AO easy PROGRESSIVE

THE PROGRESSIVE LENS FOR AN EASY LIFE

white paper

AO Easy – The Progressive Lens for an Easy Life

Dr. John T. Winthrop, American Optical Lens Co.

Dr. Winthrop has been an ophthalmic lens designer for American Optical since 1967 and has become world renowned for innovative lens designs such as AO PRO,® Technica,® and most recently AO Compact® and AO b'Active.® He has written numerous scholarly articles and has lectured throughout the United States and Europe. AO Easy is Dr. Winthrop's latest achievement in lens design.

Summary

AO Easy from American Optical is an innovative design incorporating the best features of its predecessors, combined with a shorter corridor and improved peripheral performance. The result is a powerful new choice for dispensers – a new progressive lens of enhanced utility, comfort and ease of processing and dispensing.

Introduction

What makes a general-purpose progressive great? Good visual performance in the distance, near and intermediate zones, coupled with quality vision in the periphery – viewing performance you can rely on regardless of where you look through the lens. Combine these features with a corridor length that enables the product to be used in a broad range of frames, and you have a progressive that meets the needs of the widest number of patients and fits into the broadest frame choices.

AO Easy's advanced design characteristics deliver this exceptional visual utility for the wearer along with unprecedented ease of processing and fitting for the laboratory and the practitioner.

The features and benefits of this latest progressive offering include a bipolar design layout, the application of a patented smoothing function and the use of superposition to incorporate the best features of hard and soft progressive designs.

Bipolar Layout

A bipolar layout in the design means that the distance and near vision power curves tend to converge concentrically on the distance and near power points, as can be seen in the mean power plot of Figure 1.

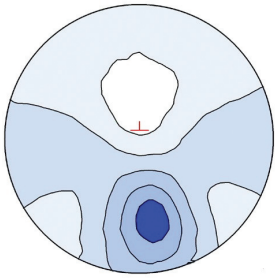

Figure 1. AO Easy surface mean power
Plano distance, addition 2.00.
Minimum and maximum power curves shown are 0.125 D and 1.875 D, respectively.

The bipolar layout ensures soft gradients of surface mean power and astigmatism, and in addition minimizes the magnitude of the unwanted surface astigmatism, thereby keeping distortion effects to a minimum.

A key feature of AO Easy – and one that sets it apart from virtually all its general-purpose competitors – is the relative clarity of the intermediate peripheral zones.

Compare the surface astigmatism plot of AO Easy in Figure 2 with that of a major competitor shown in Figure 3. The distance portions, reading portions and corridor lengths of these two lenses are similar. However AO Easy exhibits much lower peripheral astigmatism, a direct result of its bipolar layout. For the wearer the difference between the two lenses is noticeable.

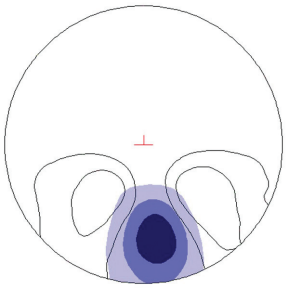

Figure 2. AO Easy surface astigmatism.
Plano distance, addition 2.00 D

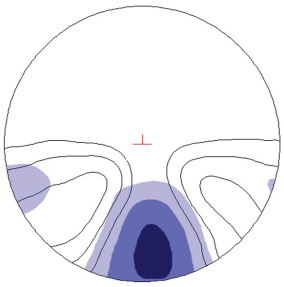

Figure 3. Competitor lens surface astigmatism.
Plano distance, addition 2.00 D

Smoothing Function

The spacing between the power and astigmatism isocurves of AO Easy have been optimized to provide the most uniform and smoothest possible flow of power between the distance and reading levels of the lens.

The benefits of optimized smoothness are easy fitting and immediate adaptation to the design by virtually all wearers.

AO easy PROGRESSIVE

THE PROGRESSIVE LENS FOR AN EASY LIFE

Superposition

AO Easy is a superposition design. That is to say, the total progressive geometry consists of the mathematical average of a hard design and a soft design. Both components of the superposition are of bipolar form and are individually smoothed, thus ensuring a smooth composite. The result is a lens incorporating the best features of its constituent parts; having almost the same distance and near utility as a pure hard design, but with softened power contours, making it as comfortable to wear as the pure soft design.

In short, AO Easy balances the needs of comfort and utility.

Corridor Length

The corridor length (distance below the fitting cross to the "nominal addition less one-eighth" power line) of AO Easy is 15 mm. This is compared with 13 mm for AO Compact and 17 mm for AO PRO.

The minimum recommended fitting height of AO Easy is 18 mm.

The 15 mm corridor length permits use with a wide choice of frames and yet still affords a central intermediate zone of sufficient width for use at the computer.

Binocularity

Binocular compatibility of the AO Easy lens pair is accomplished by incorporating mild asymmetry about the corridor meridian of the individual lens. This asymmetry is readily seen in the plots of Figures 1 and 2. A conventional measure of binocular performance is the vertical prism imbalance between corresponding points of the lens pair. In AO Easy, the maximum imbalance between any two corresponding points of a lens pair is well below the American National Standard of 0.33 ^{D} on imbalance at the prism reference points.

Design Variation to Match Degree of Ametropia

The design of each AO Easy base and add combination varies to match to the degree of ametropia.

As a result, all patients are afforded the same effective visual field.

The design variation includes a variable reading inset for optimum overlap of the monocular reading fields:

Sphere Power	Reading Inset/Eye (mm)
+3.75 and up	3.0 to 4.0 depending on add
+2.25 to –0.50	2.5 to 3.5 depending on add
–0.75 to –5.00	2.5 to 3.0 depending on add
–5.25 and lower	2.0 to 3.0 depending on add

Conclusion

The new AO Easy from American Optical offers exceptional balance between comfort and utility. With its full-width visual field and near-perfect binocularity, AO Easy stands alone in the field of general-purpose progressives providing complete performance.

American Optical Lens Company
Torrey View Corporate Centre
10590 West Ocean Air Drive, Suite 300
San Diego, CA 92130
Ph: 858-509-9899 Fax: 858-509-9898

AO American Optical Lens Company

©2005 SOLA International, Inc. b'Active and Technica are registered trademarks of SOLA International, Inc. AO Compact and AO PRO are registered trademarks of American Optical IP Corp. Transitions is a registered trademark of Transitions Optical, Inc. **005-0138-01660** 4/2005