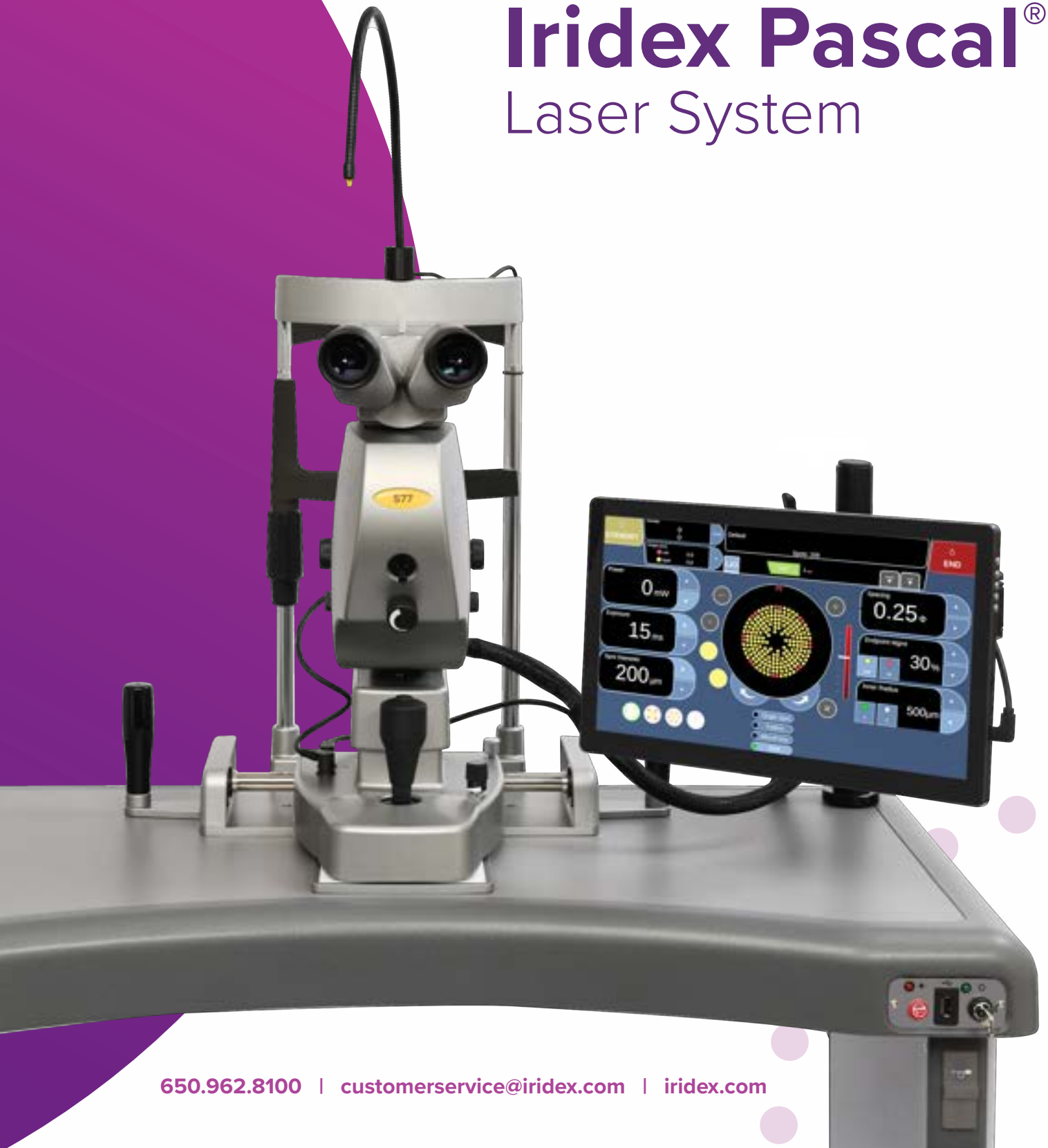
IRIDEX®

Iridex Pascal®
Laser System



650.962.8100 | customerservice@iridex.com | iridex.com

Clinical Versatility with Proven Power

The gold-standard of Pattern Scanning Laser technology has advanced to the next level.

The 5th generation of the PASCAL® Laser System is here. Now, the efficiency and convenience of the Iridex PASCAL® Laser System is availiable with MircoPulse®, the world's leading tissue-sparing ophthalmic laser therapy.

Ophthalmologists worldwide choose PASCAL® Laser Systems (the original PAttern SCAnning Laser) for its speed and ease of use.

Developed in partnership with photonics experts at Stanford University, the PASCAL Laser System method of photocoagulation treats using a single spot or chosen pattern array, providing control and flexibility in the treatment of retinal and glaucoma diseases.

> **Pattern scanning method is the preferred way and I believe it's standard of care.**
>
> **Mark S. Blumenkranz, MD**
> HJ Smead Professor and Chair Director of the Byers Eye Institute at Stanford University



Overview of Iridex Pascal Laser System

The collaboration between researchers and clinical experts resulted in a laser system recognized and used by physicians worldwide.



Four-fiber beam design improves laser depth of focus across tissue elevations



Enhanced patient comfort with reduced power and shorter pulses



Rapid pattern scanning laser delivery



Precise alignment and continuous laser pulse directed by high speed galvanometers



Advanced laser delivery slit lamp



Endpoint Management for sub-threshold treatment[1]



Pattern Scanning Laser Trabeculoplasty (PSLT)[1] for IOP reduction[2]

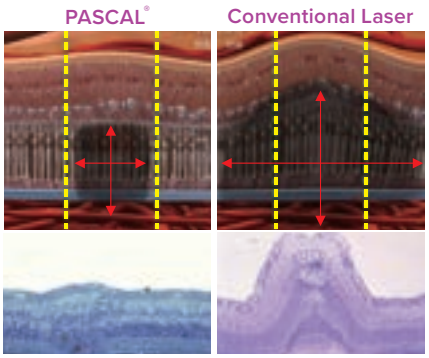


Fovea-Friendly™ Micropulse® technology finely controls thermal elevation by "chopping" a continuous-wave (CW) beam into an envelope of repetitive short pulses allowing tissue to cool between pulses and reduce thermal buildup.

1. Optional
2. Mauricio Turati, Felix Gil-Carrasco, Adolfo Morales, Hugo Quiroz-Mercado, Dan Anderson, George Marcellino, Georg Schuele, Daniel Palanker. “Patterned Laser Trabeculoplasty.” Ophthalmic Surg Lasers Imaging 2010;41: 538-545.

Experience the Advantage of PASCAL®

Unlike conventional laser burns, PASCAL's short pulse duration (10ms) results in fast procedures with less pain, minimized collateral damage, and reduced scarring for your patients.[3]

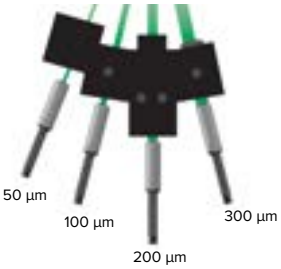


Courtesy: Dr. Daniel Palanker Associate Professor Department of Ophthalmology, School of Medicine, and Hansen Experimental Physics Laboratory Stanford University.

Precision Spots with Multi-Fiber Beam Technology

PASCAL Laser Systems proprietary multi-fiber beam delivery results in easy to focus, predictable and uniform spots. Physicians using PASCAL® Laser Systems continue to share that the consistency of the burn during photocoagulation is "better" than competing lasers. This is due mainly to the wide depth of focus from the multi-fiber beam optics found in all PASCAL® Laser Systems.

The PASCAL Laser System incorporates separate fibers (one for each spot size) into each system. Compared to other technologies, PASCAL Laser System's unique fiber beam design offers a more consistent and focused spot size for each treatment.

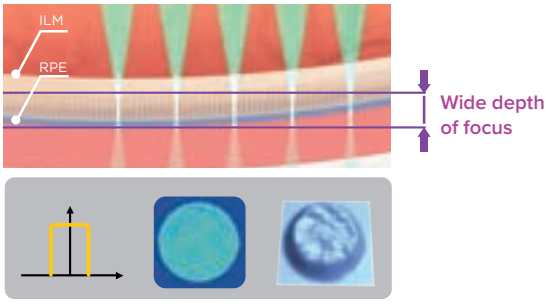


- Wide depth of focus for all spot sizes
- Consistent uptake at each spot
- Uniform and consistent energy distribution for all spot sizes[4]

Multi-Fiber Beam Delivery System

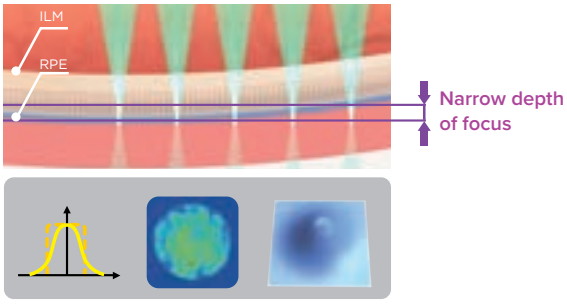
PASCAL multi-fiber beam delivery provides one dedicated fiber optic for each spot size. This increases depth of field compared to zoom optic laser systems.

Multi-Fiber Beam Delivery



Profile image of beam delivery:
PASCAL has uniform energy distribution

Zoom optic laser systems



Profile image of beam delivery:
Other lasers have "hot spots" in the beam profile

3. Manish Nagpal et. al., "Comparison of laser photocoagulation for diabetic retinopathy using 532-nm standard laser versus multispot pattern scan laser." RETINA 30:452-458,2010
4. Internal Test Report

PASCAL Slit Lamp Delivery Features

SL-PA05

Ergonomic Design and Improved Optical Design
Precise coaxiality between the slit illumination and the aiming beam provides optimal visibility of the peripheral retina.

Comfortable Observation with Binocular System
The CB-8 binocular system with 8-degree angle provides clear vision. The smooth movement of the PD adjustment makes it easy to find a comfortable PD range. Magnification configuration optimizes visibility of the treatment area. The 5x, 8x, 13x, 20x and 32x magnification grouping allows for a wider view of the treatment area.

Power Adjustment Knob
Quick and precise adjustment of the laser treatment power.

LED Illumination
Sharp and homogeneous LED illumination for comfortable viewing.

Gooseneck Fixation Target
Easy to adjust the fixation target.

Micro-manipulator
Allows precise alignment of aiming beam and treatment delivery.



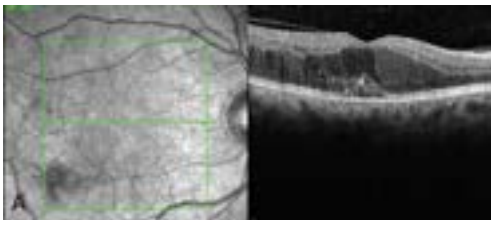
Now with MicroPulse® Technology

MicroPulse Application

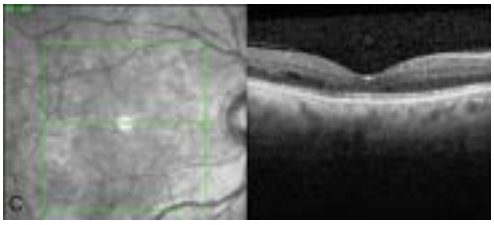
- Fovea-Friendly™ MicroPulse Laser Therapy for retinal disorders[5]

MicroPulse®

- Repeatable MicroPulse Laser Trabeculoplasty (MLT) for glaucoma therapy



Pre-treatment: CRT 458 µm | VA 20/40

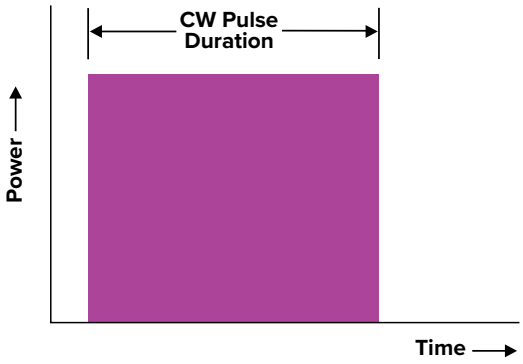


17 mos post 1st MicroPulse, 4 mos post 4th MicroPulse:
CRT 206 µm, no macular edema | VA 20/20-2

What is MicroPulse Technology?

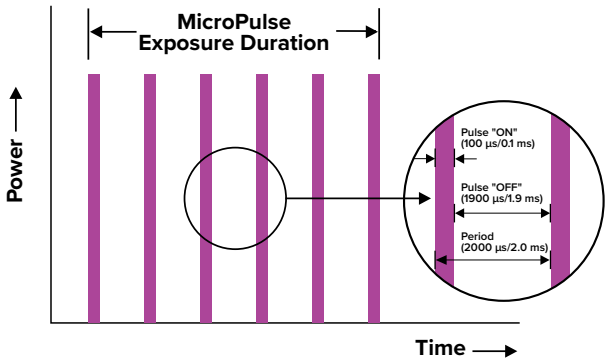
CW-Pulse™ (Continuous-Wave) Mode

CW lasers deliver a steady stream of laser energy, even with the shortest exposure duration. This results in a significant thermal rise and consequent coagulation used clinically for many applications.



MicroPulse Mode*

MicroPulse technology finely controls thermal elevation by "chopping" a continuous-wave (CW) beam into an envelope of repetitive short pulses allowing tissue to cool between pulses and reduce thermal buildup.



5. Bhagat N, Zarbin M, Mansour S, Chong V, and Cardillo JA. Fovea-friendly MicroPulse Laser. Supplement to Retina Today May/June 2012

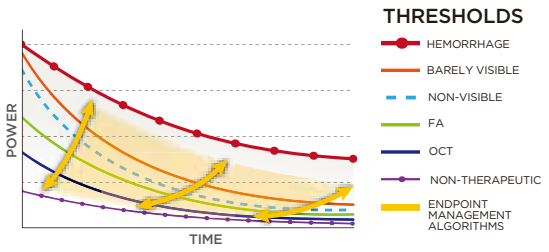
* MicroPulse is an optional Module.

Endpoint Management™ Sub-threshold Treatment for Retinal Disorders

Endpoint Management (EpM)* is a pattern sub-threshold retinal laser therapy that uses a unique algorithm to control laser power and pulse duration, optimizing the therapeutic effect of the laser at sub-visible levels.

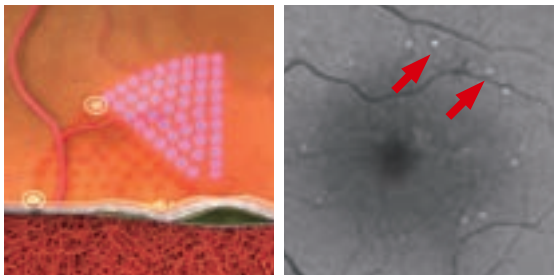
Endpoint Management is Mathematically Precise

The Arrhenius Integral coupled with extensive data on retinal laser-tissue interactions defines the algorithms for Endpoint Management. By use of this formula, heat induced changes in the retina are controlled as Endpoint Management simultaneously modulates the laser power and duration, providing linear control over a non-linear process.



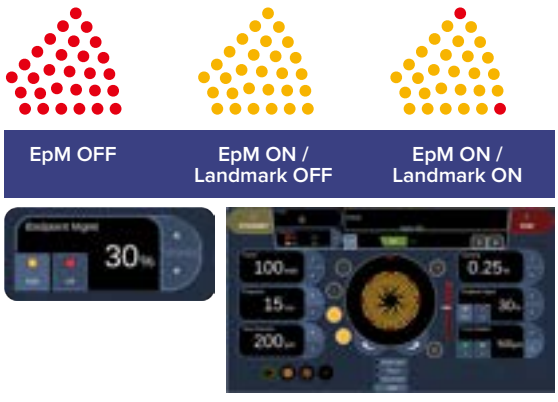
Landmark™ Patterns

The Landmark feature is a useful tool for tracking the sub-visible areas which have been treated, assisting with the treatment process and taking the guesswork out of successive treatments.



Easy Operation

The yellow dots displayed on the user interface treatment pattern display indicate the laser spots that will be delivered using the energy level set by Endpoint Management. While Endpoint Management is active, the red dots indicate the laser spots that will be delivered at the titration energy level ("100% level") and will provide the "Landmark" reference points outlining the treated area.



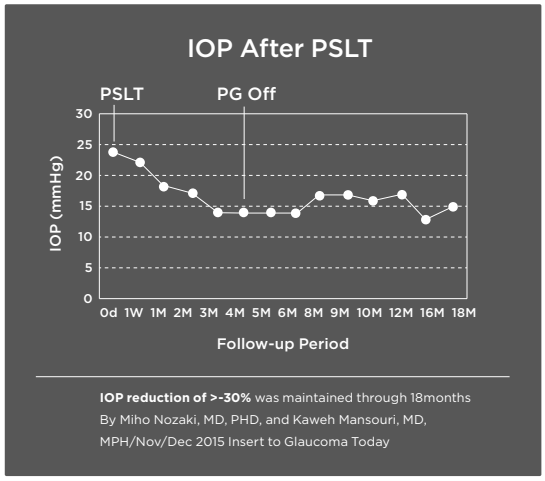
*EpM is optional software

PSLT™ (Pattern Scanning Laser Trabeculoplasty) treatment for IOP Reduction

Pattern Scanning Laser Trabeculoplasty (PSLT)*5 is a tissue-sparing laser treatment for reducing intraocular pressure in open angle glaucoma. PSLT provides a rapid, precise, and minimally traumatic computer-guided treatment that applies a sequence of patterns onto the trabecular meshwork.*6

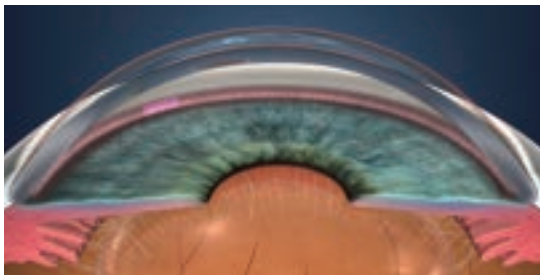
Clear Advantages of PSLT

- Computer guided treatment
- Sub-visible procedure
- Clinical studies show an IOP reduction of 24% in 6 months
- Ability to retreat if necessary



Ease of Operation

PSLT provides a computer guided placement of the treatment patterns ensuring full coverage of the trabecular meshwork and eliminating the chance of overlap.





*5 PSLT is optional software

*6 Mauricio Turati, Felix Gil-Carrasco, Adolfo Morales, Hugo Quiroz-Mercado, Dan Anderson, George Marcellino, Georg Schuele, Daniel Palanker. "Patterned Laser Trabeculoplasty." Ophthalmic Surg Lasers Imaging 2010;41: 538-545.

The 5th Generation of PASCAL® Laser System

Sophisticated Technology, Elegantly Designed

In order to help you and your patients, we never stop improving. When you understand the science behind our advancements, you'll discover the leading innovation the PASCAL Laser System is bringing to the future of opthalmology.

Iridex Pascal Laser System

- Available for 577nm and 532nm Wavelengths (yellow/ green)
- Integrated with SL-PA05 slit lamp and table
- MicroPulse Technology (optional software)
- Endpoint Management (optional software)
- Pattern Scanning Laser Trabeculoplasty (PSLT) (optional software)



Iridex PASCAL

PASCAL® LIO*
(Laser Indirect Ophthalmoscope)

- Allows physicians to offer laser photocoagulation treatments to patients unable to sit at a slit lamp
- Small and lightweight headset battery offers up to 2 hours of use without recharging



PASCAL® LIO

* Optional accessory to Iridex Pascal


IRIDEX
PASCAL
0
15
200
0.25
30
500

Specifications

	Iridex Pascal® Laser System
Treatment Laser Wavelength	532nm or 577nm
Treatment Max Power	0 - 2000mW (The maximum power output varies by spot size) LIO = 30 - 1500mW
Aim Beam	635nm
Aim Power	< 1mW, CW
Power Control	Touch Screen, Power knob on Slitlamp
Pattern	**Posterior:** Single Spot, Array, Hexagon, Triple Arc, Wedge, Arc, Triple Ring, Line, Octants, Enhanced Octants **Anterior:** PSLT 3 Row, Anterior Array, Anterior Single Spot
Licensed Features	EpM, PSLT, MicroPulse
Treatment Duration	Pulse Durations 5 to 1000ms (Pulse Durations 5ms with PSLT) MicroPulse (Optional): 0.05 ms - 1.0 ms
Repeat Interval	Non-Micropulse: 25 ms to 990 ms MicroPulse: 0.1 ms - 10.0 ms
Delivered Spot Size	50, 100, 200, 300um
Input Power Requirement	100 - 240 VAC; 50/60Hz 600VA
Cooling	TEC / Air Cooled
Size	Table H29” (73.7cm) x W 36” (91.5cm) x D 18” (45.7cm), (+/ - 1") for operator height. Service Height >52" Slitlamp Height without gooseneck fixation target 18" (45.7cm)
System Weight	< 170lbs. (< 77kg)



IMPORTANT Please be sure to review instructions for use and the operator manual. Not available for sale in all countries. Please check with your local distributor for availability in your country.

Contact Iridex Customer Service today to learn more.
650.962.8100 | customerservice@iridex.com | iridex.com

IRIDEX®

88335-EN Rev D 03.2025