

OPTIKON™
Man and Technology



TAKE A GLANCE AT THE FUTURE.



R-EVOLUTION

R-EVOLUTION GIUGIARO DESIGN

The extraordinary creativity of Giugiaro Design and Optikon's fifty-year experience in the sector of ophthalmic surgery have converged to create R-Evolution. Professionals from all over the world helped to invent a highly advanced platform that merges top quality design, a simple user friendly interface and ground breaking technological solutions to meet all surgical requirements.

R-Evolution is an advanced system, programmed to evolve steadily: its extreme flexibility involves the option of constantly updating the equipment to ensure up-to-date technology.

R-Evolution is conceived on highly sophisticated fluidics with performance optimisation based on three types of pumps. A series of Optikon patented solutions cover the main surgical areas: namely the lighting system with dual operating temperature and filters designed to reduce phototoxicity, the A.D.C. (Asymmetrical Duty Cycle) system for retinal surgery and the Minimal Stress patent for optimal energy control during cataract surgery.

R-Evolution: an unprecedented revolutionary project that looks toward the future of ophthalmology.



HIGH VACUUM I/A CASSETTE
ROTARY VANE, VENTURI AND
PERISTALTIC PUMPS

19" HD TOUCHSCREEN GUI

DUAL HID XENON LIGHT
SOURCES, 4 FILTERS

WIDE MOTORIZED INSTRUMENT TRAY

FULLY PROGRAMMABLE
BLUETOOTH FOOT PEDAL

Look

Giugiaro Design's primary mission from the outset of its partnership with Optikon was to endow the highly technological R-Evolution instrument with quality aesthetics and ergonomics.

The Industrial Design Department of the world renowned Italdesign-Giugiaro, backed by its forty-year expertise in designing clean basic and functional lines, enhanced each element of R-Evolution to make a tool that stands out for its sophisticated, highly advanced, harmonious and rational design. The final result is a technical equipment that can be

described as both refined and effective. The term "design" primarily indicates functionality and ergonomics: in plain language, this means the surgeon has streamlined, user friendly access to all devices. To this end, the instrument's adjustable screen, the focal point for the surgeon, can be tilted to ensure the best visibility and comfort.

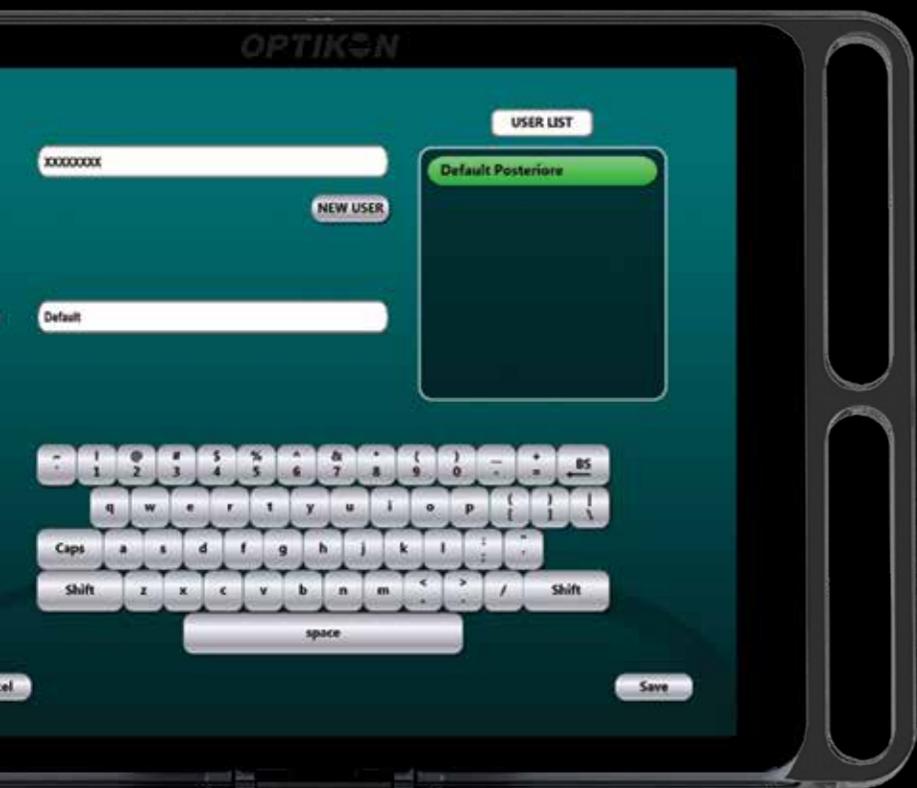
R-Evolution marks the harmonious conjunction of aesthetics, functionality and new generation technology.

GIUGIARO
D E S I G N



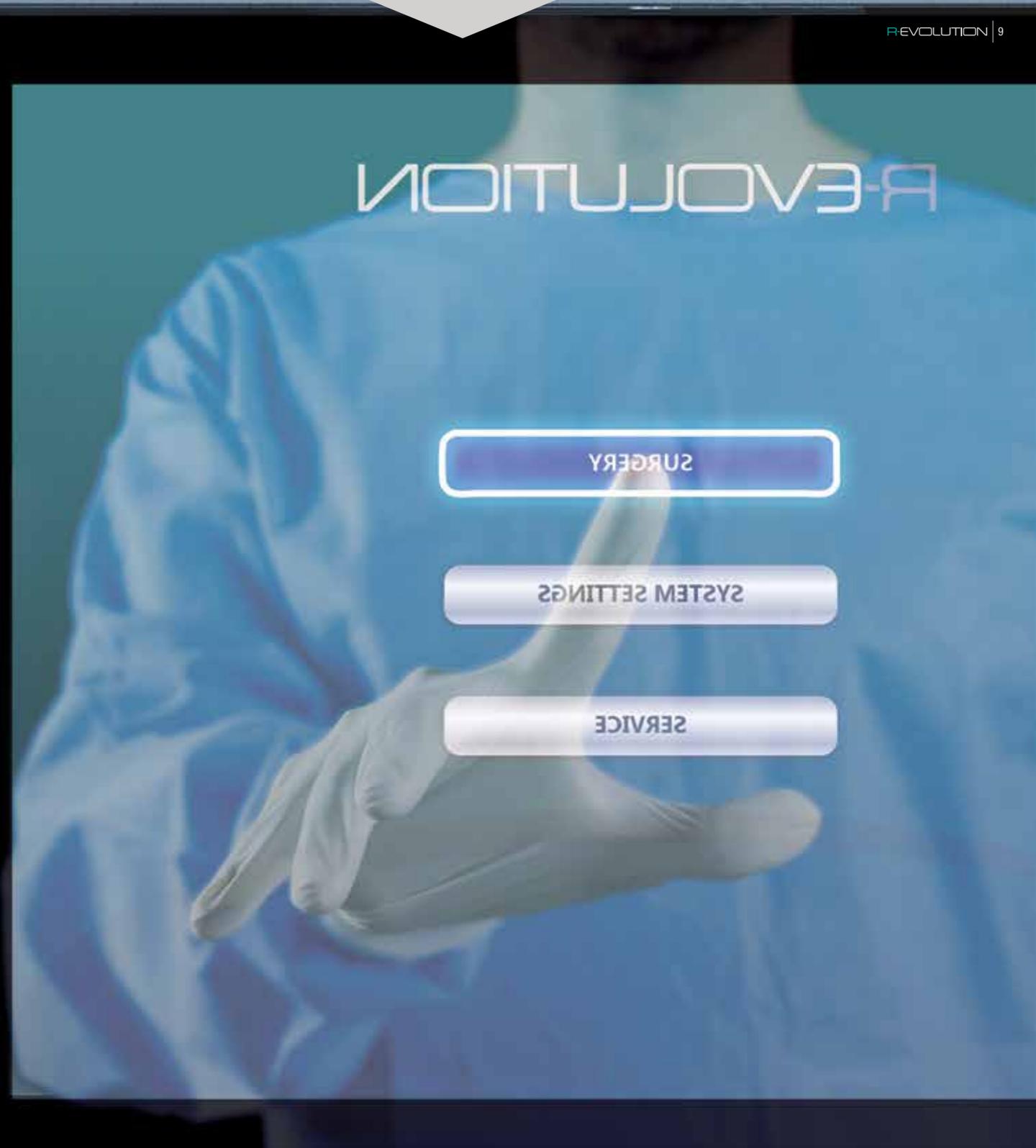


Look at the **R-EVOLUTION**.



Touch

Optikon has simplified man-machine interaction by directing the surgeon's gaze towards a single 19" touchscreen. The user-friendly graphic interface is conceived to ensure easy handling of a highly complex instrument. The large size and high resolution of the screen aid in achieving very precise surgical performance with ease. Finally, the dedicated software offers multiple level scheduling options based on the phase of surgery and ongoing updates through the USB interface.





Evolve

Aside from achieving the highest expression of ophthalmic technology, Optikon designers have also created a flexible architecture that can maintain the cutting edge features of the instrument in the long term.

In fact, R-Evolution is designed to implement

hardware and software innovations very simply: by plugging in a USB pendrive. These unique features will ensure close communications with the scientific community for the integration of new surgical techniques and methods.

Technical specifications **R-EVOLUTION**

PARAMETER	SPECIFICATION
Model	R-Evolution / R-Evolution CR
IRRIGATION	
Fluid delivery	gravity fed – eye pressure determined by the height of irrigation source forced irrigation – eye pressure controlled by the equipment
Control	system foot pedal
ASPIRATION	
Aspiration pump types	peristaltic and Venturi (R-Evolution CR), peristaltic and rotary vane (R-Evolution)
Default vacuum level	user programmable
Available vacuum range	from 5 to 650 mmHg
Default flow rate	user programmable
Available flow rate range	from 0 to 65 cc/min, step 1cc/min (peristaltic only)
Available aspiration rise time	adjustable on 25 levels (0,5 s – 12 s)
Surgeon mode (linear aspiration)	linear aspiration (vacuum and/or flow rate) from 0 to preset linearly controlled via system foot pedal
Control	system foot pedal
VIT (VITRECTOMY)	
Handpiece type	pneumatically powered guillotine cutter (VIT), pneumatically powered microscissors (SCISS)
Cutting mode	reciprocating motion
Default cut rate	user programmable
Available cutting rate	(R-Evolution CR) from 60 to 6000 cuts per minute (VIT) (R-Evolution CR) from 60 to 310 cuts per minute (SCISS) (R-Evolution) from 60 to 770 cuts per minute
Single cut	single cut mode available
Actuating medium	pressurized air
Operating pressure	from 2.3 bar to 4.2 bar
Surgeon mode (Linear cut)	linear cut rate from 0 to preset controlled via system foot pedal
Control	system foot pedal
DIATH (DIATHERMY)	
Type	bipolar generator
Operating frequency	2 MHz
Nominal power	9 W (200 Ohm LOAD)
Default bipolar power	user programmable
Available bipolar power	from 5 to 100%
Surgeon mode (linear power)	allows linear control of the DIATHERMY power via system foot pedal
Handpiece type	bipolar microforceps, slim stat pencil eraser, intraocular diathermy pencils
Control	system foot pedal

ILLUMINATION (R-Evolution CR only)

Source type	dual independent HID lamps (4300K and 5000K)
Intensity adjustment	mechanical diaphragm, 10 levels + 4 protection cut-off filters

AIR INJECTION SECTION (R-Evolution CR only)

Nominal pressure	from 5 to 120 mm/Hg
Safety devices	air activation sound

SILICONE INJECTION SECTION (R-Evolution CR only)

Nominal pressure	from 0,4 to 5 bar
Signals	silicone injection activation sound, low pressure at air inlet
Control	system foot pedal

PHACOEMULSIFIER

Handpiece type	piezoelectric
Frequency	40 KHz
Tip stroke	from 0 to 100 µm
Power Control	panel or linear control of the U/S power via system foot pedal depression
U/S Mode	linear or panel; continuous, short pulse, single burst, multi-burst, continuous burst, programmable emission mode

FOOT PEDAL

programmable, double linear, simultaneous, single linear, Bluetooth

COMPRESSED AIR SPECS (R-Evolution CR only)

Input air pressure	from 500 to 800 KPa (from 72 to 116 PSI)
Air consumption	32 normal litre/minute

ELECTRICAL SPECS

Input voltage	100 - 240 Vac.
Frequency	50/60 Hz

Regulatory compliance 93/42/EEC Medical Devices Directive (MDD)

Technical standards	EN60601 - 1 EN60601 - 1 - 1 EN60601 - 1 - 2 EN60601 - 2 - 2
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L x W x H:
560 x 529 x 1617 mm





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USA
Venezuela

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Sudan
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