easyret®

577 nm FIBER
TECHNOLOGY LASER



Quantel medical
BY LUMIBIRD MEDICAL

Peripheral and Macular Photocoagulation

Easyret® is a fully integrated **577 nm yellow photocoagulator** based on a **technological breakthrough: fiber laser technology.** Available with Haag Streit or Zeiss type slit lamps, it offers a large choice of treatment settings well adapted to the treatment of macular and peripheral retinal pathologies.

EASYRET®: YELLOW FIBER LASER, FEATURING MULTISPOT AND SUBLIMINAL® TECHNOLOGIES

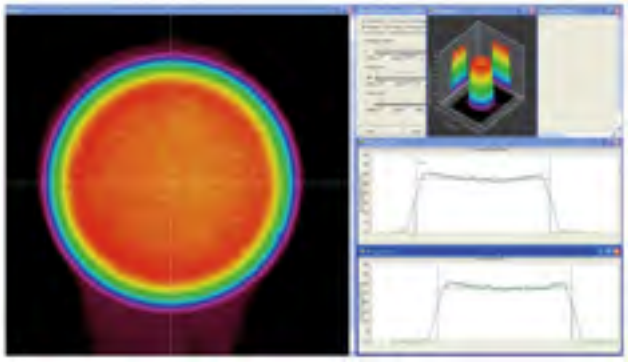
Fiber Laser Technology:

Stemming from the ELBA™ technology, developed and successfully marketed by Quantel Laser for various applications, this new generation of laser cavity provides unique advantages:

- An excellent beam quality ensuring a homogeneous laser spot profile (top hat)
- The emission of pure 577 nm yellow wavelength
- An extended lifetime thanks to a simple, compact and reliable technology.

The fiber laser technology is a variation of the standard solid-state laser technology.

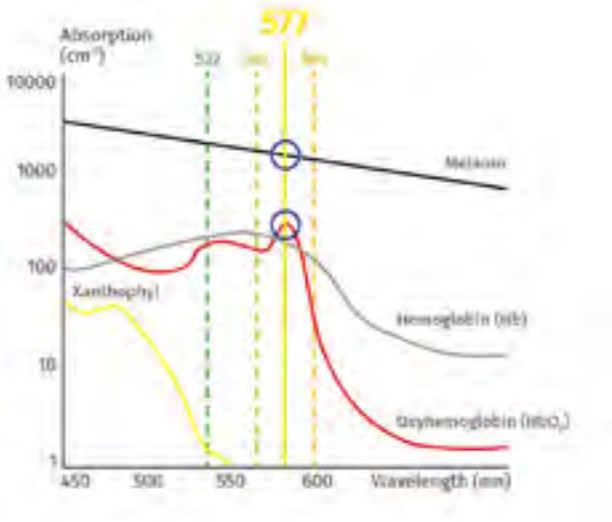
In fiber lasers, the lasing medium is composed of an optical fiber doped with rare earth elements and optically pumped by diodes.



Yellow Laser - 577 nm Wavelength:

Presented as the most versatile wavelength in the scientific literature, the 577 nm wavelength offers the following benefits:

- Excellent combined absorption by both melanin and oxyhemoglobin (peak absorption of oxyhemoglobin) [1,2]
- Very little absorption by macular xanthophyll pigments [1,2]
- Excellent penetration through cataracts and hazy media [1,2] .



1- Vogel M, Schäfer FP, Stuke M, Müller K, Theuring S, Morawietz A. Animal, experiments for the determination of an optimal wavelength for retinal coagulations. Graefes Arch Clin Exp Ophthalmol. 1989;227:277-280.

2- Mainster MA. Wavelength selection in macular photocoagulation. Tissue optics, thermal effects, and laser systems. Ophthalmology.1986;93:952-958.

Peripheral and Macular Photocoagulation

EASYRET®: FULLY INTEGRATED DESIGN

Easyret® offers a fully integrated design in which the laser and the slit lamp are optimally integrated for better ergonomics and ease of use.
It is available with two types of slit lamps to adapt to the operator's working habits.

Both versions feature:

- An integrated laser adapter featuring a continuously variable parfocal zoom
- A large touch screen interface to monitorthe treatment settings
- A click wheel to control the patterns settings
- An intelligent footswitch to control the laser settings.



EASYRET®: ENHANCED SOFTWARE USER INTERFACE

3 Treatment Modes/3 Dedicated Targets:

Easyret® provides an intuitive and versatile software user interface simplifying the use of the SingleSpot, MultiSpot and SubLiminal® treatment modes.
Built in a clinically oriented manner, Easyret® offers 3 different types of visible targets (aiming beam) facilitating the implementation of the laser spots with each treatment mode.

SingleSpot Mode



MultiSpot Mode



SubLiminal® Mode



MOSAR®: A HIGH DEFINITION IMAGING SYSTEM FOR EASYRET®

Mosar® is an optional camera/video imaging system compatible with the Easyret® laser.

It features:

- A co-observation teaching mode for live viewing of laser procedures
- An advanced mode allowing the operator to:
  - Import diagnosis images facilitating the laser treatment planning
  - Prepare, print and record advanced treatment reports including fundus and diagnosis images
  - Take pictures or record treatment videos for presentation and training purposes.

After each treatment all the generated images, videos and treatment reports can be saved and exported on a USB drive or a local network.

MultiSpot Technology:

Characterized by the use of short pulse durations from 10 to 20 ms, this technology offers many advantages over classical treatments:

- Less heat diffusion to the retina and choroid, less damage to the retinal nerve fiber layer [3,4]
- Comfortable treatment better tolerated by patients [5]
- Treatment time reduction (full PRP in 1 session) [6].

It can be delivered through 4 customizable patterns for better adaptation to the treatment site.



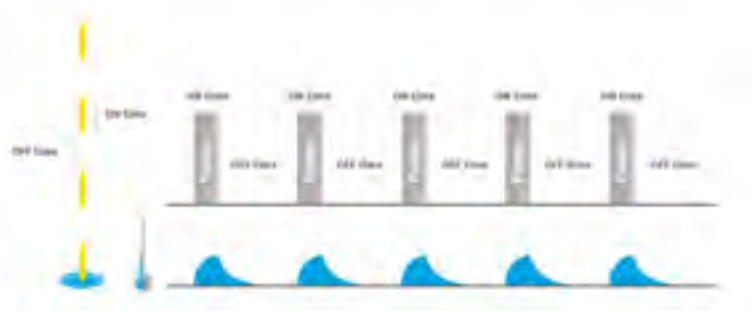


MultiSpot Panphotocoagulation

Image courtesy of Alejondro Filloy Ruis, MD, Ph.D.
Tarragona, Spain

SubLiminal® Technology:

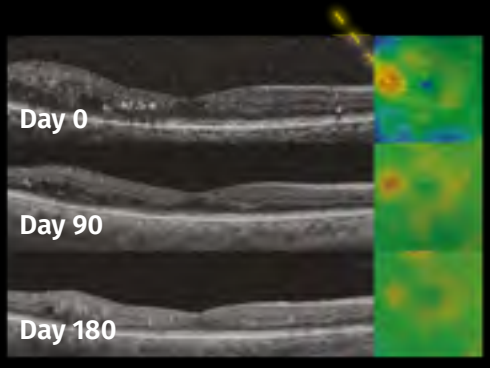
Composed of a train of extremely short microsecond pulses, this subthreshold treatment mode (non-visible laser impacts) allows the operator to fully adjust the pulse duration (On Time) and interval (Off Time). This fined-tuned control of the laser treatment settings ensures a precise management of the thermal effect on the targeted tissues. It can be delivered through 3 customizable patterns:





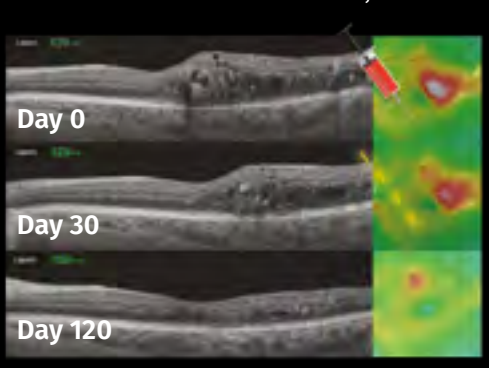
Studies using this tissue sparing treatment mode avoiding scarring [7,8] have reports successful outcomes for diabetic macular edema [7] and central serous chorioretinopathy [8].

Extrafoveal Diabetic Macular Edema

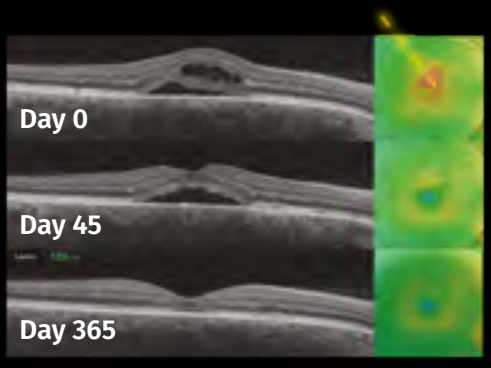


Central Diabetic Macular Edema

Laser treatment after intravitreal injection



Chronic Central Serous Chorioretinopathy



Images courtesy of Alejandro Filloy Rius, MD. Ph.D - Tarragona, Spain

TECHNICAL SPECIFICATIONS

5 YEAR WARRANTY LASER CAVITY

EASYRET SPECIFICATIONS

Laser source:	fiber laser technology
Wavelength:	yellow 577 nm
Power at tissue up to:	2000 mW
Pulse duration:	10 ms to continuous
Single spot modes:	single, repeat, painting, continuous
SubLiminal® mode:	train of microsecond pulses adjustable duty cycle: 5% to 100%
Resume® function:	available in MultiSpot and SubLiminal® modes
Pattern:	
MultiSpot mode:	single spot, squares, circles, triple arc, macular grid
SubLiminal® mode:	single spot, squares, customizable macular grid
Spot size:	
Single spot:	continuously variable from 50 µm to 400 µm
Pattern:	continuously variable from 100 µm to 400 µm
Integrated slit lamps:	
Haag Streit type:	Quantel Medical (CSO 9900 5x)
Zeiss type:	Quantel Medical (CSO 9800 5x)
Aiming beam:	635 - 650 nm
Size:	174.2 (H) x 97 (W) x 72 (D) cm 68.58'' (H) x 38.19'' (W) x 28.35'' (D)
Weight:	60 kg - 132 lbs
Cooling:	by Peltier effect
Power requirements:	100 to 240 VAC, 250 VA, 50/60 Hz

OPTIONAL FEATURES

Single column stand or Twin column stand
Easyret® with LIO port
Laser indirect ophthalmoscope Keeler Vantage Plus

MOSAR SPECIFICATIONS

Camera:

Image resolution:	1280 x 720 pixels
Compatibility:	Easyret® laser
Camera position:	left or right eye

Computer and screen:

Connected on Easyret® screen arm	
Touchscreen size:	10.1''
Storage:	SSD 256 GB
Connectivity:	USB and Ethernet
Power supply:	12 VDC / 5A

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Effect of pulse duration on size and character of the lesion in retinal photocoagulation.
Arch Ophthalmol. 2008; 126:78-85.

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Korean J Ophthalmol 2014;28(3):220-225.

5- Hussainy S Al, Dodson PM and Gibson JM
Pain response and follow-up of patients undergoing panretinal laser photocoagulation with reduced exposure times. Eye (2008) 22, 96–99

6- Muqit MM, Marcellino GR, Henson DB et al.
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7- Yoon Hyung Kwon, Dong Kyu Lee, Oh Woong Kwon
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8- Scholz P, Ersoy L, Boon CJF, Fauser S
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Artwork : www.overscan.fr

CE 0459





Manufacturer
Quantel Medical
1 Rue du Bois Joli – CS40015
63808 Cournon d'Auvergne – FRANCE
Tel.: +33 (0)4 73 745 745
Email: contact@lumibirdmedical.com
ISO 13485 : 2016

Headquarters
Lumibird Medical
1 Rue du Bois Joli – CS40015
63808 Cournon d'Auvergne – FRANCE
Tel.: +33 (0)4 73 745 745

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