and a control unit
  - Improvement of water quality used for wool washing
  - Deodorization of the main, smell steam® above the contract

- **Sewage plant for special waste water - Spolana, Neratovice, the Czech Republic**
  - Advanced Oxidation Process (AOP) for removal of dioxins and furans (PCDD/F), chlorophenols and other contaminants from the BCD process wastewater
  - OZAST® ozone generator with output of 5 kgO₂/h at 10% w/w ozone concentration, two reaction tanks with mixing systems, a vent ozone destructor and a control system
  - The world largest project for removal of PCDD/F was managed by BCD CZ a.s., a subsidiary of Thermal and Chemical Soil Remediation Ltd.
  - Dioxins removal
We are looking forward to hearing from you!

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