

# merilas

shortpulse **810**

## Diode Laser therapy

For Glaucoma and Retina

your laser specialist

meridian   
medical



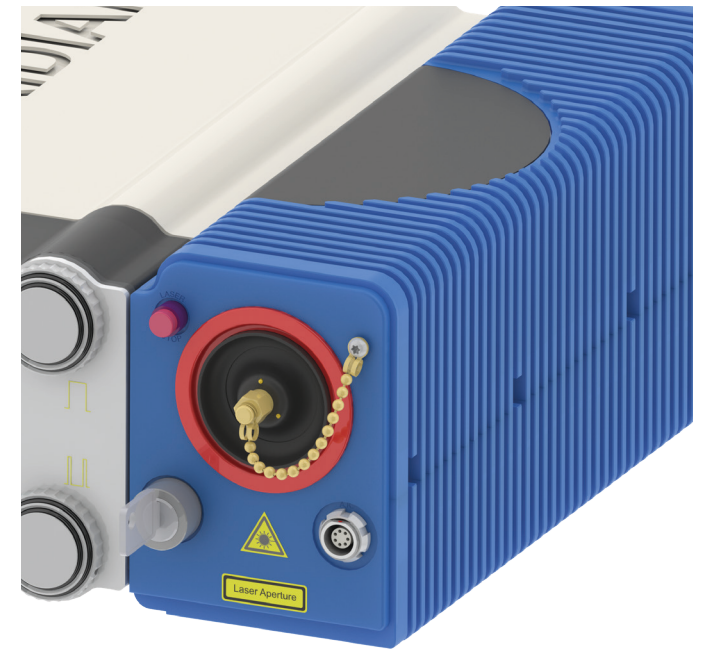
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## SUPERIOR QUALITY & LONGEVITY

The Merilas housing is made of a high grade aluminium giving Meridian's unique solid feeling. The removable control panel features a crystal interface that is resistant, durable and easy to clean.

The thermoelectric cooling (TEC) system eliminates the need for ventilation slots, making a hermetically sealed unit, ensuring a dust-free system, increasing the longevity of the laser.



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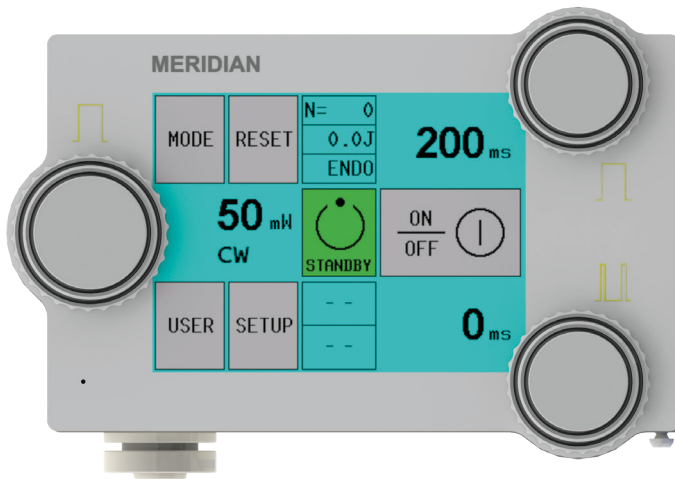
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## USABILITY

The Merilas lasers have intuitive commands, and are easy to use.

The detachable touch display with glass technology ensures flexibility and provides a greater ergonomic design. The user interface is straightforward to use, thanks to its intuitive design. Due to its thermoelectric cooling system, there are no disturbing noises or air turbulences.

The Merilas lasers impress users with their modern, compact presentation and ease to transport. Each laser comes with a robust and practical carry-on case.



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## **SAFETY**

Auto Key connector: Merilas lasers recognise the original probes and accessories connected to the console.

- Merilas laser delivers stable laser output
- Each laser accessory is calibrated and measured independently
- Safe in the cornea
- Remote support access



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## FLEXIBILITY & COMFORT

One laser: Multiple clinical applications - from Glaucoma to Retina, the Merilas 810 shortpulse features the versatility others don't.

Due to the laser's small and compact design and its practical carrying case, the Merilas 810 shortpulse is easily transportable to other practices or clinics.

Our technicians can support you via remote service in case you need assistance. This function allows fast and professional troubleshooting.





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## CLINICAL INDICATION

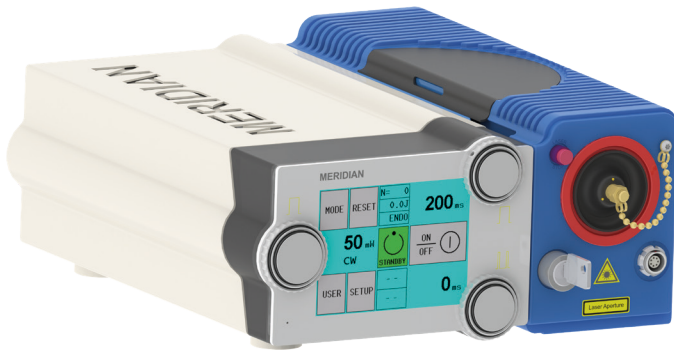
810 wavelength is ideal for ablation treatments

### Retina:

- General retinal applications (endoprobes/LIO)
- Treatment for retinopathy of the premature (ROP)
- Tumour ablation

### Glaucoma:

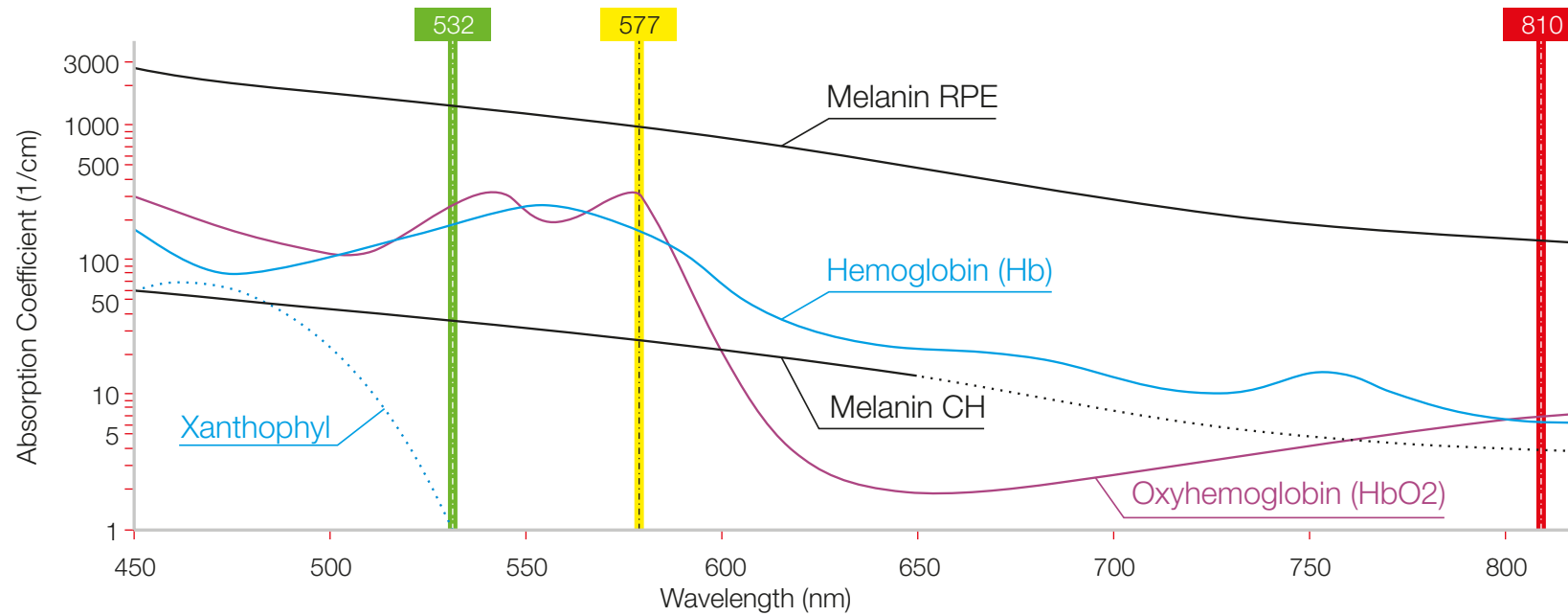
- Transscleral cyclophotocoagulation





## WAVELENGTH BENEFITS – WHY 810 nm?

- The 810 nm wavelength is less absorbed by melanin and haemoglobin
- This wavelength has the advantage of penetrating the sclera and excessive haemorrhage

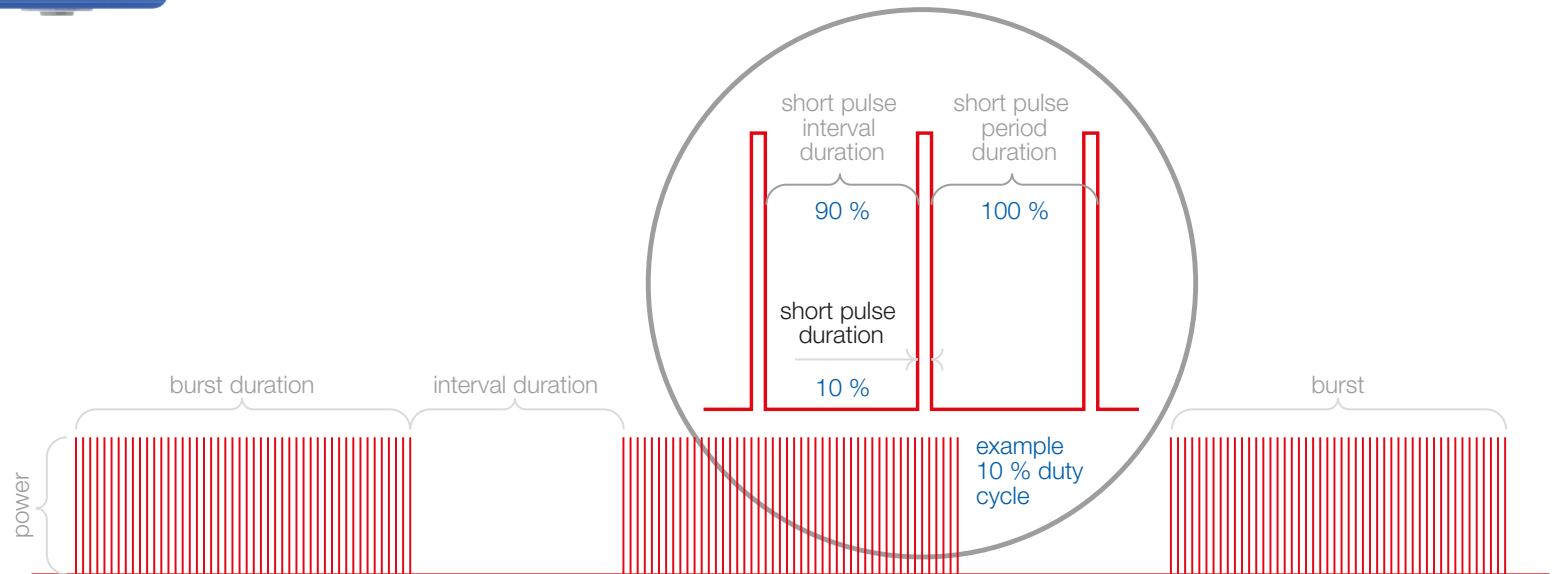
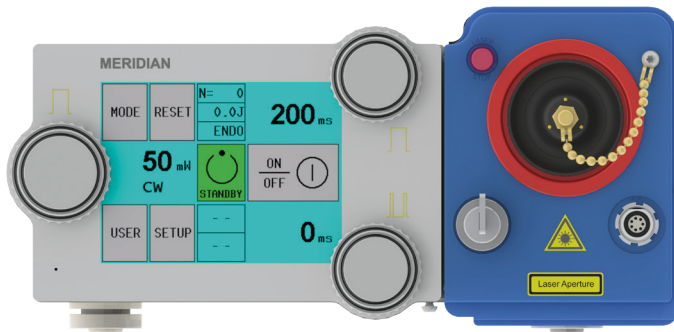


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## THE PRINCIPLE OF SHORTPULSE

- In shortpulse mode a pulse duration consists of many alternating short bursts and intervals
- In contrast to the continuous wave (CW) mode, the tissue is not heated very much in the shortpulse mode – tissue is treated more gently



## ABLATION TREATMENT GUIDELINES FOR CW & SHORTPULSE 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.

Treatment	Mode	Exposure	Power	Spot size(*)	Duty cycle	delivery
TSCPC (pop)	CW	2 s	1.75 W	–	–	I-SMA-TC
TSCPC (slow coag)	CW	4 – 5 s	1.25 W	–	–	I-SMA-TC
TSCPC	SP	100 – 300 s	2.0 W	–	31.3%	I-SMA-TC-S
ROP	CW	0.2 – 0.3 s	100 – 450 mW	–	–	LIO
TUMOUR	CW	14 min	100 – 1000 mW mean 437 mW	800-1200 µm	–	LIO
CNV (TTT)	0.3	60 s	300 – 600 mW	1200 µm	–	LIO

### TSCPC CW

The G-Probe footplate was held perpendicular to the sclera, with the curved edge of the footplate placed at the limbus so that the laser beam was directed 1.2 mm posteriorly toward the ciliary processes. Successive applications were spaced one half the width of the G-Probe footplate apart, sparing the 3 and 9 o'clock meridians to avoid injury of the long ciliary blood vessels and nerves.

### TSCPC SHORTPULSE

Typically, a surgeon moves the probe in a continuous sweeping or fast, sliding, or “painting” or slow motion over the upper and/or lower limbus (180 or 360) of the eye, avoiding the 3 and 9 o'clock positions to protect the ciliary neurovascular structures from an injury. Cystic blebs and other areas of thin conjunctiva should be avoided. Total treatment duration has varied between 100 to 360 seconds per session in reported studies.

(\*) Spot size on macula including the lens magnification factor

Suggested parameters Gaasterland, DE (2009) Diode laser photocoagulation. *Glaucoma today*, 7(2),pp.35-37

Jalali et al., 2010, Technical aspects of laser treatment for acute retinopathy of prematurity under topical anesthesia, *Indian J Ophthalmol*. 2010 Nov-Dec; 58(6): 509–515

Shields CL, Santos MCM, Diniz W, et al. Thermotherapy for Retinoblastoma. *Arch Ophthalmol*. 1999;117(7):885–893. doi:10.1001/archoph.117.7.885

Slow Coagulation Transscleral Cyclophotocoagulation for Postvitrectomy Patients With Silicone Oil–induced Glaucoma Mohamed M. Khodeiry, MD, MSc,\*† Xiangxiang Liu, MD,\*‡ Huda Sheheitli, MD,\*

Mohamed S. Sayed, MD,\* and Richard K. Lee, MD, PhD\*

R S B Newsom, J C McAlister, M Saeed, J D A McHugh (2001) Transpupillary thermotherapy (TTT) for the treatment of choroidal neovascularisation. *Br J Ophthalmol*: first published as 10.1136/bjo.85.2.173 on 1 February 2001.

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## STANDARD ACCESSORIES

- Foot switch
- Transport case
- Safety goggles

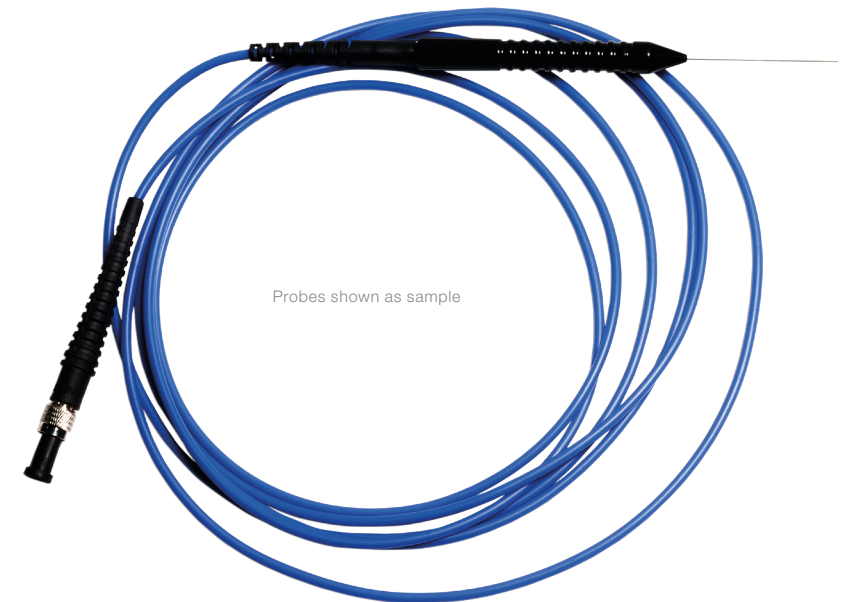


## DELIVERY SYSTEMS

- Laser Indirect Ophthalmoscope (LIO)
- Transscleral probes
- Laser endoprobes

## OPTIONAL ACCESSORIES

- External fan



## 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	1100 $\mu\text{m}$ $\pm$ 20%
Working distance (front of LIO to focused spot)	280 mm $\pm$ 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 $\mu\text{m}$ 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

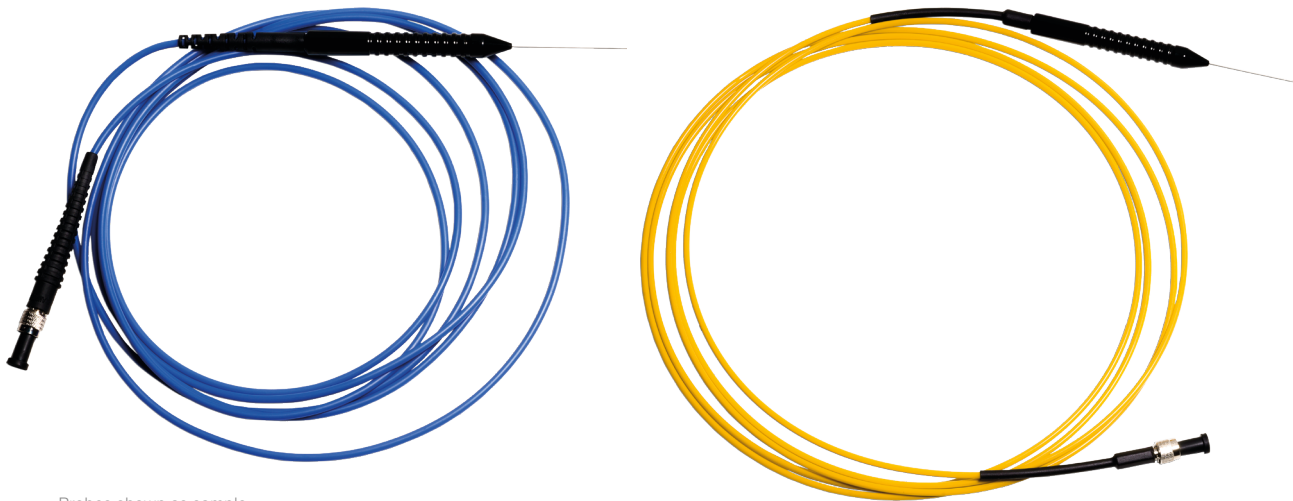


## DELIVERY SYSTEMS – PROBES

Our probes are manufactured by EMTRON, following strict quality control. The high-quality polished fibre surfaces result in homogeneous 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 endoprobes enjoy unique features such as unique serial numbers assuring the highest possible traceability. All endoprobes are CE-marked and individually sterilized for single use.

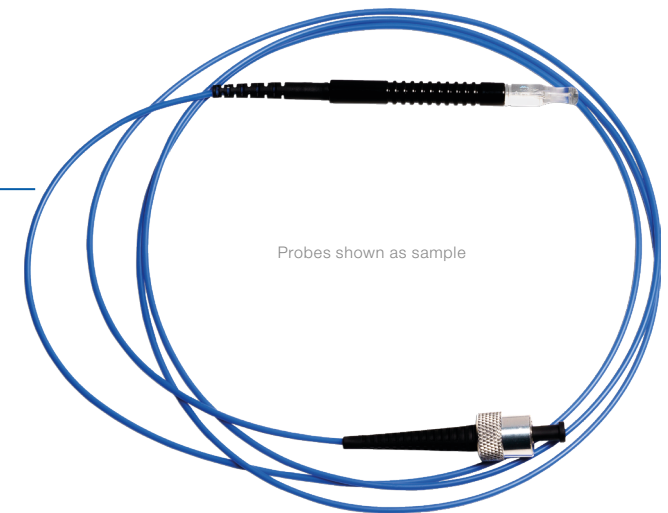


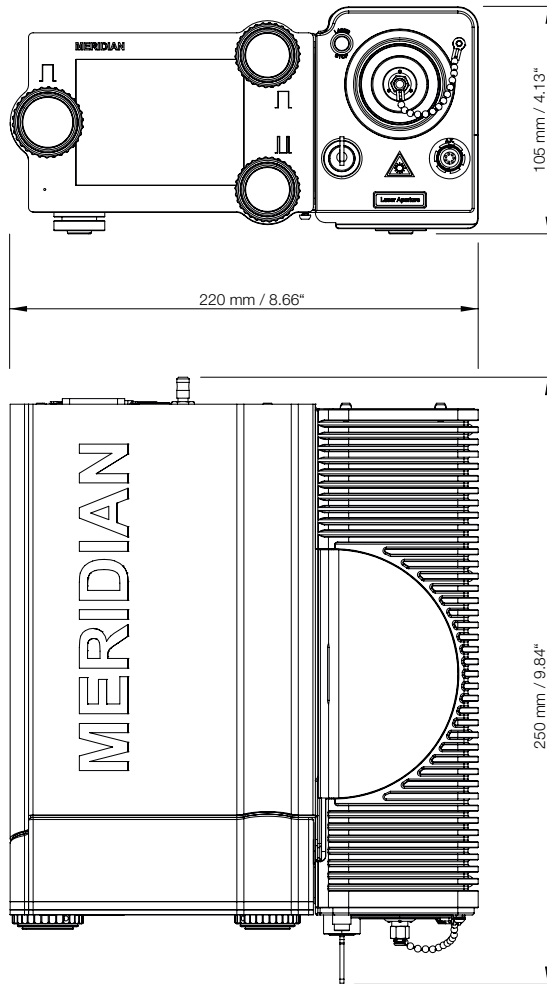
Probes shown as sample

## 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.

	Procedure	Description
	Transcleral cyclophoto-coagulation probe for CW treatment (for the treatment of Glaucoma)	<ul style="list-style-type: none"> <li>■ For use with 81 Onm ophthalmic laser in cw</li> <li>■ No timeout</li> <li>■ This probe is always in contact, as penetration of the laser light into the sclera occurs with the help of water displacement</li> </ul>
	Transcleral cyclophoto-coagulation probe for SP mode	<ul style="list-style-type: none"> <li>■ Specially designed for Shortpulse mode.</li> <li>■ No timeout</li> <li>■ This probe allows perfect visualisation of the eye while doing the treatment</li> </ul>





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## TECHNICAL SPECIFICATIONS\*

Device description	Merilas 810 shortpulse   <b>merilas</b> shortpulse <b>810</b>
Safety Classifications	Class 4
Wavelength	Infrared (810 nm)
Power Output	50 – 3000 mW
Pulse Duration	CW (continuous wave, chopped) 1 ms – 10 000 ms
Pulse Interval	1 ms – 10 000 ms
SP-Mode Settings	shortpulse (continuous wave, chopped) shortpulse duration: 0.01 – 9.5 ms shortpulse interval: 0.1 – 9.5 ms
Cooling	TEC
Aiming Beam	Diode 635 nm, (0-1 mW in 9 steps)
Dimensions	25.0 × 22.0 × 10.5 cm
Total Weight	7.0 kg
Power Requirements	100 – 240 V, 50/60 Hz, 2 A max.

\* 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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