Using an Adjustable Oval Dyop for Refractions

• Access the Adjustable Oval Dyop as a Single Dyop (Keystroke S").

• Use the Up/Down arrows, the (+/-) Screen Icons, or a controller device to reduce the Dyop diameter and determine the initial unaided visual acuity. Dyop arc width equivalents to diopter values can easily be determined by realizing that 8 arc minutes is Zero diopters of power and that each additional 6 arc minutes of Dyop diameter is equal to +/- 1 diopter of Optical Spherical power.

• Add 30 arc minutes (the equivalent to 5 diopters of blur) to the unaided acuity endpoint arc width to have a Dyop whose diameter is sufficiently large to determine Optical Axis and

• Adjust the Oval shape (Keystroke "Control+N") of the Single Dyop so that it is 50% of a circular Dyop. • Adjust the Axis of the Single Dyop to appear as horizontal as possible. (Keystroke "V"). This value is the Optical Axis.

• Then readjust the oval shape (Keystroke "Control+J") of the Single Dyop so that it appears as spherical as possible. This will indicate the Optical Cylinder Value.

110%	=	-	1.50	D	90%	=	+	1.50	D
120%	=	-	2.00	D	80%	=	+	2.00	D
130%	=	-	2.50	D	70%	=	+	2.50	D
140%	=	-	3.00	D	60%	=	+	3.00	D
150% = - 3.50 D					50% = + 3.50 D				
Minus Cylinder Adjustment					Plus Cylinder Adjustment				

Once the Single Dyop appears to be as horizontal (Axis) and as circular (Cylinder) as possible, reduce the Dyop diameter arc width to the sub-acuity level (where the direction of spin cannot be determined). Then incrementally increase the Dyop diameter so that the spin direction can be determined, which will be the Optical acuity endpoint. The value of the Optical Sphere is the Dyop arc width minus 8 arc minutes and then divided by six. Optical Cylinder Adjustment values above 100% of the Oval Adjustment indicate that the Optical Cylinder value is negative or minus. Optical Cylinder Adjustment values below 100% of the Oval Adjustment indicate that the Optical Cylinder value is positive or plus.

For example:

• An Optical Cylinder adjustment of 130% with an Optical Sphere 14 arc minutes (minus 8 arc minutes equals 6 arc minutes divided by 6) is +/- 1 diopter of Optical Sphere with 2.50 diopters of Minus Cylinder.

• An Optical Cylinder adjustment of 70% with an Optical Sphere 14 arc minutes (minus 8 arc minutes equals 6 arc minutes divided by 6) is +/- 1 diopter Optical Sphere with 2.50 diopters of Plus Cylinder.