

YOUR DESIRE OUR MISSION

YOUR TRUSTED PARTNER

Precision Lenses for Medical Excellence



SWISSCOAT®
Better Vision

COMPANY BACKGROUND

About SWISSCOAT

Founded in 1989, **SWISSCOAT** has established itself as a leading provider of comprehensive **Rx lens solutions**. With over 30 years of industry expertise, we are dedicated to delivering high-quality products through a commitment to **innovation, precision, and customer satisfaction**.

Supported by a highly skilled workforce, experienced leadership, and a robust 24/7 logistics infrastructure, we ensure reliable and timely delivery to meet the diverse needs of our global clientele. Our strong **R&D capabilities**, combined with the technological expertise of the **SWISSCOAT team**, drive continuous innovation and advancement in lens technology.

Our broad product portfolio includes customized solutions for all types of visual needs, with dedicated lines for low vision applications.

At Swiss Lens Laboratory, **sustainability and innovation** are at the heart of our mission. We actively implement eco-friendly practices while pioneering cutting-edge technologies to remain at the forefront of the optical industry.

SWISSCOAT – Empowering Vision. Delivering Excellence.



200,000 Square feet Rx Production Site



ASPAC Head Office



SWISSCOAT - Mastering the Art of Vision

SWISSCOAT seamlessly blends precision optics with visual comfort, delivering an exceptional, premium viewing experience. Our proprietary High-Definition Digital Precision Technology ensures that every pair of SWISSCOAT lenses is meticulously crafted with unparalleled accuracy and clarity, precisely aligned with the prescription specifications provided by eye care professionals.



LENS TYPE			
CUSTOMIZED MEDICAL LENSES			
Specialty Lens	Specialty Lens (Very High Diopter)	Low Vision	Spectral Filter
Amblyopia	High Myopia	Low Vision Aid Lenses	Color Blindness / Color Deficiency
Strabismus	Aphakia	MED S	Albinism
	High Prism	MED EVS	Aphakia
	Post-Cataract Surgery		Macular Degeneration (MD)
	High Astigmatism		Night Blindness
			Pre-Cataract
			Post-Cataract
			Retinitis Pigmentosa
			Diabetic Retinopathy
			Reading
			Sjogren's Syndromes
			Blepharospasm
			Photosensitivity
			Glaucoma
			Night Vision Adaptation
			Migraine
			Epilepsy
			Dyslexia

SWISSCOAT ADOPTS STATE-OF-THE-ART PRECISION TECHNOLOGY IN LENS MAKING

Optimal Fit
Technology

Optics Solution
Technology

Advanced Lens
Coating Technology

All our lens products are designed and created out of innovation

We understand that all our customers of diverse background and lifestyle needs, would have different corrective eyewear needs. Our dedication to provide a comfortable vision experience begins at the technology. As a lens specialist, we offer the right solution for glasses wearers with precisely crafted lenses that are packed with features.

Every SWISSCOAT lens product is carefully crafted with unique state-of-the art Precision Technology - every pair of lenses is customized to answer to the individual eyewear needs of our customers. Whether you are looking for single vision lenses, progressive lenses, or lenses with special protection functions, SWISSCOAT always has the right solution.

The strength of our precision lies in 5 core areas that we have carefully refined over the years.



Optics Solution
Technology



Optimal Fit
Technology



Advanced Surface
Coating Technology



Production Engineering
Technology



System Engineering
Technology





AMBLYOPIA STRABISMUS

SPECIALTY LENS

Amblyopia / Strabismus

The Relationship Between Amblyopia and Strabismus

Custom-designed optical prisms play a significant role in the rehabilitation of both amblyopia (lazy eye) and strabismus (crossed eyes). By precisely altering the path and direction of incoming light, these specialized prisms help align visual input from both eyes, supporting the restoration of **binocular visual function**.

Used as part of a tailored therapeutic approach, optical prisms can facilitate **sensory fusion**, reduce ocular misalignment, and promote **visual development**, particularly in pediatric and neuro-ophthalmic cases.

Amblyopia

Amblyopia, commonly referred to as **lazy eye**, is a developmental vision disorder characterized by reduced visual acuity in one eye that cannot be fully corrected with prescription eyeglasses or contact lenses.

This condition arises from insufficient visual stimulation during early childhood, often due to the brain receiving conflicting images from the two eyes. As a protective mechanism, the brain tends to suppress or ignore the input from the weaker eye, leading to impaired visual development.

Common causes of amblyopia include:

- **Anisometropic amblyopia:** significant difference in refractive error between the two eyes
- **Strabismus:** misalignment of the eyes
- **Visual deprivation:** due to obstruction such as trauma, ptosis (lid droop), or other ocular conditions

Early detection and treatment are critical to improve visual outcomes and promote binocular vision.

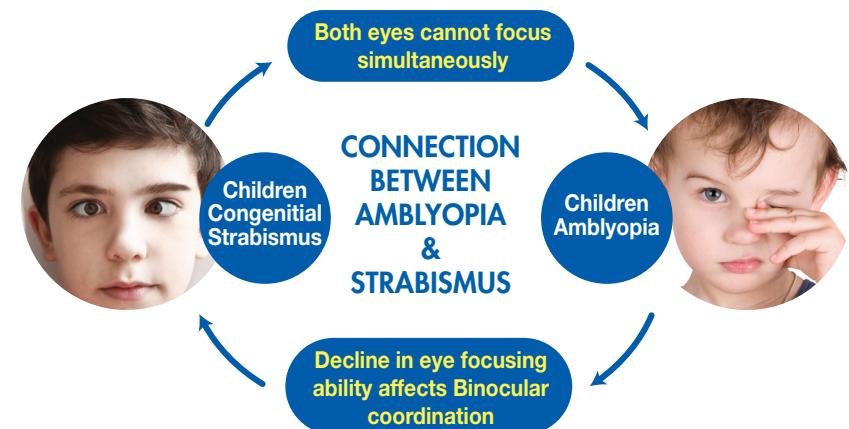
Strabismus

Strabismus, commonly known as **crossed eyes**, is a condition characterized by the improper alignment of the eyes when focusing on an object. While one eye remains directed at the target, the other may deviate inward (**esotropia**), outward (**exotropia**), upward (**hypertropia**), or downward (**hypotropia**).

This misalignment can disrupt binocular vision and, if untreated, may lead to amblyopia, as the brain tends to suppress input from the misaligned eye.

Strabismus may present as a constant or intermittent condition and can affect individuals across all age groups, though it most frequently develops during infancy or early childhood.

There is a definite correlation between Strabismus and Amblyopia particularly among children. One of the causes of amblyopia is strabismus.



Mutual Influence Between Strabismus and Amblyopia

Strabismus and amblyopia often develop during early childhood and frequently coexist, with each condition potentially exacerbating the other. Additional factors contributing to strabismus include genetics, neurological disorders, certain medical conditions, and ocular trauma.

If left untreated, strabismus can lead to vision problems such as amblyopia, where the brain preferentially favors one eye, resulting in reduced vision in the other. This imbalance can also impair **depth perception, coordination, and balance**.

Concurrent Treatment Approach

Due to the close relationship between strabismus and amblyopia, children diagnosed with strabismus typically undergo assessment and treatment for amblyopia as well. Since untreated amblyopia can compromise the success of strabismus interventions, addressing both conditions concurrently—whether through corrective lenses, vision therapy, or surgery—is essential for optimal visual outcomes.

Additional Considerations

- Decline in eye focusing ability negatively affects **binocular coordination** and overall visual function.
- It is important to recognize that strabismus and amblyopia can also occur independently; not all individuals with strabismus have amblyopia, and vice versa.
- Nevertheless, their interconnected nature highlights the importance of **regular eye examinations** and **early intervention** to promote healthy visual development and preserve binocular vision.

The Application of Custom-Designed Optical Prisms in the Rehabilitation of Amblyopia / Strabismus

Prism Test

This is a critical step in fitting optical prisms. Professionals use prisms of varying values or orientations to direct light into your eyes and observe the eye's response. This helps determine the need for optical prisms to correct strabismus or other visual issues.

Visual Correction

In cases of visual system discordance or sensitivity differences, specific prescription prisms can adjust the visual disparity between the two eyes, guiding the strabismic eye to focus on the correct target. This enables better coordination, potentially improving vision quality and function.

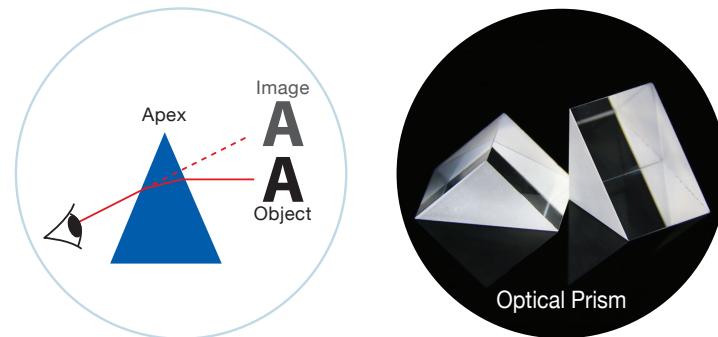


Generally, acquired or sudden-onset strabismus can result in a visual deviation, where the visual axis strays from its correct position. Optical prisms can be used to correct this visual shift, helping the strabismic eye re-establish proper visual focus, thereby improving the strabismus condition.

In cases of exotropia, a prism with its base oriented inward is typically placed in front of the misaligned eye; for esotropia, a prism with its base oriented outward is used. Prisms can be produced to combine the necessary prescription power or can be made without any prescription power.

Prisms are one of the many methods available for correcting strabismus, and they can be used alone or in conjunction with other treatments. Each patient's situation is unique, and the most suitable rehabilitation method may vary.

Therefore, it is recommended that assessments and personalized rehabilitation plans are developed under the guidance of a professional ophthalmologist or vision specialist, to ensure the best possible outcome.



SPECIALTY LENS

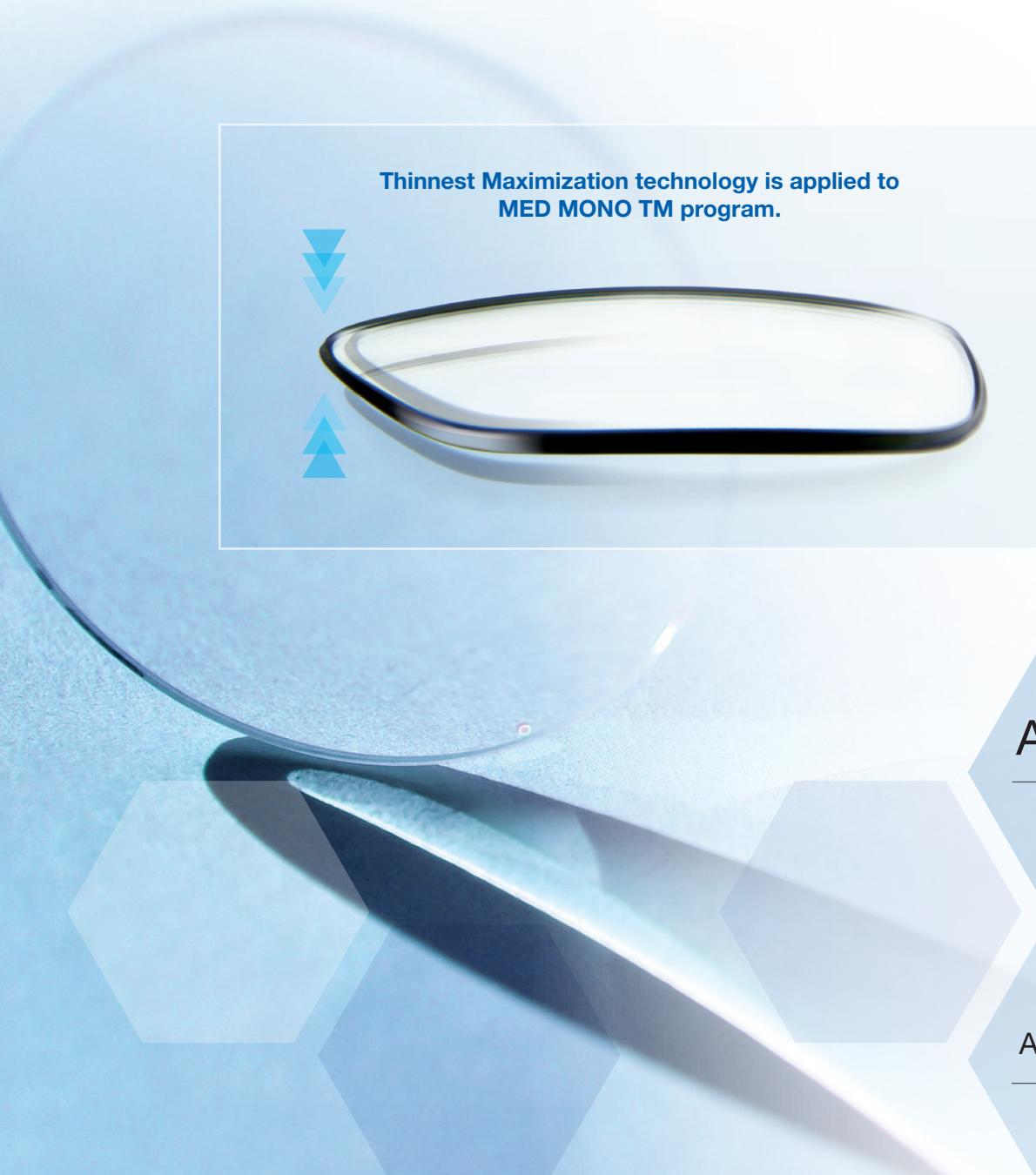
Index	Material	Total Power (Cyl -6.00)	Max. Prism Value #	Clear UV380			Clear UV400			Clear Armour UV++		
				SPC	MV	SF	SPC	MV	SF	SPC	MV	SF
1.5	CR39	+9.75 ~ -13.00	6△	✓	✓	✓	-	-	-	-	-	-
1.61	MR-8	+8.75 ~ -16.00	8△	-	-	-	✓	✓	✓	✓	✓	✓
1.67	MR-7	+14.00 ~ -11.00	10△	-	-	-	✓	✓	✓	✓	✓	✓
1.74	MR-174	+12.00 ~ -12.00	12△	-	-	-	✓	✓	✓	✓	✓	✓

The maximum prism value is for reference only. The final value is influenced by factors such as frame size, pupillary distance and prescription power.

SPECIALTY LENS

Index	Material	Total Power (Cyl -6.00)	Max. Prism Value #	Armour Sun UV++			Transitions GenS / XTRActive		
				SPC	MV	SF	SPC	MV	SF
1.5	CR39	+7.50 ~ -13.00	6△	-	-	-	✓	✓	✓
1.61	MR-8	+11.50 ~ -15.00	8△	✓	✓	✓	✓	✓	✓
1.67	MR-7	+11.50 ~ -16.00	10△	✓	✓	✓	✓	✓	✓
1.74	MR-174	+12.00 ~ -19.50	12△	-	-	-	✓	✓	✓

The maximum prism value is for reference only. The final value is influenced by factors such as frame size, pupillary distance and prescription power.



Thinnest Maximization technology is applied to
MED MONO TM program.

SPECIALTY LENS

HIGH
MYOPIA

Specialty
Lens

APHAKIA

Specialty
Lens

HIGH
PRISM

Specialty
Lens

POST-
CATARACT
SURGERY

Specialty
Lens

HIGH
ASTIGMATISM

Specialty
Lens

THIN MAX
TECHNOLOGY

Specialty
Lens

Specialty Lens

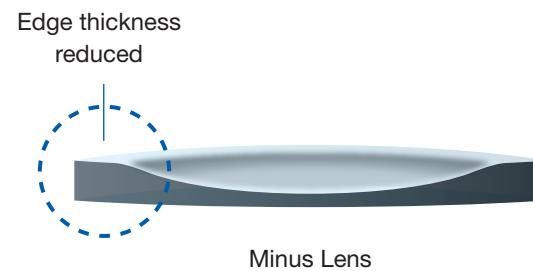
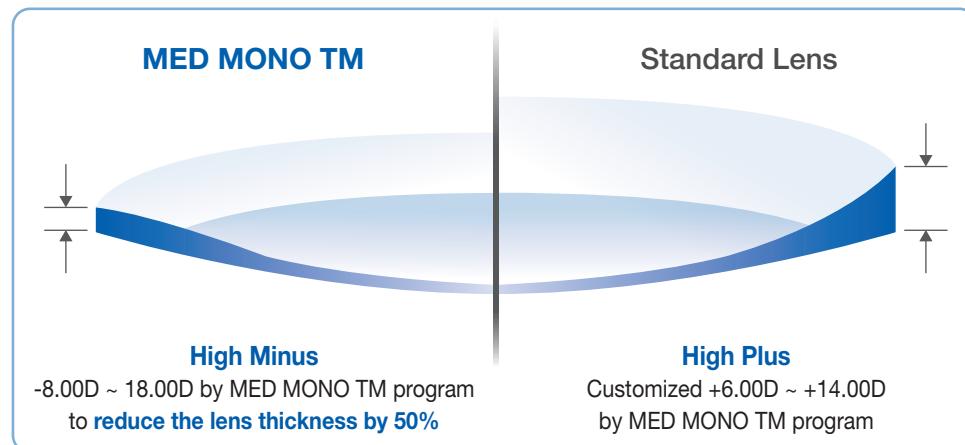
High myopia, High prism, High Astigmatism or aphakia patients have very high diopter, ordinary lenses can not meet the demand, SWISSCOAT can provide special customized services.

Patients with high hyperopia or aphakia have very high diopter, and the lenses needed are usually very thick and heavy, which greatly affects the correction and appearance.

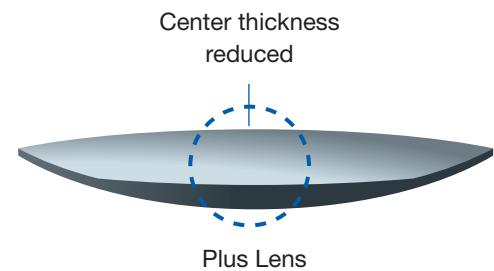
SWISSCOAT adopt the principle of reducing the diameter of lenses, which can reduce the thickness and weight of lenses as much as possible under the premise of guaranteeing the



MED MONO is a process developed to minimize the thickness and weight of lenses, it reduces the thickness with a gradual change in curvature, giving as a result a thinner lens in the edge for minus lenses and thinner in the center for plus lenses.



Minus Lens



Plus Lens

MED MONO TM



Minus Lens

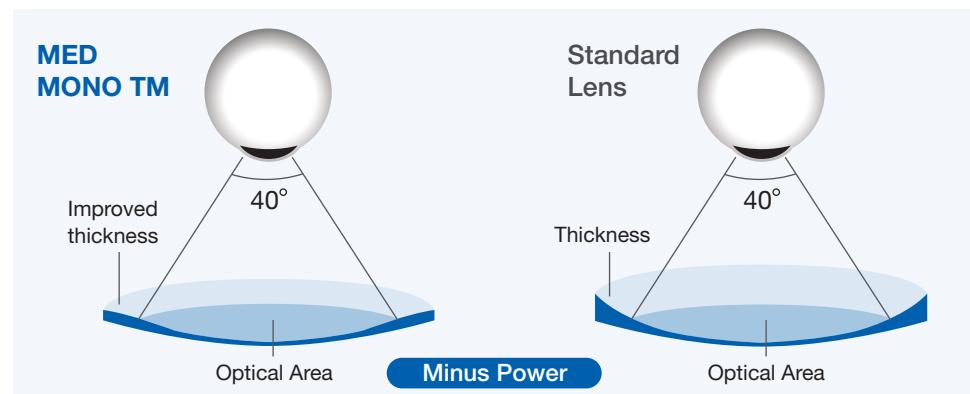


Plus Lens

Standard - Lens

Optical Area

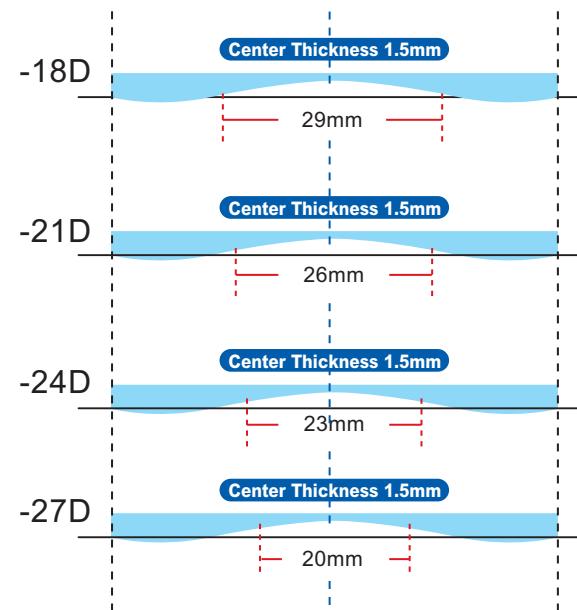
Optical area is a zone where the optical quality is optimum. MED MONO effect saves this area for optical vision and modifies the curvature of the lens outside the saved zone to reduce thickness.



Pathological Myopia by MED MONO TM

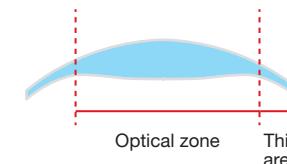
Customized through MED Mono TM technology for prescriptions from -8.00D to -32.00D. The edge thickness can be reduced by up to 50%.

Note: Prescriptions from -18.50D to -30.00D (with maximum Astigmatism of -4.00) is the extreme prescription power. Vision area is in the diameter of 20mm to 29mm. The center thickness of the lens is 1.5mm and the lens edge thickness ranges from 3.5 to 4.5mm.



Congenital Hyperopia by MED MONO TM

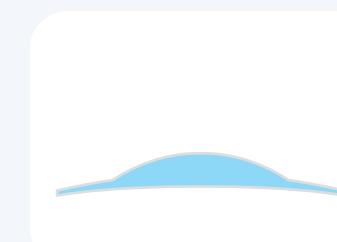
Customized by MED Mono TM technology for +6.00D to +14.00D of which the center area is the optical zone, providing accurate power, while the edges are the non-prescriptive aesthetic thinning areas. The optical vision center zone is 35-40mm.



Power Range +6.00 ~ +14.00D

Post-Cataract Surgery Specialty Lens

The center constitutes the optical zone and is also the thickest part of the lens. The central area of 35mm-40mm provides the range for accurate prescriptions, supported by the aesthetically thinner periphery. The boundary between the optical zone and the thinning area is relatively distinct.



Lenses designed for post-cataract surgery are most suitable for rehabilitation purposes. Compared to conventional lenses, these post-cataract surgery lenses appear thinner and are lighter in weight, offering patients a continuous comfortable wearing experience.

Power Range +6.00 ~ +24.00D

HIGH MYOPIA | APHAKIA | HIGH ASTIGMATISM | HIGH PRISM

MED MONO TM

Index	Material	Total Power (Cyl -6.00)	Clear UV400				Clear Armour UV++		
			HC	SPC	MV	SF	SPC	MV	SF
1.61	MR-8	-8.00D ~ -15.00D +6.00D ~ +8.00D [#]	✓	✓	✓	✓	✓	✓	✓
1.67	MR-7	-8.00D ~ -16.00D +6.00D ~ +13.00D [#]	-	✓	✓	✓	✓	✓	✓
1.74 Tintable	MR-174	-8.00D ~ -28.00D [#] +6.00D ~ +8.50D [#]	-	✓	✓	✓	-	-	-
1.74 Non-Tintable	MR-174	-8.00D ~ -28.00D [#] +6.00D ~ +11.50D [#]	✓	✓	✓	✓	✓	✓	✓

Diameter is limited to 20mm-29mm / Center thickness is 1.5mm / Maximum Edge thickness ranges from 3.5mm to 4.5mm. The diameter of the Optical zone is 35mm-40mm.

HIGH MYOPIA | APHAKIA | HIGH ASTIGMATISM | HIGH PRISM

MED MONO TM

Index	Material	Total Power (Cyl -6.00)	Armour Sun UV++			Total Power (Cyl -6.00)	Transitions GenS / XTRAactive			Total Power (Cyl -6.00)	Nupolar	
			SPC	MV	SF		SPC	MV	SF		HC	SPC
1.61	MR-8	-8.00D ~ -15.00D +6.00D ~ +8.00D [#]	✓	✓	✓	-8.00D ~ -15.00D +6.00D ~ +10.50D [#]	✓	✓	✓	-8.00D ~ -12.00D +6.00D ~ +8.00D [#]	✓	✓
1.67	MR-7	-8.00D ~ -16.00D +6.00D ~ +13.00D [#]	✓	✓	✓	-8.00D ~ -16.00D +6.00D ~ +10.50D [#]	✓	✓	✓	-8.00D ~ -12.00D +6.00D ~ +8.00D [#]	✓	✓
1.74	MR-174	-	-	-	-	-8.00D ~ -28.00D [#] +6.00D ~ +11.50D [#]	✓	✓	✓	-	-	-

Diameter is limited to 20mm-29mm / Center thickness is 1.5mm / Maximum Edge thickness ranges from 3.5mm to 4.5mm. The diameter of the Optical zone is 35mm-40mm.

POST- CATARACT SURGERY								
MED OM								
Index	Material	Total Power (Cyl -6.00)	Clear UV380			Clear UV400		
			SPC	MV	SF	SPC	MV	SF
1.5	CR39	+6.00 ~ +18.00	✓	✓	✓	-	-	-
1.61	MR-8	+10.00 ~ +20.00	-	-	-	✓	✓	✓
1.67	MR-7	+14.00 ~ +23.00	-	-	-	✓	✓	✓
1.74	MR-174	+16.00 ~ +28.00	-	-	-	✓	✓	✓



SPECIALTY LENSES FOR LOW VISION

*Restoring Vision,
Renewing Independence*

Vision and Visual Disability

Vision is the primary sensory modality for humans, accounting for over 80% of sensory input. Visual impairment, also referred to as visual disability, significantly affects not only visual function but also the individual's quality of life, contributing to substantial socio-economic challenges.

Visual Disability Overview

Visual disability is broadly categorized into **total blindness** and **low vision**, with specific definitions varying according to clinical or functional context.

- **Total Blindness** generally denotes a complete absence of visual perception, including no light sensitivity.
- **Low Vision** is defined as a permanent visual impairment where the best-corrected visual acuity in the better-seeing eye is less than 6/18 (approximately 30% of normal vision).

Individuals with low vision, despite this permanent impairment, retain the potential to improve functional sight through the use of assistive devices or specialized lenses to support daily living activities.

LEVEL OF VISION IMPAIRMENT	VISUAL ACUITY SCALE		
	6m	20ft	Decimal
Mild	<6/12 but \geq 6/18	<20/40 but \geq 20/70	<0.5 but \geq 0.3
Moderate	<6/18 but \geq 6/60	<20/70 but \geq 20/200	<0.3 but \geq 0.1
Severe	<6/60 but \geq 3/60	<20/200 but \geq 20/400	<0.1 but \geq 0.05
Blindness	<3/60	<20/400	<0.05

Classification by Severity

According to the **World Health Organization (WHO)**, low vision patients are stratified into three severity levels—**mild, moderate, and severe**—based on the functional impact on their daily lives.

This classification relies on assessments of the **better-seeing (dominant) eye**, considering parameters such as **best-corrected visual acuity** and **visual field performance**.

SWISSCOAT Low Vision Lens Solutions

SWISSCOAT is committed to offering a comprehensive range of **“Low Vision” lens products** designed to support patients affected by diabetes, severe myopia, night blindness, and other acquired visual impairments. Our primary approaches to enhancing visual function include:

1. **Magnification through high-prescription lenses**, combined with tailored prism corrections, to facilitate reading and near tasks.
2. **Low vision rehabilitation** utilizing specialized E-Scoop lenses.
3. **Improvement of image contrast and reduction of photosensitivity** using advanced filters to alleviate visual discomfort.

Note: Methods 1 and 3 may be applied independently or in combination, depending on patient needs.

SWISSCOAT introduces this dedicated series of functional lenses to help individuals with low vision **enhance their sight and visual quality**, ultimately improving their daily living and overall quality of life.

The International Classification of Diseases 11 (2018) classification for distance vision impairment is as follows.

For characterizing binocular vision impairment, vision acuity should be measured with both eyes open with presenting correction if any. For characterizing monocular visual impairment, visual acuity should be measured monocularly with presenting correction if any.

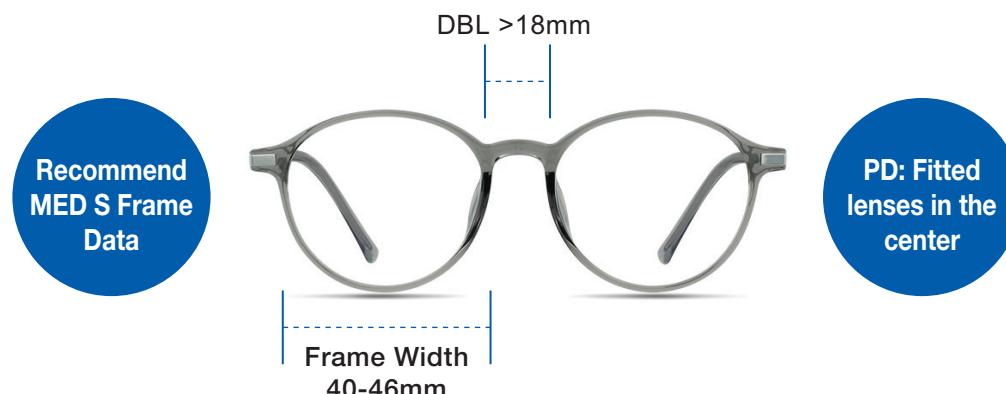
Low Vision Lens Product

The **SWISSCOAT MED S Low Vision lenses**, when used in combination with magnifiers, offer patients an effective solution for close-distance magnification, delivering one of the widest fields of view available among hands-free magnifier options.

These lenses integrate high magnification with specially designed **base-in prisms**. The prism values are calibrated to maintain a fixed difference of **two diopters** relative to the refractive power of the lenses. This prism incorporation helps to **reduce binocular convergence stress** typically experienced during near vision tasks, thereby improving visual comfort and functionality.

Power Prism	Lens Magnification (Reading Distance)	Maximum Diameter(mm) of MED S Lenses with different index			
	Reference Distance: 40cm	1.5	1.6	1.67	1.74
+4.00 / 6 BI (Base in Prism)	1X (250mm)	71	71	71	71
+6.00 / 8 BI (Base in Prism)	1.5X (166mm)	68	68	68	68
+8.00 / 10 BI (Base in Prism)	2X (125mm)	66	66	66	66
+10.00 / 12BI (Base in Prism)	3X (100mm)	65	65	65	65

Eyecare Professionals will prescribe MED S lenses based on individual vision needs



Note:

When using visual aids, we employ the necessary minimum magnification, as the working distance and lens size will decrease with increasing magnification.

MED EVS Lenses

SWISSCOAT's **MED EVS lenses** are specifically designed to enhance the visual performance of patients with low vision, particularly those affected by **macular degeneration and scotoma**. These lenses incorporate five unique features aimed at maximizing visual function and comfort:

- **Special Lens Thickness:** Enhances image magnification to support better detail recognition.
- **Custom Filter Tint:** Reduces visual stress caused by bright light and provides UV protection, increasing comfort and improving overall vision.
- **Lens Curve Options:** Strategically designed to magnify images, allowing patients to perceive finer details. Available in +3.00, +4.00, +6.00, +8.00, and +10.00 diopters.
- **Base-Up Prism:** Redirects light from damaged macular regions to healthier peripheral retinal areas, helping patients with scotomas utilize unaffected parts of their vision. Prism options include 4Δ, 6Δ, and 8Δ.
- **Anti-Reflective Coating:** Minimizes glare and reflections, enhancing visual clarity especially during night driving.



MED S								
Index	Material	Power / Prism	Clear UV380			Clear UV400		
			SPC	MV	SF	SPC	MV	SF
1.5	CR39	+4.00 / 6 (Base in Prism)	✓	✓	✓	-	-	-
1.61	MR-8	+6.00 / 8 (Base in Prism)	-	-	-	✓	✓	✓
1.67	MR-7	+8.00 / 10 (Base in Prism)	-	-	-	✓	✓	✓
1.74	MR-174	+10.00 / 12 (Base in Prism)	-	-	-	✓	✓	✓

MED EVS								
Index	Material	Power / Prism	Filter Tint			Clear Armour UV++ Filter Tint		
			SPC	MV	SF	SPC	MV	SF
1.6	MR-8	4, 6 / 8 (Base up Prism)	✓	✓	✓	✓	✓	✓
1.67	MR-7	4, 6 / 8 (Base up Prism)	✓	✓	✓	✓	✓	✓



SPECTRAL FILTERS IN LOW VISION CARE

Photoselective Filters in Low Vision Care

Clinical Benefits and Rationale

Photoselective filters are a clinically proven aid in the rehabilitation of individuals with low vision due to retinal, neurological, or ocular media disorders. By selectively filtering short-wavelength (blue-violet) light, these filters enhance the quality of vision, reduce discomfort, and improve functional performance in daily life.

Why They Work

- **Blue light reduction:** Short-wavelength light scatters more inside the eye and contributes to glare, low contrast, and visual noise. Filtering this portion of the spectrum improves image clarity and contrast sensitivity.
- **Glare control:** Patients with conditions such as **age-related macular degeneration, retinitis pigmentosa, albinism, or optic nerve disorders** often experience disabling glare. Photoselective filters reduce both **disability and discomfort glare**, resulting in greater comfort and confidence.
- **Visual function stabilization:** By reducing excessive light input and cortical overstimulation, filters support a more stable and efficient visual system, particularly in bright or changing light conditions.

Clinical Evidence

Multiple studies have confirmed the benefits of photoselective filters in low vision:

- In **AMD** patients, amber and orange filters improved **contrast sensitivity** and **reading performance** (Fujikado et al., Am J Ophthalmol).
- In **retinitis pigmentosa**, CPF filters significantly reduced **glare sensitivity** and improved **mobility** (Rosner et al., Br J Ophthalmol).
- In **albinism** and **achromatopsia**, red-orange filters improved **photophobia** and **visual comfort** (Krishna et al., Optom Vis Sci).

Functional Outcomes

Patients using photoselective filters frequently report:

- Enhanced visual comfort and contrast
- Improved reading speed and task performance
- Better adaptation to **outdoor lighting**
- Reduced visual fatigue and photophobia

A Personalized Solution

Optimal results depend on selecting the right filter based on the patient's condition, lifestyle, and light sensitivity. SWISSCOAT offers a wide range of clinically validated filters in various transmission levels and spectral profiles to support custom fitting. Trial kits and guided selection tools are available to help practitioners match the right filter to the right patient.

Spectral Color Filter Lenses

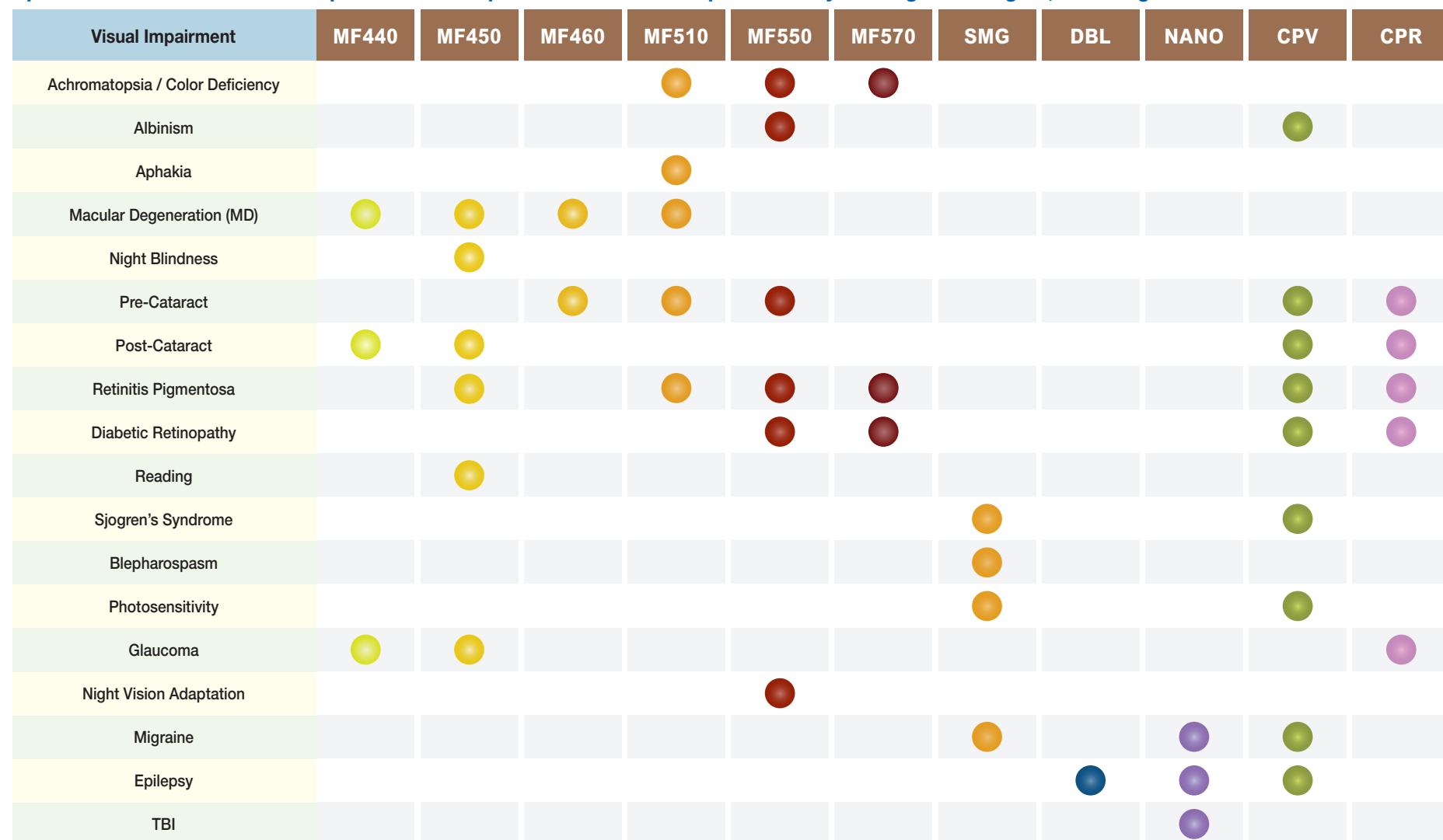
The selection of optimal spectral color filter lenses is inherently subjective, as it must be tailored to the individual's unique visual needs, preferences, and specific ocular conditions. Contrary to common misconception, darker lenses do not necessarily provide superior glare reduction; while they may diminish glare, excessive tinting can also compromise overall visibility. Therefore, it is advisable to employ the lightest tint that effectively meets the patient's visual requirements rather than defaulting to darker shades.

Applications for Degenerative Eye Conditions

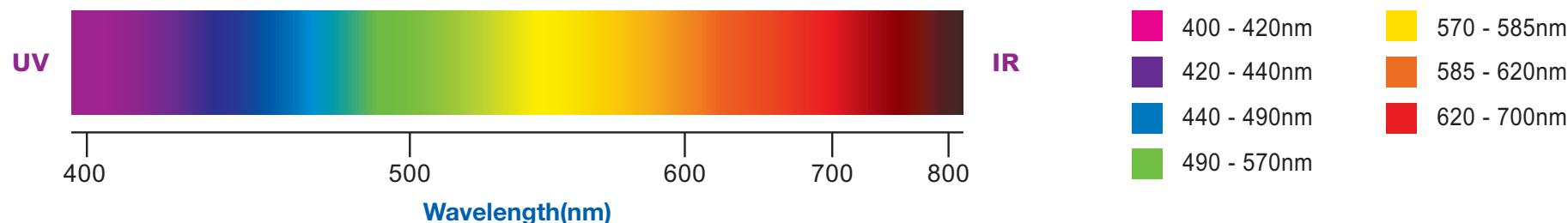
Scientific evidence supports the use of specialized spectral filter lenses that selectively attenuate specific wavelengths within the visible spectrum. These filters provide multiple therapeutic benefits for patients with degenerative retinal diseases, including:

- **Blocking ultraviolet (UV) radiation and filtering high-energy short-wavelength visible light** (violet to blue spectrum), thereby protecting retinal tissue from phototoxic damage.
- **Enhancing image contrast**, which facilitates improved visual discrimination in challenging lighting environments.
- **Supporting more efficient ocular adaptation** to varying light conditions, reducing visual discomfort.
- **Improving overall visual quality**, contributing to better functional vision and patient comfort.

Spectral Filter lenses aims to improve vision for patients with visual impairments by filtering wavelengths, including:



Above for reference only. Please check with your eyecare professionals.



 <p>Spectral Color Filter MF440</p> <p>Spectral Color Filter lenses filters out 440nm wavelength in the visible spectrum, targeting to improve vision for patients with visual impairments:</p> <ul style="list-style-type: none"> Post-Cataract Macular Degeneration (MD) Glaucoma 	 <p>Spectral Color Filter MF550</p> <p>Spectral Color Filter lenses filters out 550nm wavelength in the visible spectrum, targeting to improve vision for patients with visual impairments:</p> <ul style="list-style-type: none"> Post-Cataract Retinitis Pigmentosa Achromatopsia / Color Deficiency Night Vision Adaptation Albinism Diabetic Retinopathy
 <p>Spectral Color Filter MF450</p> <p>Spectral Color Filter lenses filters out 450nm wavelength in the visible spectrum, targeting to improve vision for patients with visual impairments:</p> <ul style="list-style-type: none"> Post-Cataract Macular Degeneration (MD) Night Blindness Retinitis Pigmentosa Glaucoma Reading 	 <p>Spectral Color Filter MF570</p> <p>Spectral Color Filter lenses filters out 570nm wavelength in the visible spectrum, targeting to improve vision for patients with visual impairments:</p> <ul style="list-style-type: none"> Retinitis Pigmentosa Diabetic Retinopathy Achromatopsia / Color Deficiency Retinitis Pigmentosa Glaucoma Reading
 <p>Spectral Color Filter MF460</p> <p>Spectral Color Filter lenses filters out 460nm wavelength in the visible spectrum, targeting to improve vision for patients with visual impairments:</p> <ul style="list-style-type: none"> Post-Cataract Macular Degeneration (MD) 	 <p>Spectral Color Filter SMG</p> <p>Spectral Color Filter lenses filters out 450 - 550nm wavelength in the visible spectrum, targeting to improve vision for patients with visual impairments:</p> <ul style="list-style-type: none"> Migraine Blepharospasm Sjogren's Syndrome Photosensitivity
 <p>Spectral Color Filter MF510</p> <p>Spectral Color Filter lenses filters out 510nm wavelength in the visible spectrum, targeting to improve vision for patients with visual impairments:</p> <ul style="list-style-type: none"> Post-Cataract Macular Degeneration (MD) Achromatopsia / Color Deficiency Retinitis Pigmentosa Aphakia 	 <p>Spectral Color Filter DBL</p> <p>Spectral Color Filter lenses filters out 550 - 650nm wavelength in the visible spectrum, targeting to improve vision for patients with visual impairments:</p> <ul style="list-style-type: none"> Epilepsy

Specialty Lenses for Traumatic Brain Injury (TBI) and Concussion

NANOGuard
Spectral Filter



Background

Traumatic Brain Injury (TBI), including concussion, often results in a range of visual disturbances that significantly affect daily life. Common symptoms include light sensitivity (photophobia), blurred vision, difficulty with eye tracking and focusing, headaches, and visual fatigue. These symptoms can create barriers to returning to normal activities and reduce overall quality of life.

Sensory overload following head injury often leads to heightened light sensitivity. Mildly tinted lenses are frequently prescribed for indoor use to alleviate discomfort caused by fluorescent lighting and digital screens (phones, computers, TVs), while sunglasses are recommended outdoors to reduce glare from sunlight.

Scientific research supports the use of specialized **precision tinted lenses**, such as those that utilize **nano controlled particles embedded within the lens material** to provide superior control over light transmission and spectral filtering. This advanced technology selectively attenuates wavelengths of light that exacerbate photophobia and sensory overload, reducing visual stress and improving comfort.



SWISSCOAT NanoLight

Calm and Soothing Tint

- Best for indoor use, Office lighting, screens, or
- Cloudy days or
- Early-stage concussion recovery



SWISSCOAT NanoDark

High Performance dark Tint

- Best for Outdoor brightness or
- For Severe Photophobia
- Blocks more overall light to reduce pain & discomfort (e.g. Sunlight, bright LEDs)
- Best for Post-Concussion Syndrome or extreme sensitivity

A 2017 study from the University of Cincinnati Department of Neurology and Rehabilitation Medicine highlights that “wearing certain colour-tinted lenses may be a good alternative to dark sunglasses” for TBI patients experiencing light sensitivity. Earlier objective research demonstrated that light-filtering lenses improve contrast sensitivity and reading performance in photophobic TBI patients, providing clinical criteria for their use in rehabilitation.

Neurological disinhibition following brain injury leads to hyperexcitability in the visual cortex, similar to the mechanism underlying Visual Stress. Precision tinted filters have been shown to normalize this hyperexcitability, resulting in decreased sensitivities to light, enhanced reading ability, and better tolerance of daily visual environments. A 2012 article by the Chief of Vision Rehabilitation Services at SUNY College of Optometry emphasized that visual-vestibular symptoms of TBI closely mirror those of Visual Stress and can be effectively managed with precision tinted lenses.

SWISSCOAT NAN[®]Guard

Spectral Filter

Our range of lenses for TBI patients combines these scientific insights with cutting-edge optical technology to deliver tailored solutions. By integrating **nano controlled spectral filters**, precision prisms, and customized tints, our lenses aim to reduce discomfort, restore visual function, and support neuro-optometric rehabilitation—ultimately helping patients reclaim their quality of life.

Explore our collection to discover how these advanced lens technologies can make a meaningful difference in TBI recovery and everyday visual comfort.

NAN [®] Guard		
Spectral Filter		
Index	Nano Light	Nano Dark
1.61	✓	✓



for Low Vision & Light Sensitivity



CPV ChromaPolar



CPR ChromaPolar



Verdi

CPV ChromaPolar

People with the conditions:

- **Photophobia:** Extreme sensitivity to light and glare.
- **Reduced Contrast Sensitivity:** Difficulty distinguishing an object from its background (e.g., a white curb against a gray sidewalk).
- **Disability Glare:** Light scattering within the eye, causing blur and reducing vision quality.
- **Chromostereopsis:** Where certain colors, especially blues, may appear to "vibrate" or be at a different depth, causing strain.

Polarization is universally beneficial for these patients as it cuts reflected glare from surfaces like water, roads, and car hoods, which is a major source of discomfort.

Now, let's break down the potential benefits of each lens type.

The **CPV ChromaPolar** Lens is the Comfort & Protection Shield. This lens is designed to filter the high-energy, high-glare portion of the spectrum that is most problematic for sensitive eyes.

Potential Benefits for Low Vision Patients:

- **Cataracts:** The cloudy lens scatters light, increasing glare and reducing contrast. This lens cuts the most disruptive wavelengths, potentially reducing glare disability and making vision more comfortable outdoors. It will not change the clarity caused by the cataract itself.
- **Age-Related Macular Degeneration (ARMD):** Can increase light sensitivity and reduce contrast. By managing blue light glare and enhancing contrast, this lens may make it easier to navigate environments and reduce strain.
- **Retinitis Pigmentosa (RP):** Extreme photophobia is a hallmark. A 460nm lens can make outdoor environments tolerable by reducing the intensity of light to a comfortable level without making the world excessively dark.
- **Albinism:** The lack of pigment causes severe light sensitivity and glare. This lens offers protection from the most intense wavelengths.
- **Migraine & Epilepsy:** For those whose episodes are triggered by light (photophobia), especially flicker and glare, this lens can serve as a preventive measure by creating a more stable, less stimulating visual environment.
- **Diabetic Retinopathy:** Can cause glare sensitivity. The comfort provided by reducing blue glare can be significant.
- **Sjogren's Syndrome:** While primarily addressing dry eye, the accompanying light sensitivity can be managed with this lens.

Best For: Patients whose **primary complaint is pain, discomfort, and glare** (photophobia) from bright light.



The **CPR ChromaPolar** Lens is the Contrast Enhancer. This lens is engineered to maximize contrast by manipulating specific color wavelengths.

Potential Benefits for Low Vision Patients:

- ARMD:** This is a key candidate. By making oranges and reds more vivid against green and blue backgrounds, it can help patients see curbs, steps, and other objects more clearly, potentially reducing fall risk.
- Cataracts:** The amber tint can increase contrast perception, which is severely reduced by cataracts. This can help with defining edges and boundaries.
- Diabetic Retinopathy:** Any contrast enhancement is beneficial for navigating the world safely.
- Glaucoma:** Reduces contrast sensitivity. A 510nm lens can help define the edges of objects, making navigation easier.
- RP:** In earlier stages, the contrast enhancement can be helpful for navigating obstacles.

Caveat: The strong color shift of a 510nm lens can be disorienting for some patients and may not be suitable for tasks requiring color accuracy.

Best For: Patients whose **primary complaint is a loss of contrast**, making it hard to see obstacles and navigate the world safely.

CONDITION	PRIMARY ISSUE	LIKELY BETTER LENS	WHY
Cataracts	Glare, Reduced Contrast	510nm	Contrast enhancement is often more valuable than glare reduction alone.
ARMD	Reduced Contrast, Glare	510nm	The contrast enhancement for navigating obstacles is a huge benefit.
Retinitis Pigmentosa	Extreme Photophobia	460nm	Managing debilitating light sensitivity is the top priority.
Albinism	Extreme Photophobia	460nm	Managing debilitating light sensitivity is the top priority.
Migraine/Epilepsy	Light-Triggered Pain	460nm	Stabilizing the visual field by reducing high-energy light is key.
Diabetic Retinopathy	Glare, Reduced Contrast	510nm	Contrast enhancement aids in safe navigation.
Glaucoma	Reduced Contrast	510nm	Helps define edges and obstacles.
Sjogren's	Photophobia (from dry eye)	460nm	Managing light sensitivity and discomfort is the goal.

- Consult a Specialist:** A low vision specialist is trained precisely for this. They have trial sets of lenses with various tints (including 460nm and 510nm) so patients can experience the effect before purchasing.
- Side Shields & Wraparound:** For maximum protection, the frame style is as important as the lens. Wraparound styles or frames with side shields prevent blinding light from entering from the sides.
- Indoor Use:** For patients severely affected indoors (e.g., with RP), a lighter version of the **460nm** tint (often called a "blue blocker" or therapeutic filter) can be worn inside to constant comfort.

SPECTRAL FILTER SERVICE			
Index	Material	Clear UV400	Polarize
1.5	CR39	✓	✓
1.61	MR-8	✓	-

All Customized Spectral Filter lenses with professional reports to ensure each pair meets specifications.

Recommend to use 1.6 MR-8 lens product to do Spectral Filter Service.

Other SWISSCOAT lens product, please refer to the main product catalogue.

Medical Reference:

Sadeghpour N, Alishiri AA, Ajudani R, Khosravi MH, Amiri MA, Sadeghpour O. Quantity and Quality of Vision Using Tinted Filters in Patients with Low Vision Due to Diabetic Retinopathy. *J Ophthalmic Vis Res.* 2015 Oct-Dec;10(4):429-32. doi: 10.4103/2008-322X.158893. PMID: 27051488; PMCID: PMC4795393.

Tsai LH, Hsieh HP, Chen PS, Jou CL, Tseng KY, Cheng CY. Relationship between refractive correction, visual symptoms, and optical device selection for low-vision patients in Taiwan. *J Optom.* 2020 Oct-Dec;13(4):249-256. doi: 10.1016/j.joptom.2019.09.003. Epub 2019 Nov 29. PMID: 31787520; PMCID: PMC7520520.

Evans BJ, Allen PM. Coloured filters may reduce symptoms of dyslexia in those with visual stress. *BMJ.* 2014 Sep 30;349:g5882. doi: 10.1136/bmj.g5882. PMID: 25270286.

DLX Color Filter lenses Meares-Irlen Syndrome (Visual Stress)

DLX Color Filter Lenses

- Meares-Irlen Syndrome, also known as **Visual Stress**, is primarily associated with **genetic and neurological factors**, with symptom severity varying among individuals.
- It is often observed alongside conditions such as **ADHD** and **autism spectrum disorder**.
- Beyond **photophobia (light sensitivity)**, individuals with Visual Stress commonly experience **physical discomfort, text distortion, visual image distortion, and spatial perception anomalies**, which significantly affect reading, learning, and daily activities.

Chromatic Correction and DLX Filter Lenses

Specialized **chromatic correction** using tinted filters is recognized as one of the most effective treatments for **photosensitivity syndrome** related to Visual Stress. These filters selectively block or attenuate specific light wavelengths that overstimulate the visual system, thereby reducing visual distortions and alleviating symptoms.

Spectral DLX Filter lenses provide clinical benefits including:

- Improved **reading ability** and **visual perception**.
- Increased **reading duration** and reduced visual fatigue.
- Relief from symptoms such as **light sensitivity, eye strain, headaches, blurred vision, and text skipping** (words or lines).

Adoption and Integration

Widely adopted in developed regions including **Europe, North America, and Australia**, the 12 standardized spectral color filter lenses can be seamlessly incorporated into prescription lenses, offering customized visual solutions for individuals affected by Visual Stress.



PHOTOSELECTIVES FILTER SERVICE

Index	Material	Clear UV380	Clear UV400
1.5	CR39	✓	-
1.61	MR-8	-	✓

All Customized Photoselectives Filter Lenses with professional reports to ensure each pair meets specifications.

Recommend to use 1.6 MR-8 lens product to do Photoselectives Filter Lenses Service.

Other SWISSCOAT lens product, please refer to the main product catalogue.

Medical Reference:

Sadeghpour N, Alishiri AA, Ajudani R, Khosravi MH, Amiri MA, Sadeghpour O. Quantity and Quality of Vision Using Tinted Filters in Patients with Low Vision Due to Diabetic Retinopathy. *J Ophthalmic Vis Res.* 2015 Oct-Dec;10(4):429-32. doi: 10.4103/2008-322X.158893. PMID: 27051488; PMCID: PMC4795393.

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