

integro lio[®]

TRULY **WIRELESS**
TOTAL **CONTROL**



LUMIBIRD[®]
MEDICAL

**Laser Indirect Ophthalmoscope
Direct Laser Diode Technology**

LASER INDIRECT OPHTHALMOSCOPE

THE FIRST OF IT'S KIND

A cable-free connection between the headset and footswitch delivers complete mobility

OPTIMUM ERGONOMICS

- 100% Wireless: No cable from headset to footswitch
- Metal-jacketed, short fiber optic minimizing the risk of breakages
- Headset and footswitch powered by their own long lasting batteries
- Total freedom of movement when performing laser treatment
- Hands-free and tablet-free design



1 "IMPRINT" HEADS-UP DISPLAY

Real-time, in-view control of treatment settings.

2 ADVANCED WIRELESS FOOTSWITCH

Control and adjust all laser treatment settings quickly and easily using intuitive foot controls and a large, easy-to-read display.



Maintain total control and focus with an intuitive wireless footswitch featuring a long-lasting battery.



The first truly wireless LIO experience

STUNNING VISUALIZATION AND PRECISION

Features a modified Keeler Vantage Plus indirect ophthalmoscope



LIGHTWEIGHT DESIGN

FULLY INTEGRATED PATENTED DESIGN

Green 532 nm laser source built into a well-balanced and lightweight indirect ophthalmoscope

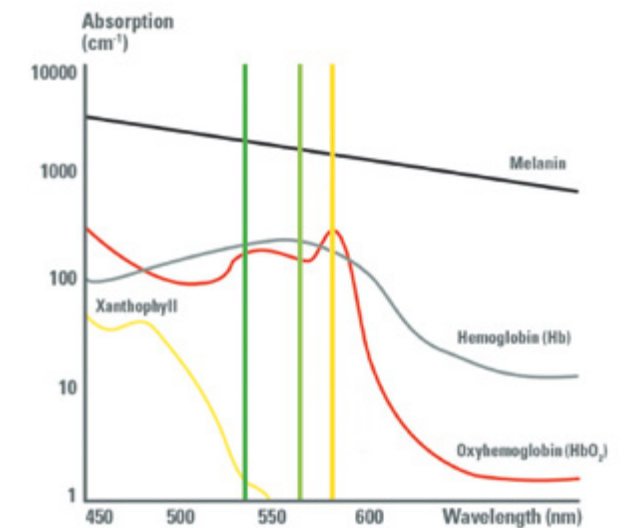


532 NM GREEN DIRECT LASER DIODE TECHNOLOGY

A WORLD'S FIRST IN PHOTOCOAGULATION

Integre® LIO features a laser cavity fully integrated into a Keeler Vantage Plus LIO. It is based on "Direct 532 nm Green Laser Diode technology". Compared to Diode-Pumped Solid-State lasers (DPSS), this technology offers numerous advantages:

- **Good beam quality** without the complexity of DPSS lasers
- **Compact design** for easy integration into laser delivery systems
- **Energy-efficient operation**, making them well suited for battery-powered, handheld devices
- **Latest-generation diodes** capable of emitting a green laser wavelength at 532 nm



WHY 532 NM GREEN?

Although often confused with the 514 nm argon laser of the past, the 532 nm green wavelength was introduced to ophthalmology in the 1990s by Quantel Medical, who introduced the first 532 nm photocoagulator featuring DPSS technology.

At that time, ophthalmologists switched from 514 nm gas tube lasers to 532 nm DPSS lasers for practical reasons, as well as for their therapeutic advantages.

The 532 nm wavelength is presented as versatile in scientific literature and offers the following benefits over shorter green wavelengths:

- Good absorption by both melanin and oxyhemoglobin (second peak of absorption by oxyhemoglobin) [1, 2].
- Low absorption by macular xanthophyll pigments [1, 2].
- Lower light scattering simplifies treatment through cataracts and hazy media [1, 2].

TECHNICAL SPECIFICATIONS

integro lio[®]

LASER INDIRECT OPHTHALMOSCOPE

Technology	Laser diode
Wavelength	532 nm Green
Maximum power	1000 mW (at tissue)
Pulse duration	0.01 s to 1 s
Repeat intervals	0.1 s to 3 s
Aiming beam	635 nm
Spot size	1100 µm
Heads-up display	Treatment settings displayed in the right binocular
Size	21 (H) x 22 (W) x 37 (D) cm 8.27" (H) x 8.66" (W) x 14.57" (D)
Weight	1 kg - 2.20 lbs Unpacked
Cooling	Air cooled

FOOTSWITCH

Wireless communication	Bluetooth [®] Low Energy (BLE)
Screen size	4.2"
Size	17 (H) x 24 (W) x 28 (D) cm 6.70" (H) x 9.45" (W) x 11.02" (D)
Weight	2.5 kg - 5.51 lbs Unpacked
Battery	Long-lasting rechargeable batteries (footswitch and headset). Full day of use on a single charge.
External power supply	2.8 m/9.19 ft length cable
Power requirements	100 to 240 VAC, 50/60 Hz, 1A

SUITCASE

Size	55 (H) x 36.6 (W) x 23 (D) cm 21.65" (H) x 14.41" (W) x 9.05" (D)
Weight	3.6 kg - 7.94 lbs (empty) 7.7 kg - 16.98 lbs (with product)

Specifications are subject to change without notice. Non contractual pictures.

Clinical references:

- 1- Vogel M, Schäfer FP, Stuke M, Müller K, Theuring S, Morawietz A. Animal, experiments for the determination of an optimal wavelength for retinal coagulations. Graefes Arch Clin Exp Ophthalmol. 1989;227:277-280.
- 2- Mainster MA. Wavelength selection in macular photocoagulation. Tissue optics, thermal effects, and laser systems. Ophthalmology.1986;93:952



FDA cleared

