

Computer Glasses for Presbyopic Patients

With computers being in almost every office and home across the country, presbyopes should take into account the need for glasses for computer tasks they do every day.

By James E. Sheedy, OD, PhD

WE all know that many computer users have eye-related problems. Studies show that between 25% and 93% of computer users are prone to them. Surveys have also shown about one in six patients in general optometric practice schedules an examination because of this.

Although any one of several factors (or a combination) can cause these symptoms, a single term "Computer Vision Syndrome" (CVS) has been adopted to describe the problems. Many CVS conditions can be treated with glasses—hence the term "computer glasses."

Unfortunately, early lens manufacturers in this area used computer glasses to refer to low-powered plus glasses, perhaps with a tint, UV, and AR properties, with the intention that a pair be given to every worker in the office. Of course, we know that general issue glasses cannot solve many CVS problems, but many workers still think this is so.

Trouble for Presbyopes

By far the largest need for computer glasses is among presbyopic patients. Bifocals and/or PALs do not properly correct for the computer display, which is at an intermediate viewing distance (about 24 inches) and intermedi-

ate viewing angle (10°-15° below the eyes). These lenses correct for a 15.75 inch viewing distance and 20°-30° of downward gaze, and the intermediate portion of the PAL is too narrow for extended work at the computer.

Daily wear multifocals require a computer user to assume an awkward posture to clearly see the computer display. The wearer can see clearly or have good posture, but not both. These patients complain of neck- and back-aches, blur, and eye strain. This becomes a particular problem when the 15.75 inch add is +1.50D or greater. Patients with lower adds often can see the screen clearly through the distance portion of their daily wear lenses because they have adequate remaining accommodation to do so.

Lens Solutions

Several segmented multifocal designs are available for computer users. They provide wide intermediate and near viewing areas and most have an intermediate power greater than 50% of the add. These lenses include CRT CR-39® lenses from Vision-Ease Lens, Inc. CRT hard-resin lenses feature a 66% intermediate to allow an ideal working distance from computer screens. CRT lenses from Vision-Ease also fea-

ture a 14mm by 35mm intermediate segment to minimize head movement and allow viewing of

the entire CRT screen at a normal distance.
Occupational Progressive

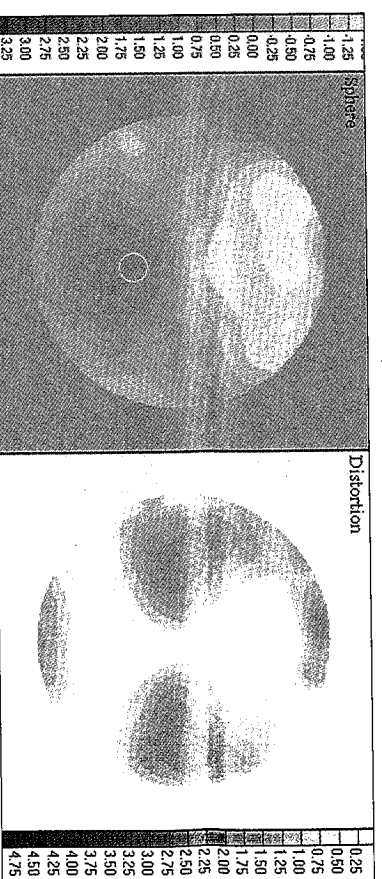


Figure 1. SOIA Access, 1.25D degression

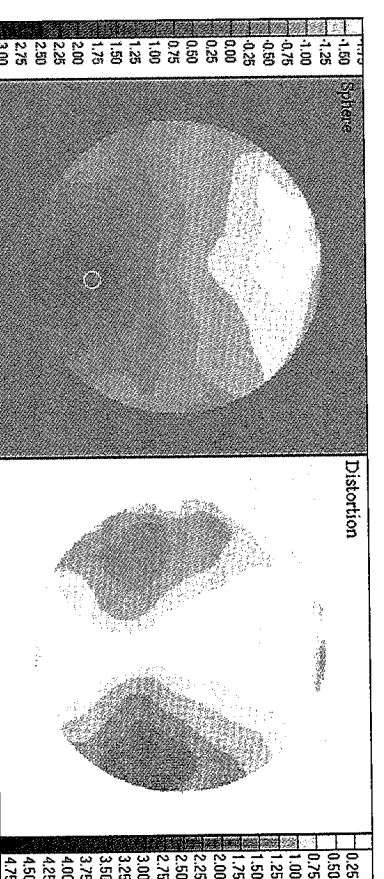


Figure 2. Rodenstock North America's Cosmolite Office, 1.75D degression

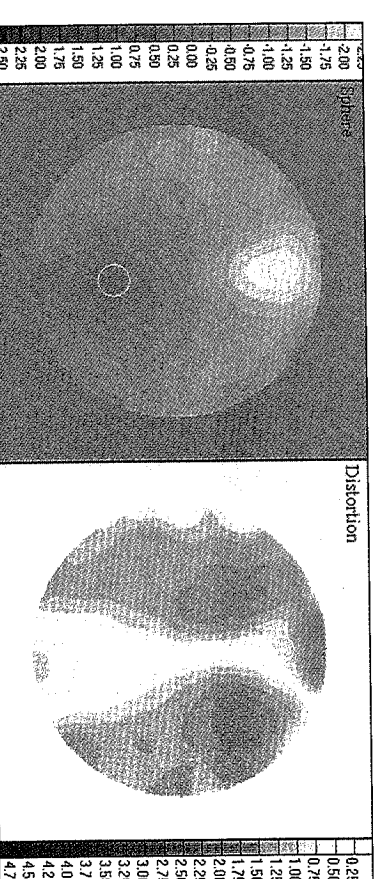


Figure 3. Shamir Office, 1.75D degression

Lenses (OPLs) are a particularly good solution for computer users—especially those who are emmetropic or who wear PALs for general wear. They have a considerably wider intermediate area compared to PALs and a wide near area. Most OPLs are designed to have far-intermediate vision in the top of the lens—usually a +0.50D to +0.75D add remains in the top of the lens. The viewing zones are wider and the unwanted astigmatism lower in OPLs. This is because the total power change is less and the distance between the two power extremes is greater when compared to a PAL.

Computer glasses will normally be unsuccessful if people need to remove them each time they get up from their computer. In this respect, the far-intermediate power in the top of the lens is important because workers can easily walk around while wearing the OPL (+0.50 to +0.75 D add does not significantly blur the distances encountered in a typical office). OPLs should be ordered by writing the usual prescription (distance power and near add) and then specifying the OPL design by name. The laboratory finishes the lens to the prescribed near power. The add power decreases towards the top of the lens based upon the design. The decrease in power is referred to as the power “degression.”

Survey of OPL Designs

Just as with PALs, there are optical differences among OPL designs. Figures 1-6 show contour plots (spherical equivalent on the left and unwanted astigmatism on the right) for selected OPL designs. The SOLA Access (Figure 1) has a wide region of intermediate power in the top of

the lens, and a wide region of near power in the bottom, separated by a narrower region of power change. This design works especially well for the person who spends considerable time viewing the computer display and reading other materials. Figures 2-4 show lenses designed to have a small amount of add power in the top of the lens. Rodenstock North America's Cosmolit Office (Figure 2) has wider intermediate and far-intermediate fields, and Shamir Insight, Inc.'s Office (Figure 3) has wider near fields,

and Carl Zeiss Optical Inc.'s Gradal® RD (Figure 4) has a balance between them. Designs can be selected based on the relative viewing needs of the patient. AO Technica (Figure 5) is designed to provide a small area of distance vision in the top center of the lens. This design can be useful for computer users with limited but critical needs to spot distant objects. Essilor of America Inc.'s Interview (Figure 6) has a fixed degression amount of 0.80D and consequently has less unwanted astigmatism than the other designs. It works best for a

person who performs dedicated work at the computer and does not require far-intermediate vision through the lens. PRIO Corp.'s Browser computer lens is an aspheric variable focus lens designed specifically for computer use. Designed by Zeiss, the PRIO Browser has two power shifts—Browser 100 (1.00D) and Browser 150 (1.50D). OPLs provide excellent vision for computer users, and are also very good for many other patients who work indoors. They should be an integral part of your prescribing armamentarium. ■

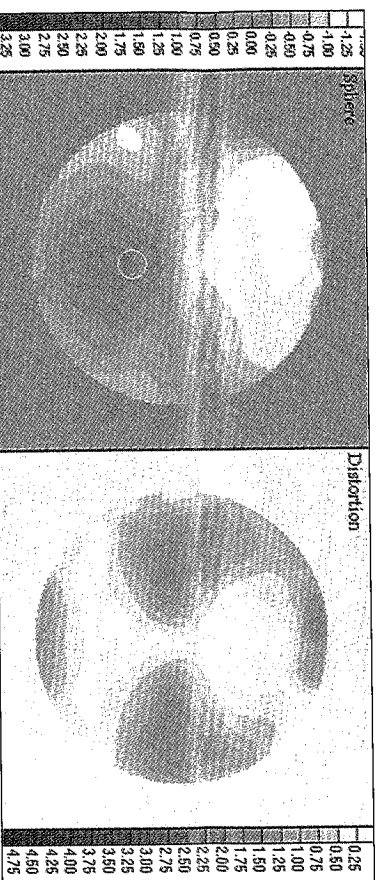


Figure 4. Zeiss Gradal RD

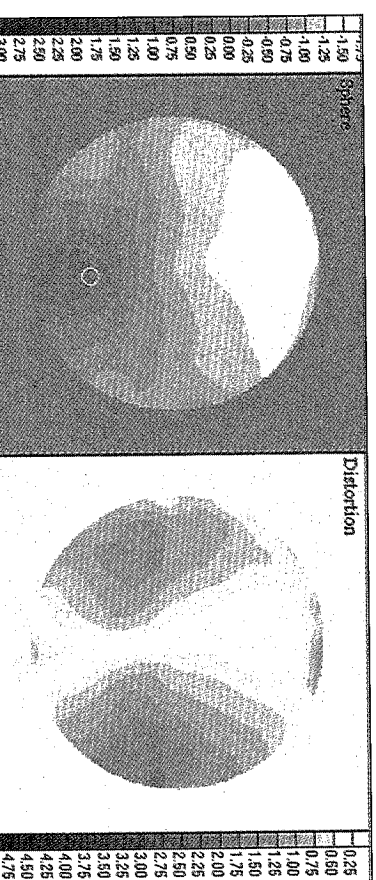


Figure 5. AO Technica, 2.50D degression – provides distance power in the top of the lens

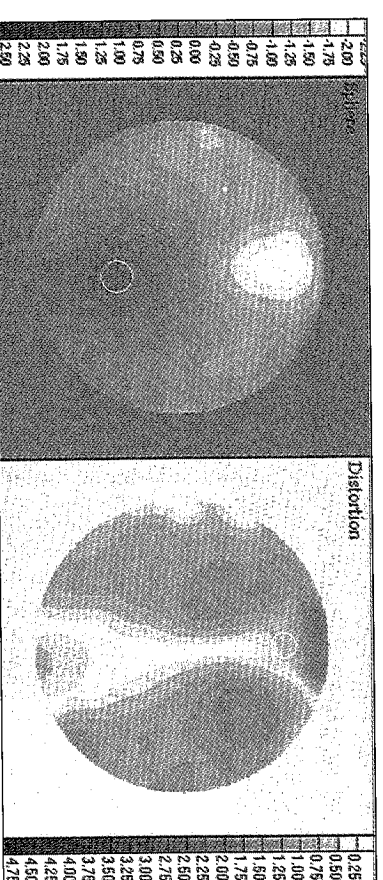


Figure 6. Essilor Interview

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WHERE TO FIND IT:

AO SOLA
800-555-7652
sola.com

Carl Zeiss Optical, Inc.
800-338-2984
zeisslenses.com

Essilor of America, Inc.
800-ESSILOR
essilorusa.com

PRIO Corporation
800-621-1098
prio.com

Rodenstock North America
888-407-3937
rodenstockusa.com

Shamir Insight, Inc.
888-707-7760
shamirlens.com

Vision-Ease Lens, Inc.
800-328-3449
vision-ease.com