

Materials

Plastic lenses

	Refractive Index	Abbe no.	Density (g/cm ³)	UV-A Absorption	UV-B Absorption**
1.5 Clear	1.501	58	1.32	>93%*	100%
1.53 Clear	1.527	45	1.11	>100%*	100%
1.6 Clear	1.598	41	1.30	>97%*	100%
1.67 Clear	1.664	32	1.35	100%	100%
1.74 Clear	1.738	32	1.47	100%	100%
1.5 PhotoFusion	1.501	58	1.32	100%	100%
1.53 PhotoFusion	1.527	45	1.11	100%	100%
1.6 PhotoFusion	1.598	41	1.30	100%	100%
1.67 PhotoFusion	1.664	32	1.35	100%	100%
1.5 Polarised	1.501	58	1.32	100%	100%
1.53 Polarised	1.527	45	1.11	100%	100%
1.6 Polarised	1.598	41	1.30	100%	100%
1.67 Polarised	1.665	32	1.35	100%	100%

* 100% tinted T<30%

Mineral lenses

	Refractive Index	Abbe no.	Density (g/cm ³)	UV-A Absorption	UV-B Absorption**
1.5 Clear	1.525	58.30	2.55	>65%	100%
1.6 Clear	1.604	43.80	2.67	>70%	100%
1.7 Clear	1.706	39.30	3.19	>64%	100%
1.8 Clear	1.807	34.40	3.65	>65%	100%
1.9 Clear	1.893	30.40	4.02	>83%	100%
1.5 Umbramatic	1.525	56.50	2.41	>93%*	100%
1.6 Umbramatic	1.604	42.80	2.74	>93%*	100%

Zeiss

Coating Availability

Progressive, Digital & EnergizeMe Lenses

		Uncoated	Hard-coated	LotuTec	DuraVision Silver & Platinum	DuraVision SUN	DuraVision Mirror	DuraVision BlueProtect	ET	Gold ET	Super ET	Gold & Super Filter
1.5	POL			■	■	■	■					
	PF / TR			■ ¹⁰	■ ¹⁰			■				
	CLEAR		■	■	■	■ ¹¹	■ ¹¹	■				
1.53	POL			■	■							
	TR			■ ¹⁰	■ ¹⁰			■				
	CLEAR		■	■ ¹⁰	■ ¹⁰			■				
	TINTED		■	■	■	■	■					
1.6	POL			■	■	■	■					
	PF / TR			■ ¹⁰	■ ¹⁰			■				
	CLEAR		■ ⁸	■	■	■ ¹¹	■ ¹¹	■				
1.67	POL			■	■	■						
	PF / TR			■ ¹⁰	■ ¹⁰			■				
	CLEAR		■ ¹⁶³	■	■	■ ¹¹		■				
1.74	CLEAR			■ ¹⁰	■ ¹⁰			■				
1.6 Glass	UMB	■ ⁴							■	■	■	
	CLEAR	■ ⁴							■	■	■	■
1.8 Glass	CLEAR								■	■	■	

Office Lenses

		Uncoated	Hard-coated	LotuTec	DuraVision Silver & Platinum	DuraVision SUN	DuraVision Mirror	DuraVision BlueProtect	ET	Gold ET	Super ET	Gold & Super Filter
1.5	CLEAR		■	■	■	■ ¹¹		■				
1.53	CLEAR		■	■	■			■				
1.6	CLEAR		■	■	■	■ ¹¹		■				
1.67	CLEAR			■	■	■ ¹¹		■				
1.74	CLEAR			■	■			■				
1.6 Glass	CLEAR	■							■	■	■	■

Bifocal

		Uncoated	Hard-coated	LotuTec	DuraVision Silver & Platinum	DuraVision SUN	DuraVision Mirror	DuraVision BlueProtect	ET	Gold ET	Super ET	Gold & Super Filter
1.5	PF / TR		■	■	■			■				
	CLEAR		■	■	■	■ ^{5 & 11}		■				
1.5 Glass	UMB	■							■	■	■	
	CLEAR	■							■	■	■	■
1.6 Glass	CLEAR	■							■	■	■	■

¹¹Only available on Sport lenses. ²Not available for Lenticular. ³Only available on Individual 2. ⁴Only available on Digital Lenses. ⁵Not available on Aphil. ⁶Not available on AS. ⁷Not available with Skylet tints. ⁸Not available on Precision Superb or Individual 2. ⁹Not available on Lenticular. ¹⁰Not available on EnergizeMe. ¹¹Only available on tinted lenses.

Zeiss

Coating Availability

Single Vision

		Uncoated	Hard-coated	LotuTec	DuraVision Silver & Platinum	DuraVision SUN	DuraVision Mirror	DuraVision BlueProtect	ET	Gold ET	Super ET	Gold & Super Filter
1.5	POL		■	■	■	■	■					
	PF / TR		■	■	■			■				
	CLEAR		■ ²	■	■ ⁹	■ ^{2, 5 & 11}	■ ^{2, 5 & 11}	■ ²				
1.53	POL		■	■	■	■	■					
	TR		■	■	■			■				
	CLEAR		■	■	■			■				
	TINTED		■	■	■	■	■					
1.6	POL		■	■	■	■	■					
	PF / TR		■	■	■			■				
	CLEAR		■	■	■	■ ¹¹	■ ¹¹	■				
1.67	POL			■	■	■						
	PF / TR			■	■			■				
	CLEAR			■	■	■		■				
1.74	CLEAR			■ ⁶				■ ⁶				
1.5 Glass	UMB	■							■	■	■	
	CLEAR	■							■	■	■	■
1.6 Glass	UMB	■							■	■	■	
	CLEAR	■							■	■	■	■
1.7 Glass	UMB	■							■			
	CLEAR	■							■	■	■	■
1.8 Glass	CLEAR								■	■	■	
1.9 Glass	CLEAR								■	■	■	

DriveSafe

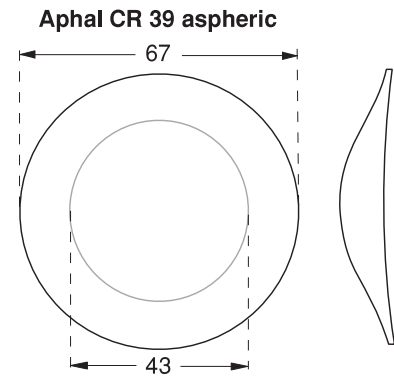
		Uncoated	Hard-coated	LotuTec	DuraVision Silver	DuraVision Platinum	DuraVision DriveSafe	DuraVision SUN	DuraVision Mirror	DuraVision BlueProtect	ET Coatings	Gold & Super Filter
1.5	POL					■	■	■				
	PF / TR						■					
	CLEAR						■	■ ¹¹				
1.53	POL						■					
	TR						■					
	CLEAR						■					
1.6	POL					■	■	■				
	PF / TR						■					
	CLEAR						■	■ ¹¹				
1.67	POL					■	■	■				
	PF / TR						■					
	CLEAR						■	■ ¹¹				
1.74	CLEAR						■					

¹Only available on Sport lenses. ²Not available for Lenticular. ³Only available on Individual 2. ⁴Only available on Digital Lenses. ⁵Not available on Apha. ⁶Not available on AS. ⁷Not available with Skylet tints. ⁸Not available on Precision Superb or Individual 2. ⁹Not available on Lenticular. ¹⁰Not available on EnergizeMe. ¹¹Only available on tinted lenses.

Single Vision Lenticular

Zeiss Single Vision 1.5 Aphal

CR39 Aspheric lens for aphakia and high hypermetropia.
Optic zone blends into margin as a continuous surface.
When used for reading, correct for Near Vision Effectivity Error.
Prescribed prism must be worked and not obtained by decentration.
Vertical optical centre position must conform to the pantoscopic tilt:
1 mm decentration down from the primary line of sight for each 2° of tilt.
Optima available.

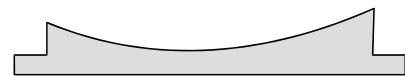


Zeiss Single Vision 1.5 Profile Lenticular

CR39 profile lenticular. Minimum lens depth 27mm (box measurement B).
The frame should be chosen so that very little decentration is required.
Frame dimensions and a former should be sent for uncuts.

Single Vision Mineral 1.5 & 1.7 Profile Lenticular

For use with high powered lenses. The optical aperture of the Profile Lenticular is usually taken to within 3 or 4mm of the lens edge, depending on the lens power. Glazed sample available on short term loan. **Prisms** to 3^Δ. Enquire for higher prisms.



Free Form Plastic Single Vision

Zeiss Single Vision Individual

An advanced fully individualised freeform generated CR39 lens with flatter curvature and less shape magnification. The optimised surface allows for precise optical imaging giving sharper vision over the entire lens. Fit similar to a progressive on pupil centre but also supply frame measurement details, pantoscopic angle, back vertex distance, monocular PD's and fitting height. These lenses will be supplied with measured powers

Zeiss Single Vision Superb

An advanced freeform generated CR39 lens with flatter curvature and less shape magnification. The optimised surface allows for precise optical imaging giving sharper vision over the entire lens. Fit similar to a progressive on pupil centre. These lenses will be supplied with measured powers.

Zeiss Single Vision DriveSafe

An advanced freeform generated CR39 lens designed around mesopic (low light level) driving conditions. The design specifically incorporates the pupil size for driving in mesopic conditions and the adapted pupil sizes used in the optimisation algorithms are 5mm in single vision lenses and 4.3mm for progressive lenses. Used in conjunction with **DuraVision Drivesafe MAR coating**. The blue light spectrum of car headlights (in particular in the 400-450nm range) using Xenon or LED technology produces a glare effect perceived by drivers. This coating partially reflects these wavelengths which reduces glare up to 64% compared with premium MAR coatings.

Glass Single Vision

Tital Umbramatic Equitint

A 2mm lamina of photochromic glass cemented on the front surface of a 1.7 index Tital glass lens; total centre thickness 2.2mm. Absorbance between 10% and 70%. Ideal for medium to high isometric prescriptions and anisometric and prismatic prescriptions where the lenses differ in thickness. The tint is a light neutral grey when unactivated but a greyish brown when fully activated. **Prisms** to 3^Δ, but enquire for higher amounts.

Photochromic Lamina



Plastic Bifocals

CR39 bifocals with front surface segment. Zeiss state that the Add is computed to agree with the refraction value; as a result they state the measured value on the focimeter may differ in certain dioptric ranges and additional information is given to check the Add on the focimeter. Bifocal segments are therefore computed to allow for oblique near vision effectivity error.

Zeiss Bifocal Classic C25

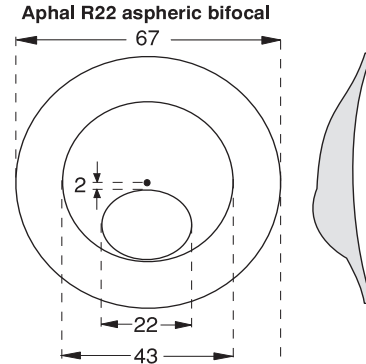
C-seg CR39 bifocal. From +10.25, the segment is moulded on the back surface with Adds 2.00 to 3.00 and 3.50.

Zeiss Bifocal Classic Aphal R22 Aspheric

22mm wide, front surface segment on an aspheric main lens for aphakia and high hypermetropia.

Note that the Add is computed to take into account the oblique near vision effectivity error. **Optimised / Optima** thinning available to Ø50. Same advantages as for single vision Clarlet Aphal.

Adds 2.00 to 3.00, and 3.50 (4.00 on request)



Plastic Trifocals

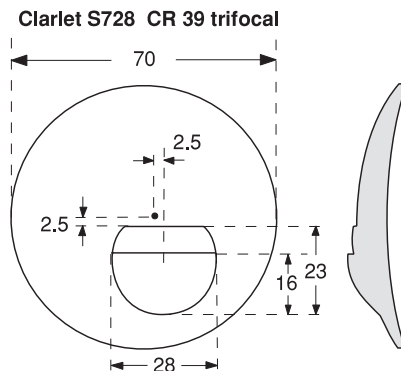
Zeiss Trifocal Classic S728 1.5

CR39 trifocal. Intermediate Add is 50% of the near Add.

Optima only available on + powers. Adds 1.75 to 3.00

For Higher cyl powers please enquire

Prisms to 3^Δ. Enquire for higher amounts.



Free Form Plastic Progressives

Zeiss Progressive Individual 2

The Zeiss premium fully individualised progressive lens that has an advanced freeform generated back surface with a flatter curvature and lower shape magnification. Although the back surface generated a power split between the back and front surface may be manufactured on higher powers and additions if the surfacing software dictates that this will give a better performance. It is necessary to supply frame measurement details, pantoscopic angle, back vertex distance, monocular PD's and fitting height together with the patients near working distance. This lens incorporates a variable length progressive corridor and utilises the Zeiss EyeFit technology allowing for bias of the design from balanced, intermediate or near. The lenses also utilise the centre of rotation evaluation allowing increased consideration of the eye's centre of rotation for each individual wearer. All Zeiss progressive lenses employ elliptical blanks (e.g. Ø75E) enabling thinner lenses on plus powers. Zeiss Progressive Individual 2 lenses will be supplied with measured powers.

Zeiss Progressive Superb

The Zeiss freeform progressive that replaces the GT2 3D lens generated on the back surface with flatter curvature and less shape magnification. It is necessary to supply frame measurement details, monocular PD's and fitting height as this lens incorporates a variable length progressive corridor and utilises the Zeiss FrameFit technology. The lenses also utilise the centre of rotation evaluation allowing increased consideration of the eye's centre of rotation for each individual wearer. All Zeiss progressive lenses employ elliptical blanks (e.g. Ø75E) enabling thinner lenses on plus powers. Zeiss Progressive Superb lenses will be supplied with measured powers. Optimised/Optima thinning available on plus lenses.

Zeiss Progressive Plus 2

The Zeiss freeform progressive that replaces the original GradalPlus lens. The curvature is generated on the back surface with flatter curves and less shape magnification. It is necessary to supply monocular PD's and fitting heights. Available in a standard and a short corridor with minimum fitting heights of 18 and 14mm. The lenses also utilise the centre of rotation evaluation allowing increased consideration of the eye's centre of rotation for each individual wearer. All Zeiss progressive lenses employ elliptical blanks (e.g. Ø75E) enabling thinner lenses on plus powers. Zeiss Progressive Plus 2 lenses will be supplied with measured powers. Optimised/Optima thinning available on plus lenses.

Zeiss PAL DriveSafe

An advanced freeform generated CR39 lens designed around mesopic (low light level) driving conditions. The design specifically incorporates the pupil size for driving in mesopic conditions and the adapted pupil sizes used in the optimisation algorithms are 5mm in single vision lenses and 4.3mm for progressive lenses. Used in conjunction with **DuraVision Drivesafe MAR coating**. The blue light spectrum of car headlights (in particular in the 400-450nm range) using Xenon or LED technology produces a glare effect perceived by drivers. This coating partially reflects these wavelengths which reduces glare up to 64% compared with premium MAR coatings.

Zeiss EnergizeMe Progressive

An advanced freeform generated lens created to adapt to the specific vision patterns of contact lens wearers, reducing eye strain after the removal of contact lenses. The design considers intentional visual behaviour and takes the movement of the head and eyes into account. The optimised lens design has been developed to allow comfortable reading of both conventional print at 38cm and digital devices at 35cm. The lens comes with the DuraVision BlueProtect coating which helps to reduce digital dazzle and prevents further eyestrain caused by blue light emissions.

Free Form Glass Progressives

Zeiss Progressive Individual 2 Mineral 1.6 Clear and Umbramatic

Zeiss Progressive Individual 2 Mineral 1.8

Zeiss Progressive Superb Mineral 1.6

Zeiss Progressive Superb Mineral 1.8

Zeiss Progressive Plus Mineral 1.6

Zeiss Progressive Superb Mineral 1.8

See lens design attributes in the Free Form Plastic section above.

Free Form Vocational

Zeiss Officelens

The Zeiss freeform vocational lenses that replace the Clarlet Business and Gradal RD. Zeiss have opted for an individual approach in determining the wearers Maximum Intermediate Distance (M.I.D) ZEISS Officelens Plus & ZEISS Officelens Superb designs are available with two Maximum Intermediate Distances. Lens type Near: This "enhanced reader lens" provides clear vision from reading distance to a fixed M.I.D. of 200cm. Lens type Room: This "indoor progressive lens" provides clear vision from reading distance up to a fixed M.I.D. of 400cm. ZEISS Officelens Individual design has an individual M.I.D. which can be customised to the wearer's needs in a range from 100cm to 400cm. The range of vision can be customised from the individual reading distance up to the individual M.I.D. of the wearer.

All ZEISS Office lenses will be fitted like a ZEISS progressive lens: place the centering cross on the centre of the patient's pupil (with patient looking straight-ahead). As these lenses are primarily for reading it is recommended that the short version is ordered in order to give the patient the maximum reading area. It is necessary to supply monocular PD's and

Zeiss Officelens Individual

A fully individualised freeform vocational lens with variable fitting heights from 14mm to 20mm. State on order the boxed frame measurements, mono PDs, fitting heights, the FrameFit value and Near or Room version. The individualised measurements required are back vertex distance, pantoscopic angle, face form angle and near working distance. If a specific working distance is required state on the order the M.I.D (Maximum Intermediate Distance) and this parameter will be incorporated into the lens design. Prisms max to 3^Δ.

Zeiss Officelens Superb

A freeform vocational lens with variable fitting heights from 14mm to 20mm. State on order the boxed frame measurements, mono PDs, fitting heights, the FrameFit value and Near or Room version. Prisms Max to 3^Δ. Optimised/Optima thinning available on plus lenses.

Zeiss Officelens Plus & Plus Short

A freeform vocational lens with two fitting heights 14mm and 20mm. State on order the boxed frame measurements, mono PDs, fitting heights, and Near or Room version. Prisms Max to 3^Δ. Optimised/Optima thinning available on plus lenses.

Free Form Lifestyle

Zeiss Single Vision DriveSafe Sport 1.5

An advanced freeform generated CR39 lens designed around mesopic (low light level) driving conditions. The design specifically incorporates the pupil size for driving in mesopic conditions and the adapted pupil sizes used in the optimisation algorithms are 5mm in single vision lenses and 4.3mm for progressive lenses. Used in conjunction with **DuraVision Drivesafe MAR coating**. The blue light spectrum of car headlights (in particular in the 400-450nm range) using Xenon or LED technology produces a glare effect perceived by drivers. This coating partially reflects these wavelengths which reduces glare up to 64% compared with premium MAR coatings.

Zeiss Single Vision Sport Clip 1.5 & 1.6

A CR39 lens designed to be inserted into clips supplied with plano goggles and sports frames. Optimised/Optima thinning available on plus lenses.

Zeiss Single Vision Sport Individual and Superb

A CR39 individualised lens designed to be inserted into sports frames with a high face form angle. Optimised/Optima thinning available on plus lenses. Available up to 1.67 Index.

Zeiss Progressive Sport

A progressive lens designed to be inserted into sports frames with a high face form angle. These lenses are freeform generated and will be supplied with measured powers. They are available in two corridor lengths with a minimum recommended fitting height of 18mm standard and 14mm short version. Optimised/Optima thinning available on plus lenses. The Individual version requires full frame fitting parameters. Available up to 1.67 Index.

Zeiss PAL DriveSafe Sport

An advanced freeform generated CR39 lens designed around mesopic (low light level) driving conditions. The design specifically incorporates the pupil size for driving in mesopic conditions and the adapted pupil sizes used in the optimisation algorithms are 5mm in single vision lenses and 4.3mm for progressive lenses. Used in conjunction with **DuraVision Drivesafe MAR coating**. The blue light spectrum of car headlights (in particular in the 400-450nm range) using Xenon or LED technology produces a glare effect perceived by drivers. This coating partially reflects these wavelengths which reduces glare up to 64% compared with premium MAR coatings. All lenses available with Adds 0.75 to 3.50. Available up to 1.67 Index.

Free Form Low Addition Lenses

Zeiss Single Vision EnergizeMe

An advanced freeform generated lens created to adapt to the specific vision patterns of contact lens wearers, reducing eye strain after the removal of contact lenses. The design considers intentional visual behaviour and takes the movement of the head and eyes into account. The optimised lens design has been developed to allow comfortable reading of both conventional print at 38cm and digital devices at 35cm. The lens comes with the DuraVision BlueProtect coating which helps to reduce digital dazzle and prevents further eyestrain caused by blue light emissions. This lens incorporates the full distance Rx together with an Addition of 0.40D

Zeiss Digital EnergizeMe

An advanced freeform generated lens created to adapt to the specific vision patterns of contact lens wearers, reducing eye strain after the removal of contact lenses. The design considers intentional visual behaviour and takes the movement of the head and eyes into account. The optimised lens design has been developed to allow comfortable reading of both conventional print at 38cm and digital devices at 35cm. The lens comes with the DuraVision BlueProtect coating which helps to reduce digital dazzle and prevents further eyestrain caused by blue light emissions. This lens incorporates the full distance Rx together with an Addition of 0.65D

Zeiss Digital Low Addition Lenses

Zeiss Digital lenses provide an aberration free distance zone and comfortable near zone for relaxed vision on digital devices. The intermediate zone usually used in progressive lenses is more compressed to match the visual behaviour of emmetropes or single vision wearers. The lenses are available with four additions from +0.50D to +1.25D. A sport version is also available. The lenses have an automatic variable fitting height from 14mm to 20mm and the recommended and standard fitting height is 16mm. With a comprehensive range of materials and treatments combined with 4 additions the Zeiss Digital lenses offer patients who are pre-presbyopic a wide selection of choice.

ZEISS Digital Lenses	Clear	Tinted	PhotoFusion®	Transitions®	Polarised
Organic 1.74	■				
Organic 1.67	■	■	■	■	
Organic 1.6	■	■	■	■	■
Organic 1.5	■	■	■	■	■
Mineral 1.8	■	■			
Mineral 1.6	■	■	■		

Free Form Low Addition Sport Lenses

Zeiss Digital 1.5 CR39 Sport

Zeiss Digital 1.5 PhotoFusion Sport

Zeiss Digital 1.5 Polarised Sport

Zeiss Digital 1.6 Sport

Zeiss Digital 1.6 PhotoFusion Sport

Zeiss Digital 1.6 Polarised Sport

All lenses available in Ø60/70 to Ø75/85, -4 to +4.00, cyls to +6.00, Adds 0.50 to 1.25

Free Form Low Addition Glass Lenses

Zeiss Digital 1.6 Mineral

Zeiss Digital 1.6 Umbramatic

Zeiss Digital 1.8 Mineral

Specialist Lens Features

Zeiss Prism Control D25mm Cement Seg 1.5 Mineral



This lens is especially made for patients with differential prism and is an alternative to the Franklin Split option. For availability of required power and prism contact Zeiss Customer Services with full Rx details including frame size, mono Pds and fitting heights.

For differential prism orders it is important to stipulate the overall required prism at near if different prescribed prism is needed in both distance and near.

For example: +1.00 1^Δ base in Add +2.00 2^Δ base in would be written to include the overall either as +1.00 1^Δ base in Add +2.00 2^Δ base in overall or +1.00 1^Δ base in Add +2.00 3^Δ base in overall depending on whether the near prism value included the distance prism or was in addition to it.

Different prism in distance and near portions

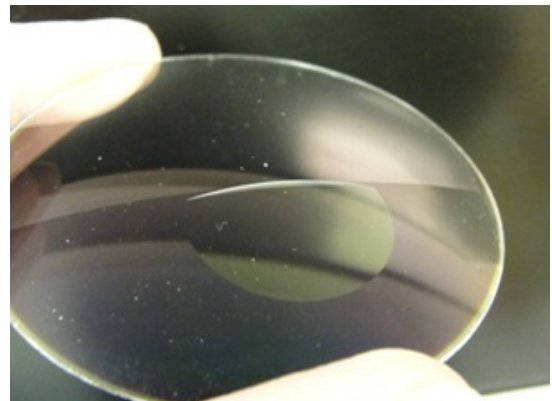
A prism segment is cemented to a Punktal (glass) single vision main lens. Possible variations: Distance without prism, near with prism. Distance prism stronger than near prism. Distance prism weaker than near prism. Distance with prism, near without prism.

Slab Off

Slab off is a feature of controlling anisometropia by incorporating a prism into the lower half of one lens for bifocal or progressive lenses. Slab off is normally produced using glass lenses and the results can be very beneficial for the patient.

A significant difference in refractive error between the right and left eyes is known as anisometropia.

Anisometropia produces two optical effects of visual consequence, firstly differences in magnification between the lenses that produce image size differences (aniseikonia) and secondly differences in prism between the lenses away from the optical centres that induce prism imbalance. Prism imbalance is especially problematic for progressive lens wearers since they cannot avoid it while using the near area of their lenses.



When looking straight through the optical centres of a pair of lenses (or distance region for a PAL), the patient should experience little or no vertical imbalance even if the powers between right and left differ considerably. However, as the eyes track down the lens to the near, effective prism is always naturally induced as the patient is no longer looking through the optical centres. If the right to left prescriptions at 90° are different, a different amount of prism is induced for each eye, resulting in double vision at near.

An example of slab off would be

R -1.00 -3.00 X 180, L 0.00 -1.00 X 180, Add +2.50, Reading level 10mm below the distance optical centres. First you would calculate the power in the 90 degree meridians which equates to:- R -4.00 @ 90, L -1.00 @ 90

Secondly you calculate the amount of prism in each eye using Prentices Rule. Prism right =1cm X 4.00, Prism left =1cm X 1.00 giving Prism right 4^Δ base down, Prism left 1^Δ base down.

Thirdly since the prism is in the same direction you take the difference between them, R4^Δ - L1^Δ = 3^Δ base down prism in the right eye. Since only base up prism can be applied and the right eye is the most minus you would slab off the right eye with 3^Δ of base up prism.

Creating a slab off does produce a noticeable horizontal line across the front surface of the lens and an example can be seen in the photograph, however, the visual results almost always outweigh the slight cosmetic disadvantage.