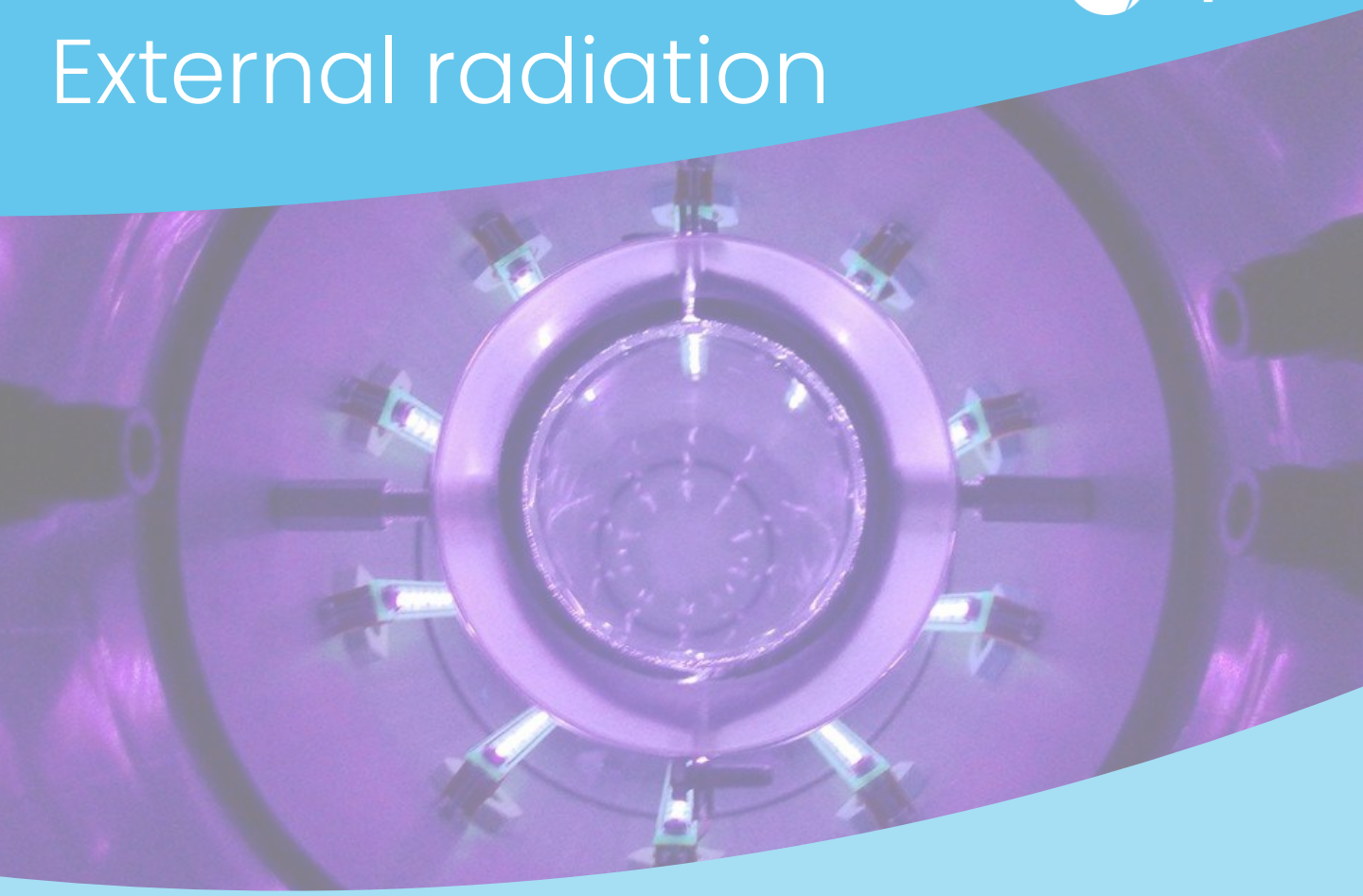
LED PHOTOREACTORS

External radiation



External illumination

LED technology

Adjustable radiation intensity

The equipment

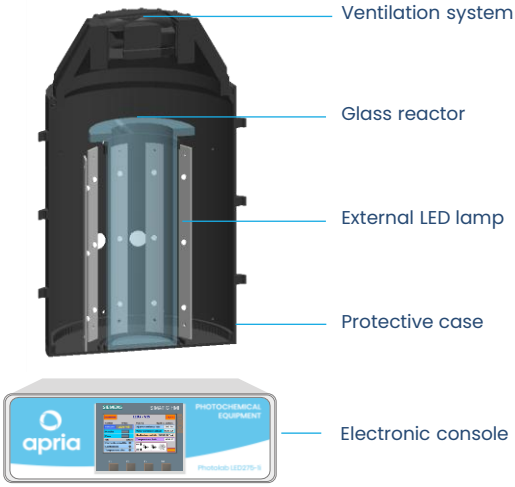
Apria Systems has designed a series of flexible photoreactors with **external radiation and LED technology.** We offer a wide range of **tailor-made** models to adapt the equipment to the needs of our clients.

Each photoreactor has one **external lamp** (LEDs arranged in several strips) 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. Locate the reactor inside the protective case and close the upper cap
3. Turn-on the electronic console
4. Select the working type of light, adjust its radiation intensity, and switch-on the lamp
5. Perform the photochemical treatment

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

Reactor characteristics

Operation mode	Batch
Configuration	Single / double wavelength / exchangeable lamps
Volume (mL)	200 – 1,000
Flowrate (m^3/h)	Up to 1
Irradiated area	Variable
Number of LEDs	20 – 160
Adjustable radiation intensity	Yes, through an electronic console with PLC
Refrigeration system for the LEDs	Forced air convection
Optional items	Magnetic stirring / online measurements (O_2, pH, etc.)

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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