Phacoemulsification and surgical platforms

# R-Evolution CR

## Phacoemulsification and anterior and posterior vitrectomy.

The R-Evolution CR is a versatile platform for ophthalmic surgery. It combines advanced technology with an intuitive interface to support surgical performance and the user experience.



R-Evolution CR · Equipment view

Sources and documentation

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Generated on 2026-11-29

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# Key advantages

## Combined surgery

Phaco and anterior and posterior vitrectomy.

Sources and documentation · Source checked on 2026-10-17

## Dual aspiration system

Choice of peristaltic and Venturi pumps.

Sources and documentation · Source checked on 2026-10-17

## Ultrasound phaco

Continuous, pulsed or burst emission at about 40 kHz.

Sources and documentation · Source checked on 2026-10-17

## Set fluidics

The interface combines pump and irrigation settings for the combined procedure.




R-Evolution CR · Manufacturer interface

Manufacturer illustration: the configuration shown may differ from the delivered configuration.

Sources and documentation

Sources and documentation · Source checked on 2026-08-30

### Control vitrectomy

The operating view documents settings dedicated to vitreoretinal steps.




R-Evolution CR · Manufacturer interface

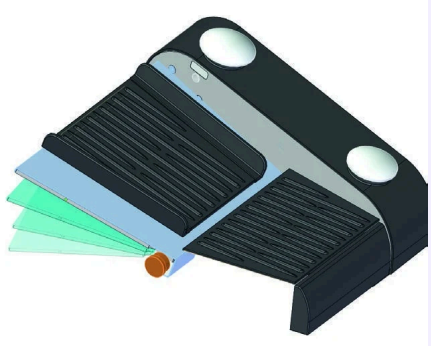
Manufacturer illustration: the configuration shown may differ from the delivered configuration.

Sources and documentation

Sources and documentation · Source checked on 2026-08-30

### Customise the pedal

The programmable pedal keeps useful controls at the surgeon’s foot during surgery.



R-Evolution CR · Hardware detail

Sources and documentation

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### Surgical workflow

Functions used in the surgical programme are brought together on the platform.

### Fluidics management

Organised settings to support surgical steps.

### Operator interface

A clear view of system settings and information.

## Capabilities in practice

### Phacoemulsification

Sources and documentation

## Anterior vitrectomy

Sources and documentation

## Posterior vitrectomy

Sources and documentation

## Main features

Intuitive interface:

High-definition touchscreen for straightforward navigation.
Customisable settings to suit surgical preferences.
Advanced phacoemulsification technology:

High-performance system for precise, efficient cataract surgery.
Reduced vibration and smooth energy control.
Extensive compatibility:

Designed to integrate modules for vitrectomy and other ophthalmic procedures.
Supports current instrumentation technologies.
Irrigation and aspiration system:

Precise adjustment to maintain a stable anterior chamber.
Automated control to minimise intraoperative risks.

Ergonomic design:

Compact structure to suit operating rooms.
Wheels and sturdy handles for mobility.

## Main applications

Cataract surgery.
Retinal and vitreous surgery.
Other ophthalmic procedures requiring a high-precision platform.

## Available accessories

Additional modules: options to tailor the platform to surgical requirements.
Spare parts: compatible instruments to support maintenance.
Documentation system: possible integration for recording procedure videos.

## Technical features

Dual-pump system: integrates peristaltic and Venturi pumps, allowing selection according to surgical requirements.

Agile Fluidics™: dynamic intraocular pressure (IOP) management through microprocessor-controlled active irrigation, providing fluidic stability throughout anterior and posterior segment surgery.

High-frequency vitreous cutting: TWEDGE™ 20K dual-blade vitreoretinal probes provide up to 20,000 cuts per minute for efficient vitrectomy.

Independent LED light sources: three independent LED sources without harmful UV or IR emissions, with selectable colour filters, provide illumination and increased protection against phototoxicity.

Integrated green laser module (532 nm): optional endophotocoagulation with an integrated laser control interface for precise retinal treatment.

## Auxiliary functions for vitreoretinal surgery

Automatic fluid/air exchange, also controlled by the foot pedal.
Silicone oil injection and removal, with simultaneous aspiration possible using the same kit.
Exo/endo diathermy.
Pars plana phacoemulsification.
Fluid extrusion.

## Optimised ultrasound energy management (Minimal Stress™)

An adaptive system adjusts ultrasound output in real time according to the resistance of lens material, maintaining effective, constant phaco tip elongation.

## Advanced user interface

Intuitive software and a programmable wireless foot pedal provide simultaneous dual-linear or single control, customisable to the surgeon's preferences.

## Key benefits

Versatility: supports combined cataract and vitreoretinal procedures, offering ophthalmic surgeons an all-in-one solution.
Safety: integrated technologies help maintain anterior chamber stability and protect delicate ocular structures.
Efficiency: advanced functions and an optimised interface reduce operating time.

### Physical specifications

Dimensions (W x D x H): 54 x 57 x 165 cm.
Weight: 130 kg.

## Designed for a smoother workflow

### Two aspiration modes

R-Evolution CR lets the operator program vacuum and flow for the selected mode.

- Peristaltic and Venturi pumps.
- Vacuum: 5–700 mmHg.
- Peristaltic flow: 1–90 ml/min.

Sources and documentation

### Active or gravity-fed irrigation

Active irrigation is microprocessor controlled. The sheet also describes gravity-fed delivery with foot-pedal control.

Sources and documentation

# Designed for daily practice

## Selectable phaco modes

The piezoelectric handpiece operates at approximately 40 kHz, with fixed or linear foot-pedal power control.

- Continuous, pulsed or burst emission.
- Autolimit and HD Pulse occlusion modes.

Sources and documentation

## Controlled anterior vitrectomy

The pneumatic cutter provides 60–10,000 cuts/min. With Twedge technology, the stated range is 120–20,000 cuts/min.

Twedge rates require the corresponding cutter; they do not describe every accessory.

- Fixed or linear foot-pedal control.

Sources and documentation

## Adjustable bipolar diathermy

The 2 MHz bipolar generator has a nominal output of 9 W at a 200-ohm load, adjustable from 5% to 100%.

Sources and documentation

## Foot-controlled settings

The pedal controls the irrigation, aspiration, phaco and vitrectomy functions documented in the sheet. Default settings are programmable by function.

Sources and documentation

## A retinal configuration

The CR version combines posterior vitrectomy with 3 independent LED sources. Auxiliary functions include fluid/air exchange and silicone-oil handling.

- The standard R-Evolution configuration must not be treated as the CR version.

Sources and documentation

# Technical specifications & documentation

### Brand
BVI Medical

### Model
R-Evolution CR

### Technology
Phacoemulsification

### Clinical use
Cataract and retinal surgery

### Phaco frequency
40 kHz

Approximate frequency; it does not establish clinical superiority.

Sources and documentation

### Maximum vacuum
700 mmHg

Sources and documentation

### Maximum flow
90 ml/min

Peristaltic mode only.

Sources and documentation

### Anterior vitrectomy cut rate
10000 coupes/min

Standard anterior probe; optional TWEDGE maximum excluded.

Sources and documentation

### Pumps
Peristaltic · Venturi

Sources and documentation

### Light sources
3

Endo-illumination; no zero value is inferred for undocumented models.

Sources and documentation

### Controls
Programmable foot pedal

Sources and documentation

### Power supply
100–240 V AC ; 50–60 Hz

Sources and documentation

### Dimensions
54 × 57 × 165 cm

Complete console on cart.

Sources and documentation

### Weight
130 kg

Complete tower; configuration not comparable to the weight of a console alone.

Sources and documentation

Approximate frequency; it does not establish clinical superiority.

Peristaltic mode only.

Standard anterior probe; optional TWEDGE maximum excluded.

Endo-illumination; no zero value is inferred for undocumented models.

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R-Evolution CR · Manufacturer interface

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Sources and documentation



R-Evolution CR · Manufacturer interface

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Sources and documentation



R-Evolution CR · Hardware detail

Sources and documentation

# Downloads & resources

- https://www.bvimedical.com/wp-content/uploads/2021/11/BVI_R-Evolution-CR_TDS_EN.pdf
  Source checked on 2026-10-05
- https://www.bvimedical.com/wp-content/uploads/2021/11/BVI_R-Evolution-CR_TDS_EN.pdf
  Source checked on 2026-10-17
- https://www.bvimedical.com/wp-content/uploads/2023/12/1739334-01_Revolution_Brochure.pdf
  Source checked on 2026-08-30
- https://www.bvimedical.com/products/r-evolution-cr/
  Source checked on 2026-08-30
- https://www.bvimedical.com/wp-content/uploads/2021/11/BVI_R-Evolution-CR_TDS_EN.pdf
  Source checked on 2026-10-18

# Your questions about R-Evolution CR

## What is the documented Phaco frequency of R-Evolution CR?

40 kHz — Approximate frequency; it does not establish clinical superiority.

Sources and documentation

## What is the documented Maximum vacuum of R-Evolution CR?

700 mmHg

Sources and documentation

## Which configuration should I confirm for R-Evolution CR?

Approximate frequency; it does not establish clinical superiority.

Sources and documentation

## Which aspiration system does R-Evolution CR use?

Peristaltic and Venturi pumps.

Sources and documentation

## How should the vitrectomy rates be read?

This variant’s sheet distinguishes 60–10,000 cuts/min from 120–20,000 with Twedge. The ordered handpiece and configuration must match.

Sources and documentation

## Is gravity irrigation also documented?

Yes. The sheet describes microprocessor-controlled active irrigation and gravity delivery. The exact station equipment must be confirmed when configuring it.

Sources and documentation

# Related products



## R-Evo Smart® CR

BVI Medical

Phacoemulsification and surgical platforms

Phacoemulsification and anterior and posterior vitrectomy.

View product



## R-Evo Smart® E

BVI Medical

Phacoemulsification and surgical platforms

Phacoemulsification and anterior vitrectomy.

View product



## R-Evo Smart® S

BVI Medical

Phacoemulsification and surgical platforms

Phacoemulsification and anterior vitrectomy.

View product



## R-Evolution

BVI Medical

Phacoemulsification and surgical platforms

Phacoemulsification platform with configurable surgical functions.

View product

# Explore the ASEM clinical catalogue

Browse related areas of the ASEM catalogue. These links do not extend the indications of this device.

Cataract and retinal surgery

# More than a device, a long-term partnership

Discuss your project with ASEM: equipment selection, installation, training and technical support.



Service illustration

### Installation

Discuss the installation requirements and configuration with our technical team.

Learn more

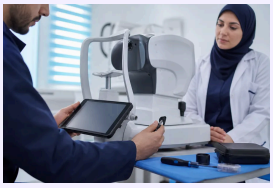


Service illustration

### Training

Ask about the training and familiarisation available for your equipment.

Learn more



Service illustration

### After-sales service

Contact ASEM for technical assistance and the support appropriate to your equipment.

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Service illustration

### Expert advice

Tell us about your clinical needs to discuss a suitable equipment selection.

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Contact a specialist | Explore all products | Manufacturer website

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