



tt532

Multispot laser for all your retinal needs

your laser specialist

meridian 
medical



SUPERIOR QUALITY & LONGEVITY

Meridian Medical 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.





USABILITY

Designed by European retinal specialists, TT 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





SAFETY

Meridian's multispot range includes the highest degree of safety features in 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
- The table height is automatically locked when the laser is in "ready mode"





FLEXIBILITY & COMFORT

We understand customers like to have the option and control, if Haag-Streit BQ 900 is not your preferred bio-microscopy we can provide our pattern lasers with CSO SL 9900.

- All Meridian systems are installed and calibrated by our worldwide network of factory trained distributors and engineers.
- TT range slit lamp scanners ensures excellent retina illumination and laser delivery.
- Meridian offers the flexibility of 3 multispot models to cater any customer needs



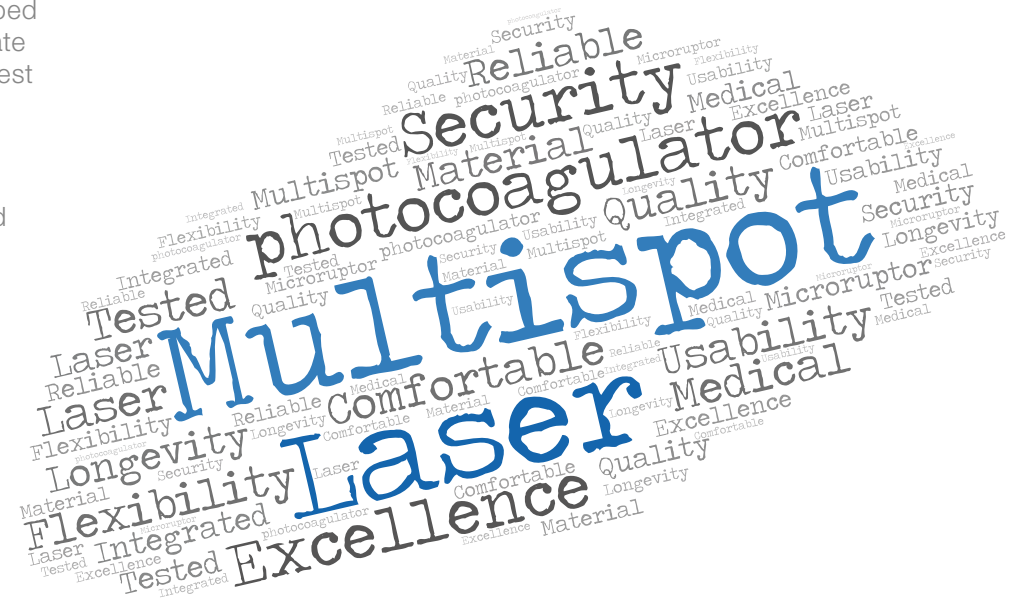
LASER EXCELLENCE

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





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 (PRP) and photocoagulation 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

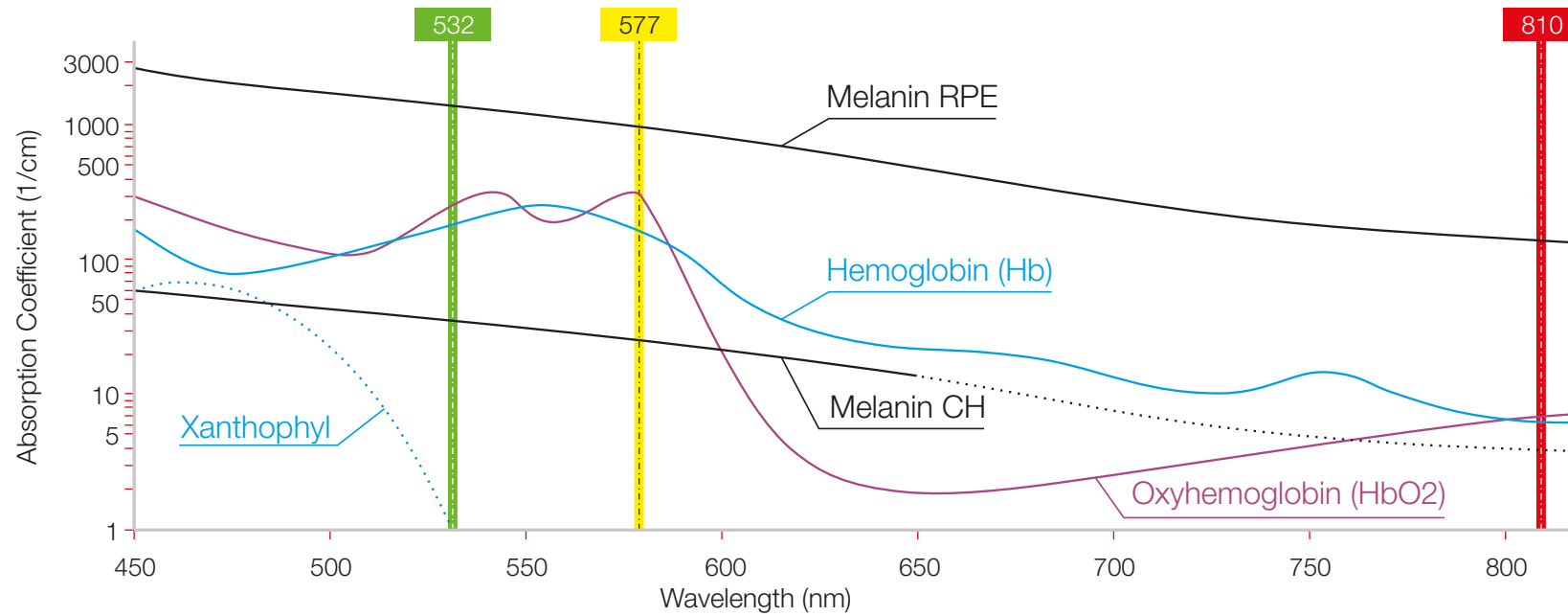
Trabeculoplasty:

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).





LASER MODALITIES

TT range delivers continuous wave laser and Meridian Medical copyrighted microsecond pulses technology shortpulse.

Continuous wave (CW) mode has been around since 1961 and it's the standard mode of treatment, pattern lasers have popularised shorter pulses of 10, 20 & 30 ms and new shorter pulses (microsecond pulses) have established as new paradigm in the subthreshold retinal treatment.

Meridian photocoagulators offer all modalities, CW and pattern short millisecond pulses.



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 (Early Treatment of Diabetic Retinopathy Study) 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 for 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	0.01 s	100 mW	Moderate Burning
PRP (Periphery)	200 – 500 μm	0.02 – 0.03 s	400 mW	Blanching
DME (Focal)	50 – 100 μm	0.01 – 0.02 s	100 mW	Light Blanching within 500 μm of fovea
DME (Grid)	50 – 200 μm	0.01 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	0.03 s	400 – 600 mW	Linear with no spacing
Degenerations	500 – 800 μm	0.03 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 & Brucker (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

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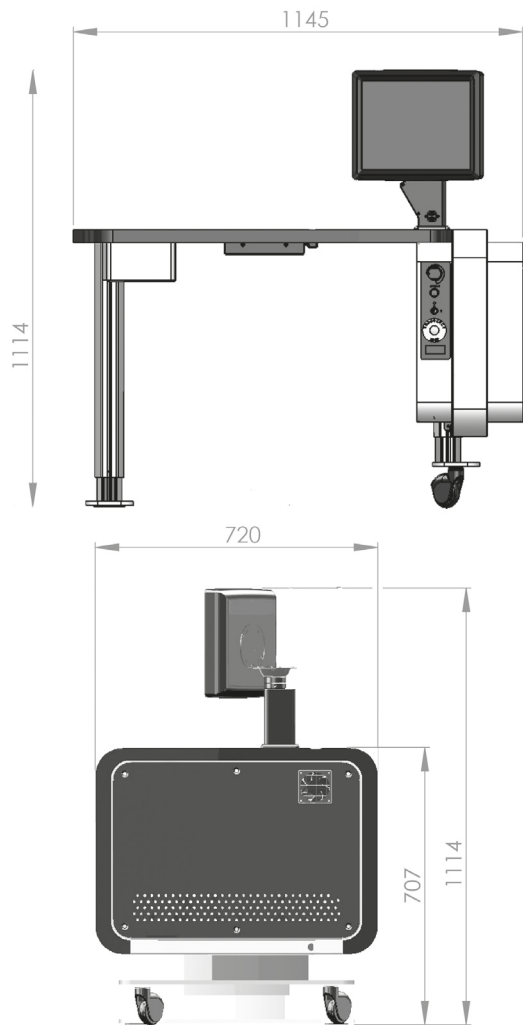
STANDARD ACCESSORIES

Meridian multipot range comes standard with:

- Scanning slit lamp delivery systems
- Footswitch
- Safety goggles

TT range includes the twin-column table for great patient access.





TECHNICAL SPECIFICATIONS*

Device description	Multispot laser tt532
Laser	532 nm
Laser Power	Laser Power 50 – 1500 mW
Pulse duration	10 – 650 ms
Spot sizes	50 µm, 100 µm, 200 µm, 300 µm and 400 µm
Aiming beam	635 nm, adjustable brightness. Pattern projected as spot or outline
Patterns	Square, Circle, Arc, Sector, Line, Spot (repetition)
User interface	15" Touch screen and Smart Wheel (3D Mouse)
Laser cooling	TEC
Computer cooling	Fan cooling
Slit lamp	Haag-Streit BQ 900 or CSO SL 9900
Electric	230 V 50 Hz (Voltage options for different countries are available)
Net Weight	138 kg
Gross Weight	208 kg

* 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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