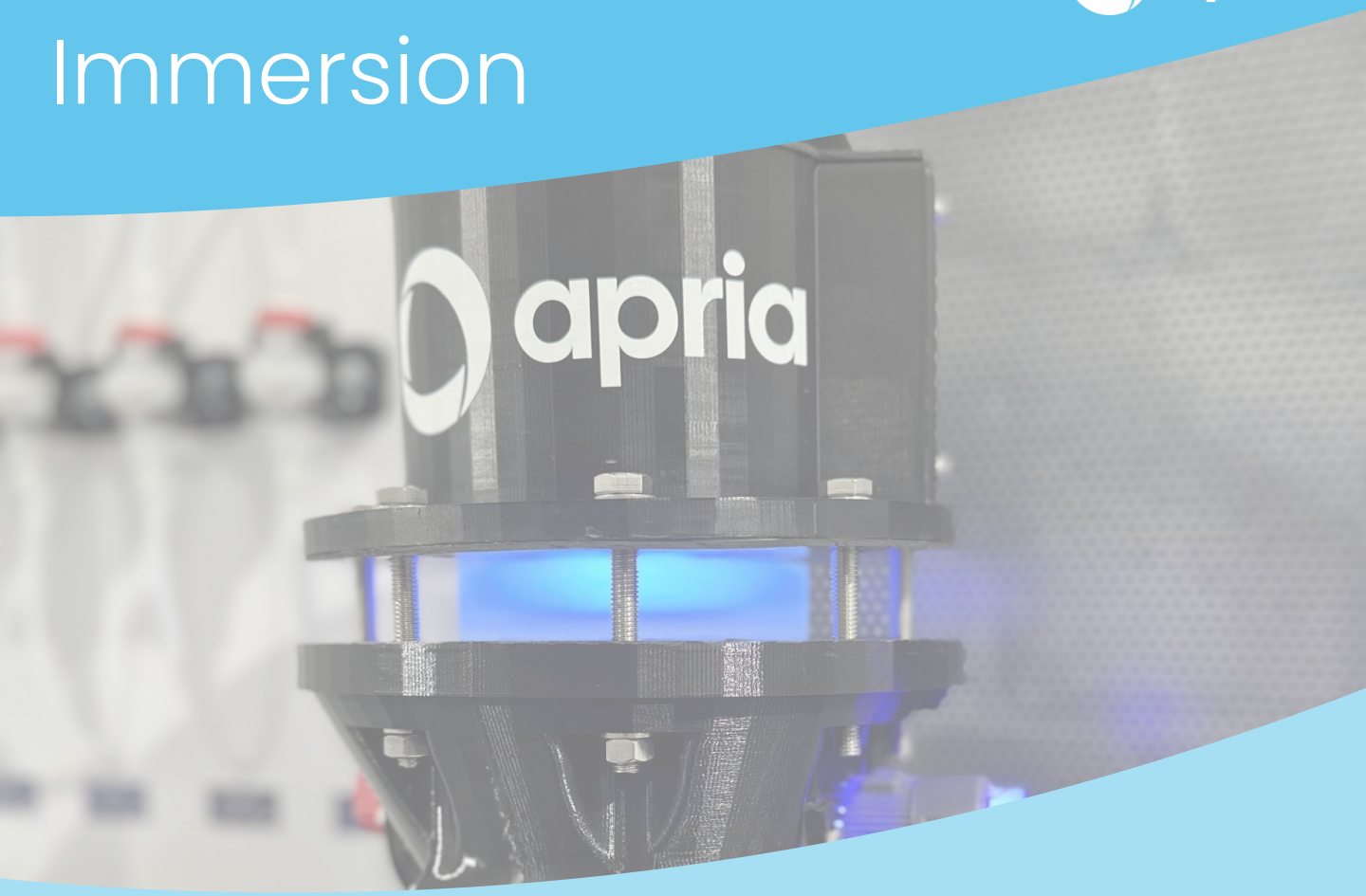
LED PHOTOREACTORS

Immersion



Immersion lamp

LED technology

Adjustable radiation intensity

The equipment

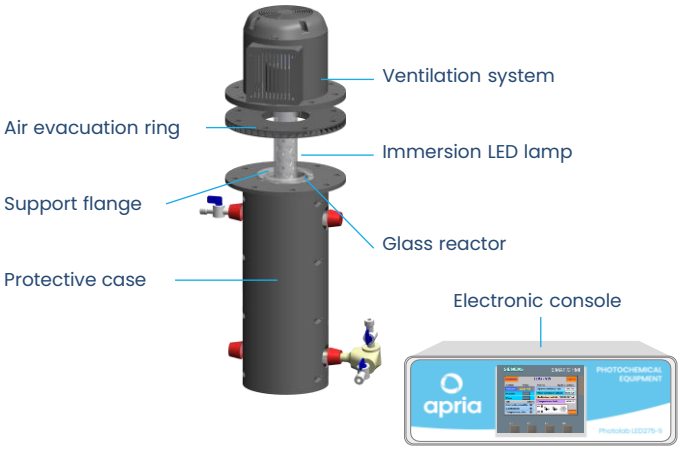
Apria Systems has designed a series of flexible immersion photoreactors with **LED technology.** We offer a wide range of **tailor-made** models to adapt the equipment to the needs of our clients.

Each photoreactor has one **immersion lamp** (LEDs arranged in 4 strips surrounded by a glass tube) with up to two **different types of light**.

Each kind of light has independent control, and its radiation **intensity can be regulated**, offering an adjustment to the needs of the treatment.

The **temperature of the LEDs is monitored** and controlled through a system of forced air convection, allowing to maximize their efficiency and lifetime.

Elements of the system



Operation

1. Introduce the fluid to be treated in the reactor
2. Turn-on the electronic console
3. Select the working type of light, adjust its radiation intensity, and switch-on the lamp
4. Perform the photochemical treatment

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

Reactor characteristics

Operation mode	Batch / continuous / recirculation
Configuration	Single / double wavelength / exchangeable lamps
Volume (mL)	300 – 1,000
Flowrate (m^3/h)	Up to 1
Irradiated area	Variable
Number of LEDs	12 – 48
Adjustable radiation intensity	Yes, through an electronic console with PLC
Refrigeration system for the LEDs	Forced air convection
Optional items	Automatization / feeding tank / jacketed reactor / magnetic stirring / online measurements (O_2, pH, etc.) / pumping / system to recover the photocatalyst / temperature control

Source of light

Type of light	λ (nm)	λ_{peak} (nm)	Φ / 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
Yellow	587 – 598	590	470 lm
Red	618 – 630	623	935 mW
NIR	835 – 875	850	930 mW
FIR	920 – 960	940	1,350 mW

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