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# mrQ

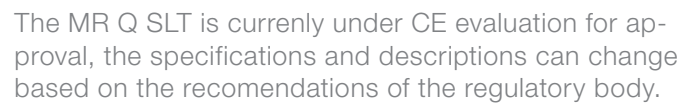
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## SLT

## Latest technology Nd:YAG + SLT laser

your laser specialist

**meridian**   
medical





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## SUPERIOR QUALITY & LONGEVITY

In collaboration with Dr Fankhauser, Meridian launched the first commercial Nd:YAG laser in 1982. The MR Q SLT has built-in DNA, the Microruptor II legacy, synonymous with innovation, reliability, and efficacy.

Meridian Medical MR Q SLT combines a powerful Nd:YAG with SLT photo-regeneration and provides the possibility to couple with Meridian photocoagulators.

Meridian carefully selects the best European components and technology to assemble its lasers. We offer our users a robust and reliable unit. The MR Q SLT housing is made of a high-grade aluminium monobloc that gives unique solid feeling and dust-free electronics.



Sample Image of MR Q SLT with a single column table



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## USABILITY

The MR Q SLT features a powerful dual laser module with a Nd:YAG laser combined with an accurate SLT photo-regenerator.

Featuring a 7" touch display control panel. Placed on either side of the table, users can easily see the laser parameters and select between the laser mode, burst and offset options.

The V-split mirror tower (optional feature) allows coaxial Nd:YAG treatments. This tower enables a red reflex that results in retro illumination of the posterior capsule, ideal for premium IOL treatments.

The laser head and slit lamp knobs are ergonomically placed on each side of the slit lamp.

The MR Q SLT has proven to be effective in treating open-angle glaucoma as primary therapy, see chart "recommended settings" on page 10.





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## SAFETY

Meridian MR Q SLT has built-in features assuring better treatments, safer laser offset and quicker response.

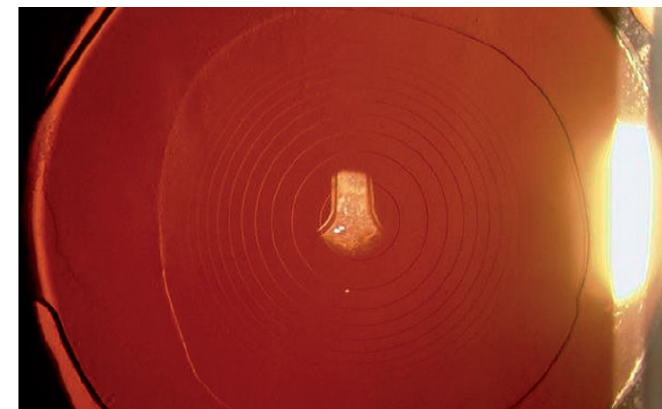
Meridian's digital anterior and posterior offset allows the user to visualise where the laser focus is and provides a clear warning when the anterior offset is selected, minimising user error.

The control panel requires double confirmation to safely swap between laser modes and the screen changes colour for a visual queue.

The electronically controlled offset resets to posterior 100  $\mu\text{m}$  after the laser enters on Stand-by; this unique feature minimises the risk of shooting at the wrong position, avoiding the risk of lens pitting.

The red reflex<sup>(1)</sup> resulting from the retro illumination of the posterior capsule optimises the on-axis capsulotomy. This feature allows seamless evaluation of the capsulotomy edges' integrity, shape, and position in relation to the premium multifocal IOL rings, with a higher degree of success and increasing patient satisfaction.

<sup>(1)</sup> <https://www.pointsdevue.com/article/multifocal-intraocular-lenses-treatment-presbyopia-benefits-and-side-effects>





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## FLEXIBILITY & COMFORT

The MR Q SLT features a twin-column table with a large tabletop. This presentation eases patients' access in wheelchairs and offers perfect working space for the treating doctor.

The unique chinrest design ensures a comfortable, relaxed, and ergonomic position for the patient during treatment while the user has unobstructed access to the patient.

The slit lamp offers an optional tonometer post to use the unit as a diagnostic device.

Meridian engineers can access the MR Q SLT remotely, offering a unique online service to assess and provide calibration at almost any time of the day.



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## 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 have come to 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

For posterior capsulotomy, iridotomy and selective laser trabeculoplasty.







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Sample Image of MR Q SLT with a single column table

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## STANDARD ACCESSORIES

- Laser safety sign
- Safety goggles
- Dust cover

## OPTIONAL ACCESSORIES

- Foot-switch
- Single or dual plug beam splitter
- Co-observation tube
- Adapter for 1/2" digital camera





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## BINOCULARS IN FOCUS

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

## ABOUT THE OFFSET

Laser energy travels towards the point of emission (to the front of the eye), when shooting on zero-offset the risk of lens pitting increases. Always check the offset before perform any treatment.





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## ND:YAG TREATMENT GUIDELINES\*

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

Procedure	Power (mJ)	Offset	Pulses
Posterior Capsulotomy (with lens)	0.9 – 2.0	Posterior 200	Single
Posterior Capsulotomy (w/o lens)	1.4 – 2.5	Posterior 200	Single
Peripheral Iridotomy	3.0 – 5.0	Posterior 100	Double-Triple
Peripheral Iridotomy (plateau iris)	5.0 – 7.0	Posterior 200	Triple

\* Weiblinger RP. Review of the clinical literature on the use of the Nd:YAG laser for posterior capsulotomy. J Cataract Refract Surg. 1986 Mar;12(2):162-70.

## ND:YAG OTHER TREATMENTS

Although the MR Q evaluation did not contemplated these parameters, the following are treatments described for Nd:YAG use

Anterior Capsulotomy	0.5 – 1.0	0	Single
Vitreous Strands (anterior)	2.0 – 3.0	Posterior 100	Single
IOL Surface Cleaning	0.3	Anterior 100	Single

\* Suggested parameters for the Nd:YAG treatment from Lindstrom, R. (1986) Review of the clinical literature of the use of the Nd:YAG laser for posterior capsulotomy. JCRS Vol 12. March, 1986



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## RECOMMENDED SETTINGS

The SLT has proven to be effective in treating open-angle glaucoma as primary therapy<sup>(1)</sup>, according to the European Society of Glaucoma.

The recommended settings and procedures<sup>(2)</sup> are as follow:

Laser parameters	SLT mode
Spot size	400 µm
Exposure	3 nsec (fixed)
Power	0.4 to 1.2 mJ according to the desired reaction: in heavily pigmented TM start with low levels e.g. 0.4 mJ
Optimal reaction	The power is titrated until the appearance of tiny air bubbles, “champagne bubbles”, at the site if the laser burn, then the power is reduced by increments of 0.1 mJ until there are no visible bubbles <sup>(1)</sup>
Number of spots	50 – 100 non-overlapping spots spaced over 108° – 360°

(1) Gazzard G, Konstantakopoulou E, Garway-Heath D, Garg A, Vickerstaff V, Hunter R, Ambler G, Bunce C, Wormald R, Nathwani N, Barton K, Rubin G, Buszewicz M; LiGHT Trial Study Group. Selective laser trabeculoplasty versus eye drops for first-line treatment of ocular hypertension and glaucoma (LiGHT): a multicentre randomised controlled trial. *Lancet*. 2019 Apr 13;393(10180):1505-1516. doi: 10.1016/S0140-6736(18)32213-X. Epub 2019 Mar 9. Erratum in: *Lancet*. 2019 Jul 6;394(10192):e1. PMID: 30862377; PMCID: PMC6495367.

(2) European Glaucoma Society, Terminology and guidelines for glaucoma, 5<sup>th</sup> edition 2020.

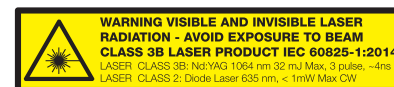


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## TECHNICAL SPECIFICATIONS\*

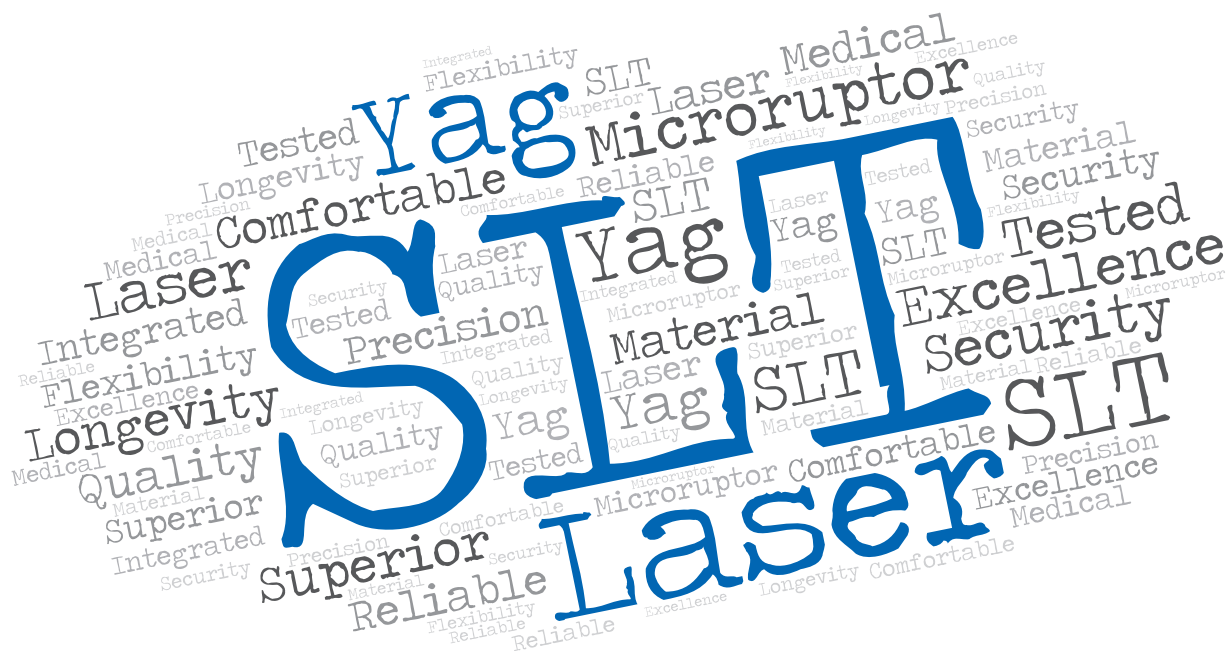
Device description	Nd:YAG mode	SLT mode
<b>Laser source</b>	Q-switched, solid state Nd:YAG 1064 nm	Q-switched, solid state frequency doubled Nd:YAG 532 nm
<b>Pulse duration</b>	4 ns +4 / -0 ns	3 ns +3 / -0 ns
<b>Pulse setting</b>	1,2 or 3 pulses	1, 2 or 3 pulses
<b>Maximum repetition rate</b>	Up to 2.5 Hz	Up to 2.5 Hz
<b>Maximum energy</b>	32 mJ	0.3 to 2 mJ per pulse
<b>Energy Steps (single pulse)</b>	0.1 (0.3-2 mJ), 0.5 (5-10 mJ), 1 (10-12 mJ)	0.1 (0.3 - 3.0 mJ)
<b>Energy Steps (double pulse)</b>	0.5 (0.6-5 mJ), 1 (5-12 mJ), 2 (12-18 mJ), 4 (18-22 mJ)	
<b>Energy Steps (triple pulse)</b>	0.5 (0.9-5 mJ), 1 (5-10 mJ), 2(10-14 mJ), 3 (14-20 mJ), 4 (20-32 mJ)	
<b>Treatment spot size</b>	10 µm	400 µm
<b>Cone angle</b>	16°	< 3°
<b>Treatment beam offset range</b>	Electronic controlled, anterior and posterior ± 0 to 300 µm	Electronically controlled offset, stepped ± 0 to 300 µm
<b>Aiming beam</b>	Red Dual Diode; 635 nm	Sharp Single Red Diode; 635 nm
<b>Treatment spot size</b>	10 µm	400 µm
<b>Magnification</b>	(6 x; 10 x; 16 x; 25 x; 40 x)	
<b>Cooling system</b>	Air cooled	
<b>Weight</b>	65 kg 143 lbs. (Unpacked)	
<b>Power rating</b>	100 – 240 VAC, 50 / 60 Hz	
<b>Power requirements</b>	100 VA	
<b>Connection Ports</b>	USB for remote service and calibration	

\* All technical specifications are subject to change without notice. In accordance with the international laser safety standards: IEC 60601-1:2005 + A1:2012, EN 60601-1-2:2015, MDD 93/42/EEC.





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## Head office

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