SUMMARY OF SAFETY AND EFFECTIVENESS DATA (SSED)

I. GENERAL INFORMATION

Device Generic Name: Hydrophobic Acrylic Small Aperture Intraocular Lens (IOL)

Device Trade Name: IC-8® Apthera™ IOL

Device Product Code: Extended Depth of Focus Intraocular Lens (POE)

Applicant's Name and Address: AcuFocus, Inc.
32 Discovery, Suite 200
Irvine, CA 92618

Date(s) of Panel Recommendation: None

Premarket Approval Application (PMA) Number: P210005

Date of FDA Notice of Approval: July 22, 2022

II. INDICATIONS FOR USE

The IC-8® Apthera™ IOL is indicated for unilateral implantation for the visual correction of aphakia and to create monovision in patients of age 22 or older who have been diagnosed with bilateral operable cataract, who have up to 1.5 D of astigmatism in the implanted eye, and who do not have a history of retinal disease and who are not predisposed to experiencing retinal disease in the future. The device is intended for primary implantation in the capsular bag, in the non-dominant eye, after the fellow eye has already undergone successful implantation (uncorrected distance visual acuity of 20/32 or better and best-corrected distance visual acuity of 20/25 or better) of a monofocal or monofocal toric IOL that is targeted for emmetropia. The refractive target for the IC-8® Apthera™ IOL should be -0.75 D. The lens mitigates the effects of presbyopia by providing an extended depth of focus. Compared to an aspheric monofocal or monofocal toric IOL, the lens provides improved intermediate and near visual acuity, while maintaining comparable distance visual acuity.

III. CONTRAINDICATIONS

1. Patients with dilated pupil size less than 7.0 mm.
2. Patients with a history of retinal disease including but not limited to, high myopia, diabetes, macular disease, sickle cell disease, retinal tear, retinal detachment, retinal vein occlusion, ocular tumor, uveitis, and patients who are predisposed to experiencing retinal disease in the future.

IV. WARNINGS AND PRECAUTIONS

The warnings and precautions can be found in the labeling for the IC-8 Apthera intraocular lens.

V. DEVICE DESCRIPTION

The IC-8 Apthera IOL is a one-piece, UV-blocking, foldable IOL that provides an extended depth of focus. Made from an implantable medical grade hydrophobic acrylic material with ≤4% water content, the IC-8 Apthera IOL is designed to be surgically implanted into the human eye (placed into the capsular bag) to replace a cataractous crystalline lens. The IC-8 Apthera IOL is an aspheric monofocal IOL that features a centrally embedded FilterRing™ component (mask) with a small central aperture. The FilterRing component is composed of polyvinylidene fluoride (PVDF) and nanoparticles of carbon. Carbon black nanoparticles represent 12 µg of the device mass. This small aperture FilterRing component is designed to extend the depth of focus. The anterior optic surface is aspheric, incorporating negative spherical aberration. The posterior surface of the IC-8 Apthera IOL is designed with a 360° square edge. The IC-8 Apthera IOL is supplied sterile for single-use only.

The IC-8 Apthera IOL has modified C-haptics, angled at 5 degrees, with an overall nominal diameter of 12.5 mm. The biconvex aspheric optic measures 6.00 mm in diameter and is ultraviolet absorbent with the hydrophobic acrylic material having an index of refraction of 1.483 at 35° C. The embedded FilterRing component has an outer diameter of 3.23 mm and an inner diameter of 1.36 mm, creating a central aperture that is intended to increase the depth of focus. The FilterRing component is 5.0 µm in thickness and contains 3,200 microperforations that are arranged in a pseudo-random fashion (sparing the periphery to optimize filter integrity while manufacturing) and range in size from 7 to 10 µm diameters. Table 1 and Figure 1 provide a detailed description and physical characteristics of the IC-8 Apthera IOL. Figure 2 displays the spectral transmittance of the lens compared with a natural human crystalline lens. Figure 3 displays the modulation transfer function (MTF) of the lens compared to a monofocal lens.

Figure 1. Physical Characteristics of the IC-8 Apthera IOL

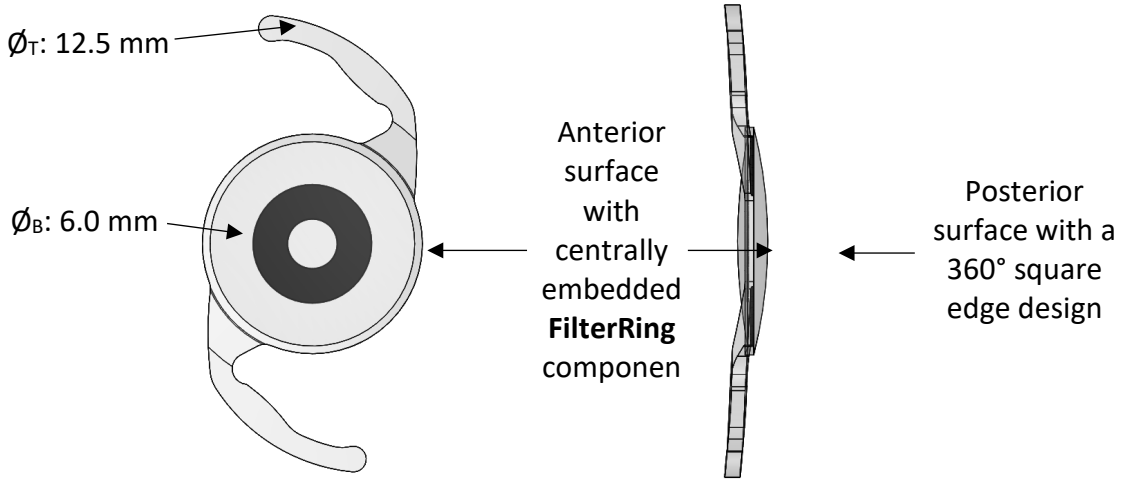
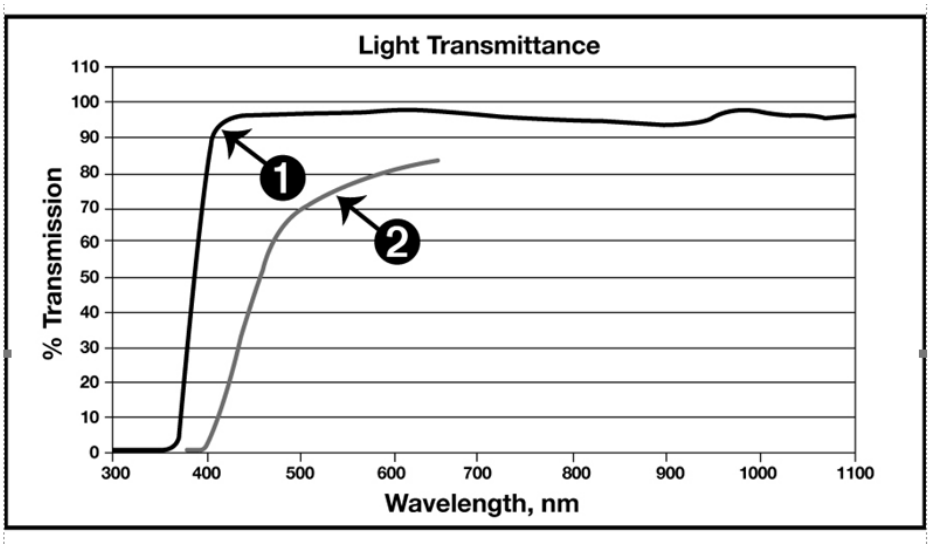


Table 1. Device Design Characteristics

Material	UV-blocking hydrophobic acrylic
Power	+10.0 D through +30.0 D in 0.5 D increments
Optic diameter ($Ø_B$)	6.0 mm
Overall diameter ($Ø_T$)	12.5 mm
Optic design	Biconvex, aspheric anterior surface, and 360° posterior square edge
Haptic design	Modified C-loop haptic with 5° angulation
Refractive index	1.483 at 35ºC and 589 nm
Spherical Aberration	-0.22 mm
Light transmission	UV cut-off at 10% Transmittance (T) for a typical 20.0 diopter IC-8 Apthera IOL is shown in Figure 2
FilterRing component material	Polyvinylidene fluoride (PVDF) with carbon nanoparticles
FilterRing component outer diameter	3.23 mm
FilterRing component aperture diameter	1.36 mm
Number of micro-perforations	3,200
FilterRing component Thickness	5 mm

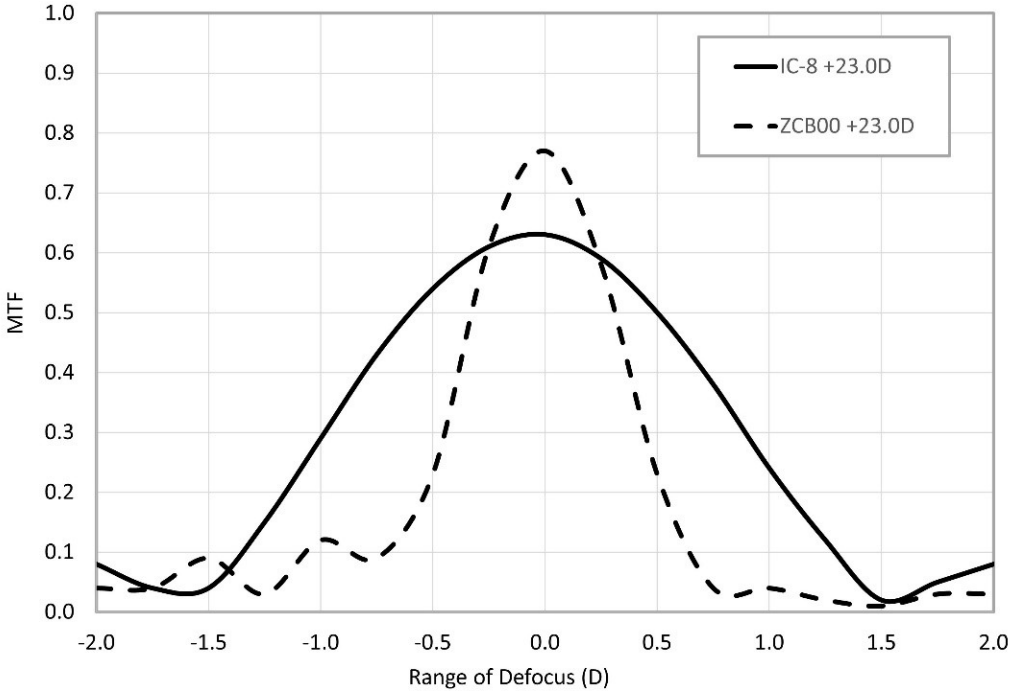
A-Constant for Ultrasound Biometry:	120.15
Optical Surgeon Factor	2.64
Ultrasound Surgeon Factor	2.44

Figure 2: Spectral Transmittance



Legend:
Curve 1: Spectral Transmittance (T) curve of a typical 20.0 diopter IC-8 Apthera IOL, UV cut-off at 10% T is 375 nm.
Curve 2: Spectral Transmittance (T) curve corresponding to a 53 year-old phakic eye[1]

Figure 2. Modulation Transfer Function (MTF) Through-Focus Response of +23.0 D IOLs in a Model Eye (Green Light, 50 lp/mm, 3 mm Aperture)



The IC-8 Apthera IOL complies with all specified International Organization for Standardization (ISO) 11979-5 physicochemical testing requirements that are relevant to IOLs.

The IC-8 Apthera IOL is packaged in an integrated twist-cap lens holder with a bromobutyl rubber stopper that screws onto a 5 mL glass vial filled with water for injection (WFI). The vial is then placed in an IOL blister tray to minimize movement of the glass vial in the blister tray during transit and sealed with a Tyvek lid. The assembled glass vial units are then sterilized by gamma radiation in a validated sterilization cycle. Following sterilization, the device is placed in a chipboard unit carton.

VI. ALTERNATIVE PRACTICES AND PROCEDURES

Patients who undergo cataract removal presently have several non-surgical and surgical alternatives for restoring functional vision of the aphakic eye. Non-surgical options include special cataract glasses or contact lenses. Surgical options include implantation of monofocal, multifocal, extended depth of focus, or accommodative IOLs. Each alternative has its own advantages and disadvantages. A patient should fully discuss these alternatives with his/her physician to select the method that best meets expectations and lifestyle.

VII. MARKETING HISTORY

The IC-8 Apthera IOL is currently commercially available in the European Union/European Economic Area, United Kingdom, Australia, New Zealand, Argentina, El Salvador, and Singapore. The IC-8 Apthera IOL has not been withdrawn from any country for any reason, including for safety and effectiveness.

VIII. POTENTIAL ADVERSE EFFECTS OF THE DEVICE ON HEALTH

Potential adverse effects (e.g., complications) associated with the use of the device include the following:

- The presence of capsular rupture or radial capsular tears known or suspected at the time of surgery
- Surgical difficulties at the time of cataract extraction, which may increase the potential for complications (e.g., persistent bleeding, significant iris damage, uncontrolled positive pressure, or significant vitreous prolapse or loss)
- Zonular damage
- Endophthalmitis/intraocular infection
- Secondary surgical intervention
- Raised intraocular pressure requiring treatment
- Iritis/vitritis
- Corneal stromal edema
- Hypopyon
- Retinal detachment/retinal tear
- Cystoid macular edema
- IOL dislocation
- Pupillary block
- Retained crystalline lens fragment
- Increased visual symptoms (compared to a monofocal IOL) related to the optical characteristics of the IOL, including glare, halo, starbursts
- Lens epithelial cell down-growth
- Corneal endothelial damage
- Hyphema
- Pigment dispersion
- Posterior capsular opacity
- Glaucoma
- Iris prolapse
- Cyclitic membrane

Secondary surgical interventions include, but are not limited to: implant repositioning, removal, vitrectomy, iridectomy for pupillary block, would leak repair, retinal detachment repair, aqueous tap.

For the specific adverse events that occurred in the IC-8 Apthera IOL clinical study conducted in the United States, please see Section X below.

IX. SUMMARY OF NONCLINICAL STUDIES

Non-clinical studies with the IC-8 Apthera IOL and the IC-8 Apthera IOL packaging components, supporting the safety and effectiveness of the IC-8 Apthera IOL, are summarized below.

Biocompatibility Testing

Biocompatibility testing was conducted using sterile finished IC-8 Apthera IOLs packaged in vials in accordance with ISO 11979- 5, Ophthalmic implants - Intraocular lenses - Part 5: Biocompatibility and ISO 10993 - 1, Biological evaluation of medical devices - Part 1: Evaluation and testing within a risk management process, - Part 3: Tests for genotoxicity, carcinogenicity and reproductive toxicity, - Part 5: Tests for in vitro cytotoxicity, - Part 6: Test for local effects after implantation, and - Part 10: Tests for irritation and sensitization standards. Results are summarized below in Table 2.

All biocompatibility tests were conducted in accordance with provisions of 21 CFR 58, Good Laboratory Practice (GLP) for Nonclinical Laboratory Studies.

Table 2. IC-8 Apthera IOL – Biocompatibility Testing

Test	Purpose	Acceptance Criteria	Results
ISO Elution Method (ISO 10993-5)	Evaluates the cellular toxicity potential of the device in vitro	Non-cytotoxic	Pass
Direct Contact Method (ISO 10993-5)	Evaluates the cellular toxicity potential of the device in vitro	Non-cytotoxic	Pass
Guinea Pig Maximization (ISO 10993-10)	Evaluate the potential of sensitization	Non-sensitizer	Pass
Bacterial Reverse Mutation Test (Ames test) (ISO 10993-3)	Evaluate the potential of implant to cause mutagenic changes	Non-mutagenic	Pass
Mouse Lymphoma Assay (ISO 10993-3)	Evaluate the mutagenic potential of the implant	Non-mutagenic	Pass
Four- Week Muscle Implantation Study in Rabbits (ISO 10993-6)	Evaluate the local tissue response and local effects of the IOL	No significant local response	Pass
Six- Month Intraocular Implantation Study in Rabbits (ISO 11979-5)	Evaluate local effects in ocular tissue	No significant biological intraocular response	Pass

Under typical clinical conditions, the FilterRing component remains embedded within the acrylic material and does not have tissue contact. Therefore, the FilterRing component was not tested separately for biocompatibility.

Physicochemical Testing

The physicochemical tests were conducted using sterile finished IC-8 Apthera IOLs packaged in vials to evaluate the physicochemical properties and stability of the IOL material that is relevant to its biocompatibility, and to provide evidence of compliance to ISO 11979-5 and ISO 10993-1 standards. All physicochemical testing met the acceptance criteria defined in the respective test protocols. The tests and results are summarized in Table 3.

Table 3. IC-8 Apthera IOL – Physicochemical Testing

Test	Purpose	Acceptance Criteria	Results
Exhaustive Extraction	To quantify extractable additives and other extractable substances	No appreciable extractables from the test article when the test article is subjected to exhaustive extraction in hexane and water.	Pass
Leachables	Analyze for leachables under simulated physiological conditions	No appreciable leachables for water extraction.	Pass
Hydrolytic Stability	Test to verify material does not degrade by hydrolysis	No appreciable extractables, changes in spectral transmittance or dioptric power of the test article after exposure in aqueous condition for 5 years (simulated).	Pass
Photostability	Ensure that exposure to light does not cause photochemical degradation	No significant changes to the lens material, UV/Visible spectra, dioptric power, image quality, and. no appreciable chemical components leached after (simulated) 20 years of UV exposure to the test article.	Pass
Nd:YAG Laser Exposure	Test to evaluate material stability when exposed to neodymium-doped yttrium aluminum garnet (Nd:YAG) laser treatment, and no leakage of toxic components	No appreciable extractables and cytotoxicity of the extractant.	Pass
Insoluble Inorganics	Assess the presence of residual inorganic material	No appreciable detection of inorganic insoluble residuals.	Pass

Optical Testing

In order to predict the quality of vision with the implantation of the IC-8 Apthera IOL, optical bench testing was undertaken in accordance with ISO 11979-2. The optical testing met the criteria in accordance with ISO 11979-2 standard. The tests and results are summarized in Table 4.

Table 4. IC-8 Apthera IOL – Optical Testing

Test	Purpose	Acceptance criteria	Results
Dioptric Power and Image Quality	To assess accuracy of optical power, meet minimum image quality specifications	Described in ISO 11979-2	Pass
Spectral Transmittance	To characterize the spectral transmittance of the IOL	N/A	Characterized
Depth of Focus	To characterize the depth of focus of the IOL	N/A	Characterized

Mechanical Testing

Mechanical testing of the IC-8 Apthera IOL was conducted to establish the opto-mechanical integrity of the IC-8 Apthera IOL as well as to predict the quality of vision after implantation of the IOL.

Testing was conducted following the guidelines of ISO 11979-3:2012, Ophthalmic implants– Intraocular lenses – Part 3: Mechanical properties and test methods. The mechanical testing met the criteria in accordance with the ISO 11979-3 standard. The tests and results are summarized in Table 5.

Table 5. IC-8 Apthera IOL – Mechanical Testing

Test	Purpose	Acceptance Criteria	Results
Compression Force	To characterize the force to compression the IOL	N/A	Characterized
Axial Displacement in Compression	To characterize the axial displacement in compression	N/A	Characterized
Optic Decentration	To assess optic decentration under compression	Mean and 2 SD not greater than 10% of clear optic	Pass
Optic Tilt	To assess optic tilt under compression	Mean and 2 SD not greater than 5 degrees	Pass
Angle of Contact	To characterize haptic contact with ocular tissues	N/A	Characterization
Compression Force Decay	To characterize the foce to compress the	N/A	Characterization

Test	Purpose	Acceptance Criteria	Results
	IOL after 24 hours decay		
Dynamic Fatigue Durability	To assess the ability of the haptics to withstand cyclic compressive loading	No haptic breakage	Pass
Surgical Manipulation	To assess the force to separate the haptic from the optic	Greater than or equal to 0.25 N	Pass
Dimensions, Surface, & Homogeneity	To assess conformance to dimensional tolerances and free of surface defects	Multiple acceptance criteria described in ISO 11979-3	Pass
Evaluation of the IC-8 IOL Following Simulated Surgical Manipulation	To assess the ability of the IOL to withstand simulated surgical implantation without damage	Multiple acceptance criteria described in ISO 11979-3	Pass

Microbiology, Sterilization, and Shelf Life Testing

The sterilization process of the IC-8 Apthera IOL was validated per FDA-recognized ISO 11137-1,2,3 using the VDmax25 approach. The process has a sterility assurance level (SAL) of 10^{-6}. The sterilization dose audits and associated test reports including validated sterility, bioburden, and endotoxin test data passed all acceptance criteria per applicable standards and guidances.

Accelerated shelf-life data equivalent to 6 months real time shelf-life data support a 6-month shelf life.

The microbiology, sterilization, and shelf-life tests were conducted in accordance with the following standards:

- ISO 11137 Sterilization of health care products — Radiation — Part 1, 2 and 3.
- United States Pharmacopeia (USP) <71> Sterility Test.
- ANSI/AAMI/ST72:2019 Bacterial endotoxins — Test methods, routine monitoring, and alternatives to batch testing.
- European Pharmacopoeia (EP) 2.6.14. Bacterial endotoxins.
- ISO 11607, Packaging for terminally sterilized medical devices — Part 1 and 2.
- ISO 11979-8:2006/Amd.1:2011 Ophthalmic implants — Intraocular lenses — Part 8: Fundamental requirements.

- ISO 11979-6:2014 Ophthalmic implants — Intraocular lenses — Part 6: Shelf-life and transport stability testing.
- ASTM F88/F88M-15 Standard Test Method for Seal Strength of Flexible Barrier Materials.
- ASTM F1929-15, Standard Test Method for Detecting Seal Leaks in Porous Medical Packaging by Dye Penetration
- ASTM-F2096 Standard Test Method for Detecting Gross Leaks in Medical Packaging by Internal Pressurization (Bubble Leak Test)

The results of the sterilization, packaging, shelf life and transport stability studies are summarized in Table 6, below:

Table 6. Microbiology, Sterilization, and Shelf-Life Testing: IC-8 Apthera IOL

Test	Purpose	Acceptance Criteria	Results
Pre-sterilization Bioburden Testing	Determine natural bioburden prior to sterilization to ensure a sterility assurance level (SAL) of 10^{-6} can be met per ISO 11737.	Limit ≤30 CFU/lens	Pass
Gamma irradiation sterilization (used VDmax25 approach)	Validates that the gamma irradiation sterilization is effective per ISO 11137-1,2,3.	Achieve SAL of 10^{-6}	Pass
Sterility test	Validates post-sterilization sterility of the device per USP 71	No microbial growth	Pass
Bacterial Endotoxin Testing (performed per EP 2.6.14. and ANSI/AAMI/ST72:2019)	Confirm product is non-pyrogenic per ISO 11979-8:2017 and the FDA guidance.	<0.2 EU/device	Pass
Package Integrity Testing – Legibility of Labeling	Confirm that product labeling remains legible after sterilization during stability studies per ISO 11979-6.	Label remains legible	Pass
Package Integrity Testing –	Assesses transport stability per ISO 11979-6.	No defects	Pass

Assessment of physical damage			
Packaging Integrity Testing – Bubble Leak	Confirm that product seal integrity is maintained after sterilization during stability studies per ISO 11979-6 and ASTM-F2096	No gross leaks	Pass
Packaging Integrity Testing – Seal Closure Strength	Confirm that product seal strength is maintained after sterilization during stability studies per ISO 11979-6 and ASTM F88-15	Minimum seal strength to be <1.2N/15mm	Pass
Packaging Integrity Testing – Dye Penetration	Confirm that product seal integrity is maintained after sterilization during stability studies per ISO 11979-6 and ASTM F1929-15	No channel leaks	Pass

X. SUMMARY OF PRIMARY CLINICAL STUDY

The applicant performed a clinical study to establish a reasonable assurance of safety and effectiveness of the IC-8 Apthera IOL (referred to as IC-8 IOL). This study was conducted in the United States under Investigational Device Exemption (IDE) G180075 (Clinical Evaluation of a Small Aperture Extended Depth of Focus Intraocular Lens). Data from this clinical study were the basis for the PMA approval decision. A summary of the clinical study is presented below.

A. Study Design

Subjects were treated between December 2018 and August 2019. The database for this PMA reflected data collected through October 2020 and included 453 bilaterally implanted subjects. There were available data from 21 investigational sites.

The study was a prospective, multi-center, open-label, parallel-group, non-randomized, and examiner masked, 12-month study conducted to evaluate the safety and effectiveness of the IC-8 IOL. The objective of this study was to evaluate the safety and effectiveness of the IC-8 device in providing increased depth of focus and improved intermediate and near visual acuity compared to an aspheric monofocal IOL.

In accordance with the device's indication, the study was designed for unilateral implantation of the IC-8 IOL. The IC-8 group (also referred to as the Test group) consisted of subjects implanted with the IC-8 IOL in one eye (IC-8 eye) and a monofocal or monofocal toric IOL in the fellow eye, with a monovision refractive target. The Control group consisted of subjects bilaterally implanted with a monofocal or monofocal toric IOL, with both eyes targeted for emmetropia. Fellow eyes in the IC-8 group and both eyes in the Control group could be implanted with an AcrySof® IQ or TECNIS® aspheric monofocal (SA60WF or ZCB00), or monofocal toric IOL (SA6AT3, SA6AT4, ZCT150 or ZCT225), all marketed alternatives to the IC-8 IOL with similar indications for use except that they do not provide an extended depth of focus and are not intended to provide improved vision at intermediate and near distances. All study subjects were required to be implanted in the first eye with a monofocal/monofocal toric IOL, with a refractive target of emmetropia. So long as the first eye achieved satisfactory visual outcomes at post-operative week one, the second eye could be implanted with either the IC-8 IOL or a control device, depending on which study arm the subjects was in. Second eyes implanted with the IC-8 IOL were targeted for a slightly myopic outcome (-0.75D). Second eyes implanted with a control device were targeted for emmetropia. If the predicted residual refractive cylinder was ≥ 0.75 D and a toric IOL was not indicated, limbal relaxing incisions (LRI's) were permitted to be performed for minimization of residual astigmatism during initial surgery, only in monofocal eyes in the test and the control groups. LRI's were not permitted in eyes implanted with the IC-8 IOL.

Statistical analyses were frequentist. For the key effectiveness analyses, three hypothesis tests were to demonstrate statistical superiority over the control group with respect to binocular uncorrected intermediate visual acuity (UCIVA), binocular uncorrected near visual acuity (UCNVA), and monocular distance-corrected intermediate visual acuity (DCIVA). An additional non-inferiority hypothesis was used to demonstrate non-inferiority of the test group compared to the control group with respect to binocular uncorrected distance visual acuity (UCDVA).

Study sample sizes are based on Annex B of ISO 11979-7:2014 with 300 evaluable total test subjects needed at one year for evaluation of safety endpoints versus Safety and Performance Endpoints (SPE) rates, particularly for adverse event and best-corrected distance visual acuity (BCDVA) evaluations. A total of 355 IC-8 group subjects and 120 Control group subjects were planned for enrollment to ensure 300 IC-8 group subjects and 100 Control group subjects would complete one-year follow-up and be available for analysis. The sample size assumed an approximate 10% attrition rate over the duration of the one-year study and an additional 5%

disqualification rate for the first eye.

For the co-primary effectiveness endpoints of binocular UCIVA, binocular UCNVA, binocular UCDVA and monocular DCIVA, a two-sided two-sample t-test with $\alpha = 0.05$ and standard deviation (SD) of 1.6 lines was estimated to provide over 99% power to detect at least a 1-line difference in mean visual acuity between IC-8 group subjects (or IC-8 eyes) and Control subjects (or Control eyes).

1. Clinical Inclusion and Exclusion Criteria

Enrollment in the study was limited to subjects who met the following inclusion criteria (all criteria apply to each eye):

1. Minimum 22 years of age
2. Able to comprehend and have signed a statement of informed consent
3. Availability, willingness, ability and sufficient cognitive awareness to comply with examination procedures and study visits
4. Planned crystalline lens removal by phacoemulsification, with or without femtosecond laser-assisted extraction, and posterior chamber IOL implantation in both eyes
5. Cataractous lens changes as demonstrated by BCDVA of 20/40 or worse either with or without a glare source present
6. Potential for postoperative BCDVA of 20/25 or better in each eye after cataract removal and IOL implantation as estimated by an instrument such as a Potential Acuity Meter (PAM) or surgeon investigator estimation
7. Clear intraocular media, other than cataract

Subjects were not permitted to enroll in the study if they met any of the following exclusion criteria (all criteria apply to each eye):

1. Requiring an IC-8 intraocular lens outside the available spherical power range of +15.5 D to +27.5 D
2. Pharmacologically dilated pupil size less than 6 mm in either eye
3. Inability to achieve stable keratometric readings for contact lens wearers (difference in corneal astigmatism between two visits at least 1 week apart following discontinuation of contact lens wear is within ± 0.50 diopter in magnitude and within ±15° in axis)
4. Subjects with irregular astigmatism in either eye
5. Preoperative corneal astigmatism > 1.50 diopters in either eye (as assessed by biometry keratometric readings)
6. Active or recurrent anterior segment pathology (chronic uveitis, iritis, iridocyclitis, rubeosis iridis, Reiter's syndrome, etc.)

7. Presence of ocular abnormalities other than cataract such as:
    a. Corneal abnormalities other than regular corneal astigmatism up to 1.50 diopters
    b. Pupil abnormalities
    c. Strabismus or amblyopia
    d. Capsular or zonular abnormalities
    e. Glaucomatous retinal nerve fiber changes
    f. Recurrent and/or persistent intraocular inflammation
    g. Known pathology that may affect visual acuity and/or is predicted to cause future acuity losses to a level of worse than 20/25 BCDVA (e.g., macular degeneration)
8. Diagnosis of dry eye in which subjects are unable to maintain eye comfort or adequate vision even with dry eye medication
9. Congenital bilateral cataracts
10. Previous corneal or intraocular surgery, except pterygium surgery, which may be allowed, based on meeting all other inclusion/exclusion criteria
11. History of ocular trauma or ocular conditions expected to require retinal laser treatment or other surgical intervention
12. Use of systemic or ocular medications that may affect vision or likely to impact pupil dilation or iris structure, such as any prior or current use of tamsulosin or silodosin (alpha-adrenergic antagonist medications, e.g., Flomax, Flomaxtra, Rapaflo), which are likely to cause poor dilation or lack of adequate iris structure to perform standard cataract surgery
13. Acute, chronic, or uncontrolled systemic disease that would, in the opinion of the investigator, increase the operative risk or confound the outcomes of the study (e.g., immune compromised, connective tissue disease, hypertension, Type I & II diabetes etc.)
14. Use of antipsychotic and/or anti-depressant medication within the last 6 months, or plan/need to use such medications during the course of the study, which could increase the operative risk or confound the outcome(s) of the study in the opinion of the investigator
15. Patient is pregnant, plans to become pregnant, is lactating or has another condition associated with hormonal fluctuation that could lead to refractive changes and dry eye
16. Concurrent participation or participation in any clinical trial up to 30 days prior to preoperative visit

Additionally, subjects implanted with a monofocal/monofocal toric IOL in the first eye had to meet the following postoperative criteria within the 1-week to 1-month (7 to 45 days) window from first eye surgery, in order to qualify for implantation in

the second eye:

- 20/32 or better UCDVA and 20/25 or better BCDVA (or Snellen equivalent)
- No ongoing ocular adverse events
- Normal corneal health as assessed by slit lamp biomicroscopy (corneal edema Grade 1+ or less and superficial punctate keratitis (SPK) Grade 1 or less)

If during the implantation of the IOL, a surgical complication such as a capsular bag tear/rupture or zonular damage/rupture occurred, the IC-8 IOL should not have been implanted.

2. Follow-up Schedule

All subjects were scheduled to return for follow-up examinations postoperatively at the time points described in Table 7. Up to 12 study visits were planned to complete treatment and assessment of either eye, or both eyes (depending upon the timing of the visit). Specific examinations and scheduled clinical assessments are presented in Table 8.

Table 7. Follow-up Visit Schedule

Visit	Eyes evaluated	Visit Window
Preoperative	Both eyes	≤ 60 days prior to 2nd eye operative visit
1st eye Operative	1st eye	Recommended ≤ 15 days from preoperative visit
2nd eye Operative	2nd eye	≤ 45 days following 1st eye operative visit; after qualifying 1st eye
1 Day Postoperative	1st eye or 2nd eye	1-2 days following operative visit for each eye
1 Week Postoperative	1st eye or 2nd eye	7-14 days following operative visit for each eye
1 Month Postoperative	1st eye, 2nd eye, or both eyes	20 - 45 days following operative visit for each eye
3 Months Postoperative	Both eyes	60 - 110 days following 2nd eye operative visit
6 Months Postoperative	Both eyes	160 - 210 days following 2nd eye operative visit
12 Months Postoperative	Both eyes	300 - 420 days following 2nd eye operative visit

Table 8. Clinical Evaluations

Clinical Evaluation	Illumination	Testing	Group	Pre-op	Op*	Day 1**	Wk 1**	Mon 1**	Mon 3	Mon 6	Mon 12
Ocular & Health History	N/A	N/A	Both	X		X	X	X	X	X	X
Cover Test	N/A	N/A	Both	X							
Sighting Eye Dominance	N/A	N/A	Both	X					X		
Pupil Size	Photopic Mesopic Dilated	Monocular (OD & OS) Monocular (OD & OS) Monocular (OD & OS)	Both	X X X					X X X[A]	X X	X X X
Swinging Flash Light Test	N/A	Monocular (OD & OS)	Both	X					X		
Biometry Measurements	N/A	Monocular (OD & OS)	Both	X							
Corneal Topography	N/A	Monocular (OD & OS)	Both	X						X	X
Uncorrected Distance Visual Acuity (UCDVA)	Photopic	Monocular (OD & OS) Binocular (OU)	Both	X X		M	M	M	M M	M M	M M
Uncorrected Intermediate Visual Acuity (UCIVA)	Photopic	Monocular (OD & OS) Binocular (OU)	Both						M M	M M	M M
Uncorrected Near Visual Acuity (UCNVA)	Photopic	Monocular (OD & OS) Binocular (OU)	Both	X X					M M	M M	M M
Manifest Refraction	Photopic	Monocular (OD & OS)	Both	X			M	M	M	M	M
Add (Near)	Photopic	Monocular (OD & OS)	Both							M	
Distance-Corrected Distance Visual Acuity (DCDVA)	Photopic	Monocular (OD & OS) Binocular (OU)	Both	X			M	M	M M	M M	M M
Distance-Corrected Intermediate Visual Acuity (DCIVA)	Photopic	Monocular (OD & OS) Binocular (OU)	Both						M M	M M	M M
Distance-Corrected Near Visual Acuity (DCNVA)	Photopic	Monocular (OD & OS) Binocular (OU)	Both						M M	M M	M M

Clinical Evaluation	Illumination	Testing	Group	Pre-op	Op*	Day 1**	Wk 1**	Mon 1**	Mon 3	Mon 6	Mon 12
Defocus Curve Test	Photopic	Monocular (OD & OS) Binocular (OU)	Both						M M		
+0.75 D Distance Corrected Distance Visual Acuity (+0.75 DCDVA)	Photopic	Monocular (2nd eye) Binocular (OU)	Both							M M	
+0.75 D Distance Corrected Intermediate Visual Acuity (+0.75 DCIVA)	Photopic	Monocular (2nd eye) Binocular (OU)	Both							M M	
+0.75 D Distance Corrected Near Visual Acuity (+0.75 DCNVA)	Photopic	Monocular (2nd eye) Binocular (OU)	Both							M M	
Near Stereoacuity (w/ UCNVA; & w/ DCNVA with Add)	Photopic	Binocular	Both							X	
Slit-Lamp Exam (SLE)	N/A	Monocular (OD & OS)	Both	X		X	X	X	X	X	X
IOL Centration & Tilt w/ SLE	N/A	Monocular (OD & OS)	Both			X	X	X	X	X	X
Toric IOL axis w/ SLE	N/A	Monocular (OD & OS)	Both			X[C]	X[C]	X[C]	X[C]	X[C]	X[C]
TBUT	N/A	Monocular (OD & OS)	Both	X					X	X	X
Corneal Staining	N/A	Monocular (1st eye) Monocular (2nd eye)	Both	X X			X	X[D]	X X	X X	X X
Intraocular Pressure	N/A	Monocular (OD & OS)	Both	X		X	X	X	X	X	X
Gonioscopy	N/A	Monocular (OD & OS)	Both	X						X	
Dilated Fundus Exam (BIO)	N/A	Monocular (OD & OS)	Both	X							X
Dilated Slit-lamp Exam	N/A	Monocular (OD & OS)	Both	X							X
Dilated Ocular Coherence Tomography (OCT)	N/A	Monocular (OD & OS)	Both	X							
Patient Reported Outcome Questionnaire(s)	N/A	N/A	Both	X					X	X	X

Clinical Evaluation	Illumination	Testing	Group	Pre-op	Op*	Day 1**	Wk 1**	Mon 1**	Mon 3	Mon 6	Mon 12
Non-directed Question	N/A	N/A	Both	X		X	X	X	X	X	X
CONTRAST SENSITIVITY SUBGROUP ONLY – CONTRAST SENSITIVITY AND LOW CONTRAST ACUITY TESTING											
Distance Contrast Sensitivity (w/ glare & w/o glare)	Photopic Mesopic	Monocular (OD & OS) Binocular (OU)	Both							M^A M^A	M^B M^B
10% contrast UCDVA	Photopic	Monocular (2nd eye) Binocular (OU)	Both							M^A M^A	M^B M^B
10% contrast UCIVA	Photopic	Monocular (2nd eye) Binocular (OU)	Both							M^A M^A	M^B M^B
10% contrast UCNVA	Photopic	Monocular (2nd eye) Binocular (OU)	Both							M^A M^A	M^B M^B
10% contrast DCDVA	Photopic	Monocular (2nd eye) Binocular (OU)	Both							M^A M^A	M^B M^B
10% contrast DCIVA	Photopic	Monocular (2nd eye) Binocular (OU)	Both							M^A M^A	M^B M^B
10% contrast DCNVA	Photopic	Monocular (2nd eye) Binocular (OU)	Both							M^A M^A	M^B M^B
RETINAL DIAGNOSTIC TESTING SUBGROUP ONLY – SUBGROUP-SPECIFIC RETINAL DIAGNOSTIC TESTING											
Undilated Threshold Visual Field Testing (Central 30-2)	Photopic	Monocular (OD & OS)	Test	X^A					X^A		
Dilated Ocular Coherence Tomography (OCT) Images	N/A	Monocular (OD & OS)	Test	X^A					X^A		
Dilated Fundus Photography	N/A	Monocular (OD & OS)	Test	X^A					X^A		

* Op (operative) visits are repeated for each eye's surgery and the associated tests are performed on that operated eye only.

** Day 1, Week 1 and Month 1 visits are repeated after each eye's surgery and the associated tests are performed on the most recently operated eye only.

A Subgroup testing only. Group sizes are specified in the statistical analysis plan.

[B] Repeated at the 12-month visit for those subjects that have had a posterior capsulotomy procedure after the 6-month visit.
[C] Repeated at postop visits if medically indicated as determined by investigator.
[D] Repeated at 1 month visit if needed.
[X] Tests to be performed by non-masked examiner; M = tests to be performed by masked examiner.

3. Clinical Endpoints

With regard to safety,

- The co-primary safety endpoints were:
    - Monocular BCDVA in the IC-8 eyes at 12 Months
    - Rates of ocular adverse events (cumulative or persistent) through 12 Months compared to ISO Safety and Performance Endpoint (SPE) rates for posterior chamber IOLs
    - Rate of IC-8 IOL removals due to visual/optical reasons cumulative through 12 Months
- The secondary safety endpoint was:
    - Contrast sensitivity at 6 Months

With regard to success/failure safety criteria,

- The co-primary safety criteria were:
    - Mean monocular BCDVA in IC-8 eyes is statistically non-inferior to that of the fellow control eyes using a non-inferiority margin of 0.10 logMAR
    - The proportion of IC-8 eyes achieving BCDVA 0.30 logMAR or better is not less than the SPE rate listed in ISO 11979-7:2014 Table B.3
    - The proportion of Best-Case IC-8 eyes achieving BCDVA 0.30 logMAR or better is not less than the SPE rate listed in ISO 11979-7:2014 Table B.4
    - For each type of adverse event listed in the ISO 11979-7:2014 Table B.2, the rate for the IC-8 eyes is not statistically greater than the SPE rate for that event
    - Descriptive statistics (mean, two-sided 90% confidence interval) for the rates of all key adverse events including but not limited to adverse events per ISO 11979-7:2014, adverse events that may be specifically related to the extended depth of focus (EDF) IOL design, e.g., related to the optical characteristics of the IOL, and any other significant ocular adverse events

- Rate of IC-8 IOL removals due to visual/optical reasons in the IC-8 eyes is < 3.1%. The one-sided 95% upper confidence limit of the rate (using exact binomial distribution) must be less than 3.1% to claim statistical success.

- The secondary safety criteria were:
    - Descriptive statistics for photopic and mesopic contrast sensitivity with and without glare. Both monocular (between-eye difference between IC-8 eyes and their fellow control eyes) and binocular (test group versus control group) contrast sensitivity were evaluated.

All co-primary safety endpoints need to be achieved to claim overall safety success.

With regard to effectiveness,

- The co-primary effectiveness endpoints were:
    - Mean photopic binocular UCIVA (66cm) for the test group compared to the control group at Month 6. The statistical success criterion was statistical superiority of the test group over the control group. The superiority margin was set at 0.00 logMAR. Clinical success criteria were: At least 50% of test subjects achieve 0.10 or better logMAR and at least 25% higher than the control subjects.
    - Mean photopic binocular UCNVA (40cm) for the test group compared to the control group at Month 6. The statistical success criterion was statistical superiority of the test group over the control group. The superiority margin was set at 0.00 logMAR. Clinical success criteria were: At least 50% of test subjects achieve 0.30 or better logMAR and at least 25% higher than the control subjects.
    - Mean photopic binocular UCDVA (4m) for the test group compared to the control group at 6 Months. The statistical success criterion was statistical non-inferiority of the test group over the control group. The non-inferiority margin was set at 0.10 logMAR. Clinical success criteria were: At least 50% of test subjects achieve 0.10 or better logMAR.
    - Mean photopic monocular DCIVA (66cm) of the second eyes at 6 Months. The statistical success criterion was statistical superiority of the IC8 eyes compared to the second eyes in the control group. Clinical success criterion was: At least 50% of IC-8 eyes should achieve DCIVA of logMAR 0.2 or better.
    - Mean photopic monocular distance-corrected depth of focus (DOF) of IC-8 eyes at 3 Months. Success criterion was: The mean DOF from IC-8 eyes is at least 0.5 D greater than the mean from the fellow control eyes at 0.2 logMAR visual acuity threshold.

- The secondary effectiveness endpoint was:
    - Performance of IC-8 in eyes with preoperative corneal astigmatism of < 1.0D (Astigmatism Group 1) compared to eyes with preoperative corneal astigmatism of 1.0-1.5D (Astigmatism Group 2). This endpoint was analyzed at Month 3, using only IC-8 eyes that achieved BCDVA 20/25 at 3 Months. The statistical success criterion was: Mean UCDVA in Astigmatism Group 2 is non-inferior to Astigmatism Group 1, using a non-inferiority margin of 0.12 logMAR. The statistical analysis plan prespecified that analysis of this endpoint would not support a labeling claim that compared the IC-8 IOL to the monofocal or monofocal toric IOL.

B. Accountability of PMA Cohort

At the time of database lock, of 453 subjects enrolled in the PMA study, 343 subjects in the IC-8 group were implanted with an IC-8 IOL in one eye and a monofocal/monofocal toric IOL in the fellow eye, and 110 enrolled subjects in the Control group were implanted in both eyes with monofocal/monofocal toric IOLs. The intent-to-treat (ITT) and safety populations both included 453 subjects (343 in the IC-8 group and 110 in the Control group). At the conclusion of the 12-month study, accountability was 98.8% (331/335) for the IC-8 group (Table 9) and 95.3% (101/106) for the Control group (Table 10).

Table 9. IC-8 Group Subject Accountability (N=343) (n/N, %)

	Day 1 (1st Eye)	Week 1 (1st Eye)	Month 1 (1st Eye)	Day 1 (2nd Eye)	Week 1 (2nd Eye)	Month 1 (2nd Eye)	Month 3	Month 6	Month 12
Active	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%
Available for Analysis	343/343 100.0%	343/343 100.0%	342/343 99.7%	342/343 99.7%	343/343 100.0%	341/343 99.4%	340/343 99.1%	335/343 97.7%	331/343 96.5%
Missing Subjects	0/343 0.0%	0/343 0.0%	1/343 0.3%	1/343 0.3%	0/343 0.0%	2/343 0.6%	3/343 0.9%	8/343 2.3%	12/343 3.5%
Discontinued*	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	3/343 0.9%	3/343 0.9%	8/343 2.3%**
Lost to follow-up	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	0/343 0.0%	3/343 0.9%†	4/343 1.2%†
Missed Visit	0/343 0.0%	0/343 0.0%	1/343 0.3%	1/343 0.3%	0/343 0.0%	2/343 0.6%	0/343 0.0%	2/343 0.6%	0/343 0.0%
Accountability	343/343 100.0%	343/343 100.0%	342/343 99.7%	342/343 99.7%	343/343 100.0%	341/343 99.4%	340/340 100.0%	335/340 98.5%	331/335 98.8%

*Discontinued includes subjects that were discontinued due to reasons other than lost to follow-up. Discontinued counts and Lost to follow-up (LTFU) counts are cumulative from the first visit interval onward to each respective column.
**For Discontinued counts in Month 12 column, subjects who missed Month 12 visit and were subsequently exited after the visit window closed (3 withdrew consents) are included with the subjects who were exited cumulative through the Month 12 visit window (5 discontinued due to other reasons).
†For LTFU counts, subjects were counted as lost to follow-up after the last visit at which they were seen, regardless of when they were subsequently exited.
Note: The early study visits (Day 1, Week 1, Month 1) are presented by eye; the order of these visits listed for accountability does not necessarily represent the actual order of the visits.
Accountability = Available for Analysis / (N – Discontinued – Active). Other percentages were calculated as (n / N) * 100%.

Table 10. Control Group Subject Accountability (N=110) (n/N, %)

	Day 1 (1st Eye)	Week 1 (1st Eye)	Month 1 (1st Eye)	Day 1 (2nd Eye)	Week 1 (2nd Eye)	Month 1 (2nd Eye)	Month 3	Month 6	Month 12
Active	0/110 0.0%	0/110 0.0%	0/110 0.0%	0/110 0.0%	0/110 0.0%	0/110 0.0%	0/110 0.0%	0/110 0.0%	0/110 0.0%
Available for Analysis	110/110 100.0%	110/110 100.0%	109/110 99.1%	110/110 100.0%	109/110 99.1%	108/110 98.2%	106/110 96.4%	100/110 90.9%	101/110 91.8%
Missing Subjects	0/110 0.0%	0/110 0.0%	1/110 0.9%	0/110 0.0%	1/110 0.9%	2/110 1.8%	4/110 3.6%	10/110 9.1%	9/110 8.2%
Discontinued*	0/110 0.0%	0/110 0.0%	1/110 0.9%	0/110 0.0%	0/110 0.0%	1/110 0.9%	1/110 0.9%	3/110 2.7%	4/110 3.6%
Lost to follow-up	0/110 0.0%	0/110 0.0%	0/110 0.0%	0/110 0.0%	0/110 0.0%	1/110 0.9%†	3/110 2.7%†	5/110 4.5%†	5/110 4.5%†
Missed Visit	0/110 0.0%	0/110 0.0%	0/110 0.0%	0/110 0.0%	1/110 0.9%	0/110 0.0%	0/110 0.0%	2/110 1.8%	0/110 0.0%
Accountability	110/110 100.0%	110/110 100.0%	109/109 100.0%	110/110 100.0%	109/110 99.1%	108/109 99.1%	106/109 97.2%	100/107 93.5%	101/106 95.3%

*Discontinued includes subjects that were discontinued due to reasons other than lost to follow-up. Discontinued counts and Lost to follow-up (LTFU) counts are cumulative from the first visit interval onward to each respective column.
†For LTFU counts, subjects were counted as lost to follow-up after the last visit at which they were seen, regardless of when they were subsequently exited.
Note: The early study visits (Day 1, Week 1, Month 1) are presented by eye; the order of these visits listed for accountability does not necessarily represent the actual order of the visits.
Accountability = Available for Analysis / (N – Discontinued – Active). Other percentages were calculated as (n / N) * 100%.

C. Study Population Demographics and Baseline Parameters

The demographics of the study population are typical for a prospective, non-randomized, multi-center, parallel-group clinical study of intraocular lenses performed in the US.

The study population demographics and baseline parameters measured from optical biometry are reported in Tables 11 and 12. The control group enrolled more subjects aged 80 years and older. Otherwise, the demographic and baseline characteristics were similar between the two groups.

Table 11. Demographics

Parameters	IC-8 Group (N=343)		Control Group (N=110)		Overall (N=453)	
Age (years)						
Mean (SD)	66.1 (7.96)		69.1 (8.63)		66.8 (8.22)	
Median	67.0		70.0		67.0	
Q1, Q3	61.0, 71.0		64.0, 75.0		62.0, 72.0	
Min, Max	36, 85		45, 90		36, 90	
95% CI	65.2, 66.9		67.5, 70.8		66.1, 67.6	
Age Group (n/N, %)						
< 60	70/343	20.4%	12/110	10.9%	82/453	18.1%
60-69	152/343	44.3%	42/110	38.2%	194/453	42.8%
70-79	108/343	31.5%	42/110	38.2%	150/453	33.1%
≥ 80	13/343	3.8%	14/110	12.7%	27/453	6.0%
Sex (n/N, %)						
Male	132/343	38.5%	34/110	30.9%	166/453	36.6%
Female	211/343	61.5%	76/110	69.1%	287/453	63.4%
Race (n/N, %)						
American Indian/Alaska Native	1/343	0.3%	1/110	0.9%	2/453	0.4%
Asian	3/343	0.9%	3/110	2.7%	6/453	1.3%
Black/African American	22/343	6.4%	6/110	5.5%	28/453	6.2%
White	311/343	90.7%	99/110	90.0%	410/453	90.5%
Other	6/343	1.7%	1/110	0.9%	7/453	1.5%
Ethnicity (n/N, %)						
Hispanic/Latino	22/343	6.4%	10/110	9.1%	32/453	7.1%
Not Hispanic/Latino	320/343	93.3%	100/110	90.9%	420/453	92.7%
Unknown	1/343	0.3%	0/110	0.0%	1/453	0.2%
Iris Color (n/N, %)						
Blue	105/343	30.6%	43/110	39.1%	148/453	32.7%
Brown	153/343	44.6%	49/110	44.5%	202/453	44.6%
Gray	1/343	0.3%	0/110	0.0%	1/453	0.2%
Green	28/343	8.2%	6/110	5.5%	34/453	7.5%
Other	56/343	6.3%	12/110	10.9%	68/453	15.0%

N = Total # in the Analysis population. n = # subjects with data in the respective category.
% = n /N *100%.
Abbreviations: Q1, Q3=First and third quartile; SD=Standard Deviation.
IC-8 and Control Groups were compared with Fisher's exact tests for binary variables, Chi-square tests for categorical variables, and a t-test for continuous variables.

Table 12. Baseline Parameters

Baseline Parameter	IC-8 Group		Control Group	
	IC-8 Eyes (N=343)	**Fellow Eyes** (N=343)	**Second Eyes** (N=110)	**First Eyes** (N=110)
Axial length (mm)				
M	343	343	110	110
Mean (SD)	23.780 (0.9440)	23.789 (0.9535)	23.921 (1.1265)	23.892 (1.0960)
Median	23.730	23.740	23.740	23.750
Min, Max	21.30, 26.56	21.30, 27.00	20.75, 27.10	20.78, 26.81
95% CI	23.680, 23.880	23.688, 23.891	23.708, 24.134	23.685, 24.099
Anterior chamber depth (mm)				
M	343	343	110	110
Mean (SD)	3.223 (0.3895)	3.213 (0.3753)	3.228 (0.4057)	3.247 (0.4058)
Median	3.200	3.190	3.220	3.275
Min, Max	2.09, 4.36	2.19, 4.34	1.94, 4.32	2.05, 4.41
95% CI	3.182, 3.264	3.173, 3.253	3.151, 3.304	3.171, 3.324
White to white (mm)				
M	343	343	110	110
Mean (SD)	12.071 (0.4480)	12.073 (0.4443)	12.024 (0.4107)	12.059 (0.4245)
Median	12.060	12.110	12.040	12.045
Min, Max	10.55, 13.23	10.46, 13.23	11.00, 13.02	11.10, 13.06
95% CI	12.023, 12.119	12.026, 12.121	11.946, 12.102	11.978, 12.139
Lens thickness (mm)				
M	333	333	109	110
Mean (SD)	4.499 (0.4213)	4.527 (0.4346)	4.501 (0.4253)	4.462 (0.4289)
Median	4.480	4.530	4.510	4.460
Min, Max	3.02, 5.86	2.97, 5.88	3.44, 5.79	3.44, 5.66
95% CI	4.454, 4.544	4.480, 4.574	4.421, 4.582	4.381, 4.543
Keratometric cylinder (D)				
M	343	343	110	110
Mean (SD)	0.648 (0.3698)	0.655 (0.3761)	0.665 (0.3541)	0.636 (0.3725)
Median	0.610	0.620	0.620	0.585
Min, Max	0.00, 1.50	0.00, 1.49	0.00, 1.50	0.00, 1.45
95% CI	0.609, 0.687	0.615, 0.695	0.598, 0.732	0.565, 0.706
N = Total # in the Analysis population. M = # subjects with available data for the respective parameter.				

Table 13 provides the mean intended target spherical equivalent refraction for the chosen IOL power implanted in the IDE clinical trial, showing -0.852 D mean target refraction for the IC-8 IOL and -0.112 to -0.146 D mean target refraction for monofocal or monofocal toric IOLs.

Manifest refraction was conducted using the duochrome technique in the study with a computerized test system (CTS, M&S® Technologies, Niles, IL). Mean ± SD manifest spherical equivalent (MRSE) at 6 Months in the IC-8 IOL eyes was -0.314 ±0.4637, and -0.021 ±0.3815 in the second eyes of the Control group. In the first monofocal or monofocal toric eyes, mean ± SD MRSE was 0.073 ±0.3679 for the IC-8 IOL group and 0.003 ±0.3589 for the Control group subjects.

Table 14 shows the percentages of absolute MRSE by treatment groups compared to the intended target spherical equivalent manifest refraction at 6 Months.

Table 13. Mean Intended Target Spherical Equivalent (for IOL Implantation)

Target Spherical Equivalent (D)	IC-8 Group		Control Group	
	IC-8 Eyes (N=343)	Fellow Eyes (N=343)	Second Eyes (N=110)	First Eyes (N=110)
Mean (SD)	-0.852 (0.1351)	-0.112 (0.1553)	-0.146 (0.1296)	-0.145 (0.1309)
Median	-0.860	-0.110	-0.140	-0.150
Min, Max	-1.30, -0.20	-0.62, 0.37	-0.52, 0.16	-0.51, 0.23
95% CI	-0.867, -0.838	-0.129, -0.096	-0.171, -0.122	-0.169, -0.120

Table 14. Percentage of Absolute MRSE vs. Intended Target at 6 Months

MRSE vs. Target	IC-8 Group		Control Group	
	IC-8 Eyes n/N (%)	Fellow Eyes n/N (%)	Second Eyes n/N (%)	First Eyes n/N (%)
≤ 0.25 D	62/334 (18.6%)	162/334 (48.5%)	47/100 (47.0%)	46/100 (46.0%)
≤ 0.50 D	139/334 (41.6%)	258/334 (77.2%)	82/100 (82.0%)	76/100 (76.0%)
≤ 1.00	287/334 (85.9%)	327/334 (97.9%)	99/100 (99.0%)	99/100 (99.0%)
> 1.00 D	47/334 (14.1%)	7/334 (2.1%)	1/100 (1.0%)	1/100 (1.0%)

D. Safety and Effectiveness Results

1. Safety Results

The analysis of safety was based on the safety cohort of 453 implanted subjects: 343 IC-8 IOL subjects and 110 control subjects, available for the 12-month evaluation. The key safety outcomes for this study are presented below in Tables 15 to 24. Adverse effects are reported in Tables 15 to 19.

The first co-primary safety objective was to evaluate monocular BCDVA in the IC-8 eyes at 12 Months. The second co-primary safety objective was to evaluate the rates of ocular adverse events (cumulative or persistent) through 12 Months compared to ISO 11979-7:2014 SPE rates for posterior chamber IOLs. The third co-primary safety objective was to evaluate the rate of IC-8 IOL removals due to visual/optical reasons, cumulative through 12 Months. The secondary safety objective was the assessment of contrast sensitivity at 6 Months. Additional safety analyses included monocular and binocular low contrast (10%) uncorrected distance, intermediate and near visual acuities in the test group and control group at 6 months (to be performed in the contrast sensitivity subgroup with BCDVA 20/25 or better in each eye). Other safety parameters included Patient Reported Outcomes (PRO) and non-directed question data, analyzed by descriptive statistics, as well as retinal diagnostic testing evaluations.

Adverse effects that occurred in the PMA clinical study:

The rate of cumulative and persistent ocular adverse events for IC-8 eyes were compared to the ISO 11979-7:2014 SPE rates (Table 15 and 16). The thresholds (95% LCL) for all the observed adverse event types in IC-8 eyes, except for the cumulative rate of secondary surgical interventions (SSIs), were statistically below the SPE rates. A description of the SSIs is provided in Tables 15. The 95% LCL rates for persistent adverse events were statistically below the SPE rates for all persistent serious adverse event (SAE) types observed in IC-8 eyes in the study (Table 16).

Table 15. Cumulative Ocular Serious Adverse Events in IC-8 IOL Eyes and Fellow Eyes through 12 Months (IC-8 IOL Group)

Cumulative SAE	SPE Rate	IC-8 Eyes (N=343)				Fellow Eyes (N=343)			
		n/N	%	95% LCL	p-value	n/N	%	95% LCL	p-value
Cystoid macular edema	3.0%	5/343	1.5%	0.6%	0.977	4/343	1.2%	0.4%	0.992
Hypopyon	0.3%	0/343	0.0%	0.0%	>0.999	0/343	0.0%	0.0%	>0.999
Endophthalmitis	0.1%	1/343	0.3%	0.0%	0.290	0/343	0.0%	0.0%	>0.999
Lens dislocated from posterior chamber	0.1%	0/343	0.0%	0.0%	>0.999	0/343	0.0%	0.0%	>0.999
Pupillary block	0.1%	0/343	0.0%	0.0%	>0.999	0/343	0.0%	0.0%	>0.999
Retinal detachment	0.3%	0/343	0.0%	0.0%	>0.999	0/343	0.0%	0.0%	>0.999
Secondary surgical intervention ‡	0.8%	10/343	2.9%	1.6%	<.001	6/343	1.7%	0.8%	0.060
IOL repositioning	N/A	1/343	0.3%	0.0%	--	1/343	0.3%	0.0%	--
Removal of retained cortex	N/A	2/343	0.6%	0.1%	--	0/343	0.0%	0.0%	--
Vitrectomy	N/A	4/343	1.2%	0.4%	--	1/343	0.3%	0.0%	--
Modified paracentesis*	N/A	4/343	1.2%	0.4%	--	3/343	0.9%	0.2%	--
Intravitreal injection**	N/A	1/343	0.3%	0.0%	--	1/343	0.3%	0.0%	--
Laser retinopexy†	N/A	0/343	0.0%	0.0%	--	1/343	0.3%	0.0%	--
Other: Retinal vein occlusion	N/A	1/331	0.3%	0.0%	--	0/331	0.0%	0.0%	--
N = Total # in the Analysis population; n = # eyes with events in the respective AE category. The rate of adverse event is based on the proportion of eyes with events, % = (n / N) * 100.									

SPE = Safety and Performance Endpoints (SPE) rates per ISO 11979-7:2014 Table B.2 for posterior chamber IOL.
95% LCL = one-sided 95% lower confidence limit (based on exact binomial distribution). The SPE rate is considered not exceeded if the one-sided 95% lower CL for an AE is less than the SPE rate, equivalent to p-value greater than 0.05.
- Cystoid macular edema: Macular edema diagnosed by clinical examination and adjunct testing (e.g., OCT, FA) resulting in BCDVA of 20/40 or worse at 1 month or later.
- Endophthalmitis: Intraocular inflammation leading to diagnostic vitreous tap and intraocular antibiotics
- Any other AEs that were standard medical diagnoses were coded per MedDRA.
* Modified paracentesis procedure (also known as 'burping the wound') in the study were all performed in an exam room via the slit-lamp as an outpatient procedure to expel excess aqueous from the eye via the original incision (paracentesis) site to lower intraocular pressure. No procedure involved the creation of a new incision or disruption of the original incision site to release the aqueous. There were 6 modified paracentesis procedures in 4 IC-8 Eyes, with 3 procedures in 1 IC-8 Eye (which also had a removal of retained cortex). There were 3 modified paracentesis procedures in 3 Fellow Eyes.
** Intravitreal injection as treatment for cystoid macular edema.
† Laser retinopexy as treatment for operculated tear.
‡ No IC-8 IOL removals were reported during the study. In the Control group, one subject was reported with bilateral IOL removal during the study, and replacement of both of their monofocal IOLs with different monofocal lenses due to visual complaints of dysphotopsia. Following exit from the IDE study but prior to completion of the 12-months post-operative period, one subject previously enrolled in the Control group had their monofocal IOL removed in one eye due to visual complaints of double vision and a “yellow tint”, and two subjects previously enrolled in the IC-8 IOL group had their IC-8 IOLs removed. One subject had their IC-8 IOL removed due to visual complaints of a “hinged blob”. The Investigator believed that the cause may be one of three things: 1) Posterior Vitreous Detachment (PVD) or Vitreous consolidation, 2) A remnant of capsule in the subject’s visual axis, 3) The YAG laser capsulotomy resulted in a “spot” (direct quote from Investigator) on the inner portion of the aperture resulting in a “little refractive spot change” (direct quote from Investigator). The other subject had their IC-8 IOL removed due to subjective complaints of starburst, glare, and halo.

Table 16. Persistent Ocular Serious Adverse Events in IC-8 IOL Eyes and Fellow Eyes through 12 Months (IC-8 IOL Group)

Persistent SAE	SPE Rate	IC-8 Eyes				Fellow Eyes			
		n/N	%	95% LCL	p-value	n/N	%	95% LCL	p-value
Corneal stromal edema	0.3%	0/331	0.0%	0.0%	>0.999	0/331	0.0%	0.0%	>0.999
Cystoid macular edema	0.5%	1/331	0.3%	0.0%	0.810	1/331	0.3%	0.0%	0.810
Iritis	0.3%	2/331	0.6%	0.1%	0.262	1/331	0.3%	0.0%	0.630
Raised IOP requiring treatment	0.4%	0/331	0.0%	0.0%	>0.999	0/331	0.0%	0.0%	>0.999
Other: Retinal vein occlusion	N/A	1/331	0.3%	0.0%	--	0/331	0.0%	0.0%	--

N = # eyes available at 12 Months; n = # eyes with events in the respective AE category.
The rate of adverse event is based on the proportion of eyes with events, % = (n / N) * 100.
SPE = Safety and Performance Endpoints (SPE) rates per ISO 11979-7:2014 Table B.2 for posterior chamber IOL.
95% LCL = one-sided 95% lower confidence limit (based on exact binomial distribution).
The SPE rate is considered not exceeded if the one-sided 95% lower CL for an AE is less than the SPE rate, equivalent to p-value greater than 0.05.
- Corneal stromal edema: Corneal swelling (stromal) resulting in BCDVA of 20/40 or worse at 1 month or later.
- Cystoid macular edema: Macular edema diagnosed by clinical examination and adjunct testing (e.g., OCT, FA) resulting in BCDVA of 20/40 or worse at 1 month or later.
- Raised IOP requiring treatment: Elevation of IOP greater than or equal to 10 mmHg above baseline to a minimum of 25mmHg.
- Any other AEs that were standard medical diagnoses were coded per MedDRA.

As presented in Table 17, two of the pars plana vitrectomies in IC-8 eyes were performed to remove posterior capsular remnants that were causing visual disturbances following YAG laser capsulotomies. One vitrectomy was performed in an IC-8 eye to treat visually significant floaters that were also present preoperatively; a vitrectomy was also performed in the fellow eye of this subject (implanted with a control IOL) to treat visually significant floaters that were present preoperatively. One vitrectomy was a modified vitrectomy concurrent with intravitreal injection performed to treat a case of endophthalmitis.

Table 17. Postoperative Ocular Adverse Events through 12 Months: Secondary Surgical Interventions

SSI	IC-8 Group		Control Group	
	IC-8 Eyes	Fellow Eyes	Second Eyes	First Eyes
	(N=343)	(N=343)	(N=110)	(N=110)
	n/N (%)	n/N (%)	n/N (%)	n/N (%)
	90% CI	90% CI	90% CI	90% CI
Intravitreal injection	1/343 (0.3%)	1/343 (0.3%)	0/110 (0.0%)	1/110 (0.9%)
	0.0%, 1.4%	0.0%, 1.4%	0.0%, 2.7%	0.0%, 4.2%
IOL exchange*	0/343 (0.0%)	0/343 (0.0%)	1/110 (0.9%)	1/110 (0.9%)
	0.0%, 0.9%	0.0%, 0.9%	0.0%, 4.2%	0.0%, 4.2%
IOL repositioning	1/343 (0.3%)	1/343 (0.3%)	0/110 (0.0%)	1/110 (0.9%)
	0.0%, 1.4%	0.0%, 1.4%	0.0%, 2.7%	0.0%, 4.2%
Iris reposition	0/343 (0.0%)	0/343 (0.0%)	0/110 (0.0%)	1/110 (0.9%)
	0.0%, 0.9%	0.0%, 0.9%	0.0%, 2.7%	0.0%, 4.2%
Laser retinopexy	0/343 (0.0%)	1/343 (0.3%)	0/110 (0.0%)	0/110 (0.0%)
	0.0%, 0.9%	0.0%, 1.4%	0.0%, 2.7%	0.0%, 2.7%
Laser Vitreolysis	0/343 (0.0%)	0/343 (0.0%)	1/110 (0.9%)	0/110 (0.0%)
	0.0%, 0.9%	0.0%, 0.9%	0.0%, 4.2%	0.0%, 2.7%
Modified paracentesis**	4/343 (1.2%)	3/343 (0.9%)	0/110 (0.0%)	1/110 (0.9%)
	0.4%, 2.6%	0.2%, 2.2%	0.0%, 2.7%	0.0%, 4.2%
Removal of retained cortex	2/343 (0.6%)	0/343 (0.0%)	0/110 (0.0%)	0/110 (0.0%)
	0.1%, 1.8%	0.0%, 0.9%	0.0%, 2.7%	0.0%, 2.7%
Vitrectomy	4/343 (1.2%)	1/343 (0.3%)	0/110 (0.0%)	0/110 (0.0%)
	0.4%, 2.6%	0.0%, 1.4%	0.0%, 2.7%	0.0%, 2.7%
– to remove posterior capsular remnant	2/343 (0.6%)	0/343 (0.0%)	0/110 (0.0%)	0/110 (0.0%)
	0.1%, 1.8%	0.0%, 0.9%	0.0%, 2.7%	0.0%, 2.7%
– to treat endophthalmitis	1/343 (0.3%)	0/343 (0.0%)	0/110 (0.0%)	0/110 (0.0%)
	0.0%, 1.4%	0.0%, 0.9%	0.0%, 2.7%	0.0%, 2.7%
– to remove bilateral vitreous floaters	1/343 (0.3%)	1/343 (0.3%)	0/110 (0.0%)	0/110 (0.0%)
	0.0%, 1.4%	0.0%, 1.4%	0.0%, 2.7%	0.0%, 2.7%

N = Total # in the Analysis population; n = # eyes with events in the respective AE category.
The rate of adverse event is based on the proportion of eyes with events, % = (n / N) * 100.
90% CI = two-sided 90% confidence interval (based on exact binomial distribution).
*No IC-8 IOL removals were reported during the study. Two subjects had their IC-8 IOLs removed after study exit, but within 12 months post-implantation. In the Control group, one subject was reported with bilateral IOL removal during the study, and replacement of both of their monofocal IOLs with different monofocal lenses. Following exit from the IDE study, one subject previously enrolled in the Control group had their monofocal IOL

removed in one eye. All subjects requested removals due to subjective reports of visual symptoms.
**Modified paracentesis procedure (also known as 'burping the wound') in the study were all performed in an exam room via the slit-lamp as an outpatient procedure to expel excess aqueous from the eye via the original incision (paracentesis) site to lower intraocular pressure. No procedure involved the creation of a new incision or disruption of the original incision site to release the aqueous. There was 1 eye/subject (IC-8 eye in a Test Group subject) with 3 modified paracentesis procedures in the same eye; other eyes/subjects had 1 paracentesis procedure each.

There were no removals of the IC-8 IOL reported during the study, yielding a rate of 0% (0/343) with 95% upper confidence limit (UCL) of 0.9% (below the criterion of 3.1%), which claimed the statistical success for this endpoint (Table 18). Following study exit, but prior to completing the 12-month post-operative period, two subjects had their IC-8 devices removed. One subject had their IC-8 device removed due to complaints of a "hinged blob." The Investigator believed that the cause may be one of three things: 1) Posterior vitreous detachment (PVD) or vitreous consolidation, 2) A remnant of capsule in the subject's visual axis, 3) The YAG capsulotomy resulted in a "spot" on inner portion of the aperture resulting in a "little refractive spot change". The other subject had their IC-8 device removed due to subjective complaints of starburst, glare, and halo.

In the Control group, one subject was reported with bilateral IOL removal during the study, and replacement of both of their monofocal IOLs with different monofocal lenses. Following exit from the IDE study, one subject previously enrolled in the Control group had their control device removed in one eye. All subjects requested removals due to subjective reports of visual symptoms.

Table 18. IOL Removals in the IC-8 IOL Group and Control Group through 12 Months

	IC-8 IOL Group				Control Group			
	IC-8 IOL Eyes		Fellow Eyes		Second Eyes		First Eyes	
	n/N	%	n/M	%	n/M	%	n/M	%
IOL Removals Total	0/343	0.0%	0/343	0.0%	1/110	0.9%	1/110	0.9%
Due to Visual/Optical Reasons*	0/343	0.0%	0/343	0.0%	1/110	0.9%	1/110	0.9%
Due to Other Reasons	0/343	0.0%	0/343	0.0%	0/110	0.0%	0/110	0.0%

N = Total # in the Analysis population; n = # eyes with events in the respective AE category.
The rate of adverse events is based on the proportion of eyes with events, % = (n / M) * 100.
95% UCL = one-sided 95% upper confidence limit (based on exact binomial distribution).
The one-sided 95% upper CL of IC-8 IOL removal rate due to visual/optical reasons less than 3.1% claimed statistical success.
*Following exit from the IDE study but prior to completion of the 12-months post-operative period, two subjects previously enrolled in the IC-8 IOL group had their IC-8 IOLs removed, and one subject previously enrolled in the Control group had their monofocal IOL removed in one eye, due to visual/optical reasons.

Supportive characterization of ocular adverse events, based on a modified version of the American Academy of Ophthalmology Task Force Consensus Statement on Adverse Events with Intraocular Lenses (Masket et al., 2017) are presented in Table 19.

There were five surgical complications and/or intraoperative AEs reported during the study, all in IC-8 eyes of the Test Group (5/343, 1.5%); two detached Descemet's Membrane events, one corneal abrasion event, one surgical complication (and a device deficiency) of missing IOL haptic (back up IC-8 IOL implanted with no complication), and one surgical complication of zonular dehiscence. There was one device deficiency of ophthalmic viscosurgical device (OVD) hardening in the IOL injector (back up IC-8 IOL implanted with no complication).

Table 19. Ocular Adverse Events Based on a Modified Version of AAO Consensus (Masket et al., 2017) through 12 Months

Cumulative AE	IC-8 IOL Group		Control Group	
	IC-8 IOL Eyes	Fellow Eyes	Second Eyes	First Eyes
	n/N (%)	n/N (%)	n/N (%)	n/N (%)
	90% CI	90% CI	90% CI	90% CI
Chronic anterior uveitis	1/343 (0.3%)	0/343 (0.0%)	0/110 (0.0%)	0/110 (0.0%)
	0.0%, 1.4%	0.0%, 0.9%	0.0%, 2.7%	0.0%, 2.7%
Clinically significant cystoid macular edema	2/343 (0.6%)	0/343 (0.0%)	0/110 (0.0%)	1/110 (0.9%)
	0.1%, 1.8%	0.0%, 0.9%	0.0%, 2.7%	0.0%, 4.2%
Visually significant corneal edema	1/343 (0.3%)	1/343 (0.3%)	0/110 (0.0%)	0/110 (0.0%)
	0.0%, 1.4%	0.0%, 1.4%	0.0%, 2.7%	0.0%, 2.7%
Endophthalmitis	1/343 (0.3%)	0/343 (0.0%)	0/110 (0.0%)	0/110 (0.0%)
	0.0%, 1.4%	0.0%, 0.9%	0.0%, 2.7%	0.0%, 2.7%
Mechanical pupillary block	0/343 (0.0%)	0/343 (0.0%)	0/110 (0.0%)	0/110 (0.0%)
	0.0%, 0.9%	0.0%, 0.9%	0.0%, 2.7%	0.0%, 2.7%
Intraocular pressure increased	20/343 (5.8%)	16/343 (4.7%)	10/110 (9.1%)	7/110 (6.4%)
	3.9%, 8.4%	2.9%, 7.0%	5.0%, 14.9%	3.0%, 11.6%
Rhegmatogenous RD	0/343 (0.0%)	0/343 (0.0%)	0/110 (0.0%)	0/110 (0.0%)
	0.0%, 0.9%	0.0%, 0.9%	0.0%, 2.7%	0.0%, 2.7%
Toxic anterior segment syndrome (TASS)	0/343 (0.0%)	0/343 (0.0%)	0/110 (0.0%)	0/110 (0.0%)
	0.0%, 0.9%	0.0%, 0.9%	0.0%, 2.7%	0.0%, 2.7%
Secondary IOL intervention*				
IOL exchange	0/343 (0.0%)	0/343 (0.0%)	1/110 (0.9%)	1/110 (0.9%)
	0.0%, 0.9%	0.0%, 0.9%	0.0%, 4.2%	0.0%, 4.2%
IOL removal	0/343 (0.0%)	0/343 (0.0%)	0/110 (0.0%)	0/110 (0.0%)
	0.0%, 0.9%	0.0%, 0.9%	0.0%, 2.7%	0.0%, 2.7%

IOL reposition	1/343 (0.3%)	1/343 (0.3%)	0/110 (0.0%)	1/110 (0.9%)
	0.0%, 1.4%	0.0%, 1.4%	0.0%, 2.7%	0.0%, 4.2%

N = Total # in the Analysis population; n = # subjects with events in the respective AE category.
The rate of adverse event is based on the proportion of eyes with events, % = (n / N) * 100.
90% CI = two-sided 90% confidence interval (based on exact binomial distribution).
- Chronic anterior uveitis: Anterior segment inflammation characterized by grade 1+ cell or greater using Standardization of Uveitis Nomenclature (SUN) criteria that persists for greater than 3 months after surgery, or relapses in less than 3 months after discontinuation of therapy, or the subject is maintained on therapy for more than 3 months to control inflammation.
- Clinically significant cystoid macular edema: Macular edema diagnosed by clinical examination and adjunct testing(e.g., OCT, FA) resulting in BCDVA of <=20/40 at >=1 month.
- (Visually significant) corneal edema: Corneal swelling (stromal or epithelial) resulting in BCDVA of <=20/40 at >=1 month.
- Endophthalmitis: Intraocular inflammation leading to diagnostic vitreous tap and intraocular antibiotics
- Mechanical pupillary block: Shallowing of anterior chamber due to obstruction of aqueous humor flow from the posterior to anterior chamber through the pupil by the crystalline lens, vitreous face, or implanted device.
- Intraocular pressure increased (Increased IOP): Elevation of IOP by >=10 mmHg above baseline to a minimum of 25 mmHg.
- Rhegmatogenous RD: Partial or complete RD associated with retinal tear.
- Toxic anterior segment syndrome (TASS): Acute, non-infectious inflammation of the anterior segment that starts within 24 to 48 hours after surgery, usually resulting in hypopyon and commonly presenting with corneal edema, and that improves with steroid treatment.
- IOL Exchange: The investigational device is replaced with the same lens model.
- IOL Removal: The investigational device is removed and replaced with a non-investigational lens or no lens is implanted.
- IOL Reposition: The existing IOL is surgically moved to another location or rotated.
* No **IC-8** IOL removals were reported during the study. In the Control group, one subject was reported with bilateral IOL removal during the study, and replacement of both of their monofocal IOLs with different monofocal lenses due to visual complaints of dysphotopsia. Following exit from the IDE study but prior to completion of the 12-months post-operative period, one subject previously enrolled in the Control group had their monofocal IOL removed in one eye due to visual complaints of double vision and a “yellow tint”, and two subjects previously enrolled in the **IC-8** IOL group had their **IC-8** IOLs removed. One subject had their **IC-8** IOL removed due to visual complaints of a “hinged blob”. The Investigator believed that the cause may be one of three things: 1) Posterior Vitreous Detachment (PVD) or Vitreous consolidation, 2) A remnant of capsule in the subject’s visual axis, 3) The YAG laser capsulotomy resulted in a “spot” (direct quote from Investigator) on the inner portion of the aperture resulting in a “little refractive spot change” (direct quote from Investigator). The other subject had their **IC-8** IOL removed due to subjective complaints of starburst, glare, and halo.

Posterior Capsular Opacity (PCO) and Nd:YAG Laser treatments

The rate of clinically significant PCO was 32.4% (111/343) in IC-8 eyes compared with 14.0% to 17.3% (48/343 to 19/110) in the eyes with monofocal or monofocal toric IOLs. During the 12-month study, 31.2% (107 of 343) of IC-8 eyes received Nd:YAG laser posterior capsulotomies as treatment for PCO affecting vision. In 12.1% (13 of 107) of these capsulotomy procedures, the Investigators reported some difficulty in performing the procedure. A correlation between reporting some difficulty performing a capsulotomy procedure and reports of resultant issues or laser damage to the IOL was noted. In 15.9% (17 of 107) of these YAG procedures, 5 eyes required a second capsulotomy treatment (1 IC-8 device was damaged by the YAG laser in this group); 2 eyes required pars plana vitrectomy (PPV) to remove a residual posterior capsular remnant (1 IC-8 device in this group also had YAG laser damage); and another 10 eyes had pits or damage on the device due to the YAG laser treatment. Of the 11 subjects with reported YAG laser damage at the final study visit, 1 reported severe glare, 1 reported severe halo, and 1 reported severe starburst at 12 Months. Exploratory analyses of patient-reported outcomes for subjects with damaged IC-8 devices suggested increased rates of severity and bothersomeness of several subjective visual disturbances compared to subjects with non-damaged IC-8 devices. However, the majority of subjects who required additional surgical interventions due to YAG laser treatment difficulties achieved satisfactory visual outcomes.

Monocular Best Corrected Distance Visual Acuity

Non-inferiority of the IC-8 eyes to the fellow eyes in the IC-8 group in monocular BCDVA was demonstrated based on a mean difference of 0.068 logMAR, with 95% UCL of 0.082 logMAR (less than the non-inferiority margin of 0.1 logMAR [p<0.0001]) as presented in Table 20.

Table 20. Mean logMAR Monocular Best-corrected Distance Visual Acuity, 12 Months (IC-8 IOL Group)

BCDVA	IC-8 Group	
	IC-8 Eyes (N=343)	Fellow Eyes (N=343)
M	**331**	**331**
Mean (SD)	0.009 (0.1131)	-0.059 (0.0928)
Snellen equiv. of Mean	20/20	20/17
Mean Difference[a]	0.068	--
Mean Difference in Lines	0.7	--
p-value[b]	<.0001	
95% Upper CL[c]	0.082	

N = Total # in the Analysis population. M = # subjects with available data for the respective parameter.
[a] Mean difference in logMAR was compared within subjects between IC-8 eyes and fellow eyes in the IC-8 Group.
[b] p-value based on mean logMAR difference using one-sided one-sample t-test with non-inferiority margin of 0.1 logMAR.
[c] One-sided 95% upper CL for mean difference less than the margin of 0.1 logMAR demonstrated noninferiority of IC-8 eyes vs. the fellow eyes.

The proportion of IC-8 IOL eyes that achieved BCDVA of 0.30 logMAR or better was 98.5% (326/331) and 98.7% (315/319) in the ITT (Table 21) and Best-Case (Table 22) analysis populations, respectively, and their corresponding 95% upper confidence limits exceeded the ISO 11979-7:2014 SPE threshold rates of 92.5% and 96.7%, respectively.

Table 21. LogMAR Levels of Monocular Best-Corrected Distance Visual Acuity at 12 Months (IC-8 IOL Group)

Monocular BCDVA (logMAR)	**IC-8 IOL Eyes**		**Fellow Eyes**	
	n/N	**%**	**n/N**	**%**
0.00 or better	197/331	59.5%	265/331	80.1%
0.10 or better	277/331	83.7%	322/331	97.3%
0.20 or better	314/331	94.9%	329/331	99.4%
0.30 or better	326/331	98.5%	330/331	99.7%
Worse than 0.30	5/331	1.5%	1/331	0.3%
Not Reported	0		0	
p-value of logMAR 0.3 or better category percentage vs. SPE rate[a]	>0.999			
95% Upper CL of logMAR 0.3 or better category percentage[b]	99.4%			

% = n/N *100%.
[a] The proportion of IC-8 eyes achieving BCDVA logMAR 0.3 or better compared to the SPE rate (92.5%) in ISO 11979-7:2014 using one-sided exact test based on binomial distribution. P-value > 0.05 indicates statistical success demonstrating the proportion was not less than the SPE rate.
[b] One-sided 95% upper CL for the proportion of IC-8 eyes achieving BCDVA logMAR 0.3 or better based on exact binomial distribution.

Table 22. LogMAR Levels of Monocular Best-Corrected Distance Visual Acuity at 12 Months (IC-8 IOL Group, Best-Case Population)

Monocular BCDVA (logMAR)	**IC-8 IOL Group**			
	IC-8 IOL Eyes		**Fellow Eyes**	
	n/N	**%**	**n/N**	**%**
0.00 or better	194/319	(60.8%)	258/319	80.9%
0.10 or better	268/319	(84.0%)	311/319	97.5%
0.20 or better	304/319	(95.3%)	317/319	99.4%
0.30 or better	315/319	(98.7%)	318/319	99.7%
Worse than 0.30	4/319	(1.3%)	1/319	0.3%

Not Reported	0		0	
p-value of logMAR 0.3 or better category percentage vs. SPE rate[a]	>0.999			
95% Upper CL of logMAR 0.3 or better category percentage[b]	99.6%			
% = n/N *100%. [a] The proportion of best-case IC-8 IOL eyes achieving BCDVA logMAR 0.3 or better compared to the SPE rate (96.7%) in ISO 11979-7:2014 using one-sided exact test based on binomial distribution. P-value > 0.05 indicates statistical success demonstrating the proportion was not less than the SPE rate. [b] One-sided 95% upper CL for the proportion of IC-8 IOL eyes achieving BCDVA logMAR 0.3 or better based on exact binomial distribution. Note: The best-case population includes subjects with both eyes meeting the best-case criteria (no preoperative ocular pathology, no macular degeneration or pathology at any time, and no previous refractive surgery).				

Contrast Sensitivity

Monocular and binocular mesopic and photopic contrast sensitivity (with and without glare) was assessed at 6 Months for the IC-8 eyes and the monofocal/monofocal toric IOL eyes and IC-8 IOL and Control groups. In the contrast sensitivity subgroup, data were obtained from 260 and 67 subjects in the IC-8 IOL and monofocal/monofocal toric IOL Control groups, respectively, using a computerized test system (CTS, M&S Technologies, Niles, IL).

A summary of mean contrast sensitivity results is presented for the binocular condition in Table 23 and for the monocular condition in Table 24. In the binocular natural viewing condition, in both mesopic and photopic conditions with and without a glare source, the IC-8 IOL subjects achieved similar mean contrast sensitivity to the monofocal/monofocal toric Control IOL subjects. In the monocular condition, the IC-8 IOL subjects had a reduction in mean monocular mesopic and photopic contrast sensitivity with and without glare compared to the monofocal/monofocal toric IOL subjects.

Table 23. Binocular Photopic and Mesopic With and Without Glare Contrast Sensitivity (logCS) at 6 Months

Spatial Frequency	IOL	N	Photopic		Mesopic	
			No Glare	Glare	No Glare	Glare
			Mean (log units)	Mean (log units)	Mean (log units)	Mean (log units)
1.5 cycles per degree	IC-8 group	260	N/A	N/A	1.936	1.395
	Control	67	N/A	N/A	1.969	1.559

(cpd)	group					
3 cycles per degree (cpd)	IC-8 group	260	2.233	1.866	2.030	1.602
	Control group	67	2.287	1.983	2.079	1.714
6 cycles per degree (cpd)	IC-8 group	260	2.119	1.856	1.688	1.382
	Control group	67	2.141	1.891	1.723	1.403
12 cycles per degree (cpd)	IC-8 group	260	1.689	1.431	0.995	0.797
	Control group	67	1.654	1.476	0.986	0.756
18 cycles per degree (cpd)	IC-8 group	260	1.164	0.957	N/A	N/A
	Control group	67	1.090	0.970	N/A	N/A

Table 24. Monocular Photopic and Mesopic With and Without Glare Contrast Sensitivity (logCS) at 6 Months (IC-8 IOL Group)

Spatial Frequency	**IOL (Eyes)**	**N**	**Photopic**		**Mesopic**	
			No Glare	**Glare**	**No Glare**	**Glare**
			Mean (log units)	**Mean (log units)**	**Mean (log units)**	**Mean (log units)**
1.5 cycles per degree (cpd)	IC-8 Eyes	260	N/A	N/A	1.385	1.044
	Fellow Eyes	260	N/A	N/A	1.850	1.338
3 cycles per degree (cpd)	IC-8 Eyes	260	1.935	1.620	1.475	1.201
	Fellow Eyes	260	2.202	1.822	1.964	1.552
6 cycles per degree (cpd)	IC-8 Eyes	260	1.795	1.513	1.217	1.035
	Fellow Eyes	260	2.055	1.747	1.609	1.353
12 cycles per degree (cpd)	IC-8 Eyes	260	1.308	1.106	0.620	0.496
	Fellow Eyes	260	1.554	1.345	0.913	0.749
18 cycles per degree (cpd)	IC-8 Eyes	260	0.832	0.659	N/A	N/A
	Fellow Eyes	260	1.072	0.887	N/A	N/A

Low Contrast (10%) Visual Acuity

Photopic low contrast (10% contrast) uncorrected and distance-corrected visual acuities were assessed monocularly in IC-8 eyes and the second eyes in the Control group and binocularly in the contrast sensitivity subgroup of subjects with BCDVA 20/25 or better in each eye at 6 Months. Results are described in Tables 25 and 26. Low contrast visual acuity assessment demonstrated that all monocular and binocular

intermediate and near mean low contrast visual acuities (uncorrected and distance-corrected) were approximately 1-2 lines better for the IC-8 group compared with the Control group. While monocular distance low contrast visual acuity was better for the eyes with monofocal or monofocal toric IOL, binocular distance mean low contrast visual acuity (uncorrected and distance-corrected) was comparable (within half a line) between the IC-8 group and the Control group.

Table 25. Mean logMAR Monocular 10% Contrast Uncorrected and Distance-corrected Visual Acuities (in CS Subgroup with BCDVA 20/25 or Better in Each Eye), 6 Months

Monocular 10% Contrast Visual Acuity (logMAR)	IC-8 Group IC-8 Eyes			Control Group Second Eyes		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
UCDVA	244	0.828	0.4755	66	0.431	0.1536
UCIVA	244	0.510	0.2272	66	0.699	0.1980
UCNVA	244	0.619	0.1692	66	0.882	0.1530
DCDVA	244	0.588	0.2494	66	0.318	0.1281
DCIVA	244	0.561	0.2001	66	0.754	0.1602
DCNVA	244	0.702	0.1420	66	0.927	0.1173

Table 26. Mean logMAR Binocular 10% Contrast Uncorrected and Distance-corrected Visual Acuities (in CS Subgroup with BCDVA 20/25 or Better in Each Eye), 6 Months

Binocular 10% Contrast Visual Acuity (logMAR)	IC-8 Group			Control Group		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
UCDVA	259	0.364	0.1915	67	0.323	0.1196
UCIVA	259	0.426	0.1920	67	0.580	0.1817
UCNVA	259	0.571	0.1464	67	0.774	0.1351
DCDVA	259	0.267	0.1516	67	0.245	0.1150
DCIVA	259	0.498	0.1712	67	0.651	0.1657
DCNVA	259	0.661	0.1329	67	0.822	0.1339

Patient Reported Outcomes

A Patient Reported Outcome (PRO) instrument (questionnaire) was developed for use in this clinical study to assess visual symptoms in conjunction with a Quality of Vision (QoV) questionnaire. Subjects reported the frequency, severity, and bothersomeness of the visual symptoms that they experienced (glare, halos, starbursts, hazy vision, blurred vision, double vision, color distortion, or peripheral dark area). Questionnaires were administered to both groups preoperatively and postoperatively at the beginning of the study visit before all other testing or assessments.

The majority of subjects in both the IC-8 IOL and Control groups reported 'never' or 'occasionally' in frequency, 'not at all' or 'mild' in severity, and 'not at all' or 'a little' in bothersomeness for all the visual symptoms. An overall summary of visual symptoms experience/bothersomeness demonstrated approximately more than 80% of subjects reported 'never experienced', 'experienced symptom but not bothered at all' or 'a little bothered' for all visual symptoms at 12 Months in both the IC-8 IOL and Control groups.

At 12 Months, the most common visual disturbances with severe ratings in the IC-8 group were starbursts (IC-8 IOL: 3.6% [12/331], Control: 1.0% [1/100]), halos (IC-8 IOL: 3.6% [12/331], Control: 0.0% [0/100]), and glare (IC-8 IOL: 3.0% [10/331], Control: 0.0% [0/100]) (Table 27). The other visual symptoms reported by more than 1% of subjects as 'severe' in the IC-8 group included: hazy vision, blurred vision, vision fluctuation, focusing difficulties, problem seeing when light conditions change, and ocular symptom of eye dryness. All other visual symptoms were reported by less than 1% of subjects as 'severe' in the IC-8 group, including distortion, double or multiple images, difficulty judging distance or depth perception, problem judging distance of moving objects, surroundings seem dimmer, and negative dysphotopsia. For bothersomeness, the observed trends are similar to the results on severity (Table 28). All the visual symptoms reported by more than 1% of subjects as either 'severe' or 'very bothersome' are presented in Tables 27 and 28.

Stratification of mean visual symptoms experience/bothersomeness rating by preoperative mesopic pupil size in the IC-8 IOL group indicates minimal worsening of visual symptoms with increasing pupil size at 12 Months and the mean rating is <1.0 (on a scale of 0 to 3, with 0=Never experience/Not at all bothered, 1=A little bothered, 2=Quite bothered, 3=Very bothered) in all visual symptoms for all three mesopic pupil size groups.

Table 27. Distribution of Visual Symptoms Severity Rating in IC-8 Group at 12 Months Compared with Control Group at 12 Months

Visual Symptoms	Severity Rating	IC-8 Group 12 Months (N=331)		Control Group 12 Months (N=100)	
		n/N	%	n/N	%
Glare	Not at all	140/331	42.3%	49/100	49.0%
	Mild	132/331	39.9%	43/100	43.0%
	Moderate	49/331	14.8%	8/100	8.0%
	Severe	10/331	3.0%	0/100	0.0%
Halos	Not at all	151/331	45.6%	73/100	73.0%
	Mild	119/331	36.0%	23/100	23.0%
	Moderate	49/331	14.8%	4/100	4.0%
	Severe	12/331	3.6%	0/100	0.0%
Starbursts	Not at all	162/331	48.9%	73/100	73.0%
	Mild	122/331	36.9%	25/100	25.0%
	Moderate	35/331	10.6%	1/100	1.0%
	Severe	12/331	3.6%	1/100	1.0%
Hazy Vision	Not at all	213/331	64.4%	75/100	75.0%
	Mild	83/331	25.1%	23/100	23.0%
	Moderate	30/331	9.1%	2/100	2.0%
	Severe	5/331	1.5%	0/100	0.0%
Blurred Vision	Not at all	181/331	54.7%	66/100	66.0%
	Mild	113/331	34.1%	31/100	31.0%
	Moderate	32/331	9.7%	3/100	3.0%
	Severe	5/331	1.5%	0/100	0.0%
Vision Fluctuation	Not at all	179/331	54.1%	71/99	71.7%
	Mild	122/331	36.9%	23/99	23.2%
	Moderate	25/331	7.6%	5/99	5.1%
	Severe	5/331	1.5%	0/99	0.0%
Focusing Difficulties	Not at all	122/331	36.9%	51/99	51.5%
	Mild	168/331	50.8%	45/99	45.5%
	Moderate	35/331	10.6%	3/99	3.0%
	Severe	6/331	1.8%	0/99	0.0%
Difficulty Judging Distance or Depth Perception	Not at all	250/331	75.5%	78/99	78.8%
	Mild	63/331	19.0%	18/99	18.2%
	Moderate	17/331	5.1%	3/99	3.0%
	Severe	1/331	0.3%	0/99	0.0%
Problem Seeing when Light Conditions Change	Not at all	203/331	61.3%	68/100	68.0%
	Mild	97/331	29.3%	29/100	29.0%
	Moderate	23/331	6.9%	1/100	1.0%

	Severe	8/331	2.4%	2/100	2.0%
Eye Dryness	Not at all	110/331	33.2%	35/100	35.0%
	Mild	136/331	41.1%	48/100	48.0%
	Moderate	69/331	20.8%	15/100	15.0%
	Severe	16/331	4.8%	2/100	2.0%

Table 28. Distribution of Visual Symptoms Bothersomeness Rating in IC-8 Group at 12 Months Compared with Control Group at 12 Months

Visual Symptoms	Bothersomeness Rating	IC-8 Group 12 Months (N=331)		Control Group 12 Months (N=100)	
		n/N	%	n/N	%
Glare	Not at all	162/331	48.9%	57/100	57.0%
	A little	126/331	38.1%	38/100	38.0%
	Quite	31/331	9.4%	5/100	5.0%
	Very	12/331	3.6%	0/100	0.0%
Halos	Not at all	174/331	52.6%	79/100	79.0%
	A little	113/331	34.1%	17/100	17.0%
	Quite	29/331	8.8%	4/100	4.0%
	Very	15/331	4.5%	0/100	0.0%
Starbursts	Not at all	192/331	58.0%	75/100	75.0%
	A little	104/331	31.4%	23/100	23.0%
	Quite	23/331	6.9%	1/100	1.0%
	Very	12/331	3.6%	1/100	1.0%
Hazy Vision	Not at all	223/331	67.4%	80/100	80.0%
	A little	81/331	24.5%	19/100	19.0%
	Quite	21/331	6.3%	0/100	0.0%
	Very	6/331	1.8%	1/100	1.0%
Blurred Vision	Not at all	191/331	57.7%	67/100	67.0%
	A little	107/331	32.3%	30/100	30.0%
	Quite	26/331	7.9%	3/100	3.0%
	Very	7/331	2.1%	0/100	0.0%
Vision Fluctuation	Not at all	191/331	57.7%	72/99	72.7%
	A little	110/331	33.2%	25/99	25.3%
	Quite	23/331	6.9%	2/99	2.0%
	Very	7/331	2.1%	0/99	0.0%
Focusing Difficulties	Not at all	140/331	42.3%	60/99	60.6%
	A little	155/331	46.8%	36/99	36.4%
	Quite	26/331	7.9%	3/99	3.0%
	Very	10/331	3.0%	0/99	0.0%

Difficulty Judging Distance or Depth Perception	Not at all	253/331	76.4%	79/99	79.8%
	A little	61/331	18.4%	18/99	18.2%
	Quite	13/331	3.9%	2/99	2.0%
	Very	4/331	1.2%	0/99	0.0%
Problem Seeing when Light Conditions Change	Not at all	213/331	64.4%	70/100	70.0%
	A little	95/331	28.7%	27/100	27.0%
	Quite	14/331	4.2%	2/100	2.0%
	Very	9/331	2.7%	1/100	1.0%
Eye Dryness	Not at all	115/331	34.7%	38/100	38.0%
	Mild	152/331	45.9%	51/100	51.0%
	Moderate	40/331	12.1%	10/100	10.0%
	Severe	24/331	7.3%	1/100	1.0%

Retinal Visualization

Dilated fundus examinations were performed preoperatively and at 12 Months using binocular indirect ophthalmoscopy (BIO) and slit-lamp fundus exam (SLE). At 12 Months**,** Investigators reported slightly higher difficulty in performing retinal evaluations during slit lamp examination and during dilated fundus examination of IC-8 IOL eyes compared to control eyes (Tables 29 and 30). Investigators reported being able to achieve a stereoscopic view of the posterior pole using both BIO and dilated SLE in 100% of the eyes in both the IC-8 IOL and Control groups at 12 Months post implantation.

Table 29. Distribution of Investigator Surgery Regarding Level of Difficulty in Performing Retinal Evaluation during Dilated Fundus Exam (BIO) at 12 Months (IC-8 IOL group)

Investigator Survey on BIO	IC-8 Eyes n/N (%)	Fellow Eyes n/N (%)
Optic Disc		
No difficulty	311/331 (94.0%)	330/331 (99.7%)
A little difficulty	20/331 (6.0%)	1/331 (0.3%)
Moderate difficulty	0/331 (0.0%)	0/331 (0.0%)
A lot of difficulty	0/331 (0.0%)	0/331 (0.0%)
Extreme difficulty	0/331 (0.0%)	0/331 (0.0%)
Macula		
No difficulty	312/331 (94.3%)	331/331 (100.0%)
A little difficulty	19/331 (5.7%)	0/331 (0.0%)
Moderate difficulty	0/331 (0.0%)	0/331 (0.0%)
A lot of difficulty	0/331 (0.0%)	0/331 (0.0%)
Extreme difficulty	0/331 (0.0%)	0/331 (0.0%)
Mid-Periphery		
No difficulty	244/331 (73.7%)	330/331 (99.7%)

A little difficulty	85/331 (25.7%)	1/331 (0.3%)
Moderate difficulty	2/331 (0.6%)	0/331 (0.0%)
A lot of difficulty	0/331 (0.0%)	0/331 (0.0%)
Extreme difficulty	0/331 (0.0%)	0/331 (0.0%)
Periphery		
No difficulty	251/331 (75.8%)	331/331 (100.0%)
A little difficulty	79/331 (23.9%)	0/331 (0.0%)
Moderate difficulty	1/331 (0.3%)	0/331 (0.0%)
A lot of difficulty	0/331 (0.0%)	0/331 (0.0%)
Extreme difficulty	0/331 (0.0%)	0/331 (0.0%)

Table 30. Distribution of Investigator Survey Regarding Level of Difficulty in Performing Retinal Evaluation during Dilated Slit-lamp Exam (SLE) at 12 Months (IC-8 IOL group)

Investigator Survey on Dilated SLE	IC-8 Eyes n/N (%)	Fellow Eyes n/N (%)
Optic Disc		
No difficulty	312/331 (94.3%)	331/331 (100.0%)
A little difficulty	18/331 (5.4%)	0/331 (0.0%)
Moderate difficulty	1/331 (0.3%)	0/331 (0.0%)
A lot of difficulty	0/331 (0.0%)	0/331 (0.0%)
Extreme difficulty	0/331 (0.0%)	0/331 (0.0%)
Macula		
No difficulty	311/331 (94.0%)	330/331 (99.7%)
A little difficulty	19/331 (5.7%)	1/331 (0.3%)
Moderate difficulty	1/331 (0.3%)	0/331 (0.0%)
A lot of difficulty	0/331 (0.0%)	0/331 (0.0%)
Extreme difficulty	0/331 (0.0%)	0/331 (0.0%)

Retinal diagnostic testing was performed for all 49 subjects at two investigational sites participating in the retinal diagnostic testing subgroup using fundus photography, spectral domain optical coherence tomography (SD-OCT) and visual field testing conducted both preoperatively and at 3 Months in both eyes of IC-8 IOL group subjects. The image quality of the SD-OCT images and fundus photos were independently graded by a Fundus Photography Reading Center (FPRC) and by the two Investigators. Three image quality scores were assigned to images in the subgroup: CS1 indicates grading confidence is high with no significant problem caused by image quality. No blurring or obstruction of retinal details. CS2 indicates grading confidence is adequate but suboptimal image quality noticeably interfered. Some blurring or obstruction of the retinal details. CS3 indicates grading confidence is inadequate to determine major disease parameters. Marked blurring or obstruction of the retinal details. The majority of the final dilated fundus photography and SD-OCT quality scores for images obtained from IC-8 eyes at 3 Months were rated by the FPRC as CS2 (87.8% [43/49] and 63.3% [31/49] for dilated fundus photography and

SD-OCT respectively) or CS1 (4.1% [2/49] and 28.6% [14/49] for dilated fundus photography and SD-OCT respectively). Fundus photography and SD-OCT quality scores for images obtained from control eyes at 3 Months were rated by the FPRC as CS2 in 63.3% (31/49) for dilated fundus photography and 55.1% (27/49) for SD-OCT, or CS1 in 32.7% (16/49) for dilated fundus photography and 38.8% (19/49) for SD-OCT. Additionally, the percentage of CS3 scores for dilated fundus photography were 6.1% (3/49) for IC-8 eyes compared to 2.0% (1/49) for control eyes. The percentage of CS3 scores for SD-OCT was 8.2% (4/49) for IC-8 eyes compared to 6.1% (3/49) for control eyes. The Investigators rated 100% of the dilated fundus photography and dilated SD-OCT macular scan and disc scan image quality as excellent or adequate preoperatively and at 3 Months, regardless of dilated pupil size.

Visual field testing was performed preoperatively and at 3 Months for all 49 subjects. Testing was performed with the Humphrey Visual Filed Analyzer and the results were evaluated by the Fundus Photography Reading Center. In the IC-8 eyes, 75.5% (37/49) had no change from baseline to 3 Months while 69.4% (34/49) of the fellow monofocal eye had no change from baseline. When looking at the Mean Deviation (MD) scores, the IC-8 eyes had a change in MD of 0.207 and the fellow monofocal eyes had a MD change of 0.791. The change in Pattern Standard Deviation (PSD) scores were 0.369 in the IC-8 eyes and 0.308 in the fellow monofocal eyes.

2. Effectiveness Results

The analyses of effectiveness endpoints on visual acuities were based on 335 evaluable IC-8 subjects vs. 100 Control group subjects at the 6 Month time point, and the analyses of the co-primary effectiveness endpoint on monocular depth of focus and the secondary effectiveness endpoint was based on 340 evaluable IC-8 subjects at the 3 Month time point. Primary effectiveness outcomes are presented in Tables 31-37 and Figure 4. In summary, all co-primary and secondary effectiveness endpoints achieved the predefined success criteria. The IC-8 group demonstrated statistical superiority to the Control group in binocular UCIVA and binocular UCNVA, as well as statistical non-inferiority to the Control group in binocular UCDVA. The eyes implanted with an IC-8 IOL were statistically superior in monocular DCIVA compared with the fellow eyes implanted with control devices in the IC-8 group. The IC-8 eyes had improved monocular depth of focus compared with the fellow control eyes in the IC-8 group, with a difference of 0.91 D. The secondary effectiveness endpoint was achieved, demonstrating statistical non-inferiority in monocular UCDVA in IC-8 eyes with 1 to 1.5 D of preoperative corneal astigmatism compared to IC-8 eyes with < 1.0 D of preoperative corneal astigmatism.

Primary Effectiveness Endpoint Results

Measurements of the co-primary effectiveness endpoints of binocular UCIVA, binocular UCNVA, binocular UCDVA, monocular DCIVA and defocus curves were conducted under photopic conditions using Early Treatment Diabetic Retinopathy Study (ETDRS) charts produced in a computerized test system (CTS, M&S Technologies, Niles, IL). Monocular and binocular visual acuity data were collected at distance (4 m), intermediate (66 cm), and near (40 cm).

Binocular Uncorrected Visual Acuity

Binocular UCIVA was tested at 66 cm. The IC-8 group was statistically superior to the Control group in binocular UCIVA based on a statistically significant mean difference of -0.177 logMAR ($p<0.0001$) as shown in Table 31. Further, 79.1% (265/335) of subjects in the IC-8 group achieved binocular UCIVA of 0.10 logMAR or better at 6 Months, yielding a 57.1% (-0.177 logMAR) difference in favor of the IC-8 group that exceeded the clinical success criteria of 50% in the IC-8 group and 25% higher than the Control group.

Table 31. Co-Primary Effectiveness Endpoints: Mean and logMAR Levels of Binocular UCIVA at 6 Months

UCIVA	**IC-8 Group (N=343)**		**Control Group (N=110)**	
M	335		100	
Mean (SD)	0.051 (0.1629)		0.228 (0.1646)	
Snellen equiv. of Mean	20/22		20/34	
Mean Difference in logMAR[a]	-0.177		--	
Mean Difference in Lines	-1.8		--	
p-value[b]	<.0001		--	
95% CI[c]	-0.214, -0.140		--	
Subjects achieving VA levels: (n/M, %)	**n/M**	**%**	**n/M**	**%**
logMAR 0.00 or better	154/335	46.0%	7/100	7.0%
logMAR 0.10 or better	265/335	79.1%	22/100	22.0%
logMAR 0.20 or better	299/335	89.3%	55/100	55.0%
logMAR 0.30 or better	313/335	93.4%	79/100	79.0%
logMAR Worse than 0.30	22/335*	6.6%	21/100**	21.0%
Difference in percentage of subjects achieving 0.1 or better logMAR (%)	57.1		--	
Not Reported	0		0	

N = Total # in the Analysis population.
M = # subjects with available data for the respective parameter.
n = # subjects with data in the respective category.
Not Reported = # subjects present at the visit with no data for the parameter (excluded from M or n).
% = n /M *100%.
[a] Mean difference in logMAR was compared between groups, and a negative value indicates IC-8 Group having better outcome.
[b] p-value based on mean logMAR difference using two-sided two-sample t-test.
[c] Two-sided 95% CI for mean logMAR difference.
*There were 19 IC-8 IOL subjects whose binocular UCIVA scores were erroneously recorded to be worse than 0.3 logMAR, due to incorrect viewing distance used during testing.
**There were 11 Control group subjects whose binocular UCIVA scores were erroneously recorded to be worse than 0.3 logMAR, due to incorrect viewing distance used during testing.

Binocular UCNVA was tested at 40 cm. The IC-8 group was statistically superior to the Control group in binocular UCNVA based on a statistically significant mean difference of -0.191 logMAR ($p<0.0001$) as shown in Table 32. Further, 83.6% (280/335) of subjects in the IC-8 group achieved binocular UCNVA of 0.30 logMAR or better, yielding a 50.6% (-0.191 logMAR) difference in favor of the IC-8 group that exceeded the clinical success criteria of 50% in the IC-8 group and 25% higher than the Control group.

Table 32. Co-Primary Effectiveness Endpoints: Mean and logMAR Levels of Binocular UCNVA at 6 Months

UCNVA	**IC-8 Group (N=343)**		**Control Group (N=110)**	
M	335		100	
Mean (SD)	0.186 (0.1425)		0.377 (0.1576)	
Snellen equiv. of Mean	20/31		20/48	
Mean Difference in logMAR[a]	-0.191		--	
Mean Difference in Lines	-1.9		--	
p-value[b]	<.0001		--	
95% CI[c]	-0.223, -0.158		--	
Subjects achieving VA levels: (n/M, %)	**n/M**	**%**	**n/M**	**%**
logMAR 0.00 or better	27/335	8.1%	2/100	2.0%
logMAR 0.10 or better	111/335	33.1%	5/100	5.0%
logMAR 0.20 or better	219/335	65.4%	15/100	15.0%
logMAR 0.30 or better	280/335	83.6%	33/100	33.0%
logMAR Worse than 0.30	55/335*	16.4%	67/100**	67.0%
Difference in percentage of subjects achieving 0.3 or better logMAR (%)	50.6		--	

Not Reported	0		0	

N = Total # in the Analysis population.
M = # subjects with available data for the respective parameter.
n = # subjects with data in the respective category.
Not Reported = # subjects present at the visit with no data for the parameter (excluded from M or n).
% = n /M *100%.
[a] Mean difference in logMAR was compared between groups, and a negative value indicates IC-8 Group having better outcome.
[b] p-value based on mean logMAR difference using two-sided two-sample t-test.
[c] Two-sided 95% CI for mean logMAR difference.
*There were 17 IC-8 IOL subjects whose binocular UCNVA scores were erroneously recorded to be worse than 0.3 logMAR, due to incorrect viewing distance used during testing.
**There were 11 Control group subjects whose binocular UCNVA scores were erroneously recorded to be worse than 0.3 logMAR, due to incorrect viewing distance used during testing.

Binocular UCDVA was tested at 4 m, with a +0.25 D infinity adjustment lens in front of the eyes. The IC-8 group was non-inferior to the Control group in binocular UCDVA based on a mean difference of -0.012 logMAR, with 95% UCL of 0.007 that was below the non-inferiority margin of 0.10 logMAR ($p<0.0001$) as shown in Table 33. Further, 89.6% (300/335) of subjects in the IC-8 group achieved binocular UCDVA of 0.10 logMAR or better at 6 Months, which exceeded the 50% clinical success criteria.

Table 33. Co-Primary Effectiveness Endpoints: Mean and logMAR Levels of Binocular UCDVA at 6 Months

UCDVA	**IC-8 Group (N=343)**		**Control Group (N=110)**	
M	335		100	
Mean (SD)	-0.010 (0.1063)		0.002 (0.0992)	
Snellen equiv. of Mean	20/20		20/20	
Mean Difference in logMAR [a]	-0.012		--	
Mean Difference in Lines	-0.1		--	
p-value[b]	<.0001		--	
95% Upper CL[c]	0.007		--	
Subjects achieving VA levels: (n/M, %)	**n/M**	**%**	**n/M**	**%**
logMAR 0.00 or better	217/335	64.8%	55/100	55.0%
logMAR 0.10 or better	300/335	89.6%	92/100	92.0%
logMAR 0.20 or better	321/335	95.8%	96/100	96.0%
logMAR 0.30 or better	333/335	99.4%	99/100	99.0%
logMAR Worse than 0.30	2/335	0.6%	1/100	1.0%
Not Reported	0		0	

N = Total # in the Analysis population.
M = # subjects with available data for the respective parameter.
n = # subjects with data in the respective category.
Not Reported = # subjects present at the visit with no data for the parameter (excluded from M or n).
% = n /M *100%.
[a] Mean difference in logMAR was compared between groups, and a negative value indicates IC-8 Group having better outcome.
[b] p-value based on mean logMAR difference using one-sided two-sample t-test with non-inferiority margin of 0.1 logMAR.
[c] One-sided 95% upper CL for mean logMAR difference for binocular UCDVA less than the margin of 0.1
logMAR demonstrated non-inferiority of IC-8 group vs. Control group.

A summary of the co-primary effectiveness endpoint analyses related to binocular visual acuities are presented in Tables 34 and 35.

Table 34. Mean Binocular Photopic UCDVA, UCIVA and UCNVA, 6 Months

Mean Binocular Visual Acuity	IC-8 IOL Group			Control Group			p-value	Difference in Means IC-8 IOL Group vs. Control Group (logMAR)
	N	Mean (logMAR)	Std. Dev.	N	Mean (logMAR)	Std. Dev.		
UCDVA	335	-0.010	0.1063	100	0.002	0.0992	<.0001	-0.012
UCIVA	335	0.051	0.1629	100	0.228	0.1646	<.0001	-0.177
UCNVA	335	0.186	0.1425	100	0.377	0.1576	<.0001	-0.191

Table 35. Proportion of Subjects Achieving logMAR VA Thresholds for Binocular Photopic UCDVA, UCIVA and UCNVA, 6 Months

Binocular Visual Acuity (logMAR)	UCDVA				UCIVA				UCNVA			
	IC-8 IOL Group		Control Group		IC-8 IOL Group		Control Group		IC-8 IOL Group		Control Group	
	n/N	%	n/N	%	n/N	%	n/N	%	n/N	%	n/N	%
0.00 or better	217/335	64.8%	55/110	55.0%	154/335	46.0%	7/110	7.0%	27/335	8.1%	2/110	2.0%
0.10 or better	300/335	89.6%	92/110	92.0%	265/335	79.1%	22/110	22.0%	111/335	33.1%	5/110	5.0%
0.20 or better	321/335	95.8%	96/110	96.0%	299/335	89.3%	55/110	55.0%	219/335	65.4%	15/110	15.0%
0.30 or better	333/335	99.4%	99/110	99.0%	313/335	93.4%	79/110	79.0%	280/335	83.6%	33/110	33.0%
Worse than 0.30	2/335	0.6%	1/110	1.0%	22/335*	6.6%	21/110 **	21.0%	55/335*	16.4%	67/110 **	67.0%

*There were 19 and 17 **IC-8** IOL subjects whose binocular UCIVA and UCNVA scores were erroneously recorded to be worse than 0.3 logMAR, respectively, due to incorrect viewing distance used during testing.
**There were 11 Control group subjects whose binocular UCIVA and UCNVA scores were erroneously recorded to be worse than 0.3 logMAR, due to incorrect viewing distance used during testing.

Monocular Distance Corrected Intermediate Visual Acuity

Monocular DCIVA was tested in each eye at 66 cm, with the distance manifest refraction (with infinity adjustment) in place for that eye. This analysis compared the IC-8 IOL implanted eyes to the fellow control eyes in the IC-8 group. The IC-8 eyes were statistically superior to the fellow control eyes in monocular DCIVA based on a statistically significant mean difference of -0.180 logMAR ($p<0.0001$) as shown in Table 36. Further, 73.4% (246/335) of the eyes implanted with the IC-8 IOL achieved monocular DCIVA of logMAR 0.20 or better, exceeding the 50% clinical success criterion for this endpoint (Table 37).

Table 36. Co-Primary Effectiveness Endpoints: Mean and logMAR Levels of logMAR Monocular DCIVA at 6 Months (IC-8 Group)

DCIVA	IC-8 Eyes (N=343)	Fellow Eyes (N=343)
M	335	335
Mean (SD)	0.144 (0.1709)	0.325 (0.1687)
Snellen equiv. of Mean	20/28	20/42
Mean Difference in logMAR[a]	-0.180	--
Mean Difference in Lines	-1.8	--
p-value[b]	<.0001	--
95% CI[c]	-0.198, -0.163	--

N = Total # in the Analysis population.
M = # subjects with available data for the respective parameter.
n = # subjects with data in the respective category.
Not Reported = # subjects present at the visit with no data for the parameter (excluded from M or n).
% = n /M *100%.
[a] Mean difference in logMAR was compared within subjects between IC-8 eyes and fellow eyes in the IC-8 Group, and a negative value indicates IC-8 eyes having better outcome.
[b] p-value based on mean logMAR difference using two-sided one-sample t-test for within-subject difference.
[c] Two-sided 95% CI for mean logMAR difference.

Table 37. LogMAR Levels of Monocular Distance-corrected Intermediate Visual Acuity, 6 Months (IC-8 IOL Group)

	IC-8 IOL Eyes		Fellow Eyes	
DCIVA (logMAR)	**n/N**	**%**	**n/N**	**%**
0.00 or better	63/335	18.8%	4/335	1.2%
0.10 or better	172/335	51.3%	28/335	8.4%
0.20 or better	246/335	73.4%	90/335	26.9%
0.30 or better	299/335	89.3%	165/335	49.3%
Worse than 0.30	36/335*	10.7%	170/335*	50.7%

% = n /N *100%.
* There were 20 subjects whose monocular DCIVA scores were erroneously recorded to be worse than 0.30 log MAR for IC-8 IOL eyes and fellow eyes, due to incorrect viewing distance used during testing.

Defocus Testing

Depth of focus was performed monocularly at 3 Months in the IC-8 group (ITT population) for the co-primary endpoint at the far to near range of vision (dioptric range of +2.00 to -5.00 D), using 100% contrast ETDRS charts in the M&S CTS calibrated for 4 m test distance, with the manifest refraction (no infinity adjustment) in place for the eye being tested. The defocus power was progressively introduced in 0.50 D increments from +2.00 D to +0.50 D, then in 0.25 D increments from +0.50 D to -0.50 D and in 0.50 D increments from -0.50 D to -5.00 D, while visual acuity was measured at each successive defocus step. The criterion for success of this endpoint was based on the negative defocus range between 0.00 and -5.00 D.

In the IC-8 group, the negative intercepts of the monocular defocus curves on the 0.2 logMAR threshold line are -1.99 D for IC-8 eyes and -1.08 D for fellow control eyes, yielding a difference of 0.91 D favoring IC-8 eyes (Figure 4). This difference

between the IC-8 eyes and fellow eyes in the range of defocus on the negative defocus range at the 0.2 logMAR visual acuity threshold exceeded the protocol-defined criterion of 0.5 D in favor of the IC-8 eyes, thereby claiming the clinical success for this endpoint.

Figure 3. Monocular Defocus Curve at 3 Months (IC-8 IOL Group) (Mean, 95% CI) IC-8 Eyes and Fellow Eyes

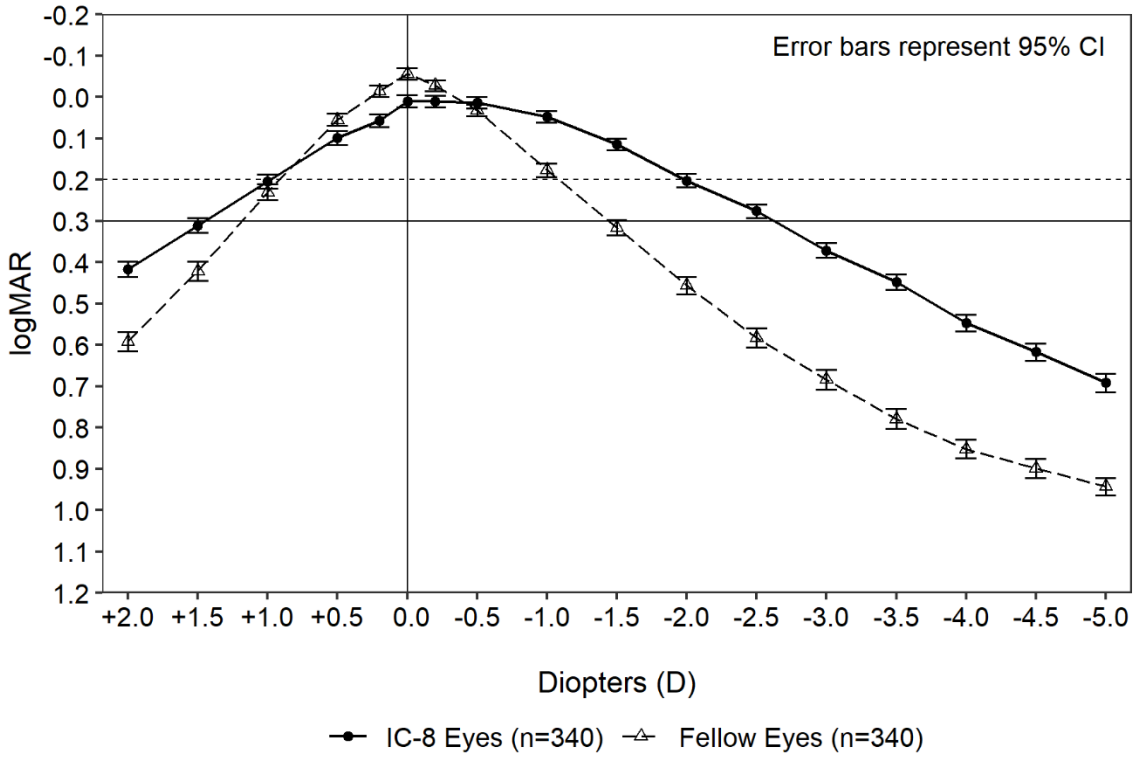
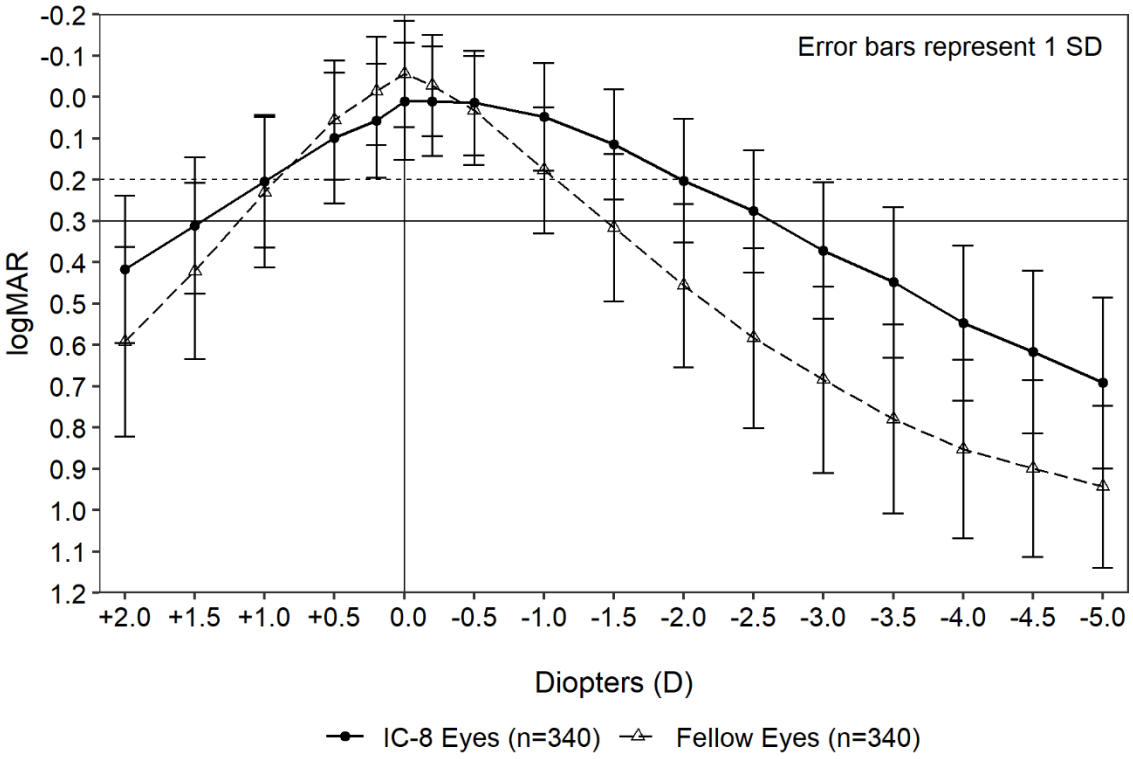


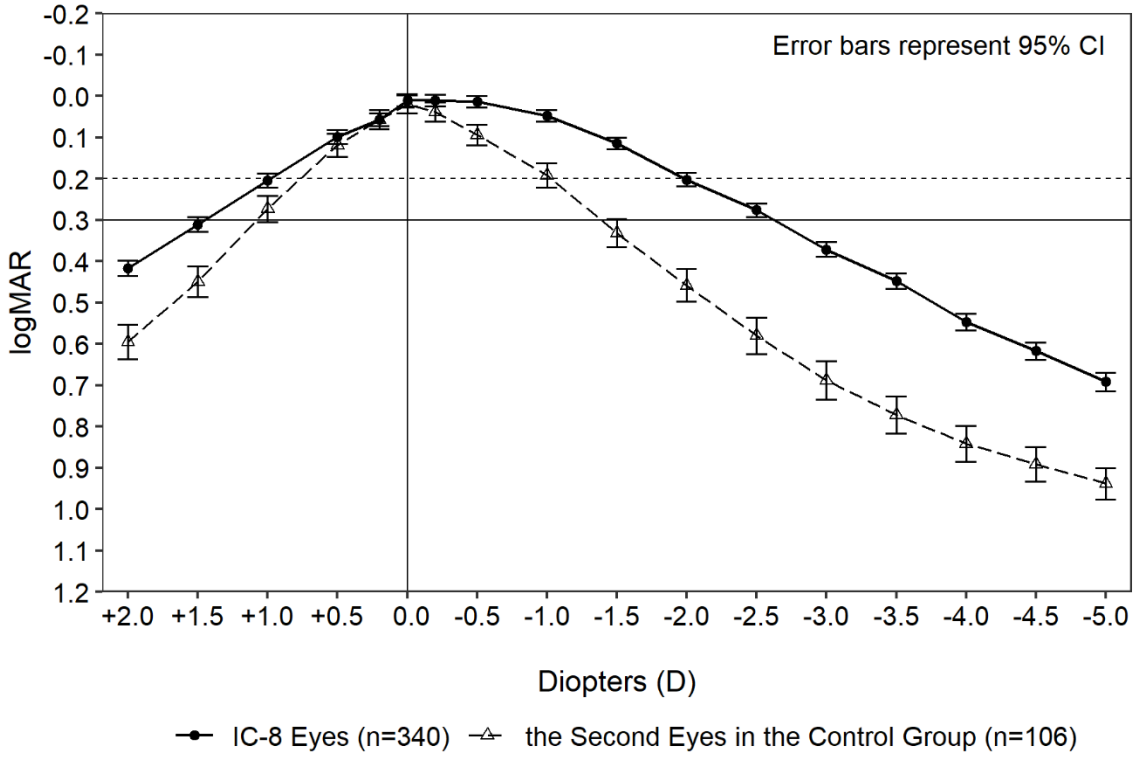
Figure 5 presents the monocular defocus curve for the IC-8 group with mean values and error bars for standard deviations.

Figure 4. Monocular Defocus Curves at 3 Months (IC-8 IOL Group) (Mean, 1 SD) IC-8 IOL and Fellow Eyes



Comparison of the IC-8 eyes in the IC-8 group and the second eyes in the Control group showed similar results with approximately 1 D difference on the negative defocus range in favor of the IC-8 eyes in the mean defocus range at the 0.2 logMAR visual acuity threshold (Figure 6).

Figure 5. Monocular Defocus Curves at 3 Months (Mean, 95% CI)
IC-8 IOL Eyes vs. the Second Eyes in the Control IOL Group



Further, defocus testing of the eyes in the IC-8 group was stratified by pupil size and indicated increasing range of vision by decreasing pupil diameter for both the IC-8 eyes (Figure 7) and fellow eyes (Figure 8).

Figure 6. Mean Monocular Defocus Curves in IC-8 IOL Eyes at 3 Months By Pupil Size Groups

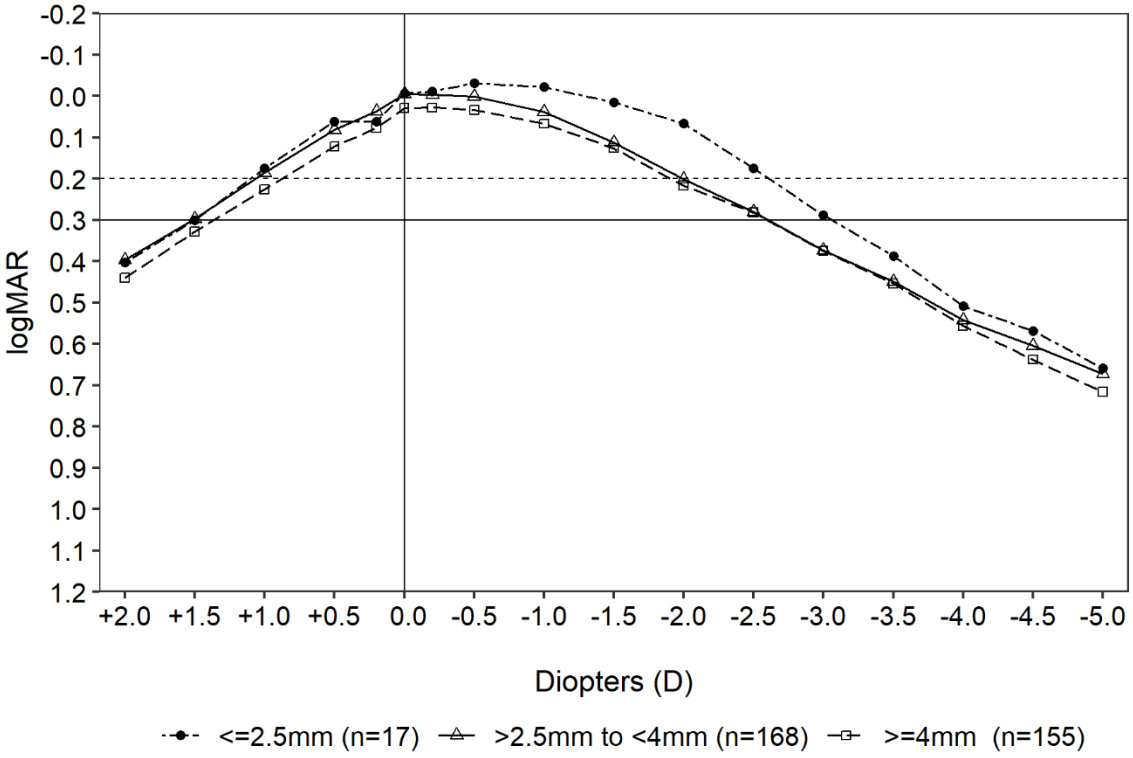
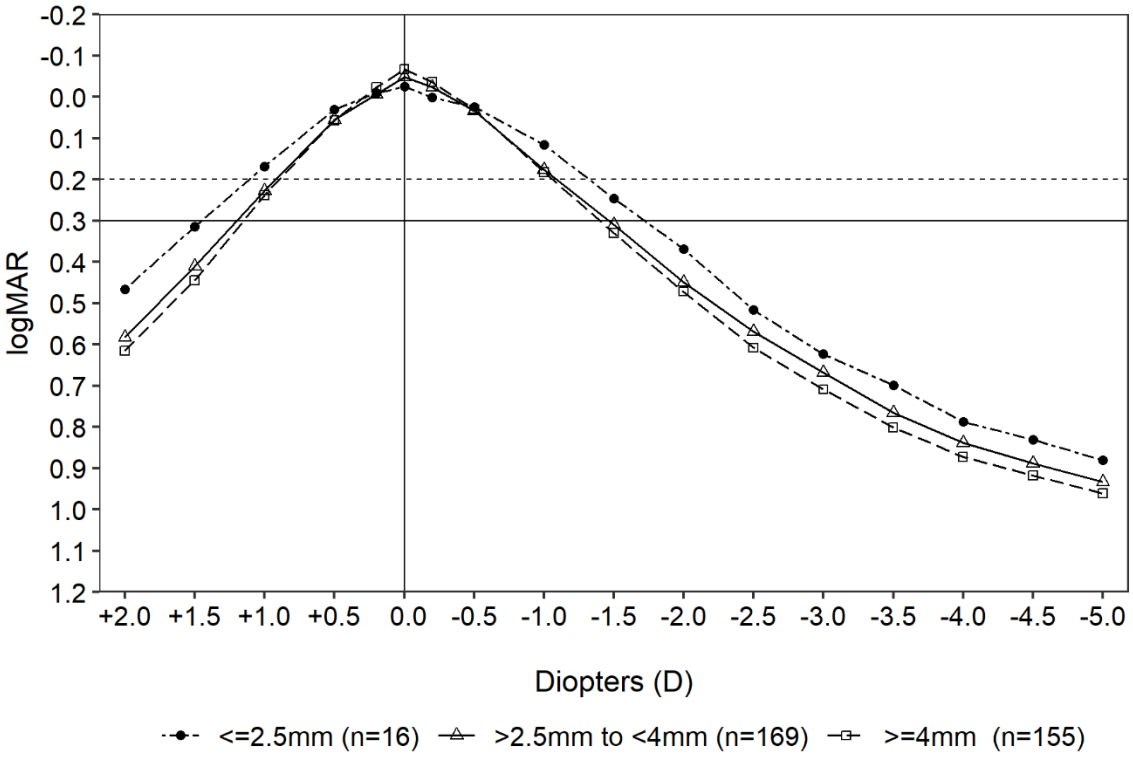


Figure 7. Mean Monocular Defocus Curves in Fellow Eyes (IC-8 IOL group) at 3 Months By Pupil Size Groups



Secondary Effectiveness Endpoint Results

The measurement of the secondary effectiveness endpoint of monocular UCDVA was conducted under photopic conditions using ETDRS charts produced in a computerized test system (CTS, M&S Technologies, Niles, IL). Visual acuity data were collected at far distance (4 m).

Assessment of Astigmatism

The secondary effectiveness endpoint compared monocular UCDVA results in the mITT population (IC-8 eyes achieving BCDVA 20/25 or better), between Astigmatism Group 1 (eyes with < 1.0 D of preoperative corneal astigmatism) and Astigmatism Group 2 (eyes with 1.0 D to 1.5 D of preoperative corneal astigmatism) at 3 Months. Subjects were grouped into Astigmatism Group 1 or 2 based on the preoperative corneal astigmatism in the second implanted eyes. As demonstrated in Table 38, statistically non-inferiority in monocular UCDVA of Astigmatism Group 2 compared to Astigmatism Group 1 was established (mean difference of 0.023 logMAR; p <0.0001). Additional exploratory analyses were performed, which show that the difference in UCIVA and UCNVA between Astigmatism Group 1 and Astigmatism Group 2 was within 0.1 logMAR. The results were calculated in the mITT population, including all eyes implanted with the IC-8 IOL that achieved BCDVA 20/25 or better.

Table 38. Mean logMAR Monocular UCDVA, UCIVA, and UCNVA by Preoperative Corneal Astigmatism Group in IC-8 IOL Eyes with BCDVA 20/25 or better at 3 Months

Mean Monocular Visual Acuity	UCDVA		UCIVA		UCNVA	
	ASTG Group 1 (N=244)	ASTG Group 2 (N=65)	ASTG Group 1 (N=244)	ASTG Group 2 (N=65)	ASTG Group 1 (N=244)	ASTG Group 2 (N=65)
Mean	0.085	0.108	0.057	0.134	0.186	0.217
SD	0.1269	0.1208	0.1762	0.2302	0.1281	0.1487
Snellen	20/24	20/26	20/23	20/27	20/31	20/33
Mean Diff. in logMAR	--	0.023	--	0.077	--	0.031
p-value	--	<.0001	--	N/A	--	N/A

ASTG Group = Preoperative Corneal Astigmatism Group

These analyses supported the performance of the IC-8 IOL in eyes with up to 1.5D of preoperative corneal astigmatism.

Additional Effectiveness Results

Simulated Monovision: +0.75D Distance-Corrected Visual Acuity

This assessment was performed at 6 Months with the best distance manifest refraction (infinity adjusted for each testing distance) in place for both eyes in each group, and a +0.75 D lens added in front of the IC-8 eyes in the IC-8 IOL group and in front of the second eyes in the Control group. The intention of this comparison was to simulate the intended target of -0.75 D for the IC-8 IOL eye in the IC-8 IOL group and to compare visual acuity results if the Control group had the same refractive mini-monovision target. Mean monocular and binocular +0.75D DCIVA, +0.75D DCNVA and +0.75D DCDVA were measured at 6 Months. All +0.75D distance-corrected visual acuity results met the pre-specified performance targets (Tables 39-41). Mean +0.75D DCDVA, +0.75D DCIVA and +0.75D DCNVA in IC-8 IOL eyes were 0.133, 0.071, and 0.183 logMAR, respectively.

Table 39. Snellen Levels of Monocular and Binocular +0.75D Distance-Corrected Intermediate Visual Acuity at 6 Months

+0.75D DCIVA (Snellen)	Monocular†				Binocular††			
	IC-8 Group IC-8 Eyes		Control Group Second Eyes		IC-8 Group		Control Group	
	n/N (%)		n/N (%)		n/N (%)		n/N (%)	
20/20 or better	147/335	43.9%	6/100	6.0%	188/335	56.1%	18/100	18.0%
20/25 or better	240/335	71.6%	24/100	24.0%	278/335	83.0%	56/100	56.0%
20/32 or better	286/335	85.4%	56/100	56.0%	307/335	91.6%	74/100	74.0%

20/40 or better	301/335	89.9%	76/100	76.0%	310/335	92.5%	85/100	85.0%
Worse than 20/40	34/335*	10.1%	24/100**	24.0%	25/335*	7.5%	15/100**	15.0%
Difference in percentage of eyes/subjects achieving 20/25 or better (%)	47.6		--		27.0		--	

*There were 20 IC-8 IOL subjects whose monocular and binocular +0.75D DCIVA scores were erroneously recorded to be worse than 20/40, due to incorrect viewing distance used during testing.
**There were 11 Control group subjects whose monocular and binocular +0.75D DCIVA scores were erroneously recorded to be worse than 20/40, due to incorrect viewing distance used during testing.
† Monocular performance target: 25% more IC-8 IOL eyes achieving 20/25 or better +0.75D DCIVA versus control eyes.
†† Binocular performance target: 25% more IC-8 group subjects achieving 20/25 or better +0.75D DCIVA versus control group.
Snellen equivalent visual acuity categories in this analysis are defined with whole-line binning, e.g., Snellen 20/20 or better is equivalent to logMAR 0.00 or better.

Table 40. Snellen Levels of Monocular and Binocular +0.75D Distance-Corrected Near Visual Acuity at 6 Months

+0.75D DCNVA (Snellen)	Monocular†				Binocular††			
	IC-8 Group IC-8 Eyes		Control Group Second Eyes		IC-8 Group		Control Group	
	n/N	(%)	n/N	(%)	n/N	(%)	n/N	(%)
20/20 or better	33/335	9.9%	0/100	0.0%	37/335	11.0%	1/100	1.0%
20/25 or better	116/335	34.6%	3/100	3.0%	141/335	42.1%	6/100	6.0%
20/32 or better	210/335	62.7%	10/100	10.0%	246/335	73.4%	30/100	30.0%
20/40 or better	280/335	83.6%	30/100	30.0%	300/335	89.6%	58/100	58.0%
Worse than 20/40	55/335*	16.4%	70/100**	70.0%	35/335*	10.4%	42/100**	42.0%
Difference in percentage of eyes/subjects achieving 20/40 or better (%)	53.6		--		31.6		--	

*There were 15 IC-8 IOL subjects whose monocular and binocular +0.75D DCNVA scores were erroneously recorded to be worse than 20/40, due to incorrect viewing distance used during testing.
**There were 9 Control group subjects whose monocular and binocular +0.75D DCNVA scores were erroneously recorded to be worse than 20/40, due to incorrect viewing distance used during testing.
† Monocular performance target: 25% more IC-8 IOL eyes achieving 20/40 or better +0.75D DCNVA versus control eyes.
†† Binocular performance target: 25% more IC-8 group subjects achieving 20/40 or better +0.75D DCNVA versus control group.
Snellen equivalent visual acuity categories in this analysis are defined with whole-line binning, e.g., Snellen 20/20 or better is equivalent to logMAR 0.00 or better.

Table 41. Snellen Levels of Monocular and Binocular +0.75D Distance-Corrected Distance Visual Acuity at 6 Months

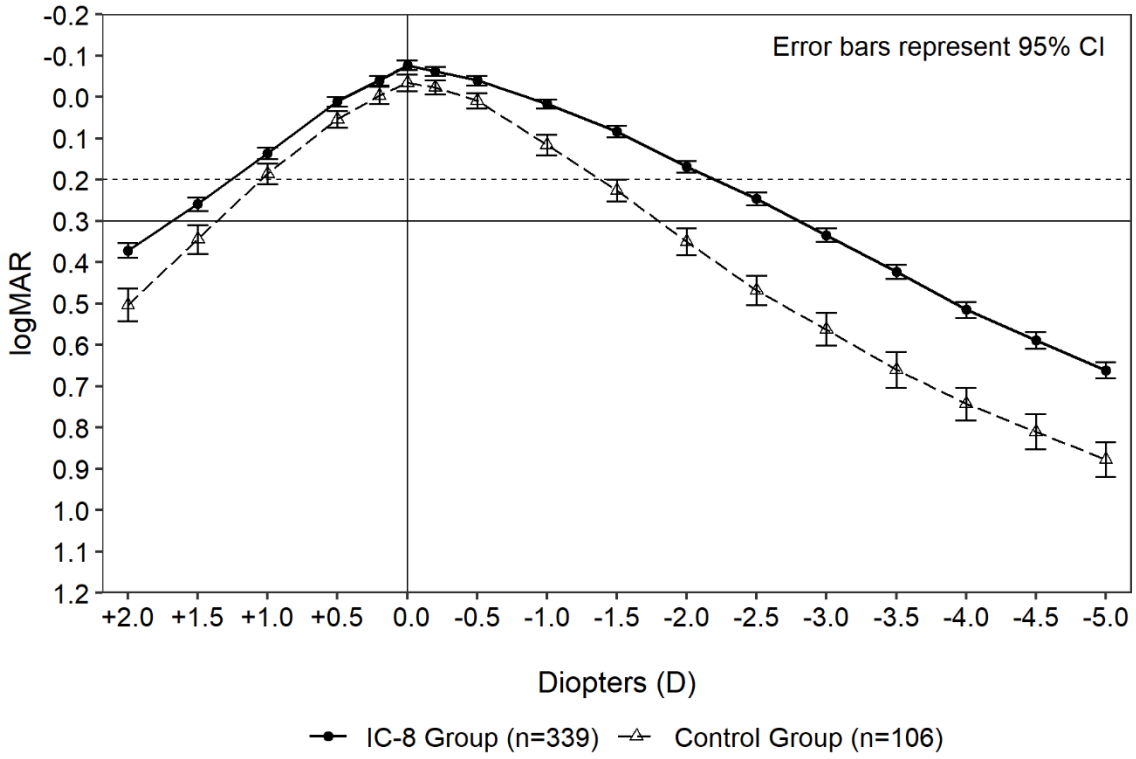
+0.75D DCDVA (Snellen)	Monocular†				Binocular††			
	IC-8 Group IC-8 Eyes		Control Group Second Eyes		IC-8 Group		Control Group	
	n/N	(%)	n/N	(%)	n/N	(%)	n/N	(%)
20/20 or better	67/335	20.0%	10/100	10.0%	125/335	37.3%	14/100	14.0%
20/25 or better	156/335	46.6%	36/100	36.0%	239/335	71.3%	56/100	56.0%
20/32 or better	263/335	78.5%	71/100	71.0%	316/335	94.3%	81/100	81.0%
20/40 or better	309/335	92.2%	91/100	91.0%	331/335	98.8%	99/100	99.0%
Worse than 20/40	26/335	7.8%	9/100	9.0%	4/335	1.2%	1/100	1.0%
Difference in percentage of eyes/subjects achieving 20/25 or better (%)	10.6		--		15.3		--	

† Monocular performance target: the percentage of IC-8 IOL eyes achieving 20/25 or better +0.75D DCDVA not less than control eyes by more than 10%.
†† Binocular performance target: the percentage of IC-8 group subjects achieving 20/25 or better +0.75D DCDVA not less than control group by more than 10%.

Binocular Defocus Testing

Binocular defocus testing also demonstrated a greater depth of focus for the IC-8 group compared to the Control group at the 0.2 logMAR threshold (Figure 9). The negative intercepts of the binocular defocus curves on the 0.2 logMAR threshold line are -2.21 D for IC-8 Group and -1.38 D for the Control Group, yielding a difference of 0.82 D favoring the IC-8 group.

Figure 8. Binocular Defocus Curves at 3 Months (Mean, 95% CI)
IC-8 IOL Group and Control group



Binocular Visual Accuity

Mean binocular BCDVA, DCIVA, and DCNVA for the IC-8 IOL group and Control group are presented in Table 42, and categorical Snellen and logMAR visual acuities are presented in Table 43 and Table 44, respectively.

Table 42. Mean Binocular Photopic BCDVA, DCIVA and DCNVA, 6 Months

Mean Binocular Visual Acuity	IC-8 IOL Group			Control Group		
	N	Mean (logMAR)	Std. Dev.	N	Mean (logMAR)	Std. Dev.
BCDVA	335	-0.084	0.0902	100	-0.068	0.0778
DCIVA	335	0.113	0.1534	100	0.288	0.1611
DCNVA	335	0.265	0.1416	100	0.427	0.1503

Table 43. Proportion of Subjects Achieving Snellen Visual Acuity Thresholds for Binocular Photopic BCDVA, DCIVA and DCNVA, 6 Months

Binocular Distance-corrected Visual Acuity (Snellen)	IC-8 Group (N=335)		Control Group (N=100)	
	n	%	n	%
BCDVA				
$20/20^{-2}$ or better	318	94.9%	93	93.0%
$20/25^{-2}$ or better	332	99.1%	99	99.0%
$20/32^{-2}$ or better	334	99.7%	100	100.0%
$20/40^{-2}$ or better	334	99.7%	100	100.0%
Worse than $20/40^{-2}$	1	0.3%	0	0.0%
DCIVA				
$20/20^{-2}$ or better	134	40.0%	2	2.0%
$20/25^{-2}$ or better	247	73.7%	15	15.0%
$20/32^{-2}$ or better	292	87.2%	45	45.0%
$20/40^{-2}$ or better	307	91.6%	72	72.0%
Worse than $20/40^{-2}$	28*	8.4%	28**	28.0%
DCNVA				
$20/20^{-2}$ or better	15	4.5%	0	0.0%
$20/25^{-2}$ or better	74	22.1%	1	1.0%
$20/32^{-2}$ or better	164	49.0%	10	10.0%
$20/40^{-2}$ or better	252	75.2%	33	33.0%
Worse than $20/40^{-2}$	83*	24.8%	67**	67.0%

Binocular Distance-corrected Visual Acuity (Snellen)	IC-8 Group (N=335)		Control Group (N=100)	
	n	%	n	%
Snellen VA was converted from logMAR VA. A Snellen notation of $20/20^{-2}$ or better is equivalent to a logMAR VA of 0.04 or better, which means 3 or more of the 5 ETDRS chart letters in the line were identified correctly. *There were 19 and 18 IC-8 IOL subjects whose binocular DCIVA and DCNVA scores were erroneously recorded to be worse than $20/40^{-2}$, respectively, due to incorrect viewing distance used during testing. **There were 11 Control group subjects whose binocular DCIVA and DCNVA scores were erroneously recorded to be worse than $20/40^{-2}$, due to incorrect viewing distance used during testing.				

Table 44. Proportion of Subjects Achieving logMAR Visual Acuity Thresholds for Binocular Photopic BCDVA, DCIVA and DCNVA at 6 Months

Binocular Distance-Corrected Visual Acuity (logMAR)	IC-8 Group (N=335)		Control Group (N=100)	
	n	%	n	%
BCDVA				
0.00 or better	297	88.7%	87	87.0%
0.10 or better	330	98.5%	98	(98.0%
0.20 or better	333	99.4%	100	100.0%
0.30 or better	334	99.7%	100	100.0%
Worse than 0.30	1	0.3%	0	0.0%
DCIVA				
0.00 or better	81	24.2%	1	1.0%
0.10 or better	207	61.8%	11	11.0%
0.20 or better	272	81.2%	40	40.0%
0.30 or better	306	91.3%	60	60.0%
Worse than 0.30	29*	8.7%	40**	40.0%
DCNVA				
0.00 or better	5	1.5%	0	0.0%
0.10 or better	48	14.3%	1	1.0%
0.20 or better	130	38.8%	7	7.0%
0.30 or better	225	67.2%	27	27.0%
Worse than 0.30	110*	32.8%	73**	73.0%

Binocular Distance-Corrected Visual Acuity (logMAR)	IC-8 Group (N=335)		Control Group (N=100)	
	n	%	n	%
*There were 19 and 20 IC-8 IOL subjects whose binocular DCIVA and DCNVA scores were erroneously recorded to be logMAR worse than 0.30, respectively, due to incorrect viewing distance used during testing. **There were 11 Control group subjects whose binocular DCIVA and DCNVA scores were erroneously recorded to be logMAR worse than 0.30, due to incorrect viewing distance used during testing.				

Monocular Visual Acuity

Results of the monocular photopic BCDVA, DCIVA, and DCNVA for the IC-8 IOL eyes and the fellow monofocal/monofocal toric IOL eyes at 6 Months post-implantation are presented in Table 45. The IC-8 IOL eyes achieved mean monocular photopic DCNVA with a difference of 0.217 lines over the fellow monofocal/monofocal toric IOL eyes (Table 45). The median monocular photopic DCNVA value was 0.300 logMAR for the IC-8 IOL eyes at 6 Months post-implantation. Results of monocular photopic uncorrected visual acuities are presented in Tables 46-48.

Table 45. Mean Monocular Photopic BCDVA, DCIVA and DCNVA, 6 Months (IC-8 IOL Group)

Mean Monocular Visual Acuity	IC-8 IOL Eyes			Fellow Eyes			p-value	Mean Difference IC-8 IOL Eyes vs. Fellow Eyes (logMAR)
	N	Mean (logMAR)	Std. Dev.	N	Mean (logMAR)	Std. Dev.		
BCDVA	335	0.008	0.1130	335	-0.066	0.1006	N/A	0.074
DCIVA	335	0.144	0.1709	335	0.325	0.1687	<.0001	-0.180
DCNVA	335	0.302	0.1441	335	0.519	0.1621	N/A	-0.217

Table 46. Mean Monocular Photopic UCDVA, UCIVA and UCNVA, 6 Months (IC-8 IOL Group)

Mean Monocular Visual Acuity	IC-8 IOL Eyes			Fellow Eyes		
	N	Mean (logMAR)	Std. Dev.	N	Mean (logMAR)	Std. Dev.
UCDVA	335	0.128	0.1420	335	0.034	0.1259
UCIVA	335	0.081	0.1881	335	0.292	0.1801
UCNVA	335	0.206	0.1569	335	0.483	0.1689

Table 47. Proportion of Subjects Achieving Snellen Visual Acuity Thresholds for Monocular Photopic UCDVA, UCIVA and UCNVA, 6 Months (IC-8 IOL Group)

Monocular Uncorrected Visual Acuity (Snellen)	IC-8 Eyes		Fellow Eyes	
	n/N	%	n/N	%
UCDVA				
$20/20^{-2}$ or better	97/335	29.0%	192/335	57.3%
$20/25^{-2}$ or better	201/335	60.0%	279/335	83.3%
$20/32^{-2}$ or better	282/335	84.2%	316/335	94.3%
$20/40^{-2}$ or better	318/335	94.9%	331/335	98.8%
Worse than $20/40^{-2}$	17/335	5.1%	4/335	1.2%
UCIVA				
$20/20^{-2}$ or better	177/335	52.8%	18/335	5.4%
$20/25^{-2}$ or better	264/335	78.8%	72/335	21.5%
$20/32^{-2}$ or better	299/335	89.3%	167/335	49.9%
$20/40^{-2}$ or better	310/335	92.5%	222/335	66.3%
Worse than $20/40^{-2}$	25/335*	7.5%	113/335**	33.7%
UCNVA				
$20/20^{-2}$ or better	52/335	15.5%	0/335	0.0%
$20/25^{-2}$ or better	137/335	40.9%	3/335	0.9%
$20/32^{-2}$ or better	225/335	67.2%	31/335	9.3%
$20/40^{-2}$ or better	279/335	83.3%	74/335	22.1%
Worse than $20/40^{-2}$	56/335*	16.7%	261/335**	77.9%

Snellen VA was converted from logMAR VA. A Snellen notation of $20/20^{-2}$ or better is equivalent to a logMAR VA of 0.04 or better, which means 3 or more of the 5 ETDRS chart letters in the line were identified correctly.
*There were 20 and 18 **IC-8** IOL eyes whose monocular UCIVA and UCNVA scores were erroneously recorded to be worse than $20/40^{-2}$, respectively, due to incorrect viewing distance used during testing.
**There were 20 fellow eyes whose monocular UCIVA and UCNVA scores were erroneously recorded to be worse than $20/40^{-2}$, due to incorrect viewing distance used during testing.

Table 48. Proportion of Subjects Achieving logMAR Visual Acuity Thresholds for Monocular Photopic UCDVA, UCIVA and UCNVA at 6 Months (IC-8 IOL Group)

Monocular Uncorrected Visual Acuity (logMAR)	IC-8 Eyes		Fellow Eyes	
	n/N	%	n/N	%
UCDVA				
0.00 or better	68/335	20.3%	155/335	46.3%
0.10 or better	159/335	47.5%	261/335	77.9%
0.20 or better	264/335	78.8%	307/335	91.6%
0.30 or better	307/335	91.6%	327/335	97.6
Worse than 0.30	28/335	8.4%	8/335	2.4%
UCIVA				
0.00 or better	135/335	40.3%	9/335	2.7%
0.10 or better	234/335	69.9%	48/335	14.3%
0.20 or better	291/335	86.9%	129/335	38.5%
0.30 or better	308/335	91.9%	206/335	61.5%
Worse than 0.30	27/335*	8.1%	129/335**	38.5%
UCNVA				
0.00 or better	22/335	6.6%	0/335	0.0%
0.10 or better	98/335	29.3%	1/335	0.3%
0.20 or better	192/335	57.3%	16/335	4.8%
0.30 or better	263/335	78.5%	57/335	17.0%
Worse than 0.30	72/335*	21.5%	278/335**	83.0%

*There were 20 **IC-8** IOL eyes whose monocular UCIVA and UCNVA scores were erroneously recorded to be logMAR worse than 0.30, due to incorrect viewing distance used during testing.
There were 20 fellow eyes in the **IC-8 Group whose monocular UCIVA and UCNVA scores were erroneously recorded to be logMAR worse than 0.30, due to incorrect viewing distance used during testing.

3. Subgroup Analyses

Evaluation of visual acuity outcomes by investigational site showed similar results at all sites except for one site where a protocol deviation was recorded. Exploratory multivariate regression analyses on combined mean distance, intermediate and near visual acuities in IC-8 eyes were generated using the covariates listed in the Statistical Analysis Plan, including but not limited to demographic parameters (age, sex, race/ethnicity, iris color), photopic pupil size, preoperative ocular surface assessments, biometry measurements, surgical techniques. The resulted significant covariates including age, sex, preoperative tear break-up time, preoperative photopic pupil size and capsulorhexis method were selected to stratify monocular and binocular uncorrected visual acuities for IC-8 group and Control group. These stratification analyses showed minimal mean differences of <0.05 logMAR across groups for all the stratification parameters on all assessed visual acuities in the IC-8 group, except for a mean difference of 0.02 – 0.08 logMAR in monocular visual acuities and 0.04 - 0.09 logMAR in binocular visual acuities between the oldest age group and the youngest age group (Age ≥ 80 vs. age < 60) (excluding one site with the protocol deviation), indicating that the differences between stratification groups were all below the 0.1 logMAR clinically significant threshold.

4. Pediatric Extrapolation

In this premarket application, existing clinical data were not leveraged to support approval of a pediatric patient population.

XI. Financial Disclosure

The Financial Disclosure by Clinical Investigators regulation (21 CFR 54) requires applicants who submit a marketing application to include certain information concerning the compensation to, and financial interests and arrangements of, any clinical investigator conducting clinical studies covered by the regulation. The pivotal clinical study included 34 principal and sub-investigators (ophthalmic surgeons) of which none were full-time or part-time employees of the sponsor and 7 had disclosable financial interests/arrangements as defined in 21 CFR 54.2(a), (b), (c) and (f) and described below:

- Compensation to the investigator for conducting the study where the value could be influenced by the outcome of the study: 0 investigators
- Significant equity interest held by investigator in sponsor of covered study: 7 investigators
- Proprietary interest in the product tested held by the investigator: 0 investigators

- Significant payment of other sorts: 0

The applicant has adequately disclosed the financial interest/arrangements with clinical investigators and described steps to address risk of bias. Statistical analyses were conducted by FDA to determine whether the financial interests/arrangements had any impact on the clinical study outcome. The information provided does not raise any questions about the reliability of the data.

XII. PANEL MEETING RECOMMENDATION AND FDA'S POST-PANEL ACTION

In accordance with the provisions of section 515(c)(3) of the Act as amended by the Safe Medical Devices Act of 1990, this PMA was not referred to the Ophthalmic Devices Panel, an FDA advisory committee, for review and recommendation because the information in the PMA substantially duplicates information previously reviewed by this panel.

XIII. CONCLUSIONS DRAWN FROM PRECLINICAL AND CLINICAL STUDIES

A. Effectiveness Conclusions

The overall effectiveness of the IC-8 Apthera IOL was demonstrated based on the 12-month results of the IDE clinical investigation. The co-primary effectiveness endpoints were met, with both statistically significant and clinically meaningful differences between the IC-8 device and control devices. The IC-8 group was statistically superior to the Control group in mean binocular UCIVA and UCNVA and was statistically non-inferior to the Control group in mean binocular UCDVA. The eyes implanted with an IC-8 Apthera IOL were statistically superior in monocular DCIVA, compared with the fellow eyes implanted with control devices in the IC-8 group. The IC-8 eyes had improved monocular depth of focus by 0.91 D, compared with the fellow eyes (control IOL) in the IC-8 group. Pre-specified clinical success criteria for these co-primary effectiveness endpoints were also met. The mean monocular UCDVA results in the mITT population (IC-8 eyes achieving BCDVA 20/25 or better), between Astigmatism Group 1 (eyes with < 1.0 D of preoperative corneal astigmatism) and Astigmatism Group 2 (eyes with 1.0 D to 1.5 D of preoperative corneal astigmatism) demonstrated non-inferiority of Astigmatism Group 2 to Astigmatism Group 1. In addition, mean monocular UCDVA and UCNVA did not show clinically meaningful differences between IC-8 eyes in Astigmatism Groups 1 and Astigmatism Group 2. Therefore, this effectiveness dataset provides a reasonable assurance of effectiveness of the IC-8 Apthera IOL for the intended population.

B. Safety Conclusions

The risks of the device are based on non-clinical laboratory studies as well as a primary clinical study conducted to support PMA approval as described above.

The 12-month results of the IDE clinical investigation of the IC-8 Apthera IOL provide reasonable assurance of the safety of this lens model. All co-primary safety endpoints, except the rate of cumulative SSIs, met the pre-defined success criteria. For the ISO 11979-7 historical control categories of adverse events (SPE categories of cumulative and persistent adverse events), the IC-8 eyes were found to not be statistically significantly inferior to the historical control rates, with the exception of cumulative total secondary surgical interventions. The IC-8 eyes were statistically non-inferior to the fellow control eyes in the IC-8 group in mean monocular BCDVA. The secondary safety endpoint of monocular (within-subject) contrast sensitivity showed reduced contrast sensitivity results in the IC-8 eyes compared to fellow eyes (control IOL) in the IC-8 Group. More than half of subjects in the IC-8 Group experienced a clinically significant negative difference in contrast sensitivity between their IC-8 eye and control eye in every lighting condition. In the control group, this rate was never higher than 23.2% for a given lighting condition. However, binocular (between-groups) contrast sensitivity results for the IC-8 group showed only a slightly reduction compared to the Control group. Visual disturbances of glare, halo, starburst, and blurry vision were reported as more frequent, severe and bothersome in subjects implanted with the IC-8 device compared to subjects in the control group, who were bilaterally implanted with control devices.

The FilterRing component of the IC-8 device created some difficulty for some Investigators when performing Nd:YAG laser capsulotomy SSIs, requiring additional SSIs to remove posterior capsular remnants, or resulting in laser damage to the IC8 IOL. Subjects with laser damage to the IC-8 IOL reported increased rates of subjective visual disturbances compared to subjects with non-damaged IC-8 IOLs. Overall, subjects who required additional SSIs due to YAG laser treatment difficulties still achieved satisfactory visual outcomes. Additional risks of the IC-8 device included difficulty diagnosing and managing eye diseases, such as retinal diseases and glaucoma, as well as the potential need for device removal and its associated risks.

The clinical study results from the pivotal trial provide a reasonable assurance of device safety.

C. Benefit-Risk Determination

The probable benefits of the device are based on data collected in a clinical study conducted to support PMA approval as described above. This study has demonstrated statistically significant and clinically meaningful results in favor of the IC-8 Apthera IOL and support the assessment that the IC-8 Apthera IOL provides several benefits over a monofocal IOL that include extended depth of focus for subjects with up to 1.5 D of preoperative corneal astigmatism.

The probable risks of the device are also based on data collected in a clinical study conducted to support PMA approval as described above. There was an increased incidence of visual disturbances in the IC-8 IOL group compared to the control group. Difficulty with performing YAG laser capsulotomy SSIs required additional SSIs to treat adverse events.

Additional factors considered in determining probable risks and benefits for the IC-8 IOL include:

- The risks associated with the optical design include visual symptoms, such as glare, halos and starbursts. Some of these may make some tasks such as driving, more difficult under certain circumstances. These issues are mitigated by labeling which informs users of these risks and quantifies them.

- The risks of SSIs and IOL damage due to difficulty performing YAG laser treatments. These risks were mitigated by a labeling Contraindication for subjects with dilated pupil size less than 7mm, labeling Warnings regarding the risks associated with YAG laser treatment, and a post-market requirement for surgeon training for YAG capsulotomy. The rates of vitrectomy and explant were low in the IDE study, and these rates support a reasonable assurance of device safety. However, there remains uncertainty in these data due to the small sample size of subjects who received YAG laser treatment. These risks will be mitigated by a post-approval study. In the post-approval study, a more robust surgeon training program for the treatment of PCO will be created, and the safety of the IC-8 device after PCO treatment will be verified.

- The risk associated with difficulty in diagnosing and treating retinal conditions. This risk is mitigated by labeling Contraindications for (1) Subjects with a history of retinal disease including but not limited to, high myopia, diabetes, macular disease, sickle cell disease, retinal tear, retinal detachment, retinal vein occlusion, ocular tumor, uveitis, and subjects who are predisposed to experiencing retinal disease in the future and (2) Subjects with dilated pupil size less than 7mm. The risk is also mitigated with labeling

Warnings.

Risks are also mitigated by the fact that the device is intended to be implanted in only one eye. Careful patient selection according to the labeling and a thorough informed consent process will be of the utmost importance.

1. Patient perspectives

   The study collected patient reported outcome measures (using questionnaires and non-directed questioning) that evaluated patient reports of visual symptoms and satisfaction with the IOL.

In conclusion, given the available information above, the data support that for the IC-8 IOL's indication for use:

> "The IC-8 Apthera IOL is indicated for unilateral implantation for the visual correction of aphakia and to create monovision in patients of age 22 or older who have been diagnosed with bilateral operable cataract, who have up to 1.5 D of astigmatism in the implanted eye, and who do not have a history of retinal disease and who are not predisposed to experiencing retinal disease in the future. The device is intended for primary implantation in the capsular bag, in the non-dominant eye, after the fellow eye has already undergone successful implantation (uncorrected distance visual acuity 20/32 or better and best-corrected distance visual acuity 20/25 or better) of a monofocal or monofocal toric IOL that is targeted for emmetropia. The refractive target for the IC-8 Apthera IOL should be -0.75 D. The lens mitigates the effects of presbyopia by providing an extended depth of focus. Compared to an aspheric monofocal or monofocal toric IOL, the lens provides improved intermediate and near visual acuity, while maintaining comparable distance visual acuity;"

The probable benefits outweigh the probable risks.

D. Overall Conclusions

The data in this application support the reasonable assurance of safety and effectiveness of this device when used in accordance with the indications for use. Key effectiveness endpoints related to near, intermediate, and distance visual acuity were met, demonstrating the ability of the IC-8 Apthera IOL to mitigate the effects of presbyopia by providing clinically meaningful improvements in intermediate visual acuity and near visual acuity, compared to an aspheric monofocal IOL. Adverse events compared favorably to the SPE rates established in an FDA-recognized international standard (ISO 11979-7:2014), with the exception of total

SSIs. Based on all available data, the probable benefits of using the IC-8 IOL outweigh the probable risks. A significant portion of the patient population achieved clinically meaningful results.

XIV. CDRH DECISION

CDRH issued an approval order on July 22, 2022. The final clinical conditions of approval cited in the approval order are described below.

1. Post-Approval Study—Continuation Study "SAIL-101-PAS (continuation of IDE study G180075)." This study will be conducted as per the protocol outline in our November 16, 2021 email. On November 17, 2021, you agreed to conduct a study as follows:

   The continuation study, previously conducted per protocol SAIL-101-UNI approved under IDE G180075, is a prospective, single-arm, multi-center observational study. All available subjects from the IDE study who were successfully implanted with the IC-8® Apthera™ IOL in one eye and a monofocal or monofocal toric IOL in the fellow eye will be eligible to enroll in the continuation study. Subjects will be followed 3 years postoperatively. The study is designed to evaluate the long-term safety of the IC-8® Apthera™ IOL. All 343 IC-8® Apthera™ IOL subjects from the IDE study are intended to be re-consented at 21 sites, to ensure at least 300 subjects with 3-year data post-implantation are available for analysis.

   Data on the 2-year assessments will be obtained from medical records. The final scheduled follow-up visit will be at 3-years post-IOL implantation.

   The primary safety endpoints are:

   - Rates of Secondary Surgical Interventions (SSI), by type of SSI)
   - Rate of eyes with other types of serious adverse events using analyses in ISO 11979-7 historical grid Table E.2-Posterior chamber IOL adverse events
   - Rate of subjective visual disturbances

   Descriptive statistics will be used to analyze the primary and secondary safety endpoints related to cumulative adverse event rates, including analysis of the two-sided 95% Confidence Intervals.

   Milestones to be met for the reconsent process from the time of PAS protocol approval:

   - First subject enrolled within 4 months
   - 20% of subjects enrolled within 12 months
   - 50% of subjects enrolled within 15 months
   - 100% of subjects enrolled within 18 months
   - Submission of Final study report: 3 months from study completion (i.e., last

subject, last follow-up date)

2. Post-Approval Study—New Enrollment Study "IC-8 Apthera IOL New Enrollment Post Approval Study." This study will be conducted as per the protocol outlined in our November 16, 2021 email. On November 17, 2021, you agreed to conduct a study as follows:

   This This study will be conducted in two phases:

   Phase A: Surgeon-Training Program. Before starting enrollment for Phase B of the PAS, you will perform non-interventional, qualitative research to create a clinician-focused training program for the treatment of Posterior Capsular Opacity (PCO), an expected complication related to IC-8® Apthera™ IOL implantation. The objective of Phase A is to develop a clinician-focused training program that ensures proper training for the treatment of PCO.

   Phase B: New Enrollment. This Phase will begin after development of the surgical training plan in Phase A is completed and has been accepted by FDA. The objective of Phase B will be to verify the safety of the IC-8® Apthera™ IOL after the treatment of PCO.

   Phase B is a prospective, multi-center, single-group, non-randomized new enrollment post-approval study to assess post-market safety of the IC-8® Apthera™ IOL. The study objective is to verify the post-market safety of the IC-8® Apthera™ IOL after the treatment of PCO, an expected complication related to IC-8® Apthera™ IOL implantation.

   The study population will include subjects implanted with the IC-8® Apthera™ IOL in accordance with the Directions for Use. Subjects enrolled will be those that have developed PCO following IC-8® Apthera™ IOL implantation that requires treatment of posterior capsular opacification.
   Sample size calculations are based on a desired precision around the point estimate for the explant rate. Assuming an explant rate of 0.5%, a 95% exact (Clopper-Pearson) upper confidence limit with precision of 1.0% (i.e., an upper CL of 1.5%) would require 435 subjects. Taking into account 10% attrition rate over 24 months, the study should enroll 483 subjects that have developed PCO and require treatment to ensure a minimum of 435 subjects with follow-up through the course of the study.

   Subjects will be enrolled and followed up to 24-months post IC-8® Apthera™ IOL implantation. The scheduled visits for all subjects will include: PCO treatment visit (including assessments prior to PCO treatment procedure), 1-week post PCO treatment visit, 1-month post PCO treatment visit, 12-months and 24-months post IC-8® Apthera™ IOL implantation visits. If visit windows align, the 1-week and 1-month post PCO treatment visits may be combined with the 12-months and 24-months post IC-8® Apthera™ IOL implantation visits. Non-directed questions pertaining to subjective visual symptoms will be asked at the 1-week and 1-month

post PCO treatment visit as well as the 12-months and 24 months post IC-8® Apthera™ IOL implantation visits. Patient reported outcomes (PROs) will be assessed for all subjects at each of the following scheduled visits: PCO treatment visit (pretreatment), 1-month post-PCO treatment, 12-months post-IC-8® Apthera™ implantation, and 24-months post-IC-8® Apthera™ implantation, using the Quality of Vision (QoV) instrument (McAlinden 2010) and the (revised) Small Aperture Patient Questionnaire (SAPQ).

The co-primary safety endpoints and/or parameters include the following: the rates of YAG (including the rate of initial YAG, and the rate of any additional YAG treatments beyond the initial YAG treatment), YAG outcome and/or complications, IOL-related assessments (including mask appearance and indication of any YAG damage), rates of secondary surgical interventions (pars plana vitrectomy, explant, etc.), other serious ocular adverse events (as described in ISO 11979-7 historical grid), and rates of subjective visual disturbance.

Other parameters that will be collected in the study include but are not limited to the following: YAG laser technique details and/or settings, YAG difficulty; best-corrected distance visual acuity; uncorrected visual acuities. Patient-reported outcomes (PROs) will be assessed with the Quality of Vision (QoV) instrument (McAlinden 2010) and the (revised) Small Aperture Patient Questionnaire (SAPQ); the SAPQ will be based on the original version used in the IC-8® Apthera™ IOL IDE study and will be revised to include two additional items assessing the concepts of "vision differences between two eyes" and "floaters".

There is no formal study hypothesis; descriptive data on the long-term performance of the IC-8® Apthera™ IOL will be collected. The study will provide point estimates with two-sided 95% CI for the study endpoints. Descriptive statistics will be reported on the data collected in this study, including but not limited to the following: sample size (N), mean, standard deviation (SD), median, minimum (Min), and maximum (Max) and 95% confidence interval as applicable for continuous variables, and sample size (N), frequency and percent of relevant total (rate) and two-sided 95% confidence interval (or one-sided 97.5% confidence limit) as applicable for categorical and some ordinal variables.

From the time of study protocol approval, you must meet the following timelines for the New Enrollment Study:

- Submit the surgical training plan for Phase A for FDA acceptance within 1 month.
- After receiving FDA acceptance of Phase A surgical training plan, successfully complete the Phase A surgical training plan for 100% of participating Investigators within 6 months.
- The enrollment of subjects that have developed PCO following IC-8® Apthera™ IOL implantation that requires treatment of posterior capsular opacification (Phase B) will begin following the successful training of the first

Investigator in Phase A. An Investigator must be trained prior to enrolling their first subject. The subject enrollment milestones for Phase B are as follows:

- First subject enrolled within 6 months
- 20% subjects enrolled within 12 months
- 50% subjects enrolled within 18 months
- 100% subjects enrolled within 24 months
- Submission of Final study report: 3 months from study completion (i.e., last subject, last follow-up date)

The applicant's manufacturing facilities have been inspected and found to be in compliance with the device Quality System (QS) Regulation (21 CFR 820).

XV. APPROVAL SPECIFICATIONS

Directions for use: See device labeling.

Hazards to Health from Use of the Device: See Indications, Contraindications, Warnings, Precautions, and Adverse Events in the device labeling.

Post-approval Requirements and Restrictions: See approval order.

XVI. REFERENCES

1. Boettner, E.A. and Wolter, J.R. Transmission of the ocular media. Invest. Ophthalmol. 1962;1:776-83.