

Polarised lens dispensing

Helping patients to see the light

Polarised lenses have long been the sun lens of choice among fishermen, boaters and skiers. However, more and more dispensers are recommending polarised lenses in high performance, premium sports and sunglasses, as well as for night driving and light-sensitive patients.

The proven performance of polarised lenses makes them easy to promote to an educated sportsman. Justifying the purchase of polarised lenses to a wider range of patients presents more of a challenge. Many dispensers have found that understanding how polarised lenses work aids in explaining the benefits to patients.

Understanding the process

Horizontal light rays reflected off a smooth, shiny surface, such as water, a wet road, or snow, causes glare. This reflected glare, referred to as polarised light, disturbs natural vision.

The effect of polarised light on natural vision can easily be illustrated using an overexposed photograph. Too much light from either the sun or the flash reflected off the horizontal surfaces in the photograph causes colours to become washed out and objects to blur together. Professional photographers use a Polaroid® filter to block reflected glare and capture true, natural colour on film.

Polaroid technology utilises minute crystals embedded vertically in the filter. Since the vibration of polarised light is confined to one horizontal plane, by positioning the crystals at a 90° angle to that plane of light, the majority of the reflected glare is absorbed by the crystals.

Polarised lenses utilise a similar technology. Energised iodine crystals are positioned in vertical rows on a thin piece of film. This film is embedded into the

lens surface. The lens allows selected light rays to reach the eye, while absorbing reflected glare or polarised light. Polaroid offers a branded range of polarised ophthalmic lenses available through the Birmingham Optical Group.

Uncovering the potential

In addition to fishermen, boaters and skiers, golfers also experience glare off water and sand bunkers, as well as highly manicured greens. The enhanced vision offered by polarised lenses can provide better definition of the fairway and green, as well as the ball in flight.

The majority of motorists have experienced glare while driving. Wet road conditions, car bonnets, windscreens and mirrors all contribute to the glare that impair drivers' vision. By filtering out this reflected glare, objects become more distinct and colours more vibrant, restoring natural, comfortable vision. This is also the case for patients involved in road-related sports, such as biking and jogging.

Polarised lenses can also be extremely useful indoors. Light-sensitive patients can experience glare off computer screens, desktops and paperwork under harsh florescent lighting conditions. Office views overlooking decorative ponds and lakes or mirrored sculptures can become a problem on a sunny day. Polarised lens technology is now available in lighter, fashion tints.

In some cases, polarised lenses may



Demonstrating the benefits in practice

also be recommended for reducing glare associated with twilight and night driving. Polarised lenses can help to improve vital depth perception obstructed by glare. However, dispensers should be familiar with driving laws regarding tinted lenses, before suggesting polarised lenses for night driving.

Almost every patient interested in sports or sunglasses, as well as light sensitive patients, will benefit from the unique properties of polarised lenses.

Avoiding the pitfalls

There is a small minority of cases where polarised lenses may not be the best choice for patient comfort. The vertical placement of the crystals in a polarised lens may reveal stress patterns in tempered glass and polycarbonate windscreens used in older cars, commercial aircraft and small planes. LCDs (liquid crystal displays) like those used for automated cash points can also disappear completely when viewed from certain angles through a polarised lens. If patients are made aware of this phenomenon upfront, they should find the effect entertaining rather than annoying.

Table 1 Polarised lens options

Company	Product	UVA/UVB Absorption up to 380nm	Colours	Light transmission factor (%)	Hard coating	AR coating	Availability	Demonstrator
American Optical	NuPolar Grey	100	Grey	15	Optional	Optional	1, 2	Yes
Birmingham Optical	Polaroid Sunspecs	100	Grey, brown, amber and magenta	15	Optional	Optional	1, 2	Yes
Essilor	Polarising Sun Range	100	Grey and brown	15	Standard rear surface	Standard rear surface	1, 2	Yes
Signet Armorlite	Kodak UVSun Polarising Progressive Range	100	Grey and brown,	16, 17	Standard	Optional	2	Yes
	Kodak UVSun Polarising Single Vision Range	100	Grey, brown, rose, blue and green	16, 17, 25, 27, 34	Standard	Optional	1	Yes
Sola	Polarised Progressive Range	100	Grey	12	Standard	Optional	2	Yes
	Polarised Single Vision Range	100	Brown	19	Standard	Optional	1	Yes
Rupp + Hubrach	Polarised Single Vision Range	100	Grey	35	Standard	Optional	1	Yes
	Polarising Single Vision Range	100 up to 400nm	Grey and brown	16	Optional	Optional	1	Yes

Demonstrating performance

Dispensers can easily demonstrate the difference between a polarised lens and other sun lenses. Manufacturers and distributors offer extremely effective demonstrators for use in recommending polarised lenses. Another demonstration method is to have the patient wear a normal pair of sunglasses while looking at the windscreen of a car on a sunny day or a glass top table under bright practice lights. The patient will not be able to see past the glare of the windscreen or glass. Then have the patient perform the same task with a pair of polarised sunglasses. The windscreen, or glass will disappear. If the patient is wearing prescription spectacles, use clip-on sun and polarised lenses.

Knowing the possibilities

Many people familiar with polarised products in pharmacies and sporting goods stores do not realise that these lenses are available in prescription form. The rapid growth of the polarised market has made a wide range of single vision and progressive lens options available, as well as fashion colour tints. In most cases, protective lens coatings and tints can

easily be added without affecting the performance of the polarised lens.

When wearing a tinted sports or sun lens, the patient's pupil opens wider reducing the eye's natural protection to harmful UV rays. Long-term and excessive exposure to UV light can cause permanent corneal damage and play a significant part in the development of cataracts and macular degeneration. Most polarised lenses on the market already have built in UV protection. It is vital to insist on a quality UV coating for all tinted lenses to avoid increased exposure to damaging UVA and UVB rays.

Tinting spectacle lenses also adds another dimension to annoying reflections, which can impair the wearer's vision. When 85% of light is absorbed by a tint, and 8% is reflected off the uncoated surface, only 7% is transmitted through the lens. The percentage of reflected light actually becomes higher than the percentage of transmitted light. That is why you can see your reflection so clearly in uncoated sunglass lenses. It is also why, at times, the wearer may be distracted by the reflections of his or her own eye or

eyelashes. An anti-reflective coating applied to a sunglass lens will reduce annoying front and back reflections, caused by the increased ratio between reflections and transmission.

Reaping the profits

Successful dispensers attribute increased sales of high performance polarised lenses to confidently offering this unique lens technology to every patient who drives a vehicle, participates in an outdoor sport, is light sensitive or is just interested in a pair of sunglasses. The availability of a wide range of materials, designs and treatments makes this possible.

Polarised lenses add value that is easily demonstrated. Patients are willing to pay more for a benefit they can see. Eyecare professionals dispensing polarised lenses also experience a higher level of patient satisfaction. Once a patient has experienced the benefits of polarised lenses, they will come back time and time again.

Understand the process, uncover the potential, avoid the problems, demonstrate the performance, and reap the profits of polarised lens dispensing.