

## Laser protection for medical applications



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uvex safety + uvex sports.  
One brand. One mission.



## protecting people

As part of the uvex group, we commit ourselves to the uvex quality promise with the best possible care and responsibility.

For us, “protecting people” means not only compliance with norms and standards, but to meet also the expectations of customers regarding services, processes and latest product technologies.

The know-how transfer between laservision, uvex safety and uvex sports makes our products even safer, more functional and more comfortable.

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## Thank you for your interest in laservision laser protection products.

The protection of people from artificial optical radiation is the focus of our daily work emphasized since mid-2018 by our new claim “protecting people”, which on the one hand takes into account the expansion of our laser protection product range in the direction of laser safety cabins and system solutions and on the other hand makes our membership of the uvex safety group even more clear.

Together with laservision USA and our manufacturing expertise, we are able, in close cooperation with carefully selected suppliers and production partners, to meet the growing requirements of our global customers and to wow them with innovative, standard-compliant, high-quality laser protection products. We are proud to support them in achieving their goals. Enthusiasm for the products and outstanding customer orientation, from advice and selection to delivery, are our promise and the driving force behind everything we do.

Our work is guided by our three brand values:



- Since 1987, laservision has been synonymous with the highest standards of quality
- Measurement, technology and development competence
- Certified in acc. with ISO 9001 to the full extent
- laservision stands for reliability, precision and long-lasting products

- Our customers' requirements are the benchmark
- Customer-specific system solutions for laser protection
- Worldwide customer support by our premium partners network
- Sales offices across Germany

- Expansion of our innovative strength through comprehensive know-how
- Digital transformation and active concepts such as Laser protection 4.0 and VR seminars

# Manufacturing expertise

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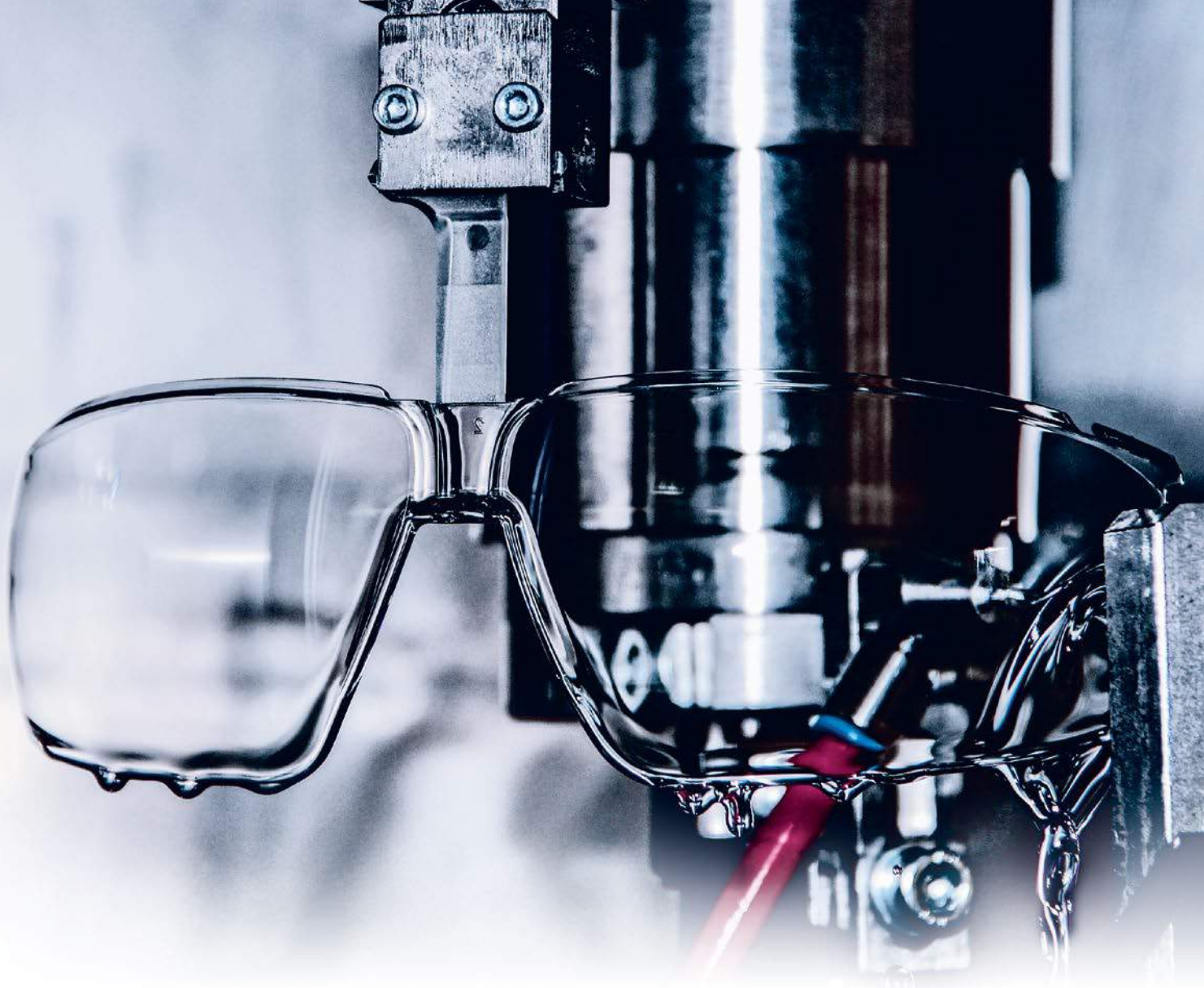
Focus on innovation and quality:  
**uvex eye protection centre of expertise**

As a wholly owned subsidiary of uvex,  
laservision follows the same standard:  
**“protecting people” is our number-one priority**

Whether you need safety glasses, goggles, prescription spectacles or laser protection eyewear: In Fürth, Bavaria, uvex develops and produces innovative safety eyewear that meets the highest quality standards. The uvex plant is certified in accordance with ISO 9001:2015 and ISO 50001:2011, and uses state-of-the-art technology and a close collaboration with strategic partners to develop pioneering technologies.

Only when a product fulfils all the requirements  
of the applicable standards  
**is it worthy of the uvex name.**





### **The quality of the lens coating is an absolutely crucial element of safety eyewear**

Looking through lenses that are fogged up, scratched or dirty increases the risk of accidents during the work day significantly. The uvex brand is synonymous with pioneering coating technologies for decades: In our centre of expertise in Fürth, we develop and produce innovative lenses and coatings for a multitude of applications.

#### **Because “standard” is not enough**

All work and laser safety glasses are carefully checked in our own test center. In addition to national and international standards, each of our products must meet the demanding in-house standard means i.e. functionality, ergonomics, durability and wearing comfort of protective glasses.

Innovative coating technologies are one of uvex's core competencies, resulting in first-class, highly functional safety eyewear that are perfectly tailored for their application.

#### **Perfect performance at all times**

The uvex eyewear coatings are perfectly designed for different working conditions in terms of performance and durability.

#### **Two sides of the lens – two sets of requirements**

The unique manufacturing process makes the difference: Unlike conventional processes, the special uvex process applies different coatings to either side of the lens.

For example, at uvex, an unbeatably hard and easy-to-clean, scratch-resistant coating can be applied to the outside of the lens, which is prone to dirt and scratches. The coating for the inside of the lens, meanwhile, has a long-lasting anti-fog effect, which remains permanently on the lens – with no drop in performance, even after repeated cleaning.

# Laser protection in medicine



The range of medical laser applications is growing rapidly, challenging laservision to develop, produce and deliver adequate laser protection. Since it was founded over 35 years ago, laservision is expanding and optimizing its range of tailor-made solutions for laser protection for the medical sector at ever shorter intervals. This includes protective goggles for doctors, nurses and assistants as well as for patients and for the use in veterinary practices.

The portfolio is completed by other innovative products from this area, such as autoclavable splash protection eyewear, laser protection curtains suitable for clean rooms and other large-area barriers.

The applications of the laser in medicine are mainly based on the ability of the laser light to be spot-focused resulting in extremely high optical power densities at the treated area. In addition, the laser light can be transmitted by means of flexible optical fibers, enabling doctors to use lasers i.e. for endoscopic surgery.

## Example applications for lasers in medicine

- Dental applications (treatment of tooth decay)
- Surgical applications with or without an endoscope (stone removal, haemostatis)
- Dermatological treatments (lesions, scars)
- Beauty (tattoo removal, skin rejuvenation, hair removal)
- Photodynamic therapy
- Ophthalmology (laser treatment for short or long-sighted patients)

# Colour Transmission Radar

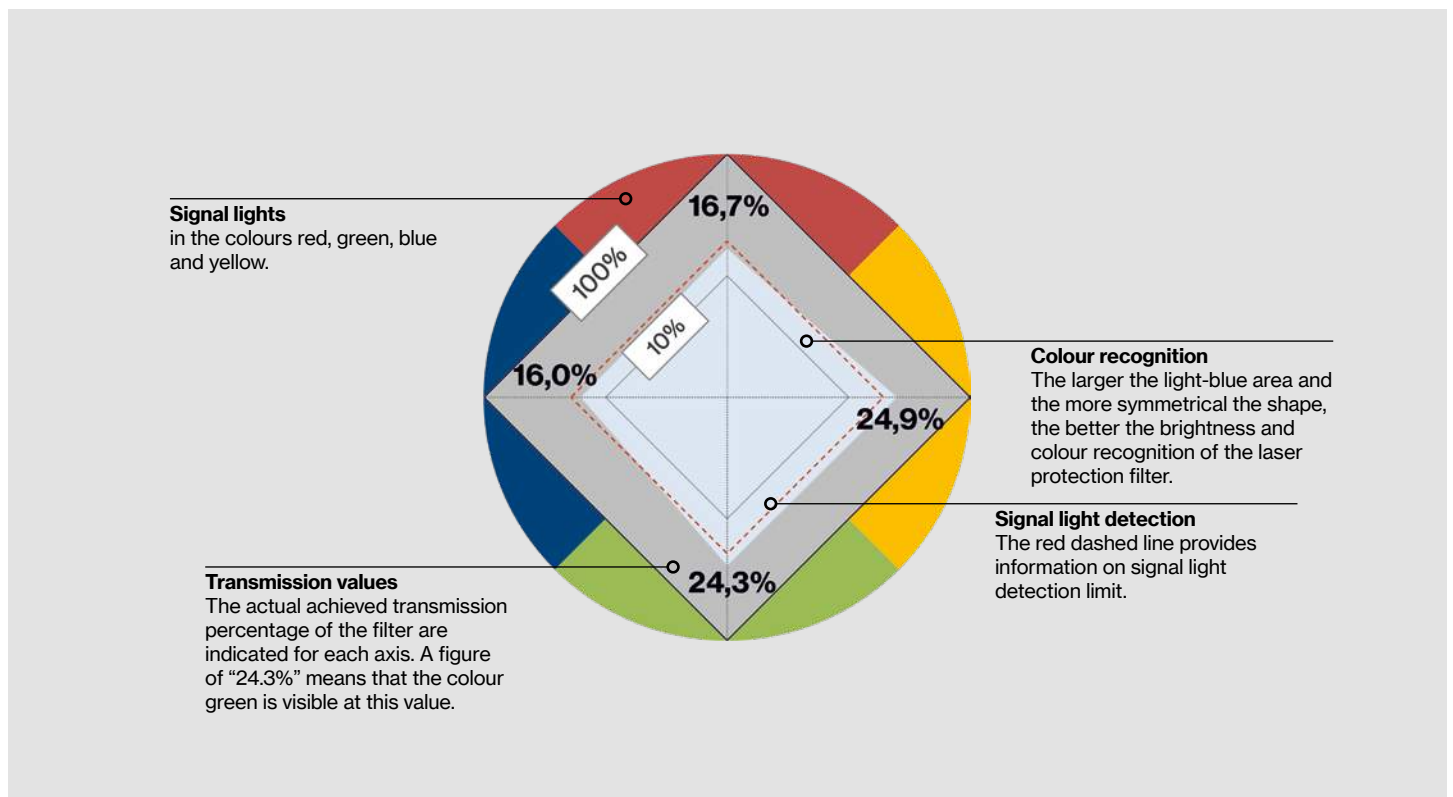
The eye adapts to the brightness of the environment, and the overall level of brightness can usually be corrected by additional lighting.

However, when selecting a filter, the view of colour through the filter is also an important consideration. When choosing a filter or laser protection window, it is essential to take into account the fact that some colours may no longer be recognisable through this filter – and that this effect may also affect warning lights or displays.

In medical applications, this limits a doctor's ability to recognise blood vessels and to distinguish between instruments identified using different colours.

In this catalogue, we use the innovative and intuitive Colour Transmission Radar (CTR diagram) – a visualisation system developed by laservision based on the DIN EN 172 (Signal Light Detection) standard – to indicate which colours can be seen through the laser protection filters.

## Transmission of signal colours based on DIN EN 172



This standard defines the required minimum transmission value for signal light detection – depending on the visible light transmission (VLT) of the filter – for each of the four basic colours (red, green, blue and yellow). This limit value is represented in the CTR diagram by the red dashed line.

The actual achieved transmission values of the filter are indicated for each axis. For ease of understanding, the diagram also shows 100% and 10% transmission levels. The larger the light-blue area and the more symmetrical the shape, the better the brightness and colour recognition of the laser protection filter. The diagram therefore allows customers to objectively compare the colour view performance of various laser protection filters for the first time.

The protection of people  
is always in the focus  
**protecting people“** is our mission!

## Laser protection eyewear

Light – or defined wavelength spectrums – can be blocked out of the spectrum using absorbing materials or reflection. Laser protection eyewear with such filters are the core of our product portfolio.

laservision has many years of technological experience in all of the relevant fields. Our internal quality management ensures that all applicable norms and standards are completely matched. This is subject to regular checks by independent institutes.







## Plastic absorption filter (e.g. P1G04)

Laservision products are made from special plastics blended with additional absorber dyes. When the laser beam hits the material, most of the light energy is converted into heat. This is why thermal stability is so important in products exposed to laser radiation. Our plastic filters are available in various curved versions (base curves), or as a single shield.



## Glass absorption filter (e.g. T2K02)

Regarding the thermal stability, glass filters are superior to their plastic counterparts, making them ideal for use in continuous (cw) laser applications at medium to high power levels. For IR applications in particular, we offer a range of powerful filters with a very good colour view performance. By combining different filters, we can create customer-specific safety spectacles with protection ranges tailored to a specific application.



## IPL eyewear or eyewear for photodynamic therapy

Our brand-new generation of IPL and PDT eyewear with grey and green-tinted filters in two different shades (level 3 and 5) provide reliable protection against UV and infrared radiation. Especially the grey filters allow perfect colour recognition - similar to that offered by us as sunglare filters. This eyewear is NOT approved as laser protection eyewear and is therefore NOT suitable for use during laser treatment. [Page 44/45](#)



## Patient eyewear

Our comprehensive portfolio of patient eyewear includes a wide range of materials to suit different applications. We offer silicon patient eyewear with a replaceable filter option and spectacles featuring our new two-way design, as well as three variants of our innovative titanium patient spectacles, which are adjustable, comfortable and suitable for disinfection and autoclaving.

[From page 48](#)



## Eyewear for veterinary medicine

Our laser protection Doggles® provide safe and reliable protection for animal patients. They are quick and easy to fit and remain secure during treatment thanks to the headbands. So that slipping is almost impossible. [Page 54](#)



## Large-area laser protection

Large-area laser protection is getting more and more important in healthcare practices and in operating theatres, as well as in laboratories where a wide range of lasers are used. Our portfolio includes laser protection curtains suitable for clean rooms, laser protection windows for new buildings covering nearly all relevant wavelengths, and laser protection films for existing internal and road-facing windows. [Page 56](#)



# Light: an essential life force

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**Lasers are the future – in engineering and in medicine. But special precautions must be taken during use**

In 1960, Theodor Maiman invented the first machine based on

**L**ight  
**A**mplification by  
**S**timulated  
**E**mission of  
**R**adiation

technology. This principle amplifies light so powerfully that it is able to remove tattoos, cut through tissue or allows photodynamic therapy. The latest research is even exploring the use of lasers in cancer treatment. As the range of applications using laser technology grows, adequate laser protection is gaining in importance.

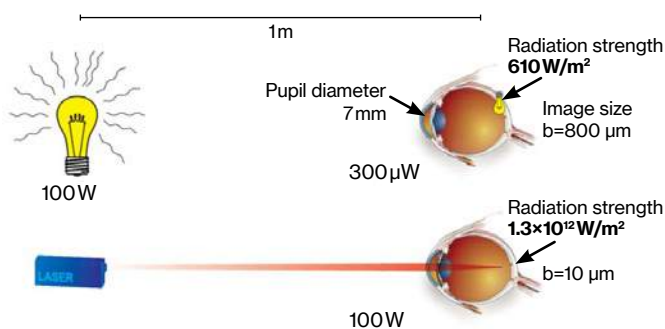


## The risks of laser radiation

Like virtually all technologies, the use of lasers comes with its own specific set of risks. The greatest danger is exposure to accidental radiation. The eyes are most at risk, as they are significantly more sensitive to light than other parts of the body; even just a quick glance at a low-power laser beam can cause irreversible blinding. Considering that we take in 90% of our sensory information via the eyes, this risk must be avoided at all costs. The importance of laser safety has also been recognized by legislators and rules have been developed at EU level to eliminate the risk of laser accidents. To help you understand why you need to protect yourself from laser radiation, we've provided a brief overview of the basics of the technology and the risks and standards associated with it.

## Laser classes

Manufacturers of laser devices must determine the laser class of their products in accordance with DIN EN 60825-1:2008-05. Categorizing laser devices into different classes enables users to immediately identify the risks involved in their use, which in turn makes it easier for them to work out which protective measures to take. As the class number increases, the level of risk rises and the required protective measures become more comprehensive. The Accessible Emission Limit (AEL) for each class is calculated to ensure that the Maximum Permissible Exposure (MPE) for the exposure duration stipulated for class 1 is not exceeded. Most devices used in medical applications are class 3 or 4 lasers, which means that they belong to one of the top-two categories.



## Health and safety guidance for protection against laser beams

In Germany, there are currently two sets of limit values that must be observed – those set out in the accident prevention regulations (MPE values) and those set out in the OStrV (German health and safety ordinance on artificial optical radiation).

The exposure values in the OStrV can be calculated based on formulas and depend on various factors, including the wavelength and the duration of exposure to radiation. The results of the calculations are then compared with the relevant limit values using tables, which are incorporated into the OStrV.

The results of this process indicate which protective measures need to be taken. The protective measures are based on the risk assessment carried out in accordance with the OStrV, which involves determining the danger area as the first step. Once this has been done, the user must then consider how the size of this area can be reduced by implementing construction/technical measures. If the presence of employees in the laser danger area cannot be avoided, personal protective equipment – in the form of eye protection – must be worn. The following rules must be taken into account:

- All persons in the laser area during laser operation must wear laser protection eyewear that is appropriate for the wavelength and power of the laser being used.
- Before use, all wearers of laser protection eyewear must check that their eyewear is not showing any signs of degradation (deformation, colour changes etc.) that could affect the level of protection. Any such defects must immediately be reported to the laser protection officer.

The new health and safety ordinance stipulates that, when using lasers of class 3 and above, an expert laser protection officer must be appointed and this person's name must be recorded in written documentation. The laser protection officer is considered to be 'expert' when he or she possesses sufficient knowledge of the laser to be used and has received training on the function of the laser beam, the protective measures and the safety equipment, enabling him or her to initiate the required protective actions. The laser protection officer must have completed a course to acquire this knowledge and must be able to provide evidence of successful completion (see OStrV). More detailed information on eye protection designed to protect against laser beams (laser protection eyewear) can also be found in DIN EN 207 (standard for eye protection products designed to protect against laser beams) or obtained from the manufacturers of the protection products.

In addition to laser protection eyewear, all laser protection equipment used in hospitals, healthcare practices or operating rooms must be selected carefully due to the high levels of risk involved in the use of laser technology. Alongside the safety spectacles commonly used to protect the eyes against laser beams, this is particularly important when converting or retrofitting existing windows with laser-safe curtains, blinds or additional panes to protect against laser beams. Users, buyers and laser safety officers must consult the manufacturer in the early stages of the planning process in order to get maximum benefit from the supplier's knowledge and experience and to ensure that the laser protection solution implemented is safe and cost-effective.

# Frames for medical applications

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## Laser protection frames and special products for the medical sector

In all countries following the European Union's laser protection eyewear standards, laser safety eyewear must maintain its protection, indicated by the protection rating marking, for the duration of a **direct five-second exposure** to a 1mm continuous wave laser beam or for 50 pulses of a pulsed laser.

The optical density (OD = attenuation) of a laser filter alone, independent of its structure, is not sufficient as the sole measure of the protective effect of the glasses. It is important that the optical density remains stable when the filter is irradiated. This applies in the same way to the frame of the laser safety glasses. The weaker part of these components determines the level of protection that can be guaranteed by the entire laser safety goggles for the respective wavelength and operating mode.

Furthermore, the frame of the laser safety goggles must prevent the laser beam from penetrating from the side (covered area) and in addition, the general requirements of other PPE standards such as B. EN 166 and EN 168 (thermal and UV resistance) need to be met as well.

In addition to the laser resistance, also the PPE requirements of the glasses frame and of the laser protection filter need to be approved by an independent notified body as part of the EC type examination.

The laser resistance is then certified by LB and/or RB protection ratings in the EC type-examination certificate (CE). All laser protection eyewear must be permanently marked with its rating.

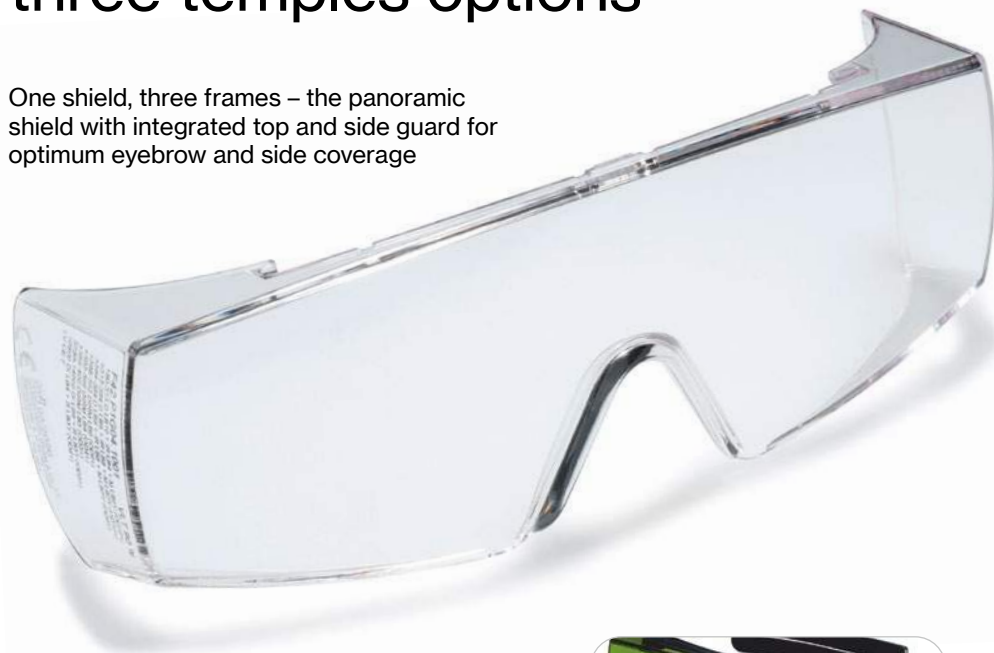
**Laser protection filters suitable for medical applications are listed on page 24 and following.**

## Overspecs (OTG – OverTheGlasses) frames for spectacle wearers

<b>14</b>	F18 – with flex temples	
<b>15</b>	F22 – with standard temples	
<b>15</b>	F42 – with quick release and standard temples	<b>NEW</b>
<b>16</b>	F27 – laser safety magnifier	
<b>18</b>	F46 – with Clipnetic System for universal use	<b>NEW</b>
<b>Sporty frames</b>		
<b>20</b>	F20 – the elegant sporty laser protection frame	
<b>21</b>	F29 – The sporty and trendy spectacles	
<b>22</b>	F47 – the lightweight sporty frame for any application	<b>NEW</b>
<b>23</b>	<b>Frames for glass filters</b>	
<b>43</b>	<b>IPL spectacles</b>	
<b>44</b>	F04 – the plastic overspecs with green IPL filters	
<b>45</b>	F34 – the sporty IPL spectacles with colour-neutral grey filters	
<b>45</b>	F18 – with flexible temples and colour-neutral grey filters	
<b>46</b>	<b>Anti-splash spectacles</b>	
<b>47</b>	9178500 uvex super fit CR	
<b>47</b>	9169500 uvex super f OTG CR	
<b>47</b>	9302500 uvex ultrasonic CR	
<b>48</b>	<b>Patient protection/patient spectacles</b>	
<b>49</b>	Eyecaps	
<b>50</b>	P01 silicon patient protection spectacles with filters or metal insert	<b>NEW</b>
<b>51</b>	P07 eyeball spectacles with with asymmetrical nose bridge	
<b>52</b>	P11 / P12 / P13 Premium Line titanium patient spectacles	<b>NEW</b>
<b>54</b>	<b>Laser protection in veterinary medicine</b>	

# One panoramic shield – three temples options

One shield, three frames – the panoramic shield with integrated top and side guard for optimum eyebrow and side coverage



Very low weight for high levels of user acceptance.



Optimum eye coverage thanks to integrated side guard.



Suitable for almost all modern prescription spectacles thanks to rectangular shape, flat geometry and virtually straight sides.



The panoramic lens is available with all plastic laser protection filters.  
**Further information on page 17**

## F18

### The lightest overspecs with flexible temples

The F18 frames with hingeless flexible temples boast an innovative temple design that delivers exceptional comfort and high mechanical stability.



Replaceable hingeless temples with high mechanical stability.



Highly flexible temple tips for maximum user comfort.



**Tip:**  
Users of F18/F22 models can switch to the F42 and benefit from its enhanced comfort by replacing the temples on their spectacles.

## F42 Overspecs with quick release



The innovative quick release temple system allows users to change their frame as needed – without tools and without risking cracks to the lens. The foldable temples are made from a disinfectable material and the F42 promises significantly enhanced ergonomics and fit thanks to the cold-formable temple tips.



Cold-formable for enhanced user comfort and optimum fit.



Innovative quick release system for greater flexibility.



## F22 The lightest overspecs with foldable temples

The F22 frames feature an innovative temple design which carries exceptional comfort and high mechanical stability.



Temple design with high mechanical stability.



Cold-formable temple tips for a secure and comfortable fit



**In the scope of delivery  
F18/F22/F42:**



**Cord for wearing around the neck**  
Art. number: A99CORDW1000



**Softbox (black) with zip**  
Art. number: A99HCASE1000

# Specials

## F27 magnifier

### F27

#### Laser safe magnifier

- Standard laser protection goggle with plastic filter
- A one shield goggle to be worn over prescription glasses
- F22 standard temples with high mechanical stability
- Special adapter for Heine loupes
- Individually adjustable pupil distance
- 2.5-times magnification as standard (other options available on request)
- Working distances of 340 mm, 420 mm and 520 mm possible
- Level of protection depending on filter (various filters available on request)
- Low frame weight and high user comfort



Compatible with almost all prescription spectacles thanks to F22 frame



Special adapter for Heine loupes

The laser safety magnifier is available with all laservision plastic laser protection filters



Loupe can be combined with the A27 Lupe-Light2 from Heine



Individually adjustable pupil distance, 2.5-times magnification as standard (other options available on request)

Included in delivery	Art. number
Complete set Spectacles, case, loupe, cord, cleaner and cloth	on request





# Filters for frames F18/F22/F42/F27



Separated according to the medical fields and Wavelength the following plastic filter are available for the F18/F22/F42 and F27 frames:

## Dental:

<b>Typical laser</b>	Diode 810+980nm, Nd:YAG 1064nm	Diode 810nm	Diode 405-460nm, 810+940+980nm, Nd:YAG 1064nm	Combi filter Nd:YAG1064nm, Er:YAG 2940nm	Diode 810-980nm, Nd:YAG 1064nm	Nd:YAG 1064nm	Erb.YAG 2940nm	Combi filter for various wavelengths
<b>Filter</b>	<b>P1L12</b> 	<b>P1F01</b> 	<b>P1P18</b> 	<b>P1M03</b> 	<b>P1L09</b> 	<b>P1M02</b> 	<b>P1D09</b> 	<b>P1P10</b> 
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## Dermatology:

<b>Typical laser</b>	Combi filter 532nm and 1064nm	Combi filter 532nm,1064nm, 694nm	Ruby laser 694nm	Alexandrite laser 755nm, Diode 810nm	Nd:YAG 1064nm	Alexandrite 755nm, Diode 810+980nm, Nd:YAG 1064nm	Nd:YAG 1064nm, Erb. YAG 2940nm	Er:YAG 2940nm	CO <sub>2</sub> 10,600-11,000nm	Combi filter Diode 810nm to Nd:YAG 1064nm
<b>Filter</b>	<b>P1L02</b> 	<b>P1L16</b> 	<b>P1E03*</b> 	<b>P1F01</b> 	<b>P1M02</b> 	<b>P1L12*</b> 	<b>P1M03</b> 	<b>P1D09</b> 	<b>P1G04*</b> 	<b>P1P18*</b> 
<b>Page</b>	31	31	32	32	33	33	34	34	35	35

## Surgery:

<b>Typical laser</b>	532nm	UV to 532nm	Ruby laser 694nm	Thulium 2008nm, Holmium 2080-2130nm, Er:YAG 2940nm, CO <sub>2</sub> 10,600-11,000nm	Combi filter for 180nm to 11,500nm	CO <sub>2</sub> 10,600-11,000nm
<b>Filter</b>	<b>P1H06*</b> 	<b>P1E01</b> 	<b>P1E03*</b> 	<b>P1D09</b> 	<b>P1M01*</b> 	<b>P1G04*</b> 
<b>Page</b>	37	37	38	38	39	40

\* F27 available on request for these filters



## F46 The multitalent with Clipnetic System

With a highly functional OTG frame design, the F46 is a truly universal product of laser safety eyewear. Thanks to the Clipnetic System, the nose bridge can be swapped out for the RX insert or Clipnetic cover quickly and easily – which means that the spectacles can be worn by different people, resulting in producing huge cost savings. The cold-formable temple tips guarantee a comfortable and secure fit. The F46 frame is compatible with glass and plastic laser safety filters.



**The Clipnetic System**  
makes it quick and easy to swap out the cover, nose piece and RX insert – without tools



**Clipnetic RX-Insert**  
for prescription lenses



**Clipnetic Flex Nose**  
Soft, adjustable and slip-resistant



Base curve 6 laser protection filters available in glass and plastic



**Optimised eye coverage**  
Enhanced protection thanks to enlarged side shields  
**Special plastic**  
with high laser resistance



**Anti-slip rubber**  
for a secure fit  
**Flexible, cold-formable temple tips**  
for a comfortable fit

### The F46 comes with

Softbox (black) with zip for spectacles with plastic laser protection filter

### Art. number

**A99HCASE1000**

or

Alu-box (silver) for spectacles with glass laser protection filters  
each incl. Clipnetic cover, RX insert and flex nose

**A14MTBOX1000**

Cord for wearing around the neck

**A99CORDB1003**

### Accessories

Adjustable, soft Clipnetic Flex Nose piece

**A46FLXNS1001**

RX insert

**A46RXINS1001**

Clipnetic Cover

**A46COVER1000**

**Cleaning and disinfection:** Further information on how to clean and disinfect laservision safety spectacles can be found on page 41.

## The magnetic F46 Clipnetic System:

1



### Clipnetic cover (A46.COVER.1000)

The orange-coloured cover is designed to protect the magnetic insert. This version can be worn as overspecs (OTG).

2



### Clipnetic RX insert (A46.RXINS.1001)

For prescription lenses of the appropriate strength.

3




### Clipnetic Flex nose piece (A46.FLXNS.1001)

For even better user comfort and a custom fit for any nose shape.

Separated according to the medical fields and Wavelength the following plastic filter are available for the F46 frame:

### Dental:

<b>Typical laser</b>	Diode 810+980nm, Nd:YAG 1064nm	Diode 810nm	Diode 405–460 nm, 810+940+ 980 nm, Nd:YAG 1064nm	Combi Nd:YAG 1064nm, Er:YAG 2940nm	Diode 810-980nm, Nd:YAG 1064nm	Nd:YAG 1064nm	Er:YAG 2940nm, Nd:YAG 1064nm	Combi filter for various wavelengths
<b>Filter</b>	<b>P1L12</b> 	<b>P1F01</b> 	<b>P1P18</b> 	<b>P1M03</b> 	<b>P1L09</b> 	<b>P1M02</b> 	<b>P1D09</b> 	<b>P1P10</b> 
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### Dermatology:

<b>Typical laser</b>	532nm, Nd:YAG 1064nm	532nm, Ruby 694nm, Nd:YAG 1064nm	Ruby 694nm	Alexandrite 755nm	Nd:YAG 1064nm	Alexandrite 755nm, Diode 810+980nm, Nd:YAG 1064nm	Nd:YAG 1064, Er:YAG 2940nm	Er:YAG 2940nm	Combi filter Diode 810 nm to Nd:YAG 1064nm
<b>Filter</b>	<b>P1L02</b> 	<b>P1L16</b> 	<b>P1E03</b> 	<b>P1F01</b> 	<b>P1M02</b> 	<b>P1L12</b> 	<b>P1M03</b> 	<b>P1D09</b> 	<b>P1P18</b> 
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### Chirurgie:

<b>Typical laser</b>	532nm	UV to 532nm	Thulium 2008nm, Holmium 2080–2130nm, Er:YAG 2940nm, CO <sub>2</sub> 10,600–11,000nm	Combination 1064nm (Nd:YAG), 2008nm (Thulium), 2080-2130nm (Holmium) 2940 nm (Er:YAG), 10,600nm (CO <sub>2</sub> )	Diode 980/1540/1940nm, Thulium 2008nm, Holmium 2080nm, Er:YAG 2940nm
<b>Filter</b>	<b>P1H06</b> 	<b>P1E01</b> 	<b>P1D09</b> 	<b>T2K02</b> 	<b>P1M01</b> 
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# Sporty frames F20

## F20

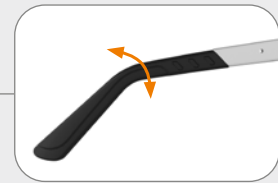
### The elegant and sporty laser protection frame

The F20 frame is lightweight and robust. Fitted with a soft nose piece and integrated side guard, the spectacles create an effective protection around the cheeks and eyebrows. The cold-formable temple tips mean that the spectacles can easily be adjusted to fit any facial shape. The base curve 6 filters guarantee a good field of view combined with a fashionable look.



**Good field of vision**  
Absorbing base curve 6 glass and plastic filters

Very good all-round protection thanks to close fit



**Flexible temple tips**  
Cold-formable, flexible temple tips for a comfortable fit



**Comfortable fit**  
Soft nose cushion for high user comfort



Wide temples with integrated side guards





Separated according to the medical fields and Wavelength, the following filters are available for the F20 frame:



#### Dental:

Typical laser	Diode 810nm
Filter	<b>P1F01</b> 
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#### Dermatology:

Typical laser	Diode 810nm Alexandrite 755nm	532nm, Nd:YAG 1064nm
Filter	<b>P1F01</b> 	<b>P1L02</b> 
Page	32	31

#### Surgery:

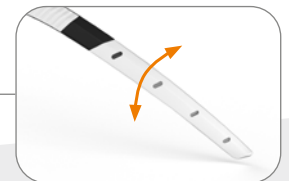
Typical laser	532nm	Nd:YAG 1064nm, Er:YAG 2940nm, CO <sub>2</sub> 10,600nm
Filter	<b>P1E01</b> 	<b>T2K02</b> 
Page	37	39

Included in delivery F20	Art. number
Softbox (black) for secure storage	<b>A99HCASE1000</b>
Cord for wearing around the neck	<b>A99CORDW1000</b>
Instruction manual	

## F29

### The sporty and trendy spectacles

The innovative F29 frame sets new benchmarks in terms of fit and user comfort. The flexible temples with multiple inclinations can be individually adjusted, while the integrated Softflex zone guarantees exceptional user comfort and a secure fit on different head sizes. The soft adjustable nose piece ensures a pressure-free fit.



**Temple flex zone**  
Soft and flexible temples provide a secure fit for both narrower and wider head shapes



**Adjustable nose piece**  
Slip-resistant pressure-free fit



**Multiple side temple inclinations**  
Reliable protection thanks to perfect fit

Separated according to the medical fields and Wavelength, the following plastic filter are available for the F29 frame:

#### Dental:

Typical laser	Diode 810nm	Diode 810-980nm Nd:YAG 1064nm Alignment red	Diode 810nm, Nd:YAG 1064nm	Nd:YAG 1064nm, Erb.YAG 2940nm	Diode 405-460 nm, 810+940+ 980nm, Nd:YAG 1064nm	Combi filter for various wavelengths
Filter	<b>P1F01</b> 	<b>P1L09</b> 	<b>P1L12</b> 	<b>P1M03</b> 	<b>P1P18</b> 	<b>P1P10</b> 
Page	26	28	26	27	27	29

#### Dermatology:

Typical laser	Diode 810nm Alexandrite 755nm	532nm, Nd:YAG 1064nm	Alexandrite 755nm, Diode 810+980nm, Nd:YAG 1064nm	Nd:YAG 1064nm/ Erb.YAG 2940nm	CO <sub>2</sub> 10,600- 11,000nm	Combi filter: Diode 810nm to Nd:YAG 1064nm
Filter	<b>P1F01</b> 	<b>P1L02</b> 	<b>P1L12</b> 	<b>P1M03</b> 	<b>P1G04</b> 	<b>P1P18</b> 
Page	32	31	33	34	35	35



Included in delivery F29	Art. number
Softbox (black) for safe storage	<b>A99HCASE1000</b>
Cord for wearing around the neck	<b>A99CORDW1000</b>
Instruction manual	

#### Surgery:

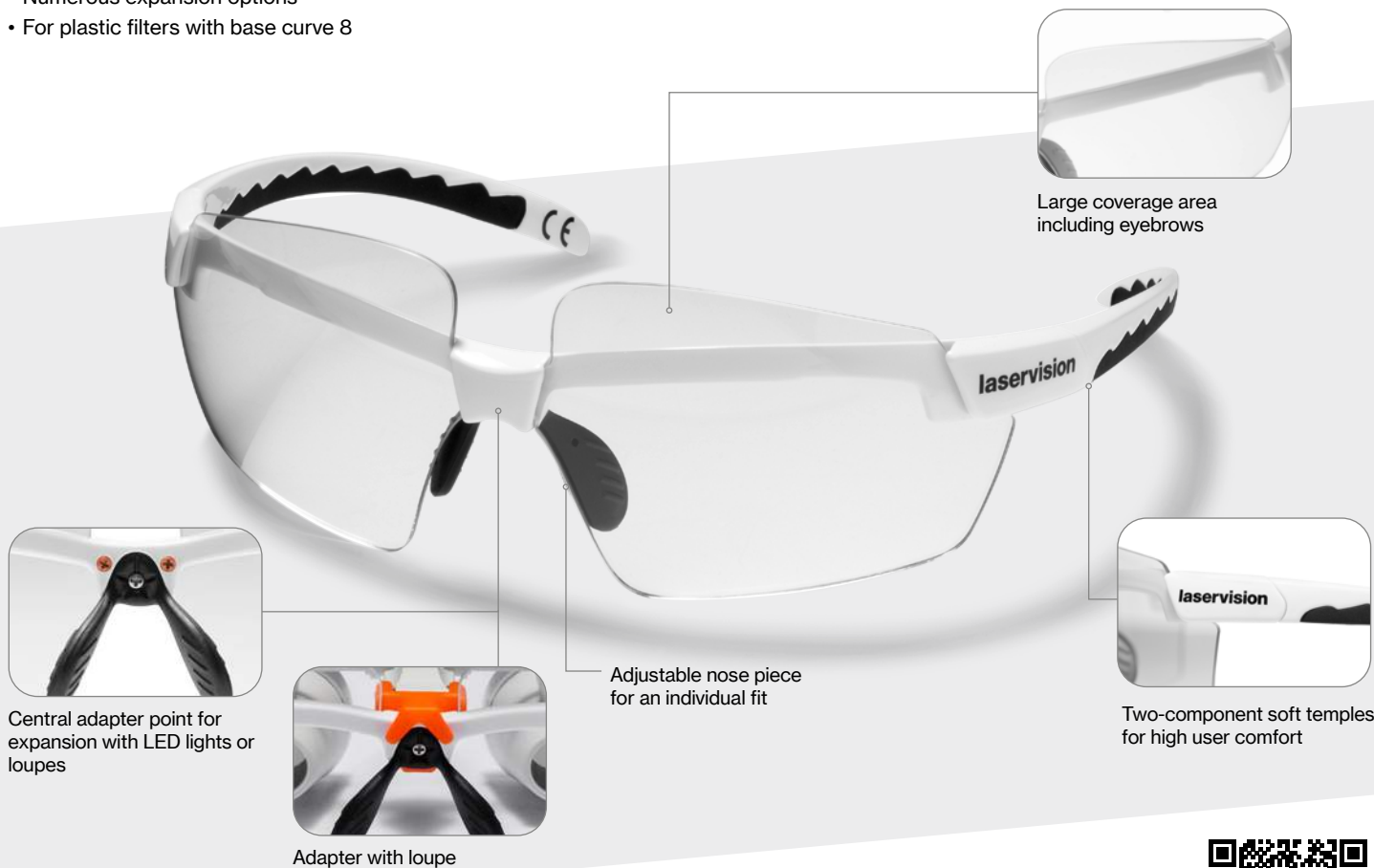
Typical laser	CO <sub>2</sub> 10,600- 11,000nm	532nm
Filter		
Page	40	37



# F47

The lightweight sporty frame for any application

- Dual lens spectacles
- Large coverage area including eyebrows thanks to filter height
- Field of view not restricted by temples
- Unrestricted field of view (base curve 8) thanks to edgeless filter
- Minimal weight (approx. 25 g with filter)
- Numerous expansion options
- For plastic filters with base curve 8



**Additional expansion options:**



Adapter with pre-installed loupe  
Art. number: A47.LOUPE.xxxx



Adapter with LED  
Art. number: A47.LIGHT.1000

The optional accessories can be ordered separately.



Separated according to the medical fields and Wavelength the following plastic filters are available for the F47 frame:

**Dental:**

<b>Typical laser</b>	Diode 810+980nm, Nd:YAG 1064nm	Combi Nd:YAG 1064nm, Er:YAG 2940nm	Combi filter for various wavelengths
<b>Filter</b>	<b>P1L12</b> 	<b>P1M03</b> 	<b>P1P10</b> 
<b>Page</b>	26	27	29

**Dermatology:**

<b>Typical laser</b>	Alexandrite 755nm, Diode 810+980nm, Nd:YAG 1064nm	Combi Nd:YAG 1064nm, Er:YAG 2940nm
<b>Filter</b>	<b>P1L12</b> 	<b>P1M03</b> 
<b>Page</b>	33	34

## R01



- Small spectacles that can also be used with a headband
- Low weight
- Multi-way adjustable Duoflex comfort temples
- External metal reinforcement for high level of protection
- Can be worn with RX insert



## R10



- Suitable for users with prescription glasses
- Multi-way adjustable Duoflex comfort temples
- Headband and cold-foldable temples available as optional accessories
- Matching head support available
- External metal reinforcement for high level of protection



## R14



- Suitable for prescription spectacle wearers
- Adjustable wide headband
- Three different cushion frames available (foam, sealing lip and ventilated frames)
- Anti-fog insert available
- Strengthened frame with internal reinforcement for high levels of protection



## R17




- RX insert can be fitted for prescription lenses
- Multi-way adjustable Duoflex comfort temples
- Optional: Headband and cold-formable temples available
- Matching carry case available
- External metal reinforcement for high level of protection



### Surgery:

**In medical applications, the R-frames should ideally be used with this glass filter:**

Typical laser	Combination 1064nm (Nd:YAG), 2008nm (Thulium), 2080-2130nm (Holmium), 2940nm (Er:YAG), 10,600nm (CO <sub>2</sub> )
Filter	<b>T2K02</b> 
Page	39

### Accessory for the R-frames



Available as optional accessories	Art. number
Antifog insert (R14)	<b>A14RAFOG1000</b>
RX insert (R01, R17)	<b>A01RXINS1000</b>
Antifog insert (R17)	<b>A17RAFOG1000</b>
Headband for R01, R10, R17	<b>A10STRAP1LVO</b>
Headband for R14	<b>A14STRAP1LVO</b>

Included in delivery	Art. number
Alu-box for safe storage of R01/R10/R17	<b>A10MTBOX1000</b>
Alu-box for safe storage of R14	<b>A14MTBOX1000</b>
Cord for wearing around the neck	<b>A99CORDW1000</b>
Instruction manual	

**Cleaning and disinfection:** Further information on how to clean and disinfect laservision safety spectacles can be found on page 41.

# Table of contents for laser safety filters based on laser type and wavelength

---

## **25** For dental applications, sorted by wavelength

- 
- 26** Combi filter 810+980nm (Diode) to 1064 (Nd:YAG) **P1L12**
- 
- 26** Laser protection filter for 810nm (Diode) **P1F01**
- 
- 27** Combi filter for 405-460nm + 810nm, 940 + 980 nm (Diode) - 1064nm (Nd:YAG) **P1P18**
- 
- 27** Combi filter for 1064nm (Nd:YAG) and 2940nm (Er:YAG) **P1M03**
- 
- 28** Combi filter for 810-980nm (Diode), alignment protection red + 1064nm (Nd:YAG) **P1L09**
- 
- 28** Laser protection filter for 1064nm (Nd:YAG) **P1M02**
- 
- 29** Laser protection filter for 2940nm (Er:YAG), 10,600nm (CO<sub>2</sub> laser) **P1D09**
- 
- 29** Combi filter for various wavelengths in dental applications **P1P10**
- 

## **30** For dermatological applications (dermatology, tattoo removal etc.), sorted by wavelength

- 
- 31** Combi filter for 532nm (Q-switched Nd:YAG) and 1064nm (Nd:YAG) **P1L02**
- 
- 31** Combi filter for 532nm (Q-switched Nd:YAG), 694nm (Ruby laser) and 1064nm (Nd:YAG) **P1L16**
- 
- 32** Laser protection filter for 694nm (Ruby laser) **P1E03**
- 
- 32** Laser protection filter for 755nm (Alexandrite laser) **P1F01**
- 
- 33** Laser protection filter for 1064nm (Nd:YAG) **P1M02**
- 
- 33** Combi filter for 755nm (Alexandrite Laser), 810+980nm (Diode) and 1064nm (Nd:YAG) **P1L12**
- 
- 34** Combi filter for 1064nm (Nd:YAG), 2940nm (Er:YAG) **P1M03**
- 
- 34** Laser protection filter for 2940nm (Er:YAG) **P1D09**
- 
- 35** Laser protection filter for 10,600nm to 11,000nm (CO<sub>2</sub>) **P1G04**
- 
- 35** Combi filter 810nm (Diode) to 1064nm (Nd:YAG) **P1P18**
- 

## **36** For surgical applications, sorted by wavelength

- 
- 37** Laser protection filter for 532nm **P1H06**, UV to 532 nm (Diode) **P1E01**
- 
- 38** Laser protection filter for 694nm (Ruby laser) **P1E03**
- 
- 38** Combi filter for 2008nm (Thulium), 2080-2130nm (Holmium), 2940nm (Er:YAG), 10,600-11,000nm (CO<sub>2</sub>) **P1D09**
- 
- 39** Glass filter for combination 1064nm (Nd:YAG), 2008nm (Thulium), 2080-2130nm (Holmium) 2940nm (Er:YAG), 10,600nm (CO<sub>2</sub>) **T2K02**
- 
- 39** Combi filter for 980/1540/1940nm (Diode), 2000nm (Thulium), 2080nm (Holmium), 2940nm (Er:YAG) 10,600nm (CO<sub>2</sub>) **P1M01**
- 
- 40** Laser protection filter for 10,600-11,000nm (CO<sub>2</sub>) **P1G04**
-



# Laser protection in dentistry

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Lasers are increasingly being used in conservative therapy, prosthetics, implantology, oral surgery and cosmetic dentistry.

All lasers used in dentistry emit in the near-infrared or infrared range. In this range, laser light is invisible to the human eye.

However, the laser light used for healing, treatment and therapy can also cause damage to the eye, including cataracts, retinal injury or even burning of the cornea.

The skin, too, is susceptible to burn injuries caused by Diode, Holmium, Er:YAG and CO<sub>2</sub> lasers.

With this in mind, it is all the more important that not only the dentist and their nursing team, but also the patient themselves, are all protected against dangerous radiation.

On the next few pages, we have listed all of the spectacles and filters for the wavelength spectrums used in dental applications, from periodontal treatment, endodontics and soft tissue surgery to biostimulation and bleaching.

**Suitable patient eyewear can be found from page 48 onwards.**



## Filter P1L12



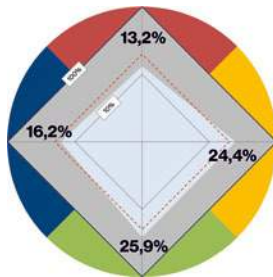
- Endodontics
- Periodontics
- Soft tissue surgery
- Therapies
- Biostimulation and whitening

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Diode	810-980nm	8+	DLB6+IRLB8+MLB8Y
Nd:YAG	1064nm	8+	DLB6+IRLB8+MLB8Y

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Light green  
**Visual brightness:** Good  
**VLT (approx.):** 30%  
**Colour view:** Good



### Available laser protection eyewear

- F18**  
Page 14  
  
Art. number: **F18.P1L12**
- F22**  
Page 15  
  
Art. number: **F22.P1L12**
- F42**  
Page 15  
  
Art. number: **F42.P1L12**
- F29**  
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Art. number: **F29.P1L12**
- F46**  
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Art. number: **F46.P1L12**
- F47**  
Page 22  
  
Art. number: **F47.P1L12**

For further information and to view the technical specifications of these filters, please scan the QR codes provided.



## Filter P1F01



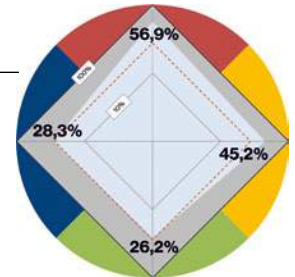
- Endodontics
- Periodontics
- Soft tissue surgery
- Therapies
- Biostimulation and whitening

### Laser and application








Typical laser	Wavelength	OD	CE protection rating
Diode	810 nm	7+	DR LB5 + I LB7Y

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Magenta  
**Visual brightness:** Good  
**VLT (approx.):** 35%  
**Colour view:** Very good



### Available laser protection eyewear

- F18**  
Page 14  
  
Art. number: **F18.P1F01**
- F20**  
Page 20  
  
Art. number: **F20.P1F01**
- F22**  
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Art. number: **F22.P1F01**
- F42**  
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Art. number: **F29.P1F01**
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Art. number: **F46.P1F01**





## Filter P1P18



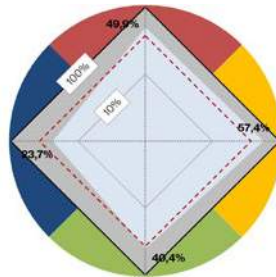
- Endodontics
- Periodontics
- Soft tissue surgery
- Therapies
- Biostimulation and whitening

### Laser and application







Typical laser	Wavelength	OD	CE protection rating
Diode	405-460nm	8+	D LB6 + IR LB8 + M LB8Y
Diode	810nm	6+	DIRM LB6
Diode	940+980nm	10+	D LB6 + IR LB8 + M LB8Y
Nd:YAG	1064nm	10+	D LB6 + IR LB8 + M LB10

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Gold  
**Visual brightness:** Very good  
**VLT (approx.):** 47%  
**Colour view:** Good



### Available laser protection eyewear

- F18**  
Page 14  
 Art. number: **F18.P1P18**
- F22**  
Page 15  
 Art. number: **F22.P1P18**
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 Art. number: **F46.P1P18**



## Filter P1M03



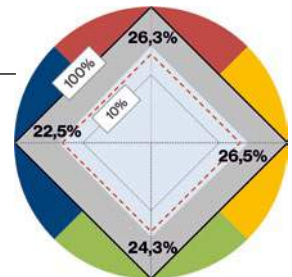
- Conservative therapy
- Prosthodontics
- Endodontics
- Periodontics
- Implantology
- Jaw surgery
- Aesthetic surgery

### Laser and application


Typical laser	Wavelength	OD	CE protection rating
Nd:YAG	1064nm	8+	DLB6+IRLB8+MLB8Y
Er:YAG	2940nm	4+	DILB4+RLB3Y+MLB4

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Grey  
**Visual brightness:** Very good  
**VLT (approx.):** 25%  
**Colour view:** Very good



### Available laser protection eyewear

- F18**  
Page 14  
 Art. number: **F18.P1M03**
- F22**  
Page 15  
 Art. number: **F22.P1M03**
- F42**  
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## Filter P1L09



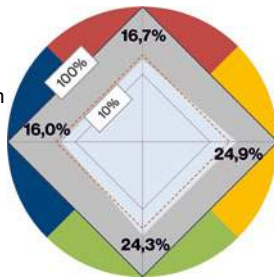
- Endodontics
- Periodontics
- Soft tissue surgery
- Therapies
- Biostimulation and whitening

### Laser and application






Typical laser	Wavelength	OD	CE protection rating
Diode	810–910 nm	8+	DLB6 + ILB8 + RLB7 + MLB6Y
Nd:YAG	1064 nm	8+	DLB6 + ILB8 + RLB7 + MLB6Y

### Filter properties

- Filter function:** Full/alignment protection  
**Filter colour:** Light green  
**Visual brightness:** Good  
**VLT (approx.):** 35%  
**Colour view:** Good



### Available laser protection eyewear

- F18**  
Page 14  
 Art. number: **F18.P1L09**
- F22**  
Page 15  
 Art. number: **F22.P1L09**
- F42**  
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 Art. number: **F42.P1L09**
- F27**  
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- F46**  
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 Art. number: **F46.P1L09**

For further information and to view the technical specifications of these filters, please scan the QR codes provided.



## Filter P1M02



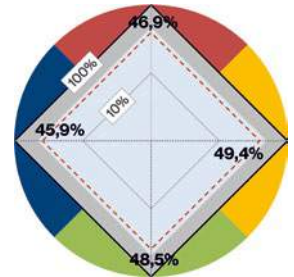
- Conservative therapy
- Prosthodontics
- Endodontics
- Periodontics
- Implantology
- Jaw surgery
- Aesthetic surgery

### Laser and application


Typical laser	Wavelength	OD	CE protection rating
Nd:YG	1064 nm	7+	DLB6+IR LB7+MLB7Y

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Light grey  
**Visual brightness:** Excellent  
**VLT (approx.):** 45%  
**Colour view:** Very good



### Available laser protection eyewear

- F18**  
Page 14  
 Art. number: **F18.P1M02**
- F22**  
Page 15  
 Art. number: **F22.P1M02**
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## Filter P1D09



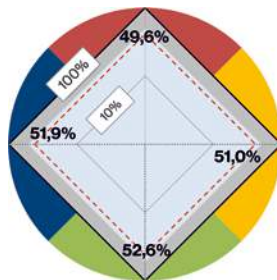
- Conservative therapy
- Prosthodontics
- Endodontics
- Periodontics
- Implantology
- Jaw surgery
- Aesthetic surgery

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Er:YAG	2940nm	4+	DI LB4+R LB3Y+M LB3
CO <sub>2</sub> laser	10,600nm	6+	DI LB4+R LB3Y+M LB4Y

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Grey-green  
**Visual brightness:** Very good  
**VLT (approx.):** 50%  
**Colour view:** Very good



### Available laser protection eyewear

**F18**  
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 Art. number: **F18.P1D09**

**F22**  
Page 15  
 Art. number: **F22.P1D09**

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## Filter P1P10



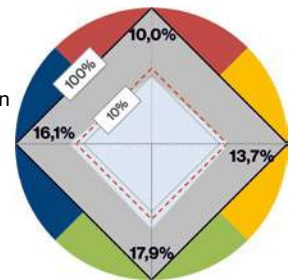
- Conservative therapy
- Prosthodontics
- Endodontics
- Periodontics
- Implantology
- Jaw surgery
- Aesthetic surgery

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Nd:YG	1064 nm	8+	DLB6+IRM LB8
CO <sub>2</sub> laser	10,600nm	4+	DI LB4+RLB3Y+M LB5

### Filter properties

- Filter function:** Full/alignment protection  
**Filter colour:** Blue  
**Visual brightness:** Sufficient  
**VLT (approx.):** 16%  
**Colour view:** Good



### Available laser protection eyewear

**F18**  
Page 14  
 Art. number: **F18.P1P10**

**F22**  
Page 15  
 Art. number: **F22.P1P10**

**F42**  
Page 15  
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**F27**  
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**F47**  
Page 22  
 Art. number: **F47.P1P10**





# Laser protection in dermatology



Lasers are used to remove thread veins, scars, visible blood vessels, tumours (e.g. warts) and pigmentation marks. Lasers are also increasingly being used in cosmetic surgery on various parts of the body and to remove tattoos.

In dermatology, various treatments use lasers for stimulation purposes; these applications use a wide variety of lasers with different wavelengths (Nd:YAG at 1064nm, Er:YAG at 2940nm and CO<sub>2</sub> lasers at 10,600nm and Ruby lasers at 694nm). When preparing these treatments, doctors aim to use the least invasive laser that is suitable for the patient. Depending on the goal of the treatment, the properties (wavelength, pulse duration, intensity etc.) of the laser are selected to achieve the desired biological effect on the skin.

Hair removal, for example, uses an Alexandrite laser at 755nm or a Diode laser in the 800–940 nm range. To give just one example.

On the next few pages, we have listed all laser protection filters for doctors and healthcare assistants, sorted by wavelength, for the various applications in the field of dermatology.

We have also listed the frames available for each laser, including overspecs, sporty spectacles or magnifiers, ensuring that there is an option to suit every user.

**Suitable patient eyewear can be found from page 48 onwards.**

## Filter P1L02



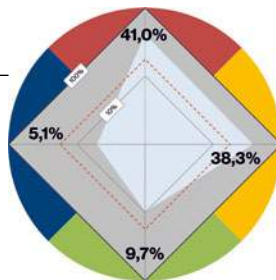
- Tattoo removal

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Q-switched Nd:YAG	532nm	8+	DLB6+ILB7+RMLB8
Q-switched Nd:YAG	1064nm	7+	DLB6+IRMLB7

### Filter properties

- Filter function:** Full protection
- Filter colour:** Orange
- Visual brightness:** Good
- VLT (approx.):** 30%
- Colour view:** Limited



### Available laser protection eyewear

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**F20**  
Page 20  Art. number: **F20.P1L02**

**F22**  
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For further information and to view the technical specifications of these filters, please scan the QR codes provided.



## Filter P1L16



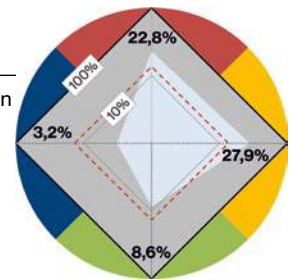
- Tattoo removal

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Q-switched Nd:YAG	532nm	8+	DLB6+IR LB8+MLB8Y
Ruby laser	694nm	8+	DLB6+I LB7+R LB8+M LB7
Q-switched Nd:YAG	1064nm	7+	DLB6+IRLB8+MLB8Y

### Filter properties

- Filter function:** Full/alignment protection
- Filter colour:** Orange
- Visual brightness:** Low
- VLT (approx.):** 15%
- Colour view:** Limited



### Available laser protection eyewear

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**F22**  
Page 15  Art. number: **F22.P1L16**

**F42**  
Page 15  Art. number: **F42.P1L16**

**F46**  
Page 18  Art. number: **F46.P1L16**





## Filter P1E03



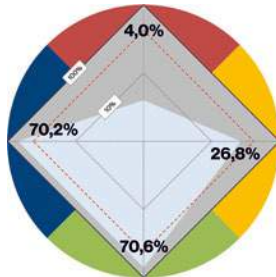
- Tattoo removal

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Ruby laser	694 nm	7+	DLB5 + IRLB7

### Filter properties

<b>Filter function:</b>	Full protection
<b>Filter colour:</b>	Mint green
<b>Visual brightness:</b>	Good
<b>VLT (approx.):</b>	45%
<b>Colour view:</b>	Good



### Available laser protection eyewear

**F18**  
Page 14  
 Art. number: **F18.P1E03**

**F22**  
Page 15  
 Art. number: **F22.P1E03**

**F42**  
Page 15  
 Art. number: **F42.P1E03**

**F46**  
Page 18  
 Art. number: **F46.P1E03**

For further information and to view the technical specifications of these filters, please scan the QR codes provided.



## Filter P1F01



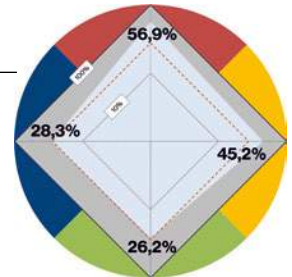
- Hair removal
- Vein treatment
- Skin tightening
- Wrinkle reduction
- Acne treatment

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Alexandrite	755 nm	7+	DR LB5 + I LB7Y

### Filter properties

<b>Filter function:</b>	Full protection
<b>Filter colour:</b>	Magenta
<b>Visual brightness:</b>	Good
<b>VLT (approx.):</b>	35%
<b>Colour view:</b>	Very good



### Available laser protection eyewear

**F18**  
Page 14  
 Art. number: **F18.P1F01**

**F20**  
Page 20  
 Art. number: **F20.P1F01**

**F22**  
Page 15  
 Art. number: **F22.P1F01**

**F42**  
Page 15  
 Art. number: **F42.P1F01**

**F27**  
Page 16  
 Art. number: **F27.P1F01**

**F29**  
Page 21  
 Art. number: **F29.P1F01**

**F46**  
Page 18  
 Art. number: **F46.P1F01**





## Filter P1M02



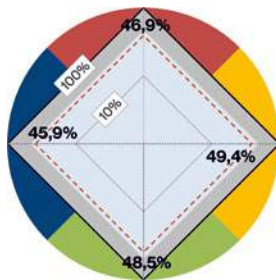
- Removal/treatment of skin lesions
- Removal/treatment of epidermal lesions

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Nd:YG	1064nm	7+	DLB6+IR LB7+MLB7Y

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Light grey  
**Visual brightness:** Excellent  
**VLT (approx.):** 45%  
**Colour view:** Very good



### Available laser protection eyewear

**F18**  
Page 14  Art. number: **F18.P1M02**

**F22**  
Page 15  Art. number: **F22.P1M02**

**F42**  
Page 15  Art. number: **F42.P1M02**

**F27**  
Page 16  Art. number: **F27.P1M02**

**F46**  
Page 18  Art. number: **F46.P1M02**



## Filter P1L12



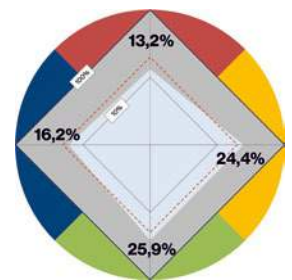
- Hair removal
- Vein treatment
- Skin tightening
- Wrinkle reduction
- Acne treatment

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Alexandrite	755nm	8+	DLB6+IRLB8+MLB8Y
Diode	810-980nm	8+	DLB6+IRLB8+MLB8Y
Nd:YAG	1064nm	8+	DLB6+IRLB8+MLB8Y

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Light green  
**Visual brightness:** Good  
**VLT (approx.):** 30%  
**Colour view:** Good



### Available laser protection eyewear

**F18**  
Page 14  Art. number: **F18.P1L12**

**F22**  
Page 15  Art. number: **F22.P1L12**

**F42**  
Page 15  Art. number: **F42.P1L12**

**F29**  
Page 21  Art. number: **F29.P1L12**

**F46**  
Page 18  Art. number: **F46.P1L12**

**F47**  
Page 22  Art. number: **F47.P1L12**





## Filter P1M03



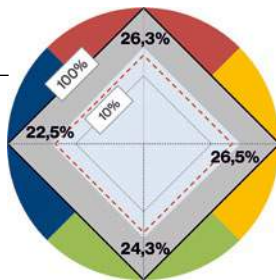
- Removal/treatment of skin lesions
- Removal/treatment of epidermal lesions

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Nd:YAG	1064nm	8+	DLB6+IRLB8+MLB8Y
Er:YAG	2940nm	4+	DI LB4 + R LB3Y + M LB4

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Grey  
**Visual brightness:** Very good  
**VLT (approx.):** 25%  
**Colour view:** Very good



### Available laser protection eyewear

**F18**  
Page 14  Art. number: **F18.P1M03**

**F22**  
Page 15  Art. number: **F22.P1M03**

**F42**  
Page 15  Art. number: **F42.P1M03**

**F27**  
Page 16  Art. number: **F27.P1M03**

**F29**  
Page 21  Art. number: **F29.P1M03**

**F46**  
Page 18  Art. number: **F46.P1M03**

**F47**  
Page 22  Art. number: **F47.P1M03**

For further information and to view the technical specifications of these filters, please scan the QR codes provided.



## Filter P1D09



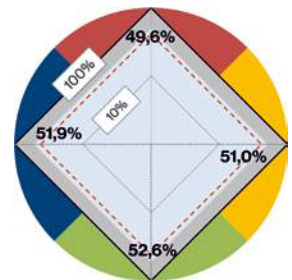
- Removal/treatment of skin lesions
- Removal/treatment of epidermal lesions

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Er:YAG	2940nm	4+	DI LB4 + R LB3Y + M LB3

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Grey-green  
**Visual brightness:** Very good  
**VLT (approx.):** 50%  
**Colour view:** Very good



### Available laser protection eyewear

**F18**  
Page 14  Art. number: **F18.P1D09**

**F22**  
Page 15  Art. number: **F22.P1D09**

**F42**  
Page 15  Art. number: **F42.P1D09**

**F27**  
Page 16  Art. number: **F27.P1D09**

**F46**  
Page 18  Art. number: **F46.P1D09**



## Filter P1G04



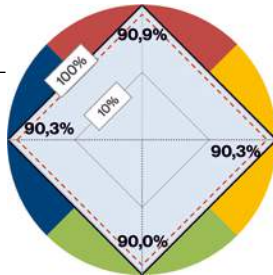
- Wrinkle treatment/tightening
- Wound treatment
- Acne scarring/wart treatment
- Skin rejuvenation

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
CO <sub>2</sub> laser	10,600nm	8+	DI LB4 + R LB3Y

### Filter properties

<b>Filter function:</b>	Full protection
<b>Filter colour:</b>	Clear
<b>Visual brightness:</b>	Excellent
<b>VLT (approx.):</b>	90%
<b>Colour view:</b>	Very good



### Available laser protection eyewear

**F18**  
Page 14  Art. number: **F18.P1G04**

**F22**  
Page 15  Art. number: **F22.P1G04**

**F42**  
Page 15  Art. number: **F42.P1G04**

**F29**  
Page 21  Art. number: **F29.P1G04**



## Filter P1P18



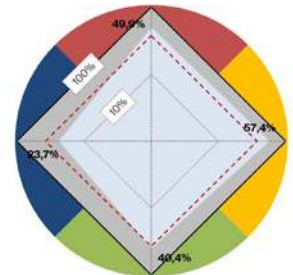
- Hair removal
- Skin tightening
- Wrinkle reduction
- Acne treatments
- Tattoo removal
- Treatment of skin lesions

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Diode	810 nm	6+	DIRM LB6
Nd:YAG	1064 nm	10+	D LB6 + IR LB8 + M LB10

### Filter properties

<b>Filter function:</b>	Full protection
<b>Filter colour:</b>	Gold
<b>Visual brightness:</b>	Very good
<b>VLT (approx.):</b>	47%
<b>Colour view:</b>	Good



### Available laser protection eyewear

**F18**  
Page 14  Art. number: **F18.P1P18**

**F22**  
Page 15  Art. number: **F22.P1P18**

**F42**  
Page 15  Art. number: **F42.P1P18**

**F27**  
Page 16  Art. number: **F27.P1P18**

**F29**  
Page 21  Art. number: **F29.P1P18**

**F46**  
Page 18  Art. number: **F46.P1P18**





# Laser protection in surgery



In surgery, lasers can be used for therapeutic or diagnostic purposes. Lasers are now a crucial aspect of many surgical applications, including in

- Plastic surgery
- Ophthalmology (treatment of glaucoma)
- Gastroenterology (reduction/removal of tumours in the digestive tract)
- Gynaecology
- Urology
- Cardiology
- Neurosurgery (removal of brain tumours)
- ENT
- Orthopaedics

These applications primarily use green lasers at 532nm, Nd:YAG at 1064nm, Holmium at 2010nm, Er:YAG at 2940nm and CO<sub>2</sub> lasers.

The following pages list suitable spectacles for doctors and medical assistants working in all of these medical settings and more.

**Suitable patient eyewear can be found from page 48 onwards.**

## Filter P1H06



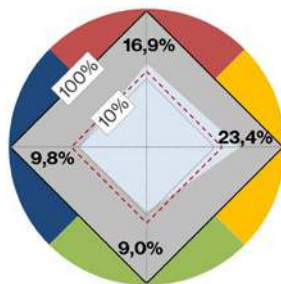
- Plastic surgery
- Dental surgery
- Urological interventions
- Cutting and removal of soft tissue

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
KTP laser	532nm	6+	DIR LB6

### Filter properties

<b>Filter function:</b>	Full protection
<b>Filter colour:</b>	Violet
<b>Visual brightness:</b>	Good
<b>VLT (approx.):</b>	15%
<b>Colour view:</b>	Good (except green)



### Available laser protection eyewear

**F18**  
Page 14  Art. number: **F18.P1H06**

**F22**  
Page 15  Art. number: **F22.P1H06**

**F42**  
Page 15  Art. number: **F42.P1H06**

**F29**  
Page 21  Art. number: **F29.P1H06**

**F46**  
Page 18  Art. number: **F46.P1H06**

**NOTE:**  
This filter blocks out the colour green almost completely.

For further information and to view the technical specifications of these filters, please scan the QR codes provided.



## Filter P1E01



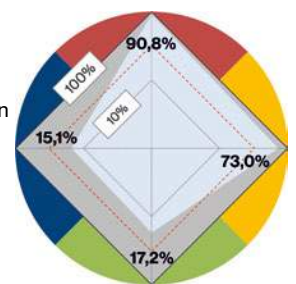
- Plastic surgery
- Dental surgery
- Urological interventions
- Cutting and removal of soft tissue

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
KTP laser	180–315nm	7+	D LB7 + IR LB4
KTP laser	532nm	6+	D LB6 + IR LB6Y

### Filter properties

<b>Filter function:</b>	Full/alignment protection
<b>Filter colour:</b>	Orange
<b>Visual brightness:</b>	Good
<b>VLT (approx.):</b>	40%
<b>Colour view:</b>	Limited



### Available laser protection eyewear

**F18**  
Page 14  Art. number: **F18.P1E01**

**F20**  
Page 20  Art. number: **F20.P1E01**

**F22**  
Page 15  Art. number: **F22.P1E01**

**F42**  
Page 15  Art. number: **F42.P1E01**

**F27**  
Page 16  Art. number: **F27.P1E01**

**F46**  
Page 18  Art. number: **F46.P1E01**





## Filter P1E03



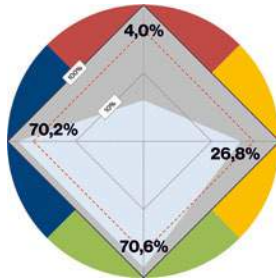
- Plastic surgery
- Dental surgery
- Urological interventions
- Cutting and removal of soft tissue

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Ruby laser	694nm	7+	DLB5 + IRLB7

### Filter properties

<b>Filter function:</b>	Full protection
<b>Filter colour:</b>	Mint green
<b>Visual brightness:</b>	Good
<b>VLT (approx.):</b>	45%
<b>Colour view:</b>	Good



### Available laser protection eyewear

**F18**  
Page 14  Art. number: **F18.P1E03**

**F22**  
Page 15  Art. number: **F22.P1E03**

**F42**  
Page 15  Art. number: **F42.P1E03**

For further information and to view the technical specifications of these filters, please scan the QR codes provided.



## Filter P1D09



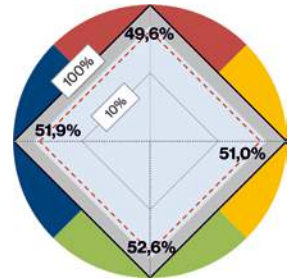
- Plastic surgery
- Dental surgery
- Urological interventions
- Cutting and removal of soft tissue

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Thulium	2008nm	5+	DI LB4 + R LB3Y + M LB3
Holmium	2080nm	5+	DI LB4 + R LB3Y + M LB3
Er:YAG	2940nm	4+	DI LB4 + R LB3Y + M LB3
CO <sub>2</sub> laser	10,600nm	6+	DI LB4 + R LB3Y + M LB4Y

### Filter properties

<b>Filter function:</b>	Full protection
<b>Filter colour:</b>	Grey-green
<b>Visual brightness:</b>	Very good
<b>VLT (approx.):</b>	50%
<b>Colour view:</b>	Very good



### Available laser protection eyewear

**F18**  
Page 14  Art. number: **F18.P1D09**

**F22**  
Page 15  Art. number: **F22.P1D09**

**F42**  
Page 15  Art. number: **F42.P1D09**

**F27**  
Page 16  Art. number: **F27.P1D09**

**F46**  
Page 18  Art. number: **F46.P1D09**



## Glass Filter T2K02



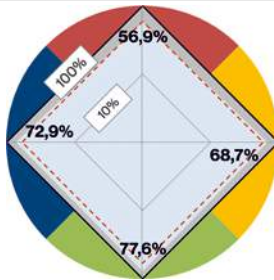
- Glass filter for high levels of protection
- Plastic surgery
- Dental surgery
- Urological interventions
- Cutting and removal of soft tissue

### Laser and application







Typical laser	Wavelength	OD	CE protection rating
Nd:YAG	1064nm	8+	DLB6+IRLB8+MLB8Y
Thulium	2008nm	4+	DI LB4 + R LB3Y
Holmium	2080nm	4+	DI LB4 + R LB3Y
Er:YAG	2940nm	4+	DIR LB4
CO <sub>2</sub> laser	10,600nm	4+	DIR LB4

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Light grey  
**Visual brightness:** Very good  
**VLT (approx.):** 70%  
**Colour view:** Excellent



### Available laser protection eyewear

- F20**  
Page 20  Art. number: **F20.T2K02**
- R01**  
Page 23  Art. number: **R01.T2K02**
- R10**  
Page 23  Art. number: **R10.T2K02**
- R14**  
Page 23  Art. number: **R14.T2K02**
- R17**  
Page 23  Art. number: **R17.T2K02**
- F46**  
Page 18  Art. number: **F46.T2K02**



## Filter P1M01



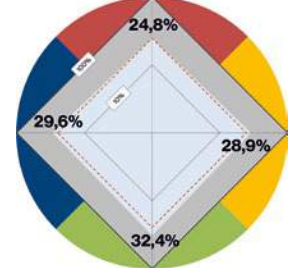
- Plastic surgery
- Dental surgery
- Urological interventions
- Cutting and removal of soft tissue

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
Diode	980 nm 1540 nm + 1940 nm	4+ 4+	DIRM LB4 DIR LB4+M LB3
Thulium	2008nm	4+	DIR LB4+M LB3
Holmium	2080nm	4+	DIR LB4+M LB3
Er:YAG	2940nm	3+	DI LB3+R LB3Y+M LB3
CO <sub>2</sub> laser	10,600nm	4+	DI LB4+R LB3Y+M LB4Y

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Light blue  
**Visual brightness:** Good  
**VLT (approx.):** 35%  
**Colour view:** Very good



### Available laser protection eyewear

- F18**  
Page 14  Art. number: **F18.P1M01**
- F22**  
Page 15  Art. number: **F22.P1M01**
- F42**  
Page 15  Art. number: **F42.P1M01**
- F46**  
Page 18  Art. number: **F46.P1M01**





## Filter P1G04



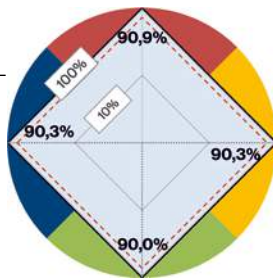
- Plastic surgery
- Dental surgery
- Urological interventions
- Cutting and removal of soft tissue

### Laser and application

Typical laser	Wavelength	OD	CE protection rating
CO <sub>2</sub> laser	10,600nm	8+	DI LB4 - R LB3Y

### Filter properties

- Filter function:** Full protection  
**Filter colour:** Clear  
**Visual brightness:** Excellent  
**VLT (approx.):** 90%  
**Colour view:** Very good



### Available laser protection eyewear

**F18**  
Page 14  Art. number: **F18.P1G04**

**F22**  
Page 15  Art. number: **F22.P1G04**

**F42**  
Page 15  Art. number: **F42.P1G04**

**F29**  
Page 21  Art. number: **F29.P1G04**

For further information and to view the technical specifications of these filters, please scan the QR codes provided.





## Cleaning and disinfection recommendations for laser safety glasses

As of: 11/26/2020

**In general, according to the instructions for use, the following applies for cleaning and disinfection of laservision glasses:**

1. Do not clean dry (dry grinding effect), we recommend using running water and laservision cleaning fluid.
2. **laservision recommends disinfection using an alcohol-based disinfectant.**
3. We recommend disinfecting the product by wiping. If the product must be disinfected by spraying, make sure there is no residue from the disinfectant remaining on the frame or lenses.
4. Never treat laser safety eyewear by autoclave or immerse the product in disinfectant solutions or ultrasonic baths.
5. Failure to follow the cleaning and disinfection instructions can significantly shorten the useful life of the product and make it unsafe.

**Based on extensive internal tests with various disinfectants, we recommend the following products:**

Company	Tissues	Liquids
Dr. Deppe	Spray In QF	Spray In QF
Dr. Schumacher	Descosept Sensitive Wipes	-
Dr. Weigert	-	Neodischer Medrapid
Schülke	Pursept A Xpress wipes	Pursept A Xpress
Schülke	Mikrozid AF wipes	Mikrozid AF liquid

Please note that you only use the recommended alcohol-based disinfectants. If this is not possible, use their composition for orientation.

Each disinfectant attacks the glasses depending on the intensity and frequency of the disinfection. This can lead to delamination of the coating even when using the recommended disinfectants, depending on the frequency of use. However, this does not affect the laser protection effect!

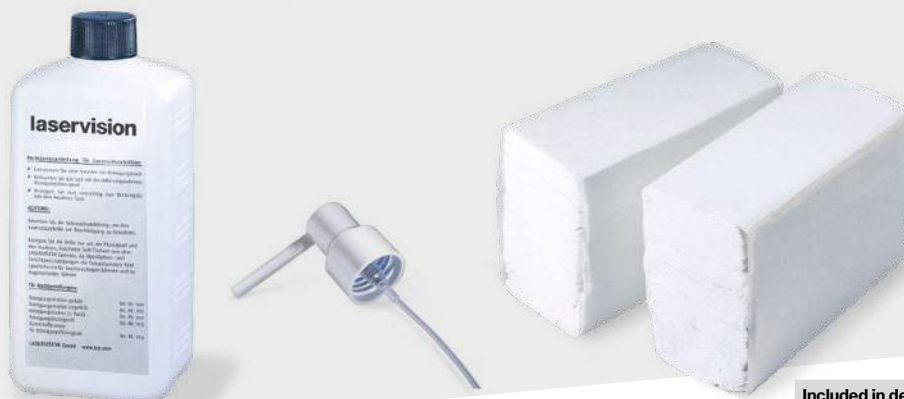
**Caution: Disinfectants with the following ingredients have proven to be particularly harmful, do not use agents with these ingredients under any circumstances:**

- Aldehydes
- Amines
- Glutaral
- Peracetic Acid
- Quaternary ammonium compounds (QAC)

## Cleaning station

The professional wall-mounted cleaning station A99.CLSTA.1300 includes a dispenser containing a cleaning fluid specially designed for use with laser protection filters, as well as wood-free tissues for cleaning.



This combination of products allows users to clean their eyewear gently and thoroughly, helping to guarantee a long service life for both the spectacles and the laser protection filters.



Included in delivery	Art. number
Cleaning station:	A99.CLSTA.1300
Cleaning tissues (single pack):	A99.CLSTA.1302
Cleaning fluid:	A99.CLASTA.1303
Spray pump:	A99.CLASTA.1304

# Table of contents for patient protection & large-area laser protection

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<b>43</b>	<b>IPL applications</b>	
<b>44</b>	F04 – the plastic overspecs with green IPL filters	
<b>45</b>	F34 – the sporty IPL spectacles with colour-neutral grey filters	
<b>45</b>	F18 – with flexible temples and colour-neutral grey filters	
<b>46</b>	<b>Anti-splash spectacles (Clean Range)</b>	
<b>47</b>	9169500 autoclavable anti-splash overspecs uvex super f OTG	
<b>47</b>	9178500 autoclavable anti-splash spectacles uvex super fit CR	
<b>47</b>	9302500 autoclavable goggles ultrasonic CR	
<b>48</b>	<b>Patient eyewear</b>	
<b>49</b>	Eyecaps	
<b>50</b>	P01 silicon patient protection spectacles with and without metal insert	
<b>51</b>	P07 eyeball spectacles with asymmetrical nose bridge	
<b>52</b>	P11 / P12 / P13 Premium Line titanium patient spectacles	
<b>54</b>	<b>Laser protection in veterinary medicine</b>	
<b>56</b>	<b>Large-area laser protection</b>	

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Photodynamic (IPL – intense pulsed light) therapies require adequate protection for both the patient and for the medical staff – particularly when these therapies are used in dental and dermatological applications.

Alongside the conventional pulsed light sources, such as Xe-based technology, high-performance LEDs are increasingly used in these clinical settings. Where the emissions spectrum is filtered or narrow, laser protection eyewear can be worn by those exposed to the light.

We would be happy to advise you if you are unsure. Safety first!

Depending on the application and power spectrum, different levels of protection are required: shade 3 and shade 5.

In most cases, the user and the staff doing the treatment will need a weaker filter than the patient.

laservision offers IPL filters based on a grey absorber dye. Unlike the conventional dark grey absorbers originally designed for welding applications, these filters feature good colour recognition and they are available in two attenuations.

On the next few pages, you will be able to identify the right IPL spectacles for your practice and find out where to order them directly from our webshop.

**Suitable patient eyewear can be found from page 48 onwards.**



# Frame for green IPL filter

Alongside the conventional pulsed light sources, such as Xe-based technology, high-performance LEDs are also used in various ways in clinical settings.

Depending on the application and power spectrum, different levels of protection are required (shade 3 or shade 5). In most cases, the staff doing the treatment will need a weaker filter than the patient.

**WARNING** Neither shade 3 nor shade 5 filters are approved as laser protection eyewear and they are therefore NOT suitable for use during laser treatment!



## F04



Large coverage area to protect against scattered light

uvex duoflex temples for a pressure-free fit

Lightweight plastic spectacles with panoramic filter and length-adjustable temples for a custom fit

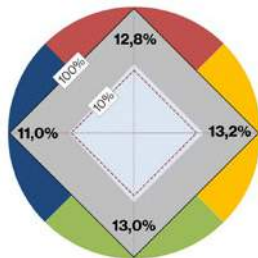
Suitable as overspecs for prescription spectacle users

### Shade 3: Filter P5L18



#### Filter properties

<b>Blocking effect</b>	UV and IR range
<b>Filter colour</b>	Light green
<b>VLT (approx.)</b>	10%
<b>Colour view</b>	Unrestricted
<b>Use based on VLT</b>	User and assistants

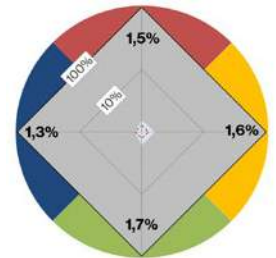


### Shade 5: Filter P5L19



#### Filter properties

<b>Blocking effect</b>	UV and IR range
<b>Filter colour</b>	Dark green
<b>VLT (approx.)</b>	2%
<b>Colour view</b>	Limited
<b>Use based on VLT</b>	Patient



#### Available laser protection eyewear

**F04**  Art. number: **F04.P5L18.1001**


#### Available laser protection eyewear


**F04**  Art. number: **F04.P5L19.1001**

Lasersation also offers IPL filters based on a grey absorber dye. Unlike the usual dark grey absorbers originally designed for welding applications, these filters feature good colour recognition.


These spectacles are available in various levels (shade 3 and shade 5).

## F34

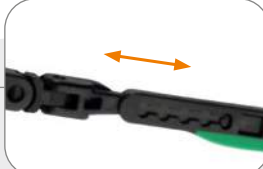





The shape of the lenses offers unrestricted peripheral view



Soft components on nose and forehead




Length-adjustable uveX quatroflex temples



Multi-level side temple inclination for individual adjustment

## F18

Further information on this frame is provided on page 14

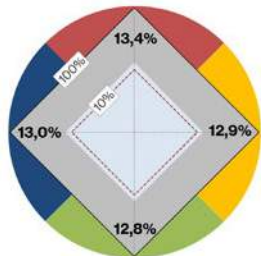


### Shade 3: Filter P5L04



#### Filter properties

<b>Blocking effect</b>	UV and IR range
<b>Filter colour</b>	Light grey
<b>VLT (approx.)</b>	13%
<b>Colour view</b>	Unrestricted
<b>Use based on VLT</b>	User and assistants



#### Available laser protection eyewear

**F18**  Art. number: **F18.P5L04.1002**

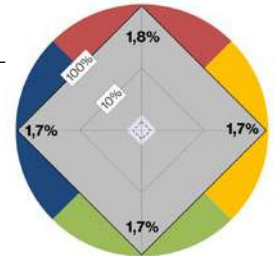
**F34**  Art. number: **F34.P5L04.1002**

### Shade 5: Filter P5L05



#### Filter properties

<b>Blocking effect</b>	UV and IR range
<b>Filter colour</b>	Dark grey
<b>VLT (approx.)</b>	2%
<b>Colour view</b>	Limited
<b>Use based on VLT</b>	Patient



#### Available laser protection eyewear

**F18**  Art. number: **F18P5L05**

**F34**  Art. number: **F34.P5L05**

# Splash protection



## **uvex laservision anti-splash spectacles (CR)**

uvex CR anti-splash spectacles were designed with the specific demands of the medical and pharmaceutical industries in mind.

With the models in the CR series, uvex has developed the world's first autoclavable safety spectacles with an anti-fog coating for these applications. The special anti-fog coating guarantees an unobstructed view even during demanding physical tasks or in warm or humid conditions.

uvex CR spectacles can be sterilised up to 10 times in an autoclave (with each treatment lasting 20 minutes at a temperature of 121°C). At higher temperatures, or where more often sterilisation cycles are required, we recommend replacing the spectacles, or changing the lens in the case of the uvex ultrasonic CR goggles.

As well as providing excellent protection, uvex CR spectacles also feature outstanding functionality, maximum user comfort and an innovative design. From super-lightweight spectacles to goggles with full panoramic vision, uvex CR provides optimum protection for all applications.



## uvex super fit CR

### The sporty spectacles

- lightweight safety spectacles with hinged side temples, a sporty design
- maximum optical clarity thanks to extremely thin wrap-around lenses
- aerodynamically optimised lenses that are angled forwards to provide optimum ventilation and comfort around the eyes
- excellent user comfort guaranteed by the lightweight design
- optical grade 1
- test standard EN166
- materials free from allergens and hazardous substances



Art. number:  
9.178.500

## uvex super f OTG CR

### Overspecs for prescription spectacle users

- overspecs for prescription spectacle users with hinged side temples
- unrestricted peripheral vision
- soft temple tips for increased comfort
- optical grade 1
- test standard EN166
- materials free from allergens and hazardous substances



Art. number:  
9.169.500

## uvex ultrasonic CR

### The goggles with panoramic field of view

- goggles in sporty design, can also be worn as overspecs
- lenses can be changed
- high mechanical strength (B:120 m/s)
- wide panoramic field of vision
- combination of hard and soft components creates a pressure-free fit
- with silicone headband
- optical grade 1
- test standard EN166
- materials free from allergens and hazardous substances



Art. number:  
9.302.500



**Cleaning and disinfection:** Further information on how to clean and disinfect laservision safety spectacles can be found on page 41.



# Patient protection



Due to the variety of laser applications in medical settings, it is becoming increasingly important to provide spectacles to protect patients' eyes.

There are two types of spectacles to choose from: models with filter or fully closed versions. The first version allows the patient to see during the treatment. However, the level of protection provided depends on the filter, which means that these patient spectacles cannot be used for all lasers and wavelengths.

The second version does not have a filter, which means that the spectacles can be used with all lasers (depending on the level of protection provided). However, as these spectacles block all

vision, they may be problematic for anxious patients.

laser vision frames are made from a special silico oder titatium material that delivers outstanding laser protecetion. All use material also promise high user comfort and helps the patient to feel safe, as it does not warm up when exposed to laser beams. The titanium patient spectacles are available in three different versions. They come with replaceable silicon rings which guarantee a comfortable fit.

We also offer high-quality and exceptionally safe titanium patient spectacles in three different versions (P11, P12 and P13). The replaceable silicon ring guarantees a comfortable fit.





## Cover plate

The cover plate can be used to cover specific areas of the face, such as the eyebrows, the upper or lower eyelashes or the lips, during laser treatment.

This cover plate can also be used in surgical applications.



- Reusable
  - Can be sterilised
- Art. number: A99COVPL1000



## Eye caps A99ECAPS

- Both the ECAPS and the suction cup can be sterilised
- Available in four different sizes
- Polished smooth inside for high user comfort
- Supplied in pairs incl. applicator



For laser surgery in the immediate vicinity of the eyes – where patient spectacles would cover too large an area – we offer special eye caps (A99ECAPS) in four different sizes.

These small dome-shaped covers made of stainless steel are placed directly on the eye like a contact lens. They have rounded edges to eliminate the risk of injury, and the inside surface is highly polished and smooth for maximum safety and user comfort.

The outside surface is matt to prevent laser beam reflections and to protect medical staff.

Diameter	Art. number
XS Ø 22mm	A99ECAPS.1122
S Ø 24mm	A99ECAPS.1124
M Ø 25.5mm	A99ECAPS.1125
L Ø 26.5mm	A99ECAPS.1126
Applicator	A99.ECAPS.1SUC

## Face guard

The laser face guard A99MCARE1000 is a single-use product designed to protect the teeth, jaw and lips during laser and IPL treatments (e.g. hair removal). It ensures that energy is spread evenly, minimises pain and prevents laser radiation from penetrating through to the skin.

**NOTE:** Before use, the laser face guard should be tested with the laser energy used during treatment.



- Hygienic single-use product
- Suitable for laser and IPL applications
- Tested for Alexandrite lasers at 755nm or Nd:YAG lasers at 1064nm
- Tested for IPL applications at 590nm and 695nm

Art. number: A99COVPL1000





## Patient spectacles P01

### Versatile silicon spectacles with filter insert

- New replaceable nose bridge – **now also fits for children**
- Silicon patient spectacles with filter insert
- Optional metal insert
- Can be sterilised with filter removed
- Adjustable headband and flexible frame
- High level of protection (depending on filter)

The P01 patient spectacles set themselves apart from other models with its laserfilter or metal insert design.

With various filters to choose from and even a metal insert option, these spectacles are suitable for the majority of laser applications. Depending on the filter, patients are able to retain their vision, which is a huge advantage for anxious patients. The spectacles are completely metal-free, which means that they can also be used in tomographs.

The filters can be removed without tools to allow the frame to be sterilised and autoclaved. The level of protection provided by the spectacles is largely determined by the filter fitted. The adjustable headband guarantees a stable and pressure-free fit.



Replaceable nose bridge



S/M and L/XL sizes included in delivery






Adjustable headband



Easy replacement



**Included in delivery**  
Patient spectacles P01, soft case, headband, two nose bridges (different sizes), instruction manual

Name	Compatible filters	Art. number
Eyeball/patient spectacles P01 with metal filter, suitable for all wavelengths	M1P04 Metal colours	 <b>P01.M1P04.1002</b>
Eyeball/patient spectacles P01 with plastic filter for Nd:YAG (1064nm) or CO <sub>2</sub> (10,600 nm)	P1P10	 <b>P01.P1P10.1002</b>
Eyeball/patient spectacles P01 with plastic filter for Diodes (610nm-820nm)	P1H03	 <b>P01.P1H03.1002</b>

Further versions with other filters on request



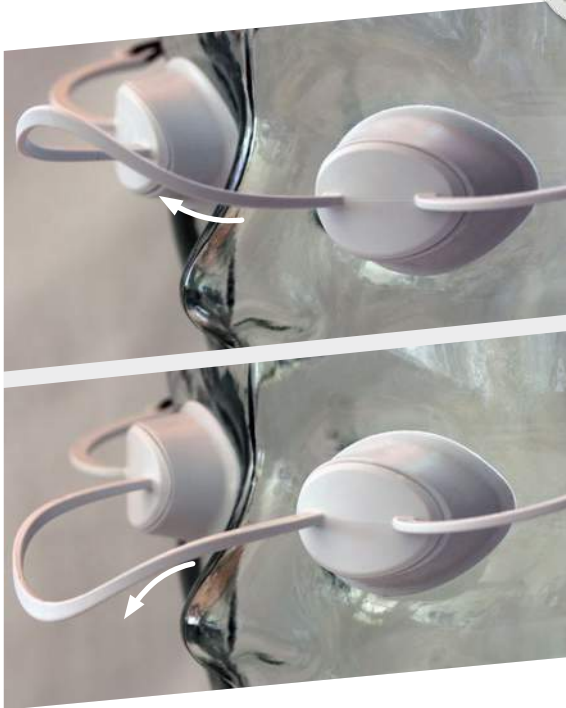
## Patient spectacles P07

### Multifunctional model with innovative two-way design

- Innovative two-way design
- Minimal coverage thanks to nose bridge and strap
- Flexible frame for a good fit
- Very high level of protection
- Can be sterilised
- Suitable for UV, VIS, NIR and IR
- Secure pressure-free fit
- Asymmetrical nose bridge
- Metal-free



The patient spectacles were developed in partnership with doctors. We have thus succeeded in setting them apart from traditional metal eyewear, with the large asymmetrical nose bridge and the positioning of the strap hooks, which are located well away from the eyes. Designed especially for laser treatment in the facial area, the spectacles offer significantly better access to the forehead and nose as well as the temporal area.



Included in delivery	Art. number
One pair of eyeball spectacles, P07 soft case, headband, instruction manual	P07.P1P11.1001

**Cleaning and disinfection:** Further information on how to clean and disinfect laserservice safety spectacles can be found on page 41.



## Premium Line Titanium patient spectacles

As an extension our existing silicon-based patient spectacles, we now also offer the Premium Line solution for particularly demanding applications and environments.

The titanium model is ideal for areas that are subject to even more stringent hygiene standards or where powerful lasers are used.



The advantages of this series include:

### Hygiene and medical aspects

- Nickel-free – nickel emissions tested in accordance with EN 11885:2009-09
- Neutral immunology (titanium is an established high-quality implant material and is perfectly tolerated/neutral in and on the human body)
- Replaceable silicon rings for maximum hygiene

### Application areas and comfort

- Corrosion-resistant (autoclavable)
- Excellent user comfort and maximum flexibility in use
- No reflection
- Paramagnetism (not affected by magnetic fields (e.g. in CT applications) in P11 and 12 with cord removed)



## P11

### P11.M1P07

The P11 with robust, flexible titanium temples for:

- supreme ease of use
- an optimum fit



### A99SRing

#### 25 pairs of replacement silicon rings for titanium patient spectacles

All titanium spectacle caps can be fitted with the supplied silicon rings – for optimum user comfort and hygiene.

The ring prevents direct contact between the patient's skin and the metal and makes the spectacles feel warmer and more comfortable to wear.





## P13

### P13.M1P07

The P13s are individual caps for:

- supreme ease of use
- individual flexibility and use
- no obstructive nose bridge



## P12

### P12.M1P07

The P12 has single-hand adjustable titanium temples for:

- maximum flexibility
- supreme ease of use
- an optimum fit



- elastic cord
- adjustable length
- adjustment mechanism on side
- no pressure on rear head when lying down

Included in delivery	Art. number
One pair of titanium patient spectacles in a softbox with two pairs of replacement silicon rings and one cord with side fastening	<b>P11M1P07</b> or <b>P12M1P07</b>
Caps in a softbox with two pairs of replacement silicon rings	<b>P13M1P07</b>
Available to order/optional	Art. number
25 pairs of replacement silicon rings for titanium patient spectacles and caps	<b>A99SRing</b>

#### Level of protection

Wavelength	OD	Level of protection
180–315nm	10+	D LB 10 + IR LB4 + M LB6Y
>315–1400nm	10+	D LB7 + IR LB9 + M LB10
>1400–25,000nm	10+	DI LB5 + R LB3Y + M LB6Y

**Cleaning and disinfection:** Further information on how to clean and disinfect laservision safety spectacles can be found on page 41.



# Laser protection in veterinary medicine



Based on the positive results of various laser and IPL-based photodynamic treatments on humans, these therapies are now increasingly making their way into veterinary medicine.

The Doggles® laser protection eyewear from laservision provide reliable protection for the eyes of pets, wild animals and farm animals during laser treatment with wavelength between 800 and 1100nm.

In veterinary medicine, these kinds of laser treatments are increasingly being used in pain therapy for arthritis, chronic joint pain and burn injuries, as well as to support the healing process.

Just like people, veterinary patients also require protection from lasers.



## Laser protection Doggles®

- Available as a set containing three different sizes
- Adjustable headband and chin strap
- Guaranteed easy and secure fitting during treatment
- Suitable for treatments in the 800–1100nm range, OD5+ strength
- Suitable for various IPL and laser-based photodynamic therapies



### Available sizes:

#### Size: X-small

- Example patients: Dogs, cats, rabbits, kangaroos, wombats and other small animals weighing up to 10 kg.

#### Size: Small/Medium

- For animal patients weighing between 9 and 30 kg.

#### Size: Medium/Large

- For animal patients weighing between 30 and 95 kg.



## Equine Mask

The veterinary range also includes a laser protection hood, which is available in three sizes (S/M/L).

The maximum radiation strength is 100 W/cm<sup>2</sup> for 100 sec.

- Example patients for the Equine Mask:  
Horses and ponies

Art. number: DKTP.5K01.5000



## Laser protection mat

The laser protection mat (LPM.F5P01.1000) protects against harmful scattered radiation and reflections from the treatment table during treatment or surgery. The mat protects the veterinary, the assistance and the animals.



Name	Art. number
Laser protection Doggles® (set of three)	DKTP.5K01.5000
Equine Mask (S/M/L)	ELM.F5P05.500x
Laser protection mat (approx. 61 cm x 92 cm)	LPM.F5P01.5000

Frames for veterinary applications	Compatible filters for laser treatments (800–1100nm)	Art. number
F18/F22/F42 (see pages 14–15)	P1H02 (pages 29/34/38)	F18/F22/F42/F29.P1H02.1001
F20 (see page 18)	P1C02 (pages 29/34/38)	F18/F22/F42/F20/F29.P1C02.1001
F29 (see page 19)	P1D09 (page 27/34)	F18/F22/F42/F27.P1D09.1001
F27 (see page 16)	P1M03 (page 34)	F18/F22/F42/F29/F27.P1M03.1001



## Large-area laser protection



In operating theatres, healthcare practices and laboratories, large-area laser protection is a versatile and flexible way to use lasers at all wavelengths and for all laser treatments in dental, dermatological, surgical and veterinary applications.

Our modular wall systems – which are comprised of strong panels combined with our specially developed hinge system – can also be equipped with various plastic windows. This enables assistants, parents or teaching staff to observe operations safely.

We also offer a series of CR (Clean Range) laser safe curtains, which have been specially designed for use in clean environments. These curtains can be installed in eight standard sizes and reach a total size of up to 2700 x 3500mm. You can also choose from a range of fastening, hanging and rail systems. All of these products offer a high level of protection and are CE certified.

You can also order your curtains in a roll-up design. These curtains can simply be rolled down, positioned and fastened with connectors to reliably protect large areas against laser and/or scattered radiation.

The medical portfolio is completed with a range of IR-blocking window films, which can be fitted on existing windows in labs, operating theatres, practices or lecture halls. The films can even be applied on both sides of the pane to double the OD protection, making them the ideal solution to protect observers and visitors.

The next few pages provide further information on the outstanding Large Area Protection products that laservision has developed for the medical sector. Please don't hesitate to contact us for advice tailored to your specific application and the unique needs of hospitals, healthcare practices or laboratories.



## Roll-up Shelter Light

- Self supporting laser protection curtain (0.94 m × 2.0 m)
- Quick and easy assembly, easy to transport
- Join multiple modules using velcro
- Incl. transport bag and frame

The Roll-up Shelter Light combines unrivalled flexibility with a high level of stability. The design is based on the single-layer version of the Shelter Light laser protection curtain.

The lightweight material is held in place by two rails and stretched taut by a telescopic rod. The support to the rear keeps the whole system stable.



Dimensions W×H [mm]	Art. number
900x2000	BC3.F1P01.1RU1
Roll-up connector	BC3.F1P01.1274

## Window film NIR and IR range

- For applications with Diode, Nd:YAG, Er:YAG, Ho:YAG and CO<sub>2</sub> lasers
- For windows in laboratories or operating theatres, to provide protection against the escape of direct or scattered radiation
- Very good colour vision
- OD1+ of 800–3000 nm
- OD2+ of 9000–11,500 nm
- Double OD if applied on both sides of the window
- Additional UV protection
- Application service available as option
- Very good daylight transmission of 55%



Art. number	Packaging unit
000P5P141001	1 unit – dimensions: 1m x standard width approx. 1.50 m

Prices are calculated per metre based on a standard width of approx. 1.50 m. The laser protection film is applied by a qualified service provider as option; the costs of this service are calculated based on the scope of the work involved.





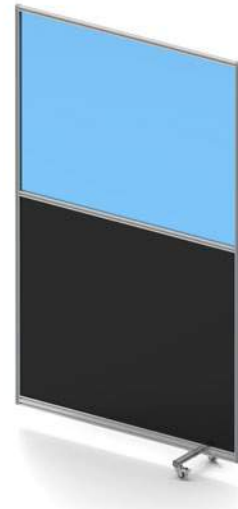
# Large-area laser protection

## E25

### Modular barrier system



Hinges provide full protection against laser light at any angle



E25 window frame kit made to order

- Laser and Light safe at any angle (0-360°)
- Proven hinge system
- Fast and flexible way to screen off the operating area
- With P7P06 as standard filling material
- Plastic laser protection windows available on request
- Available with two to nine segments
- Quick and space saving storage when not in use



Art. number	Description
E25.M7P06.1001	Basic module
E25.M7P06.1002	Inside module
E25.FRAME.1001	Window frame kit
Available win- dows	P1D01, P1K03, P1K10 (3 or 6 mm), P1L03, P1N01, P1P01, P1P10 (3 or 6 mm), P1P12 (3 or 6 mm), P1P20

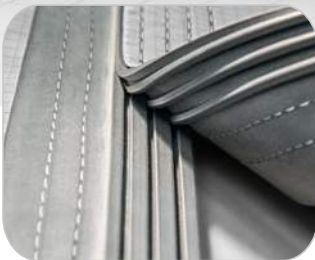
## Anti-static laser protection curtains for clean environments



- Fast and flexible way to screen off the operating area
- Certified to EN 12254 and EN 60825-4 (CE)
- Special material tested acc. DIN EN 1149-1
- Covers UV, VIS, NIR and IR wavelengths (180 nm–11,000 nm)
- Standard lengths are 2000mm and 2500mm
- Standard widths are 900mm and 1800mm
- Connect individual panels for maximum flexibility
- Uses a form-fit elastomer tape
- Curtains hang on eyelets

Ask our specialists for advice on the most suitable products for your practice, operating theatre or laboratory.

We would be happy to visit you at your site!



### BC7



- Single-layer clean room (CR) curtain
- Flexible and lightweight laser protection solution
- Designed for medium-level protection (e.g. scattered light in laboratories)
- With anti-static coating on both sides

### BC6



- Two-layer curtain with M level of protection
- Designed for enhanced performance
- Laser protection solution for escape routes and screening of laser areas
- Can be adjusted/shortened to suit customer requirements
- Max. height up to 3500 mm on request
- With anti-static coating on both sides

Art. number for tube frames	Description
093	Basic frame 2100 x 2100 mm + 2 swivel temples (1100 mm width)
094	Basic frame 2100 x 2100 mm + swivel temple (1100 mm width)
095	Basic frame 2100 x 2100 mm + 1 swivel temple (700 mm width)
096	Basic frame 2100 x 2100 mm + 2 swivel temples (700mm width)
097	Basic frame 2100 x 2100 mm without swivel temple

Art. number	Description
BC6.xxxx	CR curtain panel Shelter NG
BC7.xxxx	CR curtain panel Shelter Light
BC3.F1P01.1RU1	Roll-up Shelter Light
BC3.F1P01.1274	Option: Connector

Both CR curtains are available in eight standard sizes. See our website for further information.



## Shop Online

Registered business customers can place orders online via the laservision webshop. Ordering via the webshop means that you'll always be able to access the latest information on availability and pricing. You can also use the Favourites feature to place repeat orders in a quick, secure and simple process.

Your account allows you to manage your delivery addresses and access permissions, and reflects your agreed prices and orders from framework agreements, as well as special delivery terms via our delivery service provider.



## Social network

LinkedIn / Twitter / Facebook / Youtube / Instagram

- The latest news from laservision
- Discussions on laser protection
- News on standards
- Special offers and product information
- Seminars and workshops
- Exhibition information



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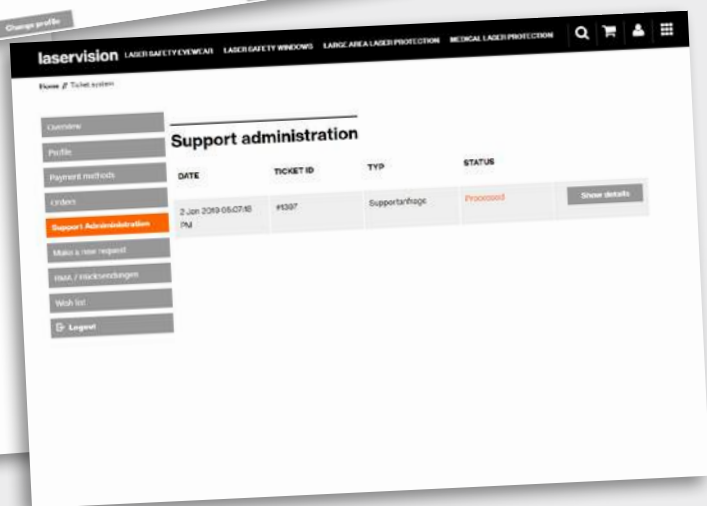
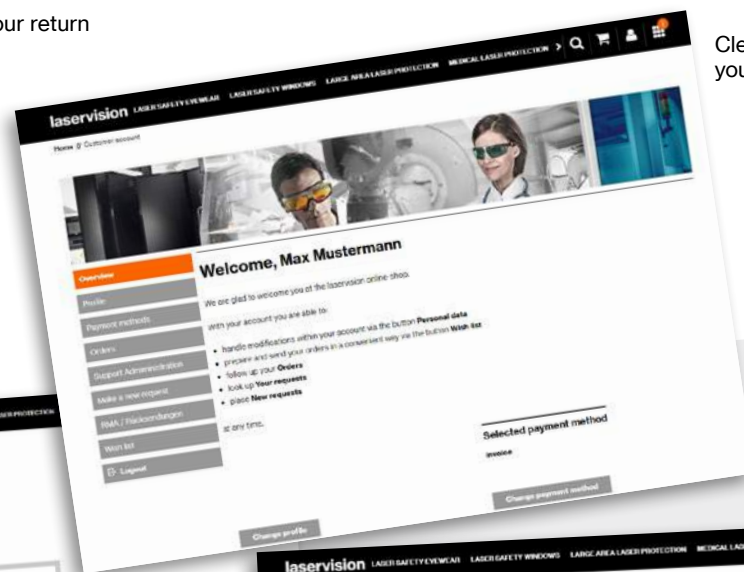
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Jederzeit zugänglicher Statusüberblick

Already registered on the laservision website?





Company \_\_\_\_\_

Contact person \_\_\_\_\_

Street address \_\_\_\_\_

Postcode + town/city \_\_\_\_\_

Telephone \_\_\_\_\_

Fax \_\_\_\_\_

Email \_\_\_\_\_

Please fax back to:  
**+49 911 9736-8199**  
 or send by email:  
**info@lvg.com**

Laser manufacturer: \_\_\_\_\_

Laser model: \_\_\_\_\_

We will collect, store and process your data exclusively for the purpose of processing your request. For further information, please see our data protection statement.

**Please provide a quote for: Spectacles for**  **Doctors**  **Assistants**  **Patients**

- Full protection in accordance with EN 207  I would like laser-specific spectacles
- Alignment protection in accordance with EN 208 (only available for visible lasers at 400–700nm)  I would like combined spectacles for all lasers

Laser	Application	Dental	Dermatology	Surgery	Veterinary
Diode <input type="checkbox"/> 810nm <input type="checkbox"/> 940nm <input type="checkbox"/> 980nm					
Nd:YAG 1064nm	<input type="checkbox"/>				
Er:YAG 2940nm	<input type="checkbox"/>				
Ruby laser 694nm	<input type="checkbox"/>				
Alexandrite 755nm	<input type="checkbox"/>				
CO <sub>2</sub> 10600nm	<input type="checkbox"/>				
Holmium laser (2080nm)	<input type="checkbox"/>				
Tulium laser (2000nm)	<input type="checkbox"/>				
532nm	<input type="checkbox"/>				
Other wavelength:	<input type="checkbox"/>				

**Please provide a quote for:**  **Window films**  **Curtains**  **E25 modular wall system**

**Dimensions: W:** \_\_\_\_\_ **H:** \_\_\_\_\_ **D:** \_\_\_\_\_

- Please provide information on EYEPRO: Software for determining level of protection in accordance with DIN/EN 207/208

# laservision



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