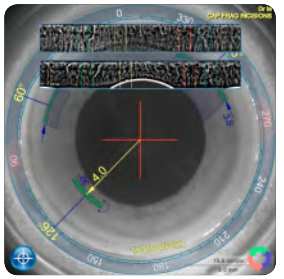

LENSAR
CATARACT LASER WITH AUGMENTED REALITY
You-Centric.
Today and Tomorrow.
Finally, a Cataract Laser
Designed With You in Mind

Manage Astigmatism With the Strength of LENSAR, Now With Streamline IV

Streamline® IV, the fourth LENSAR® system upgrade in two years, provides surgeons with the most advanced technology for confidently managing astigmatism and optimizing patient outcomes. LENSAR, the leader in next-generation femtosecond cataract laser technology, has focused this and other rounds of Streamline enhancements on astigmatism because the overwhelming majority of cataract patients suffer from this condition, which is often difficult to manage and can have a major impact on visual outcomes. Now with Streamline IV, surgeons can deliver the outstanding outcomes their astigmatic patients will be happy to see.

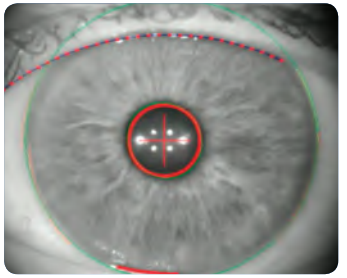
CONFIDENCE

The LENSAR Laser with Streamline IV offers a new level of surgeon **confidence**. Superior Augmented Reality™ provides comprehensive imaging, including biometric data, for confident treatment planning. Iris registration and automatic cyclorotation adjustment replace the need for manual ink marking for more confident arcuate incision planning and toric IOL alignment.



Iris Registration

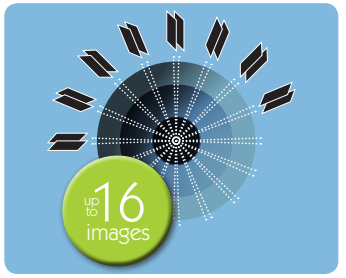
With LENSAR's iris registration (IR) feature, surgeons can have the highest level of confidence when planning astigmatism treatment. IR provides automatic, software-controlled cyclorotation adjustment, helping eliminate the potential for errors caused by ink marking the cornea and/or manual cyclorotation adjustment.



Iris Registration Image Compatibility

Surgeons can be confident in LENSAR's automatic cyclorotation adjustment and their own astigmatism treatment planning with the IR image compatibility feature. LENSAR automatically confirms image compatibility at the point of capture during the pre-op* diagnostic exam (e.g., detecting poor focus or an eyelid blocking the iris), so the topography can be retaken if the image is suboptimal.

*Available using the Pentacam® HR or AXL or the Cassini® Corneal Shape Analyzer.



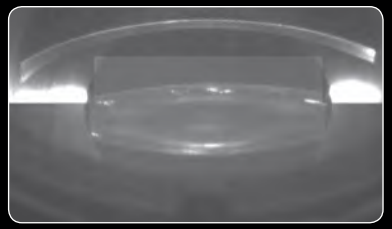
Augmented Reality Biometric Data Capture

Augmented Reality gives surgeons a more complete visualization of the eye for informed and confident treatment decisions. This is uniquely accomplished with anterior segment imaging and biometry captured at 2 angles at up to 8 different positions. The result is an accurate 3-D Augmented Reality model of the actual ocular anatomy for each patient. Additionally, with up to 2 times faster scanning and imaging than before, Streamline can reduce treatment times by up to 20 seconds.

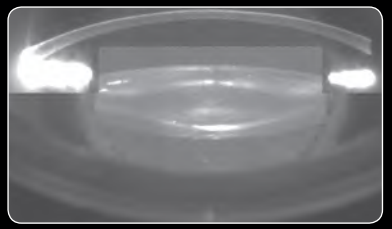
SAFETY

The LENSAR® Laser with Streamline® IV was designed specifically with patient **safety** in mind. Cataract density imaging (available for density categories 1-5), superior use of Augmented Reality™, and a non-applanating patient interface can help you feel secure knowing that you can provide an optimized custom treatment that will help maximize outcomes while minimizing risk of corneal folds and striae that could affect laser treatment accuracy.

CATEGORY 1



CATEGORY 2



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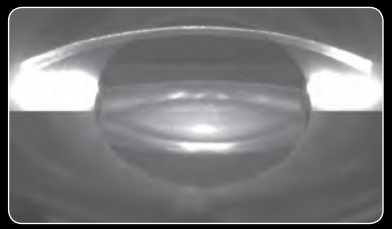

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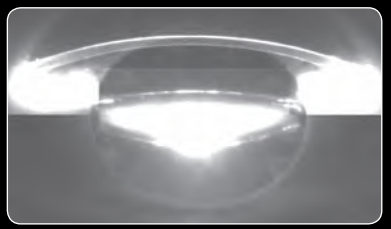

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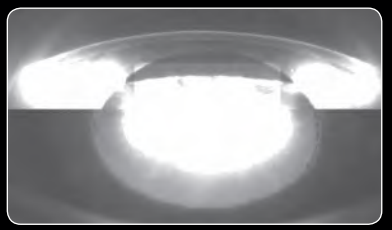
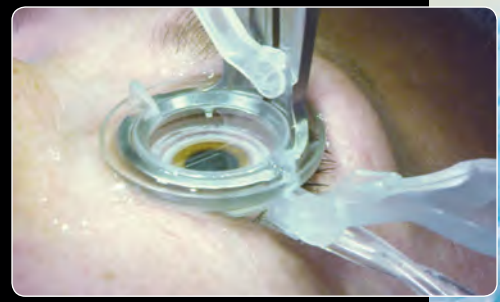


Cataract Density Imaging

Only LENSAR with Streamline IV automatically categorizes the density of each cataract and determines the location of the nucleus to increase treatment efficiency and potentially decrease laser energy used in the eye. LENSAR is able to provide cataract density imaging because of Augmented Reality's superior imaging capabilities for identifying varying lens layers and depth of field advantage.

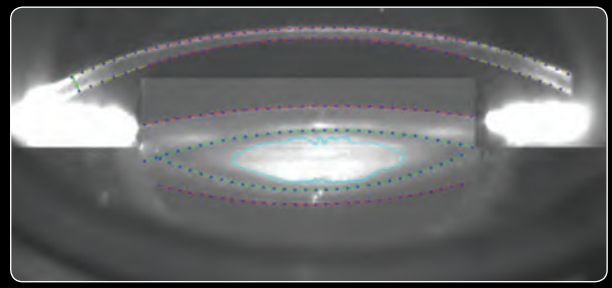
Non-Applanating Liquid Interface

LENSAR's non-applanating, fluid-filled patient interface contributes to precise laser placement and clean imaging by maintaining the integrity of the cornea, so surgeons can be assured that they are delivering treatment precisely where intended.



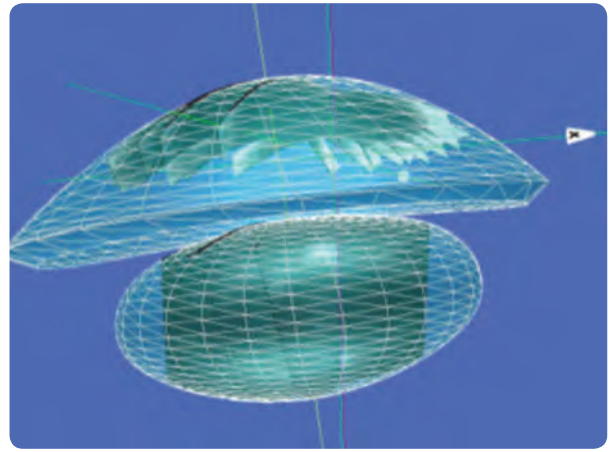
Augmented Reality Imaging

Augmented Reality imaging was specifically designed to produce a high-resolution image from the anterior cornea to the posterior lens capsule, so surgeons can be confident they are using an accurate eye model required for delivering a safe and efficient patient treatment. To provide this level of visualization, Augmented Reality marries Scheimpflug tomography with advanced imaging technologies, including a variable-rate scanning superluminescent diode (SLD) illumination. And with Streamline, scanning and imaging are up to 2 times faster, which reduces time under the laser and contributes to the overall safety of the patient treatment and subsequent outcomes.



Lens Tilt Detection and Compensation

LENSAR's ability to detect and compensate for lens tilt contributes to the safety of the laser treatment by helping ensure the fragmentation pattern fits within the capsular bag without encroachment on the capsule. LENSAR is able to detect and compensate for lens tilt by collecting accurate biometric data used in the creation of a precise 3-D model.

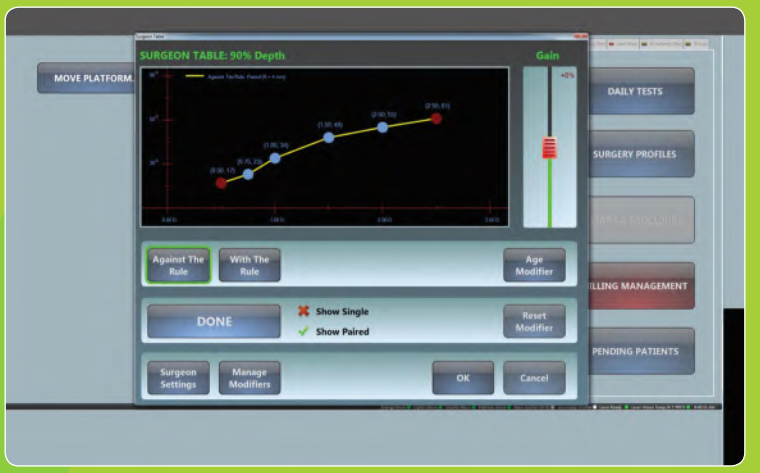


PRECISION

The LENSAR® Laser with Streamline® IV employs several features that allow for **precise** astigmatism treatment planning and **precise** laser delivery, so you can make every cataract procedure an individual success.

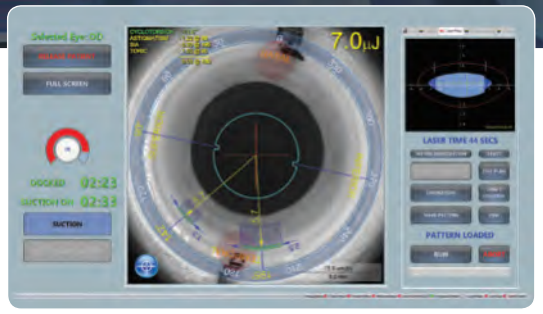
Arcuate Incision Surgeon Tables

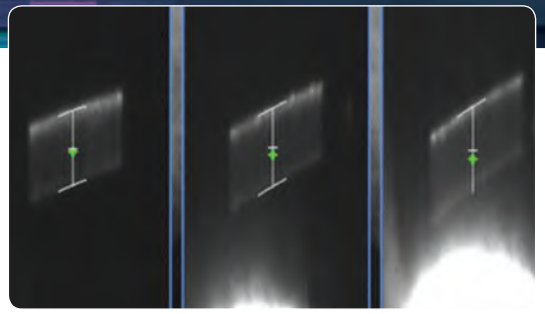
LENSAR's surgeon tables add a level of precision to convenient, one-touch arcuate incision planning and eliminate possible transcription errors by using the most current pre-programmed nomogram data, individual patient biometric measurements, and other factors defined by the surgeon (e.g., white-to-white, with-the-rule, or against-the-rule adjustment) to automatically determine optimal arcuate incision depth, location, and length.



Toric IOL Selector

LENSAR with Streamline IV includes an enhanced toric IOL selector with manufacturer-defined toric IOL power at the corneal plane to account for SIA, allowing for precise residual corneal astigmatism treatment planning.





IntelliAxis-L Steep Axis Capsular Marking

Now with Streamline IV, surgeons can master toric IOL alignment like never before with IntelliAxis®-L steep axis capsular marking. IntelliAxis-L gives surgeons the ability to establish biomechanically stable and permanent landmarks on the capsule, which can be used to verify the location of the steep axis relative to toric IOL orientation, both intra- and postoperatively. IntelliAxis-C steep axis corneal marking is also available.

Surgically Induced Astigmatism (SIA)

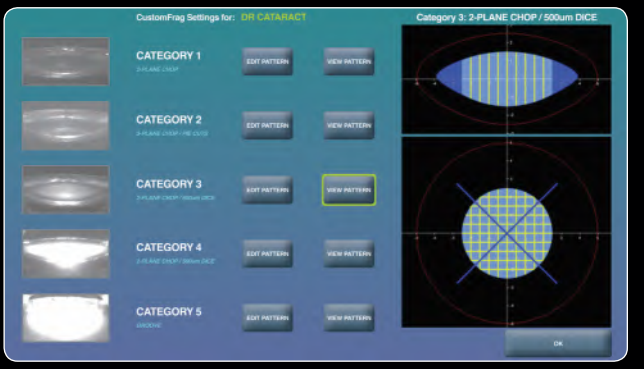
To further increase the precision of astigmatism treatment planning, LENSAR's software compensates for SIA. A graphical interface that can be manipulated by touch demonstrates the impact of SIA on the expected residual astigmatism, showing predictive changes from the surgeon-preferred treatment programmed into the LENSAR Laser.

Intelligent Incisions

Intelligent Incisions™ employs localized imaging to monitor the position of the cornea immediately before each incision to ensure the precise location of each incision. LENSAR is the only femtosecond cataract laser system that re-images the cornea prior to incision making, enabling precise incisions that are easy to open and that consistently seal at the end of the procedure.

EFFICIENCY

The LENSAR® Laser System with Streamline® IV was designed with your **efficiency** in mind, built with thoughtful ergonomic features and levels of automation never before seen in femtosecond cataract lasers, allowing for seamless integration into your existing workflow without increasing procedure time. And with up to 2 times faster scanning and efficient laser energy delivery, Streamline can reduce laser treatment times by up to 20 seconds.



Automatic Customized Fragmentation Patterns

Surgeons can experience greater procedural efficiency by utilizing automatic customized fragmentation patterns and energy settings that can be optimized for different cataract densities, including density categories 1 to 5. LENSAR automatically categorizes each cataract using cataract density imaging, then selects the pre-programmed, surgeon-customized fragmentation pattern and energy settings based on the density category for a customized treatment.

Pentacam **Aladdin** **Cassini** **Nidek® OPD-Scan III***

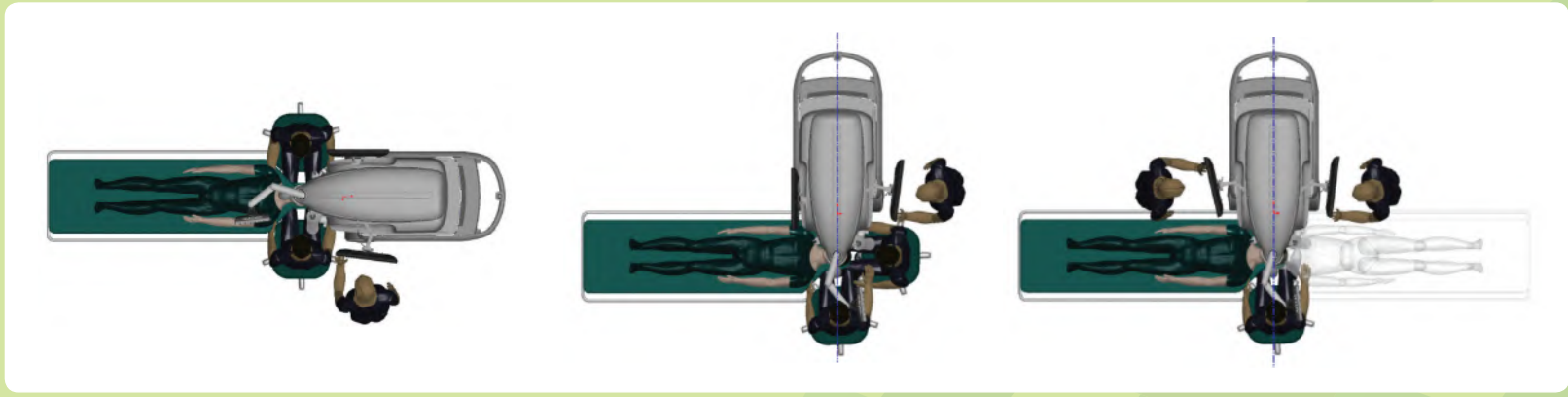
Wireless Integration With Pre-Op Diagnostic Data

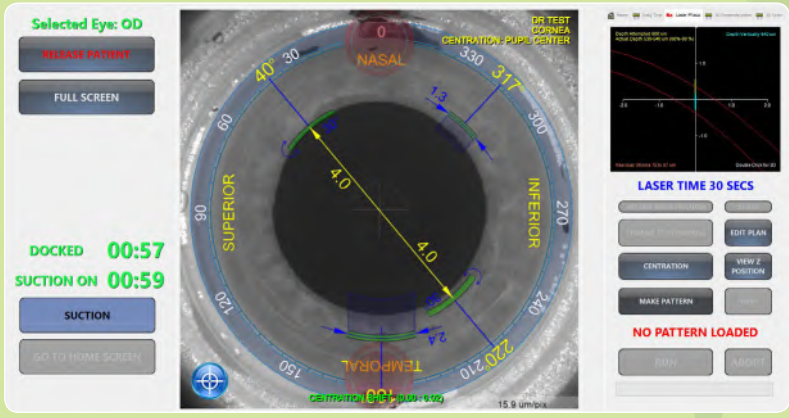
To save staff time and reduce potentially costly transcription errors, patient name, pre-op images, and preoperative data, including Total Refractive Power from the OCULUS Pentacam® HR and AXL and Total Corneal Astigmatism from Cassini® Corneal Shape Analyzer, can be transferred wirelessly to the LENSAR Laser. Pre-op data can also be transferred via USB from other pre-op diagnostic devices.

*Distributed by Marco in the USA.

Small Laser Footprint

The LENSAR Laser System has a small footprint that is configurable, facilitating improved patient flow and staff utilization. Surgeons can seamlessly integrate the LENSAR Laser into their existing workflow because of the compact design and other thoughtfully designed features, including a deployable laser head, intuitive graphic interface, and no fixed-bed design.





Corneal Incision–Only Mode

Surgeons can now perform laser corneal incisions independent of capsulotomy and fragmentation, providing surgeons with the flexibility to treat patients who may benefit from post-op arcuate incisions. Corneal incision–only mode contributes to overall efficiency of the procedure, with abbreviated scanning.

SPECS

System Dimensions and Weight

Containing all subsystems except patient bed
Width: 32 in (0.81 m)
Height: 65 in (1.65 m)
Length: 80 in (2.03 m)
Weight: Entire LLS-fs 3D System: 1,421 lbs (645 kg)
Electrical: The LLS-fs 3D Laser System requires a dedicated electrical service of 208-240 VAC (±10 %) single phase, minimum of 10 amps, with ground, 50/60 Hz

Surgical Laser Specifications

Laser Center Wavelength: 1030 ± 2 nanometers
Laser Maximum Average Power: ≤1.2 ± 3% watts
Laser Maximum Energy / Pulse: ≤15 ± 3% µjoules
Maximum Pulse Repetition Rate (PRF): 80 ± 0.5 kHz (kilohertz)
Laser Classification, IEC 60825-1:2007: Class 4

Scanning Illumination

SLD Wavelength Emission Range: 845 to 920 nanometers
SLD Maximum Average Power: ≤4 milliwatts
Laser Classification, IEC 60825-1:2007: Class 3B

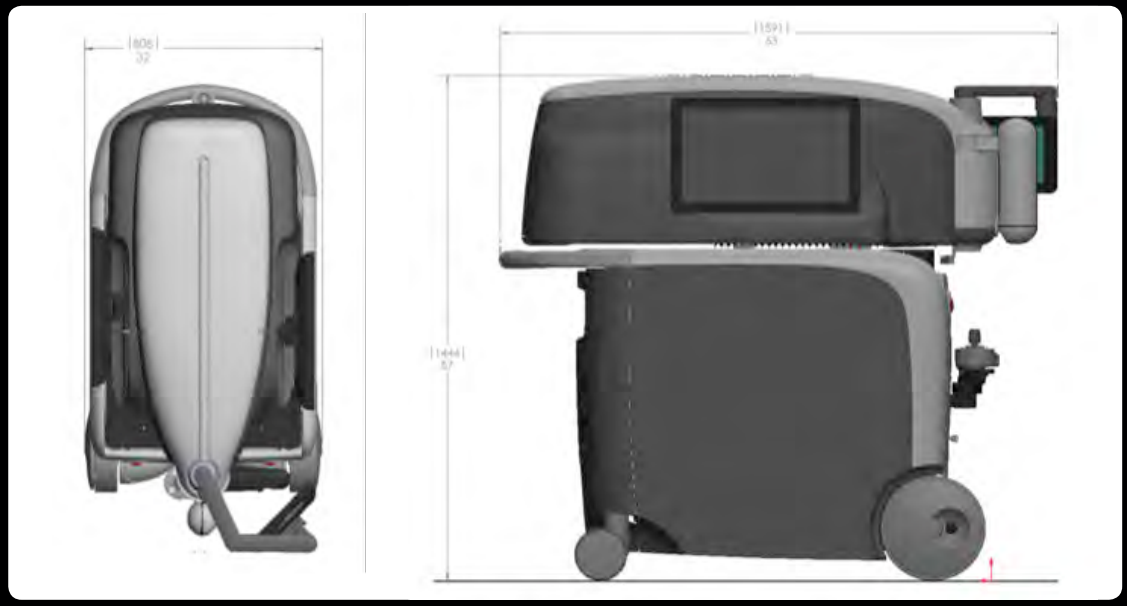
Laser Suite

Electrical:

- 208-230-240 VAC (+/- 10%) single-phase, ground, 50/60 Hz, 10 amp minimum service receptacle in wall (NEMA L6-30R or equivalent; based on location. i.e., European Type E/F) 222 VAC
- 2 standard 110/220 VAC receptacles installed near main system outlet with common ground 122 VAC

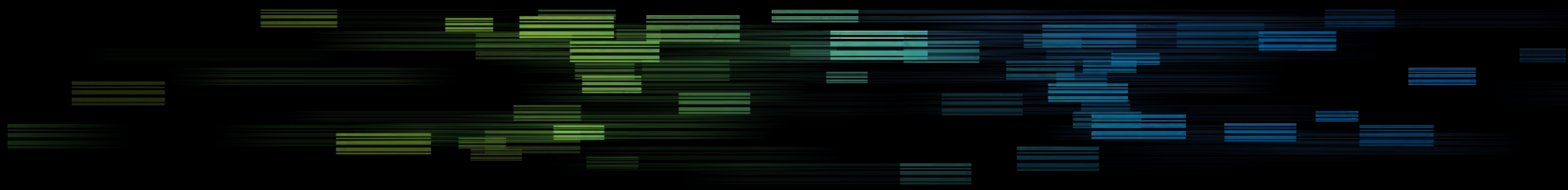
Internet Connection: At least one internet connection in the room or within 50 feet of the system
Environmental Control:

- Humidity: 35% - 70% range, non-condensing
- Temperature: 65-75°F/18-23.9°C range, above dew point. 66°
- The room temperature should be maintained to a temperature of ± 2°C of a set temperature that is in the range of 65-75°F / 18-23.9°C.



System at Maximum Travel Position

	Stowed Length	Maximum Potential Travel
Length	63 in / 1591 mm	+ 15 in / + 381 mm
Width	32 in / 808 mm	± 4 in / ± 101.6 mm
Height	57 in / 1444 mm	+ 8 in / + 203.2 mm



Visit www.LENSAR.com to learn more about the strength of the LENSAR® Laser with Streamline® IV.

LENSAR, Inc.
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Orlando, FL 32826
888-536-7271

Indication

The LENSAR Laser System – fs 3D (LLS-fs 3D) is intended for use in patients undergoing cataract surgery for removal of the crystalline lens. Intended uses in cataract surgery include anterior capsulotomy, laser phacofragmentation, and the creation of full and partial thickness single-plane and multi-plane arc cuts/incisions in the cornea, each of which may be performed either individually or consecutively during the same procedure.

Laser Capsulotomy, laser phacofragmentation and/or corneal incisions surgery is contraindicated in patients: who are of pediatric age, whose pupils will not dilate or remain dilated to a diameter greater than that of the intended treatment and for capsulotomies and/or laser phacofragmentation with intended diameters of less than 4 mm or greater than 7 mm, who have existing corneal implants, who have previous corneal incisions that might provide a potential space into which the gas produced by the procedure can escape, who have conditions that would cause inadequate clearance between the intended capsulotomy cut and the corneal endothelium, such as: hypotony, uncontrolled glaucoma, who have corneal disease or pathology that precludes transmission of light at the laser wavelength or causes distortion of laser light, such as: corneal opacities, residual, recurrent, active ocular or uncontrolled eyelid disease or any corneal abnormalities (including endothelial dystrophy, guttata, recurrent corneal erosion, etc.) in the eye to be treated, ophthalmoscopic signs of keratoconus (or keratoconus suspect) in the eye to be treated, a history of severe dry eye that has not responded to therapy, a history of herpes zoster or herpes simplex keratitis.

Potential contraindications are not limited to those included in the list.

WARNING: The safety and effectiveness of this laser have NOT been established in patients with diabetic retinopathy, a history of uncontrolled glaucoma, or prior intraocular surgery.

Patent pending for IntelliAxis-L.