NIDEK

Multicolor Scan Laser Photocoagulator **MC-500 Vixi**

Multicolor Laser Photocoagulator **MC-500**

U.S. EDITION

THE ART OF EYE CARE

MC-500 Vixi / MC-500

The Versatile Laser Photocoagulator

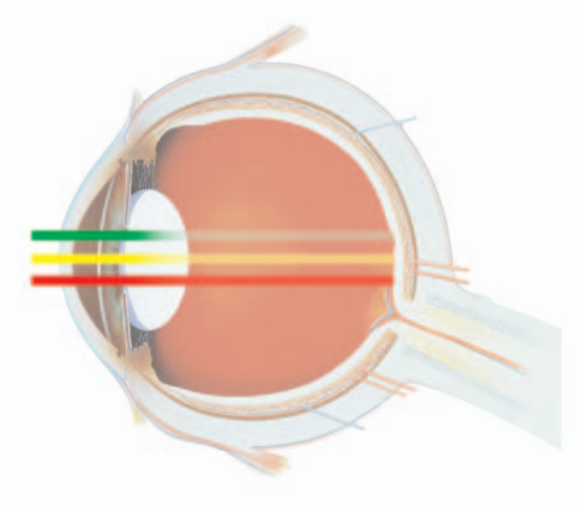
- **Selectable configuration of laser colors and delivery units**
- **Multiple scan patterns**
- **Enhanced usability**
- **LPM (Low Power Mode)**

The MC-500 Vixi / MC-500 provides a variety of laser treatments including panretinal photocoagulation for diabetic retinopathy and laser iridotomy for glaucoma with a scan slit lamp delivery unit. Additionally, our new LPM software allows easier setup for minimally invasive photocoagulation with a grid scan pattern.

Multicolor on Modular Architecture

Multicolor Laser for Multiple Applications

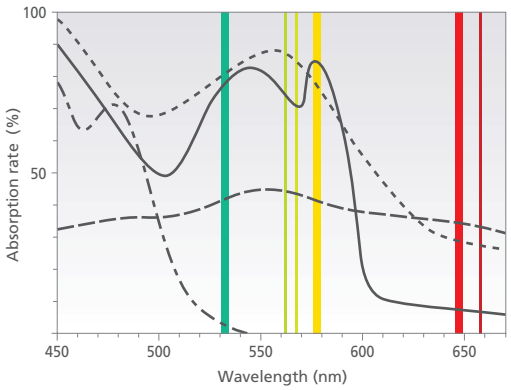
The MC-500 Vixi / MC-500 enables efficient photocoagulation even through opaque media.
In cases of cataract, better penetration is achieved with the yellow (577 nm) laser compared to the green (532 nm) laser.
In eyes with retinal hemorrhage, better penetration is achieved with the red (647 nm) laser.



532 nm
The 532 nm (green) is the most common wavelength for treating retinal pathology.

577 nm
The 577 nm (yellow) laser is minimally absorbed by xanthophyll and is well absorbed by oxygenated hemoglobin compared to 561 nm and 568 nm lasers making it the wavelength of choice for lesions close to the macula. This wavelength has plentiful results achieved with the dye lasers.

647 nm
The 647 nm (red) wavelength has been historically used in krypton lasers. This wavelength is used for photocoagulation of deep choroidal pathology.



Reference: Folia Ophthalmol. Jpn. 40(5)1128-1133, 1989

- Pigment epithelium
- Reduced hemoglobin
- Oxygenated hemoglobin
- Xanthophyll
- 532 nm (MC-500, 300)
- 561 nm (MC-300)
- 568 nm (MC-7000)
- 577 nm (MC-500)
- 647 nm (MC-500, 7000)
- 659 nm (MC-300)

Selectable Laser Color Configuration

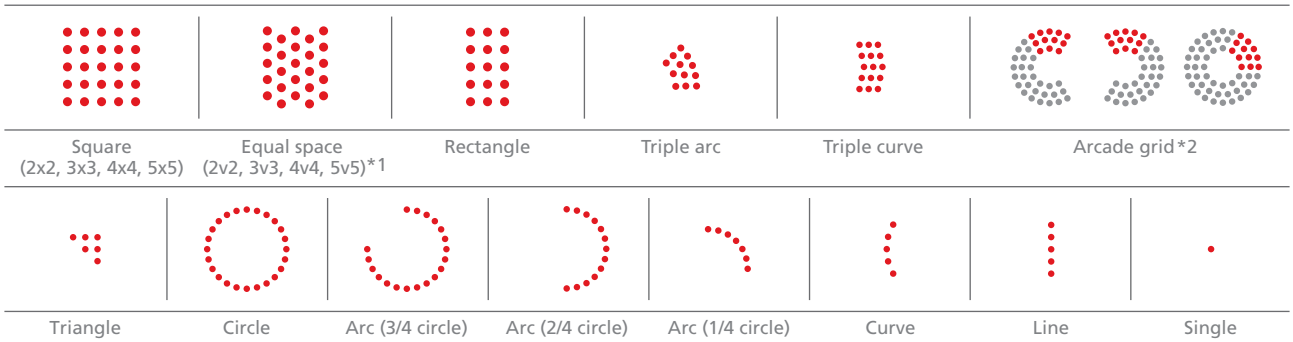
The MC-500 Vixi / MC-500, with its user friendly design, allows the selection of one, two, or three wavelengths, among green, yellow, and red. It enables the freedom to select the necessary color or combination of colors to increase efficiency of treatment.

Three-color selection			
Two-color selection			
One-color selection			

Green Yellow Red

Multiple Scan Patterns

The MC-500 Vixi has 22 preprogrammed scan patterns to allow treatment of varying retinal pathologies.



*1 For equal space patterns, No. v No. indicates the number of spots in horizontal and vertical directions.
*2 The arcade grid pattern is used for treatment of the periphery of macula in one-sixth units. The inner diameter is fixed and spot sizes range from 100 to 200 µm.

Typical Scan Patterns

Equal space (2v2, 3v3, 4v4, 5v5)

The space between spots is equal in all directions.

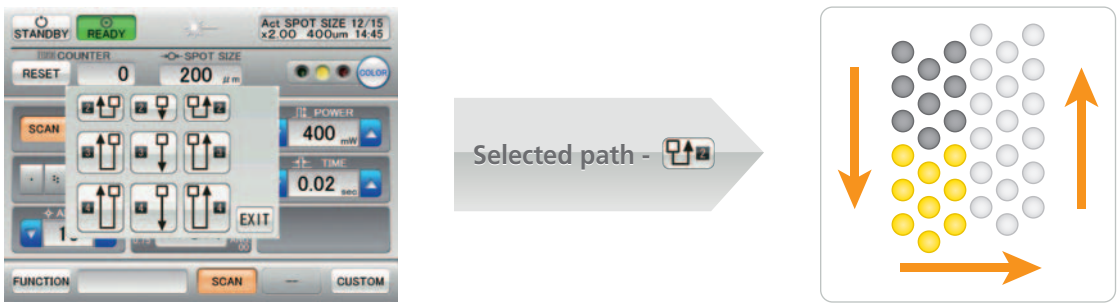
Square (2x2, 3x3, 4x4, 5x5)

The space between spots is equal in the horizontal and vertical directions.

The square pattern makes larger spaces in the diagonal direction than the horizontal and vertical directions.
The equal space pattern keeps the spaces between spots equal allowing for denser photocoagulation than the square pattern.

Auto Forward*

Once photocoagulation is completed in one region, the MC-500 Vixi allows automated positioning of the scan pattern to the next region to undergo photocoagulation. This feature allows the surgeon to concentrate on focus adjustment.



The repeat mode with the auto forward function enables consecutive regions to undergo photocoagulation on a selected path without repeatedly pressing the foot switch.

*The auto forward function is available for the equal space (2v2, 3v3, 4v4) and the square (2x2, 3x3, 4x4) patterns.
The number of times of the forwarding differs depending on the scan pattern, spot size, and spacing.

Delivery Unit Options

Scan Delivery Units

Scan slit lamp
delivery unit
(NIDEK SL-1800)

Scan attachable
delivery unit
(NIDEK SL-1800)

Scan attachable
delivery unit
(ZEISS SL 130)

Scan attachable
delivery unit
(HAAG BQ 900 / BQ 900 LED slit lamp)

Single Delivery Units

Slit lamp
delivery unit
(NIDEK SL-1800)

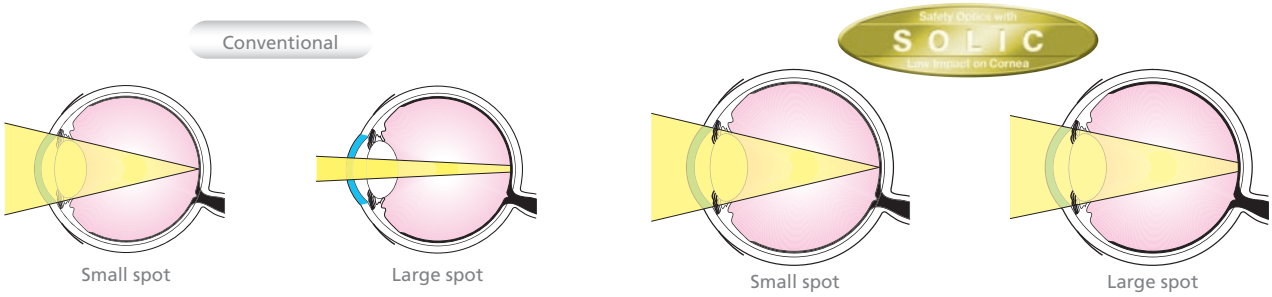
Attachable
delivery unit
(NIDEK SL-1800)

Attachable
delivery unit
(ZEISS SL 130)

BIO delivery unit
(HEINE OMEGA 500)

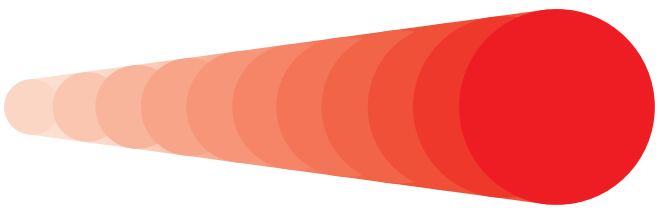
SOLIC (Safety Optics with Low Impact on Cornea)

All scan slit lamp and slit lamp delivery units including attachable models incorporate the SOLIC optical design that ensures low energy density on the cornea and lens even for large spot sizes.



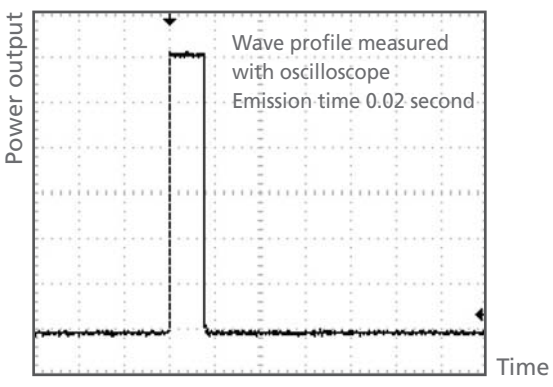
Continuously Variable Spot Size

The scan spot size is continuously variable from 100 to 500 µm (50 to 500 µm in single mode). The continuous variability enables the surgeon to easily compensate for the spot size change due to the use of a laser contact lens.



Stable Laser Power Output

Momentary increase followed by a plateau and an immediate decrease enables rapid and high-power laser emission on the scan patterns.



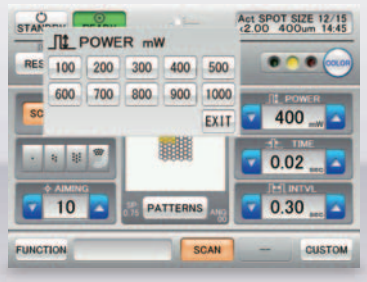
Practical and User-friendly Features

Intuitive graphic user interface and easy-to-read color LCD touch screen allows easy and quick setup and confirmation of the scan pattern and treatment parameters.

Pop-up Window

The pop-up window appears once the displayed value, such as POWER, TIME or ITVL, is touched. It enables the surgeon to make significant changes to the laser values quickly with two-touch operations.

1. **Touch the value on the screen**
2. **Select the value on the pop-up window**



Spot Size

The spot size of the scan slit lamp delivery unit and slit lamp delivery unit is displayed on the LCD, and can be read with other parameters even in a dark room.

Actual Spot Size

The converted spot size is displayed once the laser spot magnification of laser contact lens is selected on the pop-up window.

Memory of Scan Pattern

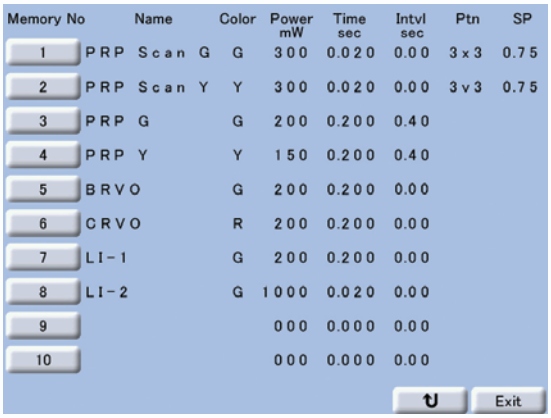
Four frequently used scan patterns can be saved and recalled with one-touch selection.

MC-500 Vixi LCD screen

This screen displays all buttons and items for convenience sake, but the actual screen is not consistent with this sample screen.

Memory of Photocoagulation Data

In accordance with various clinical cases, up to 10 sets of photocoagulation data (color, power output, emission time, interval time, scan pattern, and spacing) can be registered.
Each set is retrievable quickly with one-touch operation.

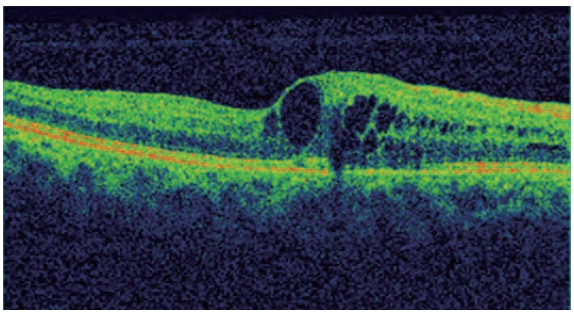


LPM (Low Power Mode)

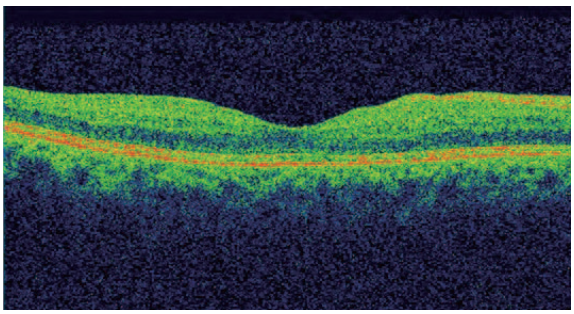
Minimally Invasive Photocoagulation

LPM (Low Power Mode) is a form of laser treatment that delivers reduced power to the retina. In LPM, the standard (yellow) laser treatment power is reduced by a specified ratio.
To use the optional LPM, the MC-500 Vixi has to be equipped with the yellow laser. An additional software upgrade is required.

Laser Treatment for Macular Edema



Before



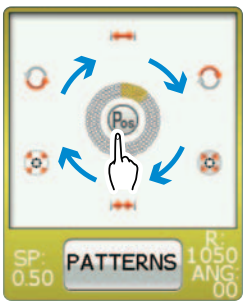
After treatment with LPM

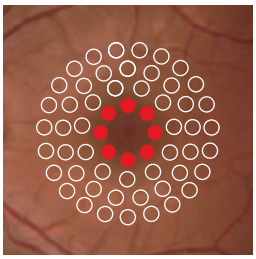
Sample image – Outcomes may vary based on patient-specific response.

Advantage of LPM function

Arcade Grid Scan Pattern

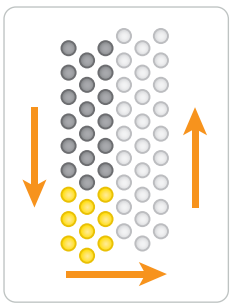
In addition to regular mode, LPM includes a scan pattern that prevents treatment in a central circular area within the grid. Selecting the “Pos” (Position) button to align the aiming beam to the foveal center activates treatment that follows the grid scan pattern.

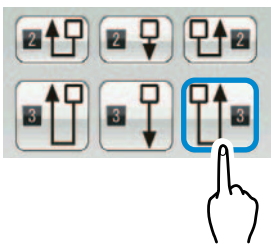




Auto Forward Function

The auto forward function is available for LPM. The MC-500 Vixi allows automated positioning of the scan pattern for photocoagulation.



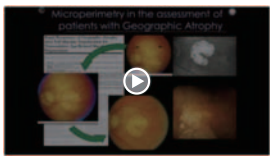


EDUCATION

More Clinical Information available online at the NIDEK Education page

For more clinical information, please visit the Education page on the NIDEK website. This site allows access to case reports, journal articles, and video presentations.

https://www.nidek-intl.com/education/

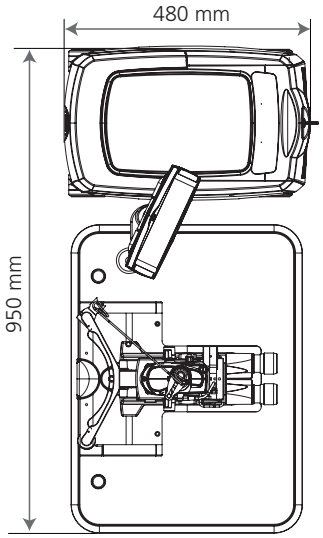


Videos

Case reports

Main Body Specifications

Laser type	Solid state laser, Diode laser
Wavelength	Green : 532 nm Yellow : 577 nm Red : 647 nm
Power output	Green: 50 to 1,700 mW*1 Yellow: 50 to 1,500 mW Red: 50 to 800 mW*2
Output type	Continuous wave
Emission time	0.01 to 1.00 s, 2.00 s, 3.00 s*3
Interval time	0.05 to 1.00 s*4
Aiming beam	Red diode, 670 nm, max. 0.6 mW
Cooling system	Air cooling
Power supply	115/230 V AC, 50/60 Hz
Power consumption	400 VA
Dimensions/Mass	300 (W) x 480 (D) x 670 (H) mm / 35 kg 11.8 (W) x 18.9 (D) x 26.4 (H)" / 77.1 lbs.
Optional accessories	3D mouse, Control box, Remote control



Foot print

*1 50 to 1,500 mW with scan delivery unit
*2 With the slit lamp delivery unit, scan slit lamp delivery unit, attachable delivery unit, and scan attachable delivery unit, the maximum power output is limited according to the spot size.
Spot size 50 µm - 500 mW, Spot size 60 µm - 600 mW, Spot size 70 µm - 700 mW
*3 0.01 to 0.05 second in scan mode
*4 0.10 to 1.00 second in auto manipulation mode and auto forward function

Scan / Single Delivery Unit Specifications

Model	Scan delivery unit (MC-500 Vixi)	Single delivery unit (MC-500)
Spot size	100 to 500 µm (scan mode & auto manipulation mode) 50 to 500 µm (single mode)	50 to 1,000 µm (slit lamp & attachable deliveries)
Emission pattern	Single Square (2x2, 3x3, 4x4, 5x5), Equal space (2v2, 3v3, 4v4, 5v5)*5, Rectangle, Triple arc, Triple curve, Arcade grid, Triangle, Circle, Arc (3/4 circle, 1/2 circle, 1/4 circle), Curve, Line	Single
Type	Scan slit lamp delivery unit (NIDEK SL-1800) Scan attachable delivery unit (NIDEK SL-1800, ZEISS SL 130, HAAG BQ 900/ BQ 900 LED slit lamp)	Slit lamp delivery unit (NIDEK SL-1800) Attachable delivery unit (NIDEK SL-1800, ZEISS SL 130) BIO delivery unit (HEINE OMEGA 500)
Dimensions/Mass	600 (W) x 450 (D) x 1,300 to 1,500 (H) mm / Approximately 45 kg*6 23.6 (W) x 17.7 (D) x 51.2 to 59.1 (H)" / Approximately 99.2 lbs.*6 (NIDEK SL-1800 scan slit lamp delivery with table)	← ← (NIDEK SL-1800 slit lamp delivery with table)

*5 For equal space patterns, No. v No. indicates the number of spots in horizontal and vertical directions.
*6 The dimensions and mass differ depending on delivery types.

Product/Model name: Multicolor Laser Photocoagulator MC-500
Caution: U.S. Federal Law restricts this device to sale, distribution, and use by or on the order of a physician or other licensed eye care practitioner.
Specifications may vary depending on circumstances in each country.
Specifications and design are subject to change without notice.

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