

## Cell

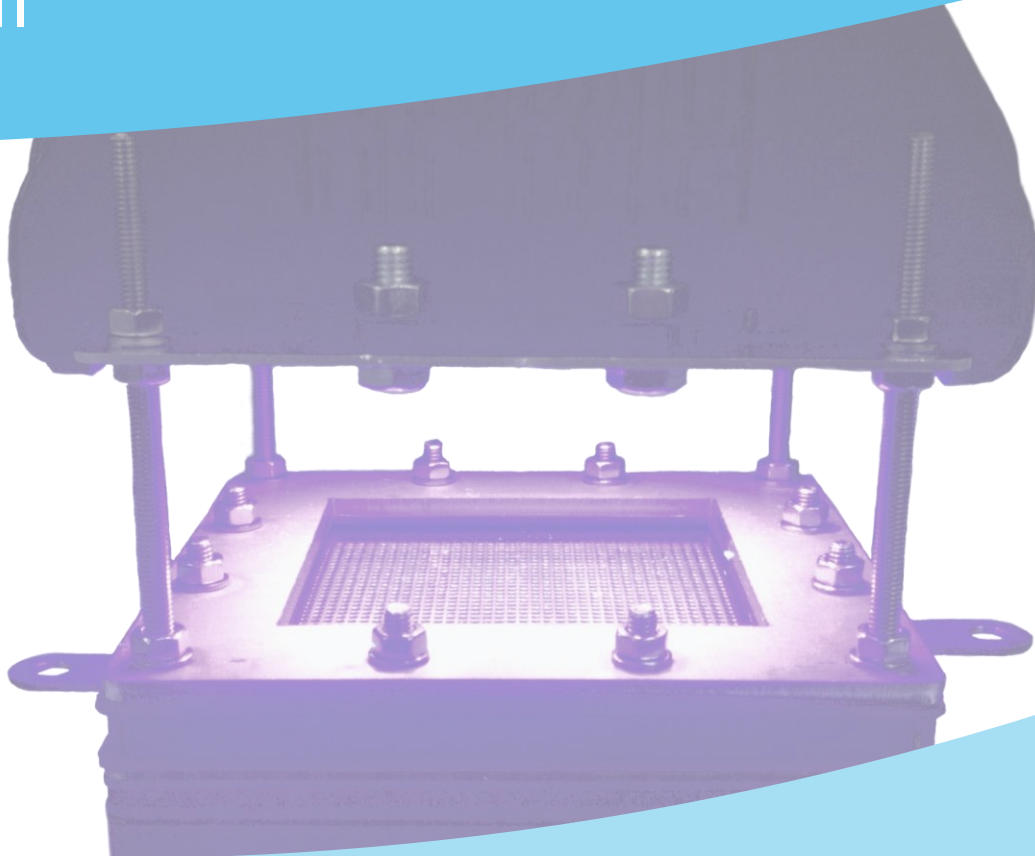


Plate and frame configuration



Customized electrodes



LED technology



Adjustable radiation intensity

## The equipment

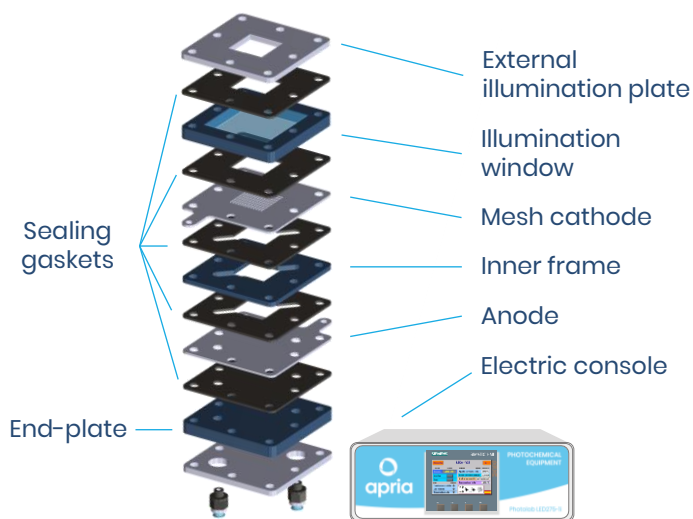
Apria Systems has designed a series of flexible cell photoelectroreactors, offering a wide range of **tailor-made** models to adapt the equipment to the needs of our clients.

We always use **cutting-edge LED technology** as source of light. Remarkably, the emitted radiation intensity can be regulated, and the temperature of the LEDs is controlled through forced air convection. Exchangeable illumination lamps –plates– are available in case different kind of lights need to be used.

The **electrodes can be totally customized**, being possible to select their configuration (distance between electrodes, number of compartments, etc.), the active anodic area, and the geometry of the electrodes. Moreover, we have a wide variety of exchangeable electrodes, allowing to test different electrode materials, when necessary.



## Elements of the system



## Operation

1. Pump the fluid to be treated to the photoelectroreactor
2. Turn-on the electric console for the LED lamp
3. Select the working type of light, adjust its radiation intensity, and switch-on the lamp
4. Turn on the AC/DC power supply for the electrodes and select the desired working amperage and voltage
5. Perform the photoelectrochemical tests

Extremely easy

We offer a wide range of alternatives to adjust our equipment to your needs

## Reactor characteristics

<b>Operation mode</b>	Continuous / recirculation
<b>Configuration</b>	One plate / exchangeable plates – up to two wavelengths per plate –
<b>Flowrate (m<sup>3</sup>/h)</b>	Up to 1
<b>Irradiated area (cm<sup>2</sup>)</b>	1 – 100
<b>Number of LEDs</b>	1 – 25
<b>Adjustable radiation intensity</b>	Yes, through an electric console with PLC
<b>Refrigeration system for the LEDs</b>	Forced air convection
<b>Number of compartments</b>	Selectable
<b>Optional items</b>	Automatization / Feeding tank / Online measurements (pH, O <sub>2</sub> , etc.) / Pumping / Temperature control

## Source of light

Type of light	Wavelength (nm)	Peak (nm)	Radiant flux / LED
UV-C	263 – 268	265	100 mW
	268 – 280	275	
UV-B	295 – 305	300	32 mW
UV-A	365 – 370	365	1,200 mW
Violet	400 – 410	405	1,260 mW
White	400 – 700	450	315 lm
Blue	453 – 460	457	1,350 mW
Green	520 – 530	523	450 mW
Red	618 – 630	623	935 mW
IR	835 – 875	850	930 mW

## Electrodes

<b>Electrodes material</b>	BDD / Carbon felt / IrO <sub>2</sub> / Ni / PtO <sub>x</sub> / PbO <sub>2</sub> / RuO <sub>2</sub> / Stainless steel / Ti
<b>Anodic useful surface (cm<sup>2</sup>)</b>	1 – 100
<b>Separation between the electrodes</b>	Adjustable and selectable (>1 mm)