



5G532

5G photocoagulator

for all your retinal needs

your laser specialist

meridian 
medical

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SUPERIOR QUALITY & LONGEVITY

Meridian reserves its best laser cavities using the highest quality components for our premium laser range. We have strategically partnered with the top ophthalmic industry manufacturers to include the absolute best quality components from Switzerland and Europe in our multispot range. Meridian's propriety scanning systems feature the fastest galvanometers on the market, assuring perfect patterns and laser quality at all times.

These systems are meticulously integrated at our facilities, providing the best and most reliable integration platform combined with Haag-Streit slit lamps. The TT housing encloses all peripheral fibre and cables increasing its protection whilst the dust-free aluminium case safeguards the inner electronics.



Image table shown as sample



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USABILITY

Designed by European retinal specialist, 5G offers a high level of practical and relevant features:

- Retinal projection: laser settings, laser power, pattern selection, size, and rotation are observed through the oculars eliminating the need of removing the eyes from the slit lamp. Thus, maximising the efficiency of the surgeon when performing the treatment
- Except spot size, all laser parameters can be modified through the touch screen (e.g. power, pattern, duration)
- Furthermore, our proprietary 3D Mouse interface makes the laser operation fast, easy, and intuitive. Power and pattern (type, size, position) can be swiftly modified by using the 3D Mouse.
- These advanced features help to speed up the treatment time and reduce patient chair time

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SAFETY

Meridian multispot range features the highest range of safety features in the pattern laser photocoagulation.

- Restricted pattern size by 2×2 mm
- Automatic fluence calculation combined with spot size control and laser lens power
- Limited total time of pattern delivery to 0.7 seconds
- Retinal outline projection of patterns to ensure the visibility of tissue and grid location
- Pattern delivery stops by releasing the foot pedal



5G₅₃₂

FLEXIBILITY & COMFORT

Meridian engineering team can adapt the 5G to your preferred slit lamp: Haag-Streit BQ 900 or CSO SL 9900.

Meridian designs, manufacture and calibrate the slit lamp adapters to each slit lamp. 5G's proprietary slit lamp scanners ensure excellent retina illumination and laser delivery.



Image table shown as sample

your laser specialist

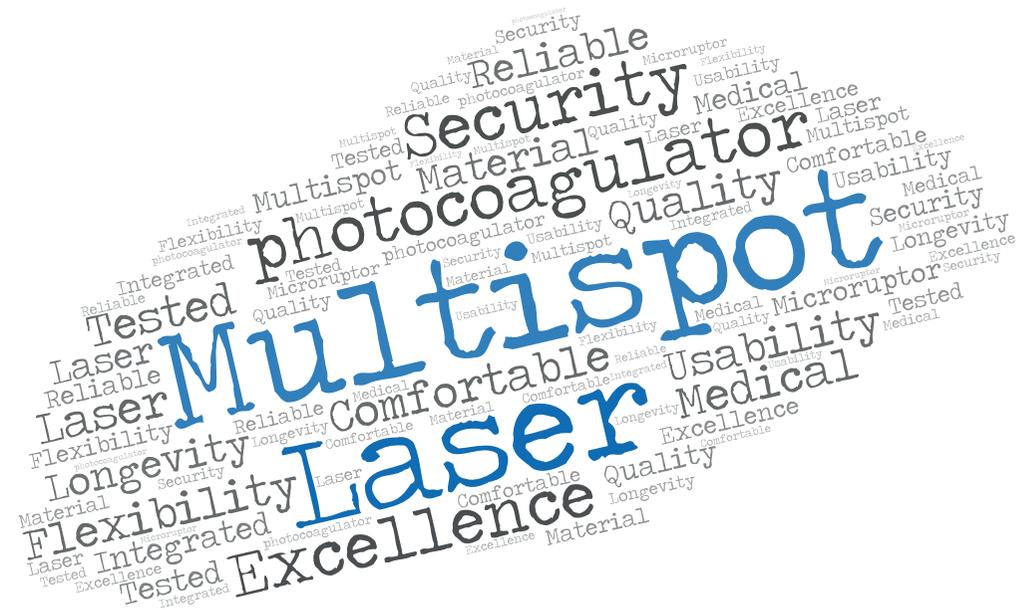
LASER EXCELLENCE

The history of Meridian AG, now showing up as Meridian Medical Group, and the history of the medical Nd:YAG laser are closely connected. The Microruptor II developed by Meridian engineers and Prof. Dr. Franz Fankhauser († 2020) changed the way of many ophthalmology treatments. New technology is continuously developed and patented by our development engineers. We select and integrate the best Swiss and European laser components to ensure the highest quality and long-term reliability.

We use tested and reliable best practices in engineering and integration, ensuring our systems' highest performance. Our highly skilled and experienced staff works to deliver the service and results our customers deserve and expect.

TIPS FOR YOUR LASER

- Yearly maintenance service assures the optimal performance of your laser
- Follow the safety advice of the manufacturer and your regulatory body
- Only use the laser as described in the IFU



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CLINICAL INDICATION

Meridian's multispot lasers are designed to satisfy the needs of retinal photocoagulation. Our lasers will deliver superb laser quality with the highest optical quality available in the industry when treating the retina. Whatever your treatment parameters and preferences are, Meridian's multispot range offers solutions to cater to your need in a compact and versatile unit.

Photocoagulation:

Retinal photocoagulation, panretinal photocoagulation (PR) and intravitreal endophotocoagulation of vascular and structural abnormalities of the retina and choroids, including:

- Proliferative and non-proliferative diabetic retinopathy
- Choroidal neovascularization
- Branch retinal vein occlusion
- Age-related macular degeneration
- Retinal tears and detachments
- Retinopathy of prematurity
- Macular edema
- Lattice degeneration
- Central retinal vein occlusion

Iridotomy:

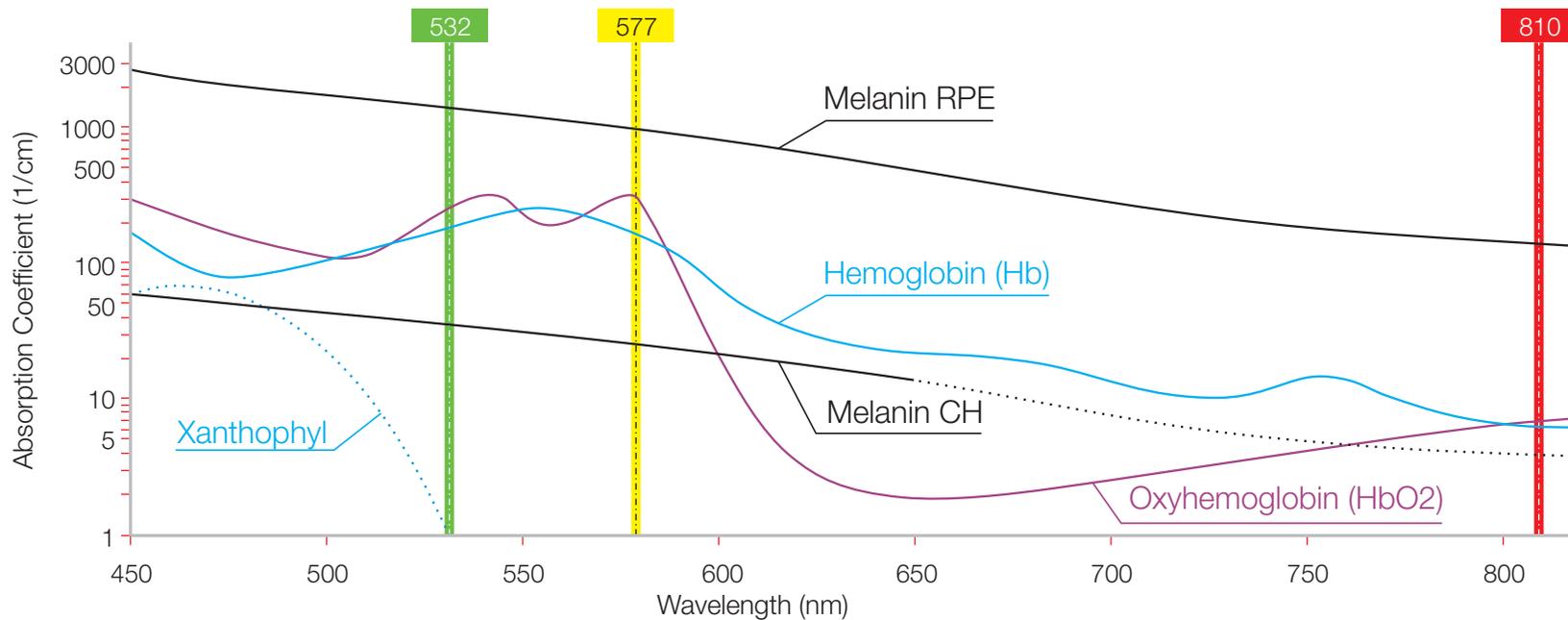
- Iridotomy in angle closure glaucoma (2-step procedure with Nd:YAG)

Trabeculoplasty:

- Trabeculoplasty in open angle glaucoma

WAVELENGTH BENEFITS – WHY 532 nm?

Green laser of 532 nm wavelength is the gold standard in photocoagulation. Its overall absorption across all pigments makes it the perfect selection to treat retinal disorders in the periphery and the central retinal area (away from the macula).



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STANDARD ACCESSORIES

- Scanning slit lamp delivery systems
- Footswitch
- Safety goggles

OPTIONAL ACCESSORIES

- Slit lamp
- Laser Indirect ophthalmoscopy (LIO)
- Endo-probes



PHOTOCOAGULATION – TREATMENT GUIDELINES FOR SHORTPULSE LASERS

These guidelines have been prepared following industry standards retinal treatments, the use of the laser and its parameters are responsibility of the treating ophthalmologist.

Procedure	Spot size(*)	Exposure	Starting power	Spacing	Pattern
PRP (Central)	100 – 200 µm	0.01 S	100 mW	0.5 – 0.75	Arc
PRP (Periphery)	200 – 500 µm	0.02 – 0.03 S	400 mW	0.5 – 0.75	Square
DME (Focal)	50 – 100 µm	0.01 – 0.02 S	100 mW	0 – 0.5	Arc
DME (Grid)	50 – 200 µm	0.01 S	100 mW	0 – 0.5	Square
Tears & Breaks	50 – 1000 µm	0.03 S	400 – 600 mw	0	Line 1-2-3
Degenerations	500 – 800 µm	0.03 S	400 – 600 mw	0.25	Line 1-2-3

(*) Spot size on macula including the lens magnification factor
 Suggested parameters for the Posterior Segment taken from Bloom & Bruckner (1997) "Laser Surgery of the Posterior Segment"
 "Initial experience with the Pascal® Photocoagulator -a pilot study of 75 procedures" Sanghvi et al
 "Light panretinal photocoagulation (LPRP) versus classic panretinal photocoagulation (CPRP) in proliferative diabetic retinopathy" Bandello et al
 "Comparison of laser photocoagulation for diabetic retinopathy using 532-nm standard laser versus multispot pattern scan laser" Nagpalet al

TREATMENT END-POINT

depending on the disease or disease:

Sealing (holes, tears)	aim for a full-thickness, visible strong grey burn
Tissue photocoagulation (PRP)	the brighter (whiter) the burn, the more thermal spread will be observed but this will require longer pulse times or higher fluences. Shorter pulse times (e.g. 20 ms) and lower fluences will result in barely visible light grey burns
Stimulation, reduction oedema (macular grid)	aim for an only barely visible effect. Note that with short pulse durations, the burn takes longer to become visible. Wait a few seconds when titrating to allow for full effect

SELECTING A PATTERN AND PATTERN ROTATION

Pattern selection and rotation depend on user preference, on the pathology and on the curvature of the eye. The full pattern must be visible and in focus on the retina, avoiding direct coagulation of blood vessels.

SELECTING A CONTACT LENS

The contact lens will be chosen according to the position of the lesion and personal preference. The software calculates the actual spot size on the retina depending on the lens selected by the user.

SELECTING SPACING

The ETDRS recommendation for PRP is 0.5 burn spacing for short pulsed lasers because there is less thermal diffusion. Confluent (0) spacing will be chosen when creating a barrage around tears or holes.

SELECTING PULSE DURATION

It is recommended to start with 20 ms for peripheral treatments and 10 ms for macular treatments. If in doubt, start with a longer pulse duration and low power.

SELECTING FLUENCE

Start with low power in single spot mode and observe the effect on the tissue. Titrate upwards until the desired effect is seen on the tissue. Wait a few seconds to observe the effect as shorter pulses take longer to become visible. The fluence is calculated and displayed on the screen. Fluence delivered in a pattern will always be less due to the shorter pulse duration.

NUMBER OF SPOTS

To be effective and obtain regression of NV with 20 ms pulse duration it is necessary to deliver at least 50%.

PHOTOCOAGULATION – TREATMENT GUIDELINES FOR CW LASERS

These guidelines have been prepared following industry standards retinal treatments, the use of the laser and its parameters are responsibility of the treating ophthalmologist.

Procedure	Spot size(*)	Exposure	Power	Visible effect
PRP (Central)	100 – 200 µm	0.05 – 0.2 S	100 mW	Moderate Burning
PRP (Periphery)	200 – 500 µm	0.05 – 0.5 S	400 mW	Blanching
DME (Focal)	50 – 100 µm	0.05 – 0.1 S	100 mW	Light Blanching Within 500µm of fovea
DME (Grid)	50 – 200 µm	0.1 S	100 mW	Blanching
RVO	100 – 500 µm	0.05 – 0.5 S	100 – 500 mW	Intense burn
CNV	50 – 200 µm	0.1 – 0.5 S	100 – 500 mW	
Tears & Breaks	50 – 1000 µm	0.2 – 0.5 S	400 – 600 mw	Linear with no spacing
Degenerations	500 – 800 µm	0.1 – 0.2 S	400 – 600 mw	Linear with no spacing

(*) Spot size on macula including the lens magnification factor
Suggested parameters for the Posterior Segment taken from Bloom & Bruckner (1997) "Laser Surgery of the Posterior Segment"

BINOCULARS IN FOCUS

Each user must have the oculars set for their personal refraction, this way the laser will be in parfocality with the aiming beam and retina. Defocused slit lamp may result in unpredictable laser burns.

TEST SHOTS

- Always assure perfect retinal focus before delivering the treatment
- Perform a series of SINGLE SPOT shots in the periphery to test the melanin response, for your test shot aim for a blanching or light burn
- Start with the lowest recommending power and the shortest exposure time

DELIVERY SYSTEMS – LIO – FEATURES

- Optimized for the Merilas platform
- Laser delivery coaxial to the users viewing axis
- Standard LED module
- Neutral LED cooler color providing brighter illumination and longer battery life
- High-contrast optics
- Built-in filters
- Intelligent optical system with automatic optics and mirrors adjustment
- High magnification lens with additional 1.6 x magnification

DELIVERY SYSTEMS – LIO – TECHNICAL SPECIFICATIONS

Description	Mode
Spot size	1100um ± 20%
Working distance (front of LIO to focused spot)	280mm ± 20%
Operating wavelengths (Factory configured to one therapy wavelength)	Therapy laser: 532 nm, 577 nm or 810 nm up to 2000 mW pulsed Aiming laser: 635 nm, 1 mW
Back-scatter protection	OD > 5.5 at therapy wavelength
Laser Fiber	100 µm core, multimode with A/R coating 3 mm stainless steel protected 5 m length SMA905 laser termination
Power Source	Wall mounted wireless charger including spare lithium battery

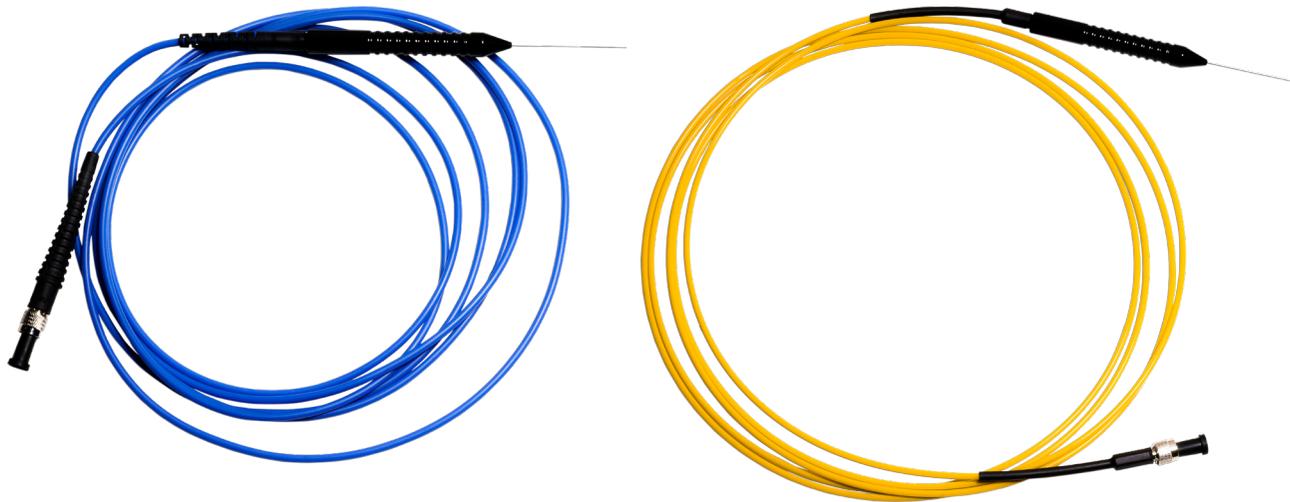


DELIVERY SYSTEMS – PROBES –

Our probes are manufactured by EMTRON, following strict quality control. The high-quality polished fibre surfaces result in homogenous laser spots with evenly distributed power across the entire area, eliminating the potential risk for the formation of “hot spots” in the treatment area.

SAFETY

The endo probes enjoy unique features such as unique serial numbers assuring the highest possible traceability. All endo probes are CE-marked and individually sterilized for single use.



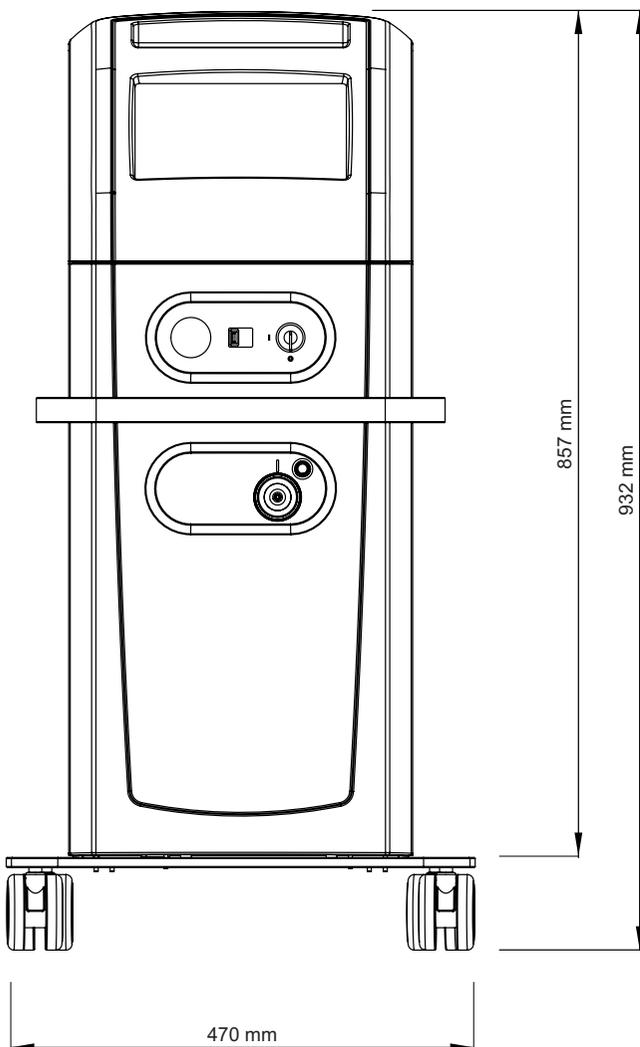
Probes shown as sample

DELIVERY SYSTEMS – AVAILABLE PROBES –

The probe design incorporates a proprietary ergonomic design, resulting in a comfortable grip. The handpiece is well balanced for precise and safe fibre guidance resulting in unsurpassed treatment precision. The laser port is a standard SMA connector, providing users with a higher degree of versatility.

type	Features and Advantages
Straight (standard laser probe) 	<ul style="list-style-type: none">■ Basic endophotocoagulator for nonperipheral retinal locations■ Most efficient delivery of thermal energy■ Ease of entry through small gauge cannulas■ 20G, 23G, 25G and 27G series
Curved (versatile) 	<ul style="list-style-type: none">■ Curved for ease of entry through small gauge cannulas■ Unique curve for efficient spot placement at far peripheral locations■ Versatile for central or peripheral use■ 20G, 23G and 25G series





TECHNICAL SPECIFICATIONS*

Device description	5G photocoagulator 5G532
Treatment wavelength	532 nm
Spot size	50 µm, 100 µm, 200 µm, 300 µm and 400 µm
Slit Lamp	Integrateable to various upper light source type slit lamps e.g. Haag-Streit BM and BQ and CSO SL 990
Laser	Frequency doubled Nd-YVO 532 nm
Laser Power	50 – 1500 mW
Accuracy of internal power measuring	±5 %
Laser class (treatment)	IV
Pulse duration	10 – 650 ms, 10 – 30 ms in pattern mode
Aiming beam	635 nm, adjustable brightness
Laser class (aiming)	3R, limited to class I
Available Patterns	Square, Circle, Line, Sector, Arc, Spot
User Interface	Touch screen or Smart Wheel
Laser cooling	TEC
Computer cooling	Fan cooling
Risk classification	IIb
Mains input specification	115 – 120/220 – 240 V~ 50/60 Hz 600 VA (supported voltages, the device is configured for one voltage)

* All technical specifications are subject to change without notice. In accordance with the international general safety standards: IEC 60601-1:2005/AMD1:2012, IEC 60601-1-2:014, MDD 93/42/EEC. The laser safety is in accordance with the international standards: IEC 60825-1:2014 and IEC 60601-2-22:2007/AMD1:2012.





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