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1
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3

Atlantis™
Scleral Lens Design

FIT GUIDE

800.241.9312
www.xcelcontacts.com

MAR2013

With the 1, 2, 3 FIT strategy, **Atlantis™** should be your #1 GP lens of choice for many different ocular conditions including the ones stated on page one. The fitting philosophy is based on the premise of customizing the lens fit by manipulating 3 zones to control the sagittal height relationship of the lens to the anterior ocular surface. The design offers 3 proprietary zones which each has a specific function and are independent of each other. The diagnostic set will offer laser markings to easily identify the 3 proprietary zones to ensure an easier evaluation process for the practitioner along with a comprehensive 123 Fit Guide, DMV plungers, unpreserved single use saline, lens tweezers, Patient I&R Guide and lap towel.

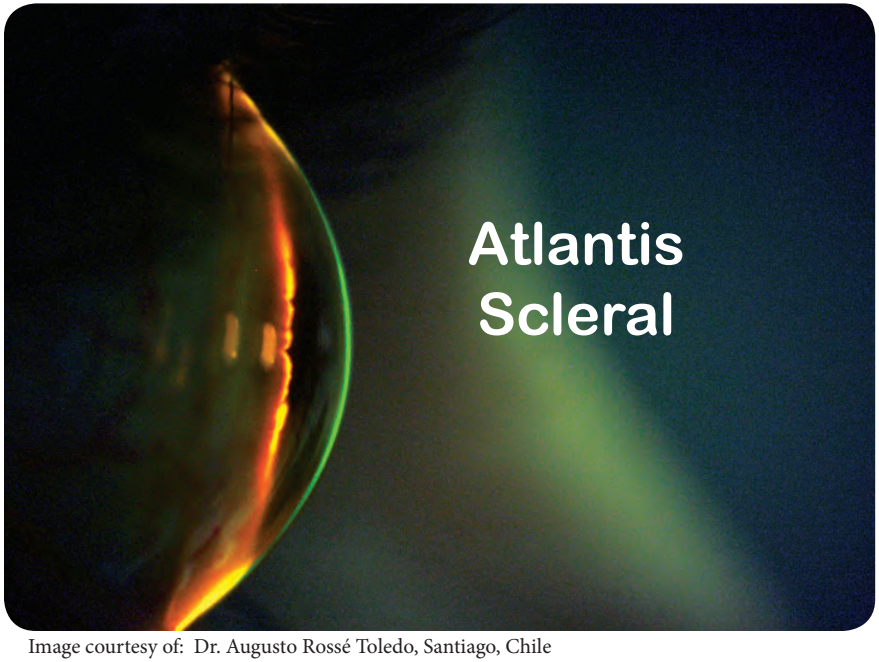

Image courtesy of: Dr. Augusto Rossé Toledo, Santiago, Chile

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Learn about X-Cel's In-Office Consultation for Specialty Contact Lens Fits

In today's optical business, time is the most valuable commodity. The initial specialty lens fitting process averages multiple office visits per patient, but with the help of our in-office assistance, the visits can be reduced in most cases. We believe the patient in your chair is our patient too. If you are fitting the Atlantis Scleral lens or any of our designs for the first time, fitting a new patient, or have a difficult fit, we would like to provide you with an "in-office" consultant. During the consult, we are there to assist in the fitting process and to ensure a successful fit.

To learn more, please call an
X-Cel Consultant or Account Manager for details.

We Fit Your Practice™

Atlantis™ Table of Contents

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X-Cel Contacts, 2775 Premiere Parkway, Suite 600, Duluth, GA 30097
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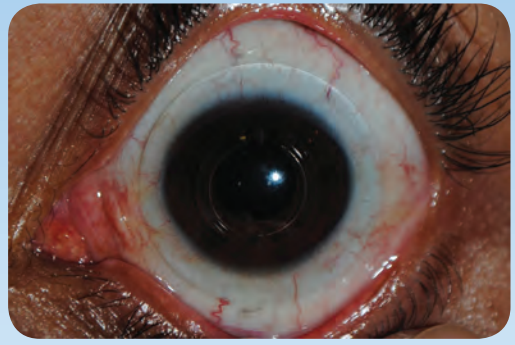
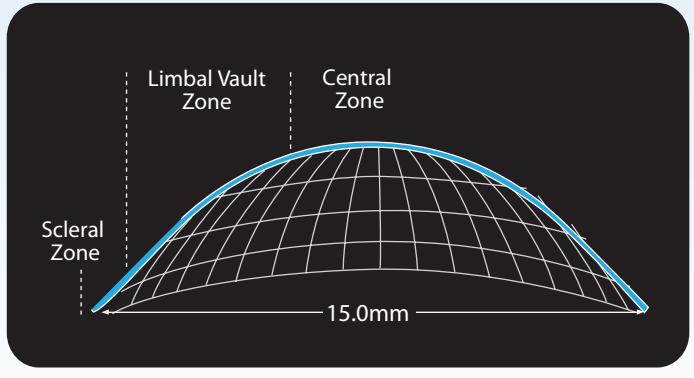
PATIENT INDICATIONS

The **Atlantis™ Scleral Lens Design** is indicated for the correction of many different ocular conditions and sagittal depths. Among the conditions with varying sagittal depths are keratoconus, pellucid marginal degeneration, corneal transplants, post-refractive surgery, post corneal rings and ocular surface disease.



DESCRIPTION

The **Atlantis Scleral Lens Design** is comprised of three zones: 1. Base Curve or Central, 2. Limbal Vault, and 3. Scleral, each of which has a specific function. The fitting philosophy is based on the premise of customizing the lens fit by manipulating these zones to control the sagittal height relationship of the lens to the anterior ocular surface. The standard diameters are 15.0mm, 16.0mm and 16.5mm.



Images on this page courtesy of: Dr. Augusto Rossé Toledo, Santiago, Chile

DIAGNOSTIC SET

The **Atlantis** diagnostic set contains 5 base curves (A, B, C, D, E) in the 15.0mm diameter and 3 base curves (F, G, H) in the 16.5mm diameter. Each base curve will have 3 peripheries (standard, steep, and flat).

Each base curve has a standard clearance (sagittal depth). Steepening the periphery will add 50 microns (μ) of clearance and flattening the periphery will decrease the clearance by 50 microns.

DIAGNOSTIC PARAMETERS

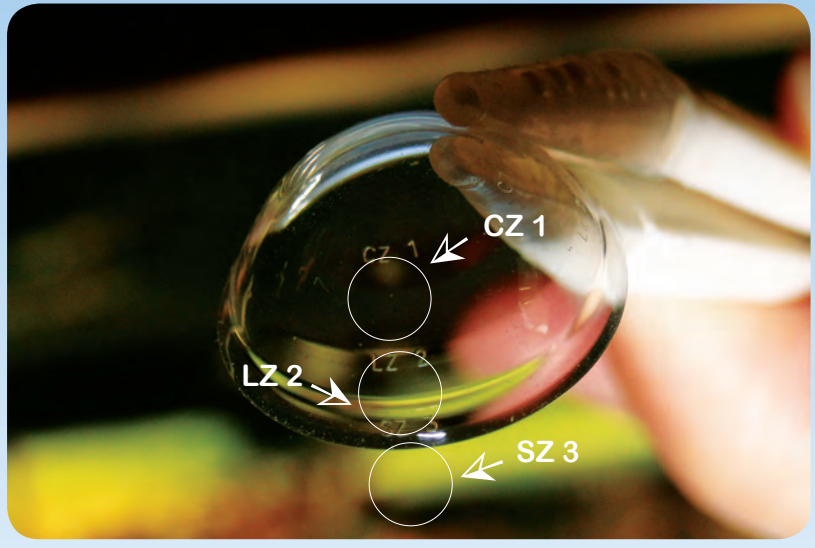
	15.0 Diameter	Sagittal Height Standard	Scleral Zone Flat	Scleral Zone Steep	Power
A	40.00 (8.44)	3.394	3.344	3.444	-1.00
B	42.00 (8.04)	3.681	3.631	3.731	-2.00
C	44.00 (7.67)	3.998	3.948	4.048	-3.00
D	46.00 (7.34)	4.349	4.299	4.399	-4.00
E	48.00 (7.03)	4.754	4.704	4.804	-5.00
	16.5 Diameter				
F	43.00 (7.85)	5.072	5.022	5.122	-6.00
G	45.00 (7.50)	5.627	5.577	5.677	-7.00
H	47.00 (7.18)	6.338	6.288	6.388	-8.00

Each Set contains:

24 GP Atlantis Lenses
Fitting Guide
Patient Insertion/Removal Guide
Single Use Saline
2 Small DMV's
2 Large DMV's
3 Lap Towels
2 Lens Tweezers

1-2-3 FIT ZONES

The diagnostic lenses have unique identifying marks that note the edges of each of the zones. This provides increased accuracy in determining the fitting relationship of each zone. See the image below for an example of the Central Zone (CZ), Limbal Vault Zone (LZ), and Scleral Zone (SZ) markings.



Each zone is marked 2 times in case the markings have rotated underneath the lids.

CZ = Central Zone
LZ = Limbal Vault Zone
SZ = Scleral Zone

An additional laser mark has been added to diagnostic sets for lens identification purposes. Starting March 2013, a 3-digit sagittal depth mark will appear on the lens scleral zone.

Example: Lens C Steep will have a laser mark of 404

EASE OF FIT WITH THREE ZONES

Central Zone (CZ) - This zone is designed to clear the cornea. This is the effective posterior optic zone and although it comprises approximately 50% of the back surface of the lens it has the least effect on the lens fit. In fact, most eyes can be fit using just 5 different central zone vaults.

Limbal Vault Zone (LZ)- The LZ zone does what it implies, i.e. it controls the vaulting effect over the limbus but will not impact the overall sagittal height. This zone has a standard proprietary radius developed to work independently from the Central Zone. It is also available in radii that are 1 flat, 2 flat, 1 steep and 2 steep as compared to the standard. Each change in the limbal vault zone curvature modifies the effective zone depth by approximately 25 microns.

Scleral Zone (SZ) - This zone is primarily designed to align with the sclera and provide sagittal height alterations by changes in its curvature. The Scleral Zone has a standard proprietary radius while also available single flat, double flat, and single steep compared to the standard. Each change in the scleral zone curvature modifies the overall sagittal height by approximately 50 microns.

The **lens thickness** is typically 0.25mm to 0.35mm dependent on the lens power and can be dictated when ordering the patients lenses. Changes in lens thickness should be made in .10 steps.

The **standard diameters** are 15.0mm and 16.5mm.

1-2-3 FIT

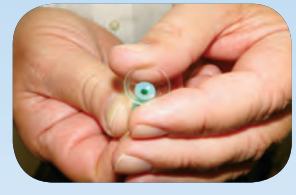
INSERTION

DUE TO THE SIZE AND UNIQUE HANDLING OF THIS LENS, INSERTION AND REMOVAL IS OF THE UTMOST IMPORTANCE

MAINTAINING THE PROPER AMOUNT OF FLUID IN THE LENS AND AVOIDING ANY CENTRAL AIR BUBBLES UNDERNEATH THE LENS ARE THE TWO KEYS OF THE INSERTION PROCESS

√ Drape the patient with the lap towel (provided) to ensure no overflow of the solution will get on their clothing.

√ Attach the lens to the large insertion plunger (with hole in center).



√ Fill the lens to the top (or slightly over) with sterile non-preserved saline.

√ Add fluorescein by dipping the strip repeatedly in the fluid-filled lens bowl.

√ Have the patient look downward, tucking chin to chest. Hold the patient's upper and lower lid at the lid margins. Slowly approach the patient's eye while asking them to focus on the center of the suction device.

INSERTION

√ Firmly press the lens onto the patient's eye. Squeeze the suction device to dislodge it from the lens.

√ Note if there are any air bubbles under the lens (usually due to loss of fluid during insertion). If so, remove and repeat the steps listed above.

√ If the lens is uncomfortable it may be due to:

1. Large insertion bubble
   (Remove, refill, and re-insert.)
2. Inappropriate sagittal depth
3. Debris under the lens

√ If there is no discomfort or insertion bubble, allow the lens to settle for at least 15-20 minutes before evaluating the fit.
Note: If possible, allowing the lens to settle for a longer period of time will provide a better lens edge evaluation.

REMOVAL

√ Wet the small removal plunger (without hole in center) with sterile non-preserved saline or a rewetting solution.

√ Hold the patient's upper and lower lid at the lid margins. Have the patient look straight ahead. Hold the plunger at a 45 degree angle, aimed at the bottom of the lens.

√ Place the plunger against the lens at the 6 o'clock position, then gently lift the lens off the eye.

√ Do not release the eyelids until the lens is completely out of the patient's eye.

√ Hold the lens firmly at the edges, then gently twist the plunger to release it from the lens.

INITIAL LENS SELECTION

When utilizing the trial set to fit the Atlantis lens, there are 3 ways to select the initial lens:

RECOMMENDED (regardless of K readings or condition):

1. Start with the "C" lens in the 15.0mm diameter.

USING TOPOGRAPHER DATA:

Simply add the corneal sagittal height measurement at the 10.0mm chord to 2,400 microns (which represents the average depth of the cornea from the 15.0mm chord to the 10.0mm chord plus the 400 microns of desired clearance).

Use this result to choose the fit set lens with closest sagittal height.

USING OCT (Optical Coherence Tomography):

Use the sagittal depth measurement of the cornea at the 15.0mm chord and add 400 microns.

Use this result to choose the fit set lens with the closest sagittal height.

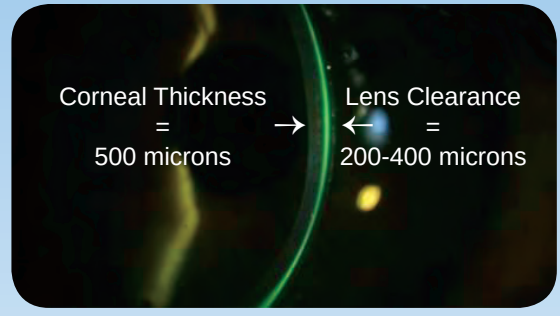
FITTING & EVALUATION PROCESS

2. Insert diagnostic lens with non-preserved saline and fluorescein, using the Insertion directions are provided.

FITTING & EVALUATION PROCESS

3. Use the CLS evaluation process (Central, Limbal, Scleral). The ideal fitting relationships are:

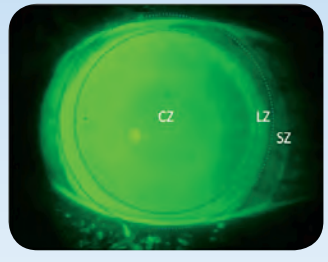
   a. CZ - completely vault the cornea, approximately 200-400 microns of clearance.



To evaluate approximate clearance, compare the fluorescein to either the corneal thickness or the lens thickness (lens thickness is represented on the lens vial).

   b. LZ - completely vault the limbus, approximately 100 microns of clearance

   c. SZ - uniform minimal clearance 360º around the lens edge



Use lens marks to aid with parameter adjustments.

4. Upon blink evaluation, look for signs of lens flexure. (if present, order .10 thicker CT)

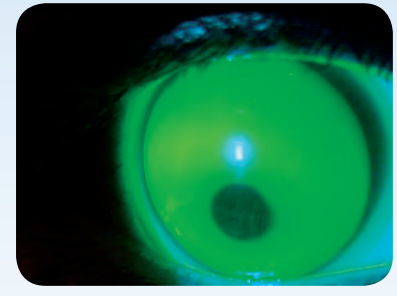
5. Perform sphero-cylindrical over-refraction. (If any cylinder is observed coming through the lens, order .10 thicker CT)

6. Always make the first change within the 15.0mm diameter by changing the Central Zone to improve lens fit.

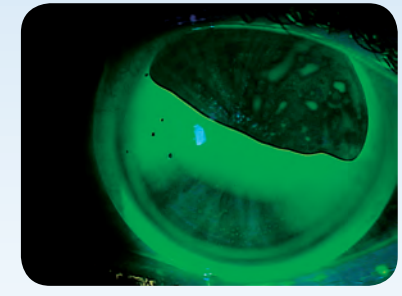
7. Order lens from X-Cel Lens Consultant.

CENTRAL FIT EVALUATION

	1	2	3
Decentered Lens	Steepen Base Curve by 1.00D	Increase Diameter	
Large Bubble or Excessive Apical Clearance	More than 100 microns - Decrease SAG by flattening Base Curve by 1.00D	Reduce Diameter	
	Less than 100 microns - Request 1 Flat Scleral Zone	Flatten Base Curve by 0.50D	Reduce Diameter



Flat Central Zone
UNACCEPTABLE



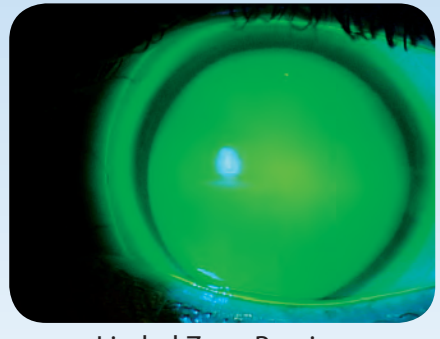
Steep Central Zone
UNACCEPTABLE

LIMBAL VAULT ZONE EVALUATION

	1	2	3
Excessive Clearance, Large Bubble or Bubbles 360 Degrees	Request Flat Limbal Vault Zone	Flatten Base Curve 0.25D	Reduce Diameter
Limbal Bearing or Absence of Fluorescein	Request Steep Limbal Vault Zone	Steepen Base Curve by 0.25D	Increase Diameter

Small, stagnate bubbles are acceptable in the Limbal Vault Zone and may dissipate over time.

Limbal Zone Bubbles
UNACCEPTABLE



Limbal Zone Bearing
UNACCEPTABLE

SCLERAL COMFORT CURVE EVALUATION

	1	2	3
Excessive Edge Clearance	Request Steep Scleral Zone	Steepen Base Curve by 0.25D	
Edge Impingement or Seal Off	Request Next Flat Scleral Zone	Request 2 Flat Scleral Zone	Flatten Base Curve by 0.25D

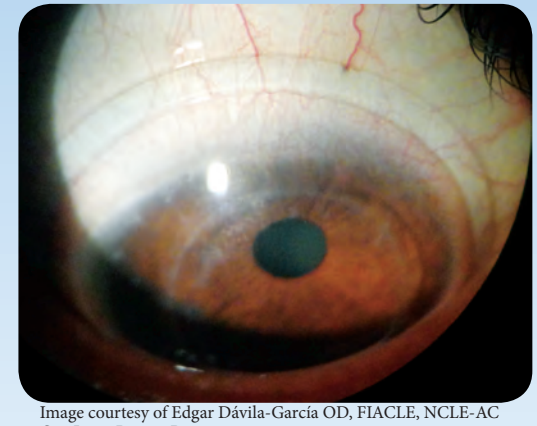
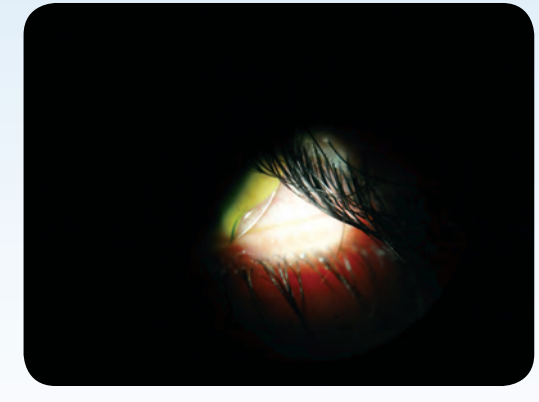


Image courtesy of Edgar Dávila-García OD, FIACLE, NCLE-AC
San Juan, Puerto Rico

Blanching
Steep Scleral Zone
UNACCEPTABLE

Edge Stand-off
Flat Scleral Zone
UNACCEPTABLE



LENS SAGITTAL HEIGHT CHART

15.0 DIAMETER

Base Curve	SAG	Flat SZ SAG	Steep SZ SAG
9.12 / 37.00	3.005	2.955	3.055
9.06 / 37.25	3.035	2.985	3.085
9.00 / 37.50	3.066	3.016	3.116
8.94 / 37.75	3.098	3.048	3.148
8.88 / 38.00	3.130	3.080	3.180
8.82 / 38.25	3.164	3.114	3.214
8.77 / 38.50	3.192	3.142	3.242
8.71 / 38.75	3.227	3.177	3.277
8.65 / 39.00	3.262	3.212	3.312
8.60 / 39.25	3.292	3.242	3.342
8.54 / 39.50	3.329	3.279	3.379
8.49 / 39.75	3.361	3.311	3.411
8.44 / 40.00	3.394	3.344	3.444
8.39 / 40.25	3.426	3.376	3.476
8.33 / 40.50	3.467	3.417	3.517
8.28 / 40.75	3.501	3.451	3.551
8.23 / 41.00	3.537	3.487	3.587
8.18 / 41.25	3.573	3.523	3.623
8.13 / 41.50	3.610	3.560	3.660
8.08 / 41.75	3.648	3.598	3.698
8.04 / 42.00	3.681	3.631	3.731
7.99 / 42.25	3.719	3.669	3.769
7.94 / 42.50	3.759	3.709	3.809
7.89 / 42.75	3.801	3.751	3.851
7.85 / 43.00	3.835	3.785	3.885
7.80 / 43.25	3.879	3.829	3.929
7.76 / 43.50	3.915	3.865	3.965
7.71 / 43.75	3.961	3.911	4.011
7.67 / 44.00	3.998	3.948	4.048
7.63 / 44.25	4.037	3.987	4.087
7.58 / 44.50	4.086	4.036	4.136

LENS SAGITTAL HEIGHT CHART

15.0 DIAMETER

Base Curve	SAG	Flat SZ SAG	Steep SZ SAG
7.54 / 44.75	4.127	4.077	4.177
7.50 / 45.00	4.169	4.119	4.219
7.46 / 45.25	4.212	4.162	4.262
7.42 / 45.50	4.256	4.206	4.306
7.38 / 45.75	4.301	4.251	4.351
7.34 / 46.00	4.349	4.299	4.399
7.30 / 46.25	4.394	4.344	4.444
7.26 / 46.50	4.443	4.393	4.493
7.22 / 46.75	4.494	4.444	4.544
7.18 / 47.00	4.546	4.496	4.596
7.14 / 47.25	4.599	4.549	4.649
7.11 / 47.50	4.641	4.591	4.691
7.07 / 47.75	4.697	4.647	4.747
7.03 / 48.00	4.754	4.704	4.804
6.99 / 48.25	4.816	4.766	4.866
6.96 / 48.50	4.863	4.813	4.913
6.92 / 48.75	4.928	4.878	4.978
6.89 / 49.00	4.987	4.937	5.037
6.85 / 49.25	5.047	4.997	5.097
6.82 / 49.50	5.100	5.050	5.150
6.78 / 49.75	5.175	5.125	5.225
6.75 / 50.00	5.232	5.182	5.282
6.72 / 50.25	5.292	5.242	5.342
6.68 / 50.50	5.375	5.325	5.425
6.65 / 50.75	5.441	5.391	5.491
6.62 / 51.00	5.508	5.458	5.558
6.59 / 51.25	5.579	5.529	5.629
6.55 / 51.50	5.678	5.628	5.728
6.52 / 51.75	5.756	5.706	5.806
6.49 / 52.00	5.838	5.788	5.888

LENS SAGITTAL HEIGHT CHART

16.0 DIAMETER

Base Curve	SAG	Flat SZ SAG	Steep SZ SAG
9.00 / 37.50	3.621	3.571	3.671
8.94 / 37.75	3.660	3.610	3.710
8.88 / 38.00	3.701	3.651	3.751
8.82 / 38.25	3.743	3.693	3.793
8.77 / 38.50	3.778	3.728	3.828
8.71 / 38.75	3.822	3.772	3.872
8.65 / 39.00	3.867	3.817	3.917
8.60 / 39.25	3.906	3.856	3.956
8.54 / 39.50	3.953	3.903	4.003
8.49 / 39.75	3.993	3.943	4.043
8.44 / 40.00	4.034	3.984	4.084
8.39 / 40.25	4.077	4.027	4.127
8.33 / 40.50	4.129	4.079	4.179
8.28 / 40.75	4.174	4.124	4.224
8.23 / 41.00	4.220	4.170	4.270
8.18 / 41.25	4.267	4.217	4.317
8.13 / 41.50	4.316	4.266	4.366
8.08 / 41.75	4.365	4.315	4.415
8.04 / 42.00	4.406	4.356	4.456
7.99 / 42.25	4.459	4.409	4.509
7.94 / 42.50	4.513	4.463	4.563
7.89 / 42.75	4.569	4.519	4.619
7.85 / 43.00	4.615	4.565	4.665
7.80 / 43.25	4.674	4.624	4.724
7.76 / 43.50	4.723	4.673	4.773
7.71 / 43.75	4.785	4.735	4.835
7.67 / 44.00	4.837	4.787	4.887
7.63 / 44.25	4.891	4.841	4.941
7.58 / 44.50	4.959	4.909	5.009
7.54 / 44.75	5.017	4.967	5.067
7.50 / 45.00	5.076	5.026	5.126

LENS SAGITTAL HEIGHT CHART

16.0 DIAMETER

Base Curve	SAG	Flat SZ SAG	Steep SZ SAG
7.46 / 45.25	5.136	5.086	5.186
7.42 / 45.50	5.199	5.149	5.249
7.38 / 45.75	5.265	5.215	5.315
7.34 / 46.00	5.332	5.282	5.382
7.30 / 46.25	5.403	5.353	5.453
7.26 / 46.50	5.476	5.426	5.526
7.22 / 46.75	5.552	5.502	5.602
7.18 / 47.00	5.631	5.581	5.681
7.14 / 47.25	5.714	5.664	5.764
7.11 / 47.50	5.779	5.729	5.829
7.07 / 47.75	5.870	5.820	5.920
7.03 / 48.00	5.965	5.915	6.015

16.5 DIAMETER

Base Curve	SAG	Flat SZ SAG	Steep SZ SAG
9.12 / 37.00	3.843	3.793	3.893
9.06 / 37.25	3.885	3.835	3.935
9.00 / 37.50	3.929	3.879	3.979
8.94 / 37.75	3.974	3.924	4.024
8.88 / 38.00	4.019	3.969	4.069
8.82 / 38.25	4.066	4.016	4.116
8.77 / 38.50	4.107	4.057	4.157
8.71 / 38.75	4.156	4.106	4.206
8.65 / 39.00	4.207	4.157	4.257
8.60 / 39.25	4.250	4.200	4.300
8.54 / 39.50	4.304	4.254	4.354
8.49 / 39.75	4.350	4.300	4.400
8.44 / 40.00	4.397	4.347	4.447

LENS SAGITTAL HEIGHT CHART

16.5 DIAMETER

Base Curve	SAG	Flat SZ SAG	Steep SZ SAG
8.39 / 40.25	4.446	4.396	4.496
8.33 / 40.50	4.506	4.456	4.556
8.28 / 40.75	4.557	4.507	4.607
8.23 / 41.00	4.610	4.560	4.660
8.18 / 41.25	4.665	4.615	4.715
8.13 / 41.50	4.721	4.671	4.771
8.08 / 41.75	4.779	4.729	4.829
8.04 / 42.00	4.826	4.776	4.876
7.99 / 42.25	4.888	4.838	4.938
7.94 / 42.50	4.951	4.901	5.001
7.89 / 42.75	5.017	4.967	5.067
7.85 / 43.00	5.072	5.022	5.122
7.80 / 43.25	5.141	5.091	5.191
7.76 / 43.50	5.199	5.149	5.249
7.71 / 43.75	5.275	5.225	5.325
7.67 / 44.00	5.337	5.287	5.387
7.63 / 44.25	5.401	5.351	5.451
7.58 / 44.50	5.485	5.435	5.535
7.54 / 44.75	5.555	5.505	5.605
7.50 / 45.00	5.627	5.577	5.677
7.46 / 45.25	5.703	5.653	5.753
7.42 / 45.50	5.782	5.732	5.832
7.38 / 45.75	5.864	5.814	5.914
7.34 / 46.00	5.950	5.900	6.000
7.30 / 46.25	6.040	5.990	6.090
7.26 / 46.50	6.135	6.085	6.185
7.22 / 46.75	6.235	6.185	6.285
7.18 / 47.00	6.338	6.288	6.388

TROUBLESHOOTING

FORMATION OF BUBBLES

- Small bubbles are common and acceptable if they remain stagnant and do not cross the visual axis (pupil)

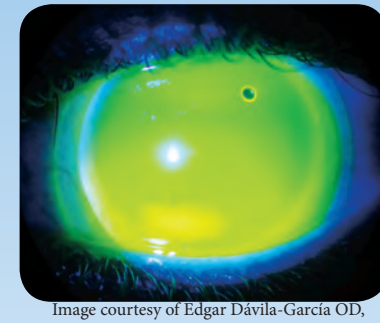
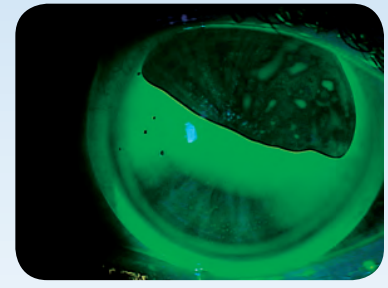
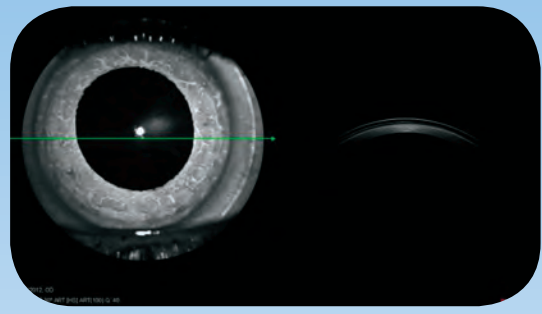


Image courtesy of Edgar Dávila-García OD, FIACLE, NCLE-AC, San Juan, Puerto Rico

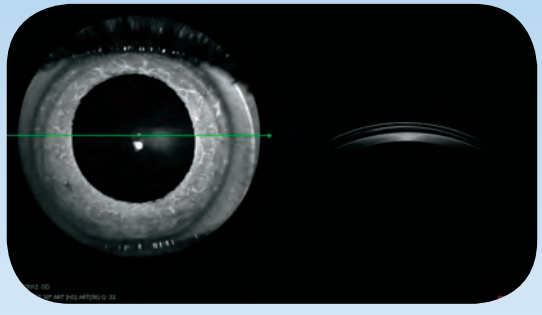
- Large bubbles are due to insertion technique or too much clearance (refer to fitting and/or insertion steps)



CLEARANCE

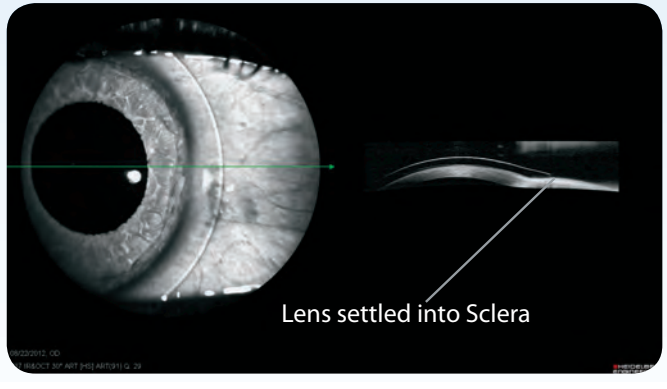


7.67 Base Curve
15.0mm Diameter



7.34 Base Curve
15.0mm Diameter

- Too much clearance is better than not enough as patients may lose clearance due to the soft sclera (this loss can range from 50 - 150 microns)
- Lens should always rest completely outside of the limbal area. If limbus is not cleared, future comfort issues can occur.



POST FIT EVALUATION

Lens movement will be minimal (similar or less than a soft lens) and there will be very little tear exchange behind the lens.

1. Have patient arrive wearing lenses.
2. Apply fluorescein while lenses are on and wait 15-20 minutes.
3. Evaluate central zone concentrating on the amount of fluorescein that has worked its way behind the lens.
4. If no fluorescein is present it is due to seal-off and a flatter scleral zone is needed.

VISUAL ACUITY

Consistent Blur

- Sphero-Cylinder over-refraction shows cylinder coming through lens
  (Increase Lens Thickness by at least .10mm)
- Excessive clearance (Flatten Central Zone)

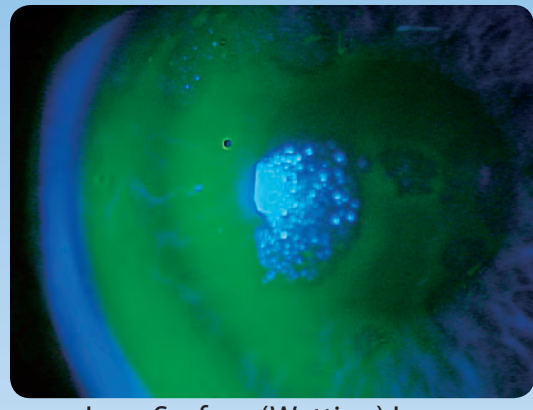
Fluctuating Vision

- Chamber Bubbles crossing visual field (Flatten Central Zone)
- Lens surface distortion (Clean lens, re-insert)
- Lens Flexure
  (Increase Lens Thickness by at least .10mm)

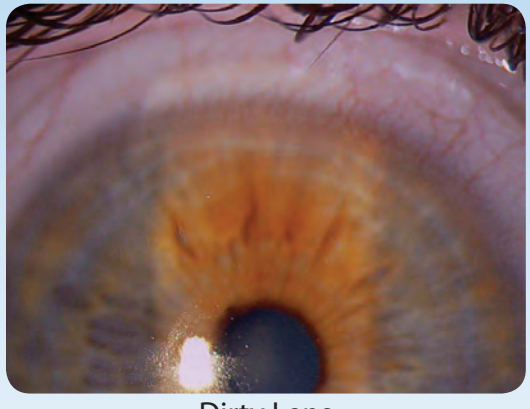
Foggy/Ghosting

- Surface Wettability (Clean surface well)
- Chamber Debris (Remove lens, clean and re-insert)

Examples of Foggy/Ghosting:



Lens Surface (Wetting) Issue



Dirty Lens

Mucus Build-up, Mucin Balls

- For patients that tend to have excessive mucus build-up it is recommended to remove lens mid-day for cleaning and re-insertion

PARAMETER AVAILABILITY

Base Curve	Diameter
6.50mm to 9.00mm	15.0
7.03mm to 9.00mm	16.0
7.18mm to 9.00mm	16.5

Power: +20.00D to -20.00D in 0.25 steps

Material: Boston XO® and Boston XO2®

All Atlantis lenses are plasma treated.

A spare pair is recommended and can be purchased at a discounted price. Re-plasma treatment is also available.

We recommend Boston® Solutions for the Atlantis design.

Boston® Materials

NO RISK WARRANTY

90 days for full credit on two exchanges per eye and cancellation.

With our **Paperless Credit Policy** there is no need to return lenses. Simply, submit on our website under Paperless Credits, fax or email your account number, invoice number, patient name, and quantity. We will process your credit and it will appear on your monthly statement.

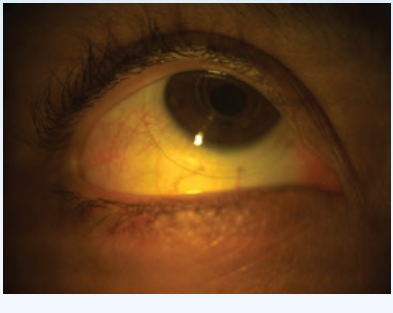
With the paperless system, you save valuable time and more importantly, costs you incur with packaging and return postage!

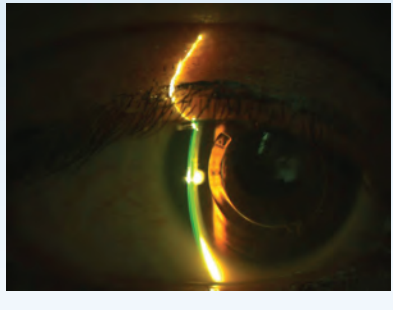
ATLANTIS CASE STUDY

SEVERE KERATOCONUS WITH INTACS

OD: 44.75 / 51.00 x 41
OS: 45.00 / 49.00 x 122

Visual Acuity
Spectacles 20/200
Corneal GP's 20/60





Atlantis Rx:
OD: 42.00 +0.00 16.5, Visual Acuity 20/20
OS: 43.00 -1.00 16.5, Visual Acuity 20/20