GETTING THE MOST FROM YOUR HAAG-STREIT SLIT LAMP
From adding technology, to learning new techniques...
The Haag-Streit slit lamp family
Excellent optics, optimum illumination & perfect mechanics

Since the launch of its first slit lamp in 1958, Haag-Streit has built a solid reputation of providing ‘gold standard’ slit lamps that last a lifetime. Over the years, World-first innovations have followed, however, the basic goal of each Haag-Streit slit lamp has always remained the same: to provide a slit lamp with excellent optics, optimum illumination and perfect mechanics.

Today, Haag-Streit offers a comprehensive slit lamp portfolio; from the original BM 900, to the ‘workhorse’ BP 900 and advanced BQ 900, to its newest addition - the BI 900 - and the highly-sophisticated BX 900, the ‘photographers choice’.

In addition, a number of invaluable accessories are available, to further enhance each slit lamp solution, including the; Goldmann AT 900 applanation tonometer, FM 300 non-mydriatic fundus imaging module and the fully-integrated IM 900 and IM 600 digital imaging systems.

Haag-Streit UK (HS-UK) is the sole UK distributor for the Haag-Streit slit lamp range. Every Haag-Streit slit lamp installation is inclusive of full on-site training. Tailored post-sales service and support is available to give users full peace-of-mind.
Excellent optics

The quality of the optical system determines the results of whichever application a slit lamp is used for.

All Haag-Streit slit lamps are equipped with elaborate microscopes, manufactured to the highest quality. The result is a superb view, allowing accurate diagnostics, safe patient treatment and stunning imaging results.

Optimum illumination

The LED illumination system delivers the sharpest, brightest and most homogeneous slit available. The light spectrum has been specially designed for Haag-Streit to meet the highest quality standards and to achieve results that are even superior to those delivered by tungsten light. This ensures optimal diagnostic details from the cornea to the retina.

A tilting frame allows good posterior segment observation, while the defocusing option enhances observation with indirect illumination. All filter and slit controls are conveniently situated for ease-of-use, and the cross slide mechanism is a masterpiece of engineering, affording faultless precision in both design and movement.

Perfect mechanics

Since its foundation more than 150 years ago, Haag-Streit has stood for high-precision mechanics. This experience, combined with outstanding Swiss engineering and the use of high-grade materials, ensures perfect mechanics in every slit lamp.

Superiority in design, materials and construction allow all movement to be made smoothly and effortlessly without any wrist or finger strain - and continue doing so for the lifetime of a Haag-Streit slit lamp.
Established in 2016, the Haag-Streit UK Clinical Education and Training (CEaT) Division delivers a slit lamp education programme that sets the highest standards within the optical industry. It has developed a comprehensive range of learning tools and an extensive series of workshops, courses and training, designed to meet the needs of the individual slit lamp user.

The HS-UK CEaT Division is committed to providing full education following a slit lamp installation. All customers receive an on-site training workshop, as standard. Bespoke advanced training can also be delivered either on-site or at our dedicated training facility in Harlow, Essex.

For those who want to get more out of their slit lamp systems, regular CPD-accredited live events are available, UK-wide. These include hands-on workshops and clinical lectures delivered by expert guest speakers specialising in slit lamp imaging. E-learning courses are also available providing slit lamp users with an opportunity for self-directed education, at their own pace.

In addition to individual slit lamp user training, the HS-UK CEaT Division has developed an advanced ‘Train the Trainer’ programme designed to provide hospitals who have multiple users with the knowledge and skills to train their staff in the operation and basic clinical applications of the slit lamp device.
Comprehensive post-sales training

Soon after a slit lamp is installed, each customer is provided with an on-site training workshop, which is delivered to all key members of staff. Workshops are usually facilitated by a member of the HS-UK CEaT team, an expert in both the operation and clinical applications of the slit lamp system.

These workshops cover all the areas necessary to allow you to begin using your device effectively. This includes; setting-up your slit lamp, entering and amending patient data, patient positioning and patient examination, as well as other functions such as; post-image processing, editing and how to export images to patient record systems.

The information provided in these workshops is replicated in a handy user guide, which is provided to each member of the team.

Bespoke advanced training on your slit lamp can also be arranged either on-site or at HS-UK’s dedicated training facility in Harlow. ‘Imaging techniques using non-contact lenses for the assessment of the fundus’, ‘Using contact lenses for the assessment of the anterior chamber’ and ‘Using barrier filters for the assessment of fluorescein staining’ are examples of topics that can be covered in advanced training sessions.

Exciting live slit lamp events

For those who are interested in exploring how to get more from their slit lamp systems, live interactive slit lamp training events are available to attend, UK-wide. Delivered by experienced clinical speakers and product experts, these exclusive events give slit lamp users the opportunity to pick up hints, tips and valuable information during clinical lectures and hands-on workshops.

Agendas for the events cover a wide range of topics, ranging from a step-by-step guide to basic eye examination to the various techniques required for anterior and posterior imaging. Workshop sessions give attendees a unique opportunity to examine live subjects using state-of-the-art slit lamp imaging devices. These exciting events also give delegates an opportunity to gain valuable CPD points.

Alongside these live events, the HS-UK CEaT Division also runs regional slit lamp operator training roadshows. These roadshows offer Doctors and Allied Health Professionals such as Nurses, Orthoptists, Technicians and Screeners the opportunity to learn from product experts and acquire a range of basic slit lamp skills.

Flexible online e-learning courses

The HS-UK CEaT Division has developed a comprehensive range of basic online e-learning content, including: PowerPoint-style presentations, "how-to" instructions, case studies, blogs, multimedia user guides and webinars. More advanced e-learning material is also offered, this includes examination and certification courses and access to peer-reviewed published content. Regardless of the level of online education chosen, it is available 24-7, offering users the flexibility to learn at their own pace and in their own time.
BM 900 slit lamp
Haag-Streit’s entry-level slit lamp, trusted by eye care specialists for decades

The BM 900 has been the standard in modern slit lamp microscopy for over 60 years. Over 100,000 eye-care professionals worldwide agree that it was the best investment they ever made for their practice.

A firm favourite with Nurses, Healthcare Assistants and other eye specialists, this classic entry-level device is known as the original ‘gold standard’ slit lamp by ophthalmic professionals and can be found in NHS ophthalmic clinics, A&E departments and optometry practices UK-wide.

As with all Haag-Streit slit lamps, a Goldmann tonometer – the ‘gold standard’ in Intra-Ocular Pressure (IOP) measurement – may be added to the BM 900 slit lamp.
Kepler Microscope

Equipped with a Kepler microscope, the BM 900 provides two customary magnifications; 10x and 16x. With a set of optional oculars it can be extended to 25x and 40x magnification.

Like any other Haag-Streit slit lamp, the BM 900 features the best optical components to show all structures of the human eye in every detail.

Cross slide

The cross slide mechanism, incorporated into all Haag-Streit slit lamps, introduced one-handed operation of the slit lamp many decades ago.

Perfection in design, materials and construction allow these movements to be made smoothly and effortlessly without any wrist or finger strain – and continue doing so for the very long lifetime of this classic slit lamp.

Illumination system

In recent years, LED illumination has become standard in modern slit lamp microscopy. It delivers the sharpest and most homogeneous slit available.

A tilting frame allows good posterior segment observation, while the defocusing option enhances observation with indirect illumination.

All filter and slit controls are conveniently situated for ease-of-use and, as with the cross slide mechanism, have a silky smooth, effortless movement.

The slit mechanism is a masterpiece of engineering, affording faultless precision in both design and movement.
BI 900 slit lamp

A new, entry-level slit lamp for those that require basic imaging capability

Equipped with an improved version of the BM 900 microscope, an enhanced illumination system and Haag-Streit’s traditional high-precision mechanics, the BI 900 is the predestined successor to the legendary, original BM 900.

Already established in NHS ophthalmic clinics, A&E departments and optometry practices UK-wide, the BI 900 is the slit lamp of choice for Allied Health Professionals and eye specialists that require imaging capability on an entry-level device.

The BI 900’s optional imaging set is a simple-to-use, integrated, compact imaging solution, allowing the capture of high-quality digital images at initial presentation.

A Goldmann tonometer – the ‘gold standard’ in Intra-Ocular Pressure (IOP) measurement – may be added to the BI 900 slit lamp.
Kepler microscope

The BI 900 is equipped with a Kepler microscope providing the default magnifications 10x and 16x. With a set of optional oculars it can be extended to 25x and 40x magnification. A yellow barrier filter provides additional contrast for fluorescein applications. The maximised diameter size of the ocular view ensures fatigue-free examination, even on long working days.

Optional imaging set

The optional imaging set provides a fully integrated compact imaging solution for the BI 900. It has been designed to simplify the image capturing process. A fast and accurate automatic exposure control and the established history trigger function allow simple image capturing while you are concentrating on your patient. The EyeSuite software package is included, as standard. It contains a comprehensive imaging program and permits integration of the BI 900 into your practice network.

Control panel

Located in front of the joystick, the control panel can be operated blindly while examining the patient. It not only provides full control over the slit lamp illumination, but also a release bar for the camera, as well as simple and ergonomic management of the camera settings.
BP 900 slit lamp
The slit lamp of choice for those wanting advanced imaging capabilities

Designed for routine practice, the BP 900 combines Haag-Streit’s outstanding optics and mechanical quality with the latest imaging technology, at an exceptional price.

Known as ‘the workhorse’, the BP 900 is already established in NHS ophthalmic clinics, university teaching hospitals and optometry practices UK-wide. It is the slit lamp of choice for Consultants and other eye specialists that require an advanced imaging solution on an entry-level device.

The optional IM 600 imaging module is more than just a camera, it is a fully-integrated compact imaging solution, providing features which make slit lamp imaging more convenient than ever before.

A Goldmann tonometer – the ‘gold standard’ in Intra-Ocular Pressure (IOP) measurement – may be added to the BP 900 slit lamp.
Galilean microscope

A Galilean Microscope with a magnification range from 10x to 25x provides the BP 900 with a powerful observation system. The optical excellence and wide aperture allow comfortable and fatigue-free examination, even on long working days.

Optional IM 600 imaging module

The IM 600 imaging module is a fully-integrated compact imaging solution for the BP 900 slit lamp. This camera, manufactured by Haag-Streit, has excellent sensitivity, a wide dynamic range and unique ergonomics that provide full control of the imaging process, without detracting from the clinical examination.

The EyeSuite software package is included, as standard. It contains a comprehensive imaging program and permits integration of the BP 900 into your practice network.

Contrast enhancing filter

The yellow barrier filter provides additional contrast to fluorescein images. It can be mounted permanently on the slit lamp and easily inserted or removed as required.
Already established in both NHS and private ophthalmic clinics UK-wide, the high-end BQ 900 has become the ‘gold standard’ for Ophthalmologists, Optometrists and senior eye specialists that require advanced slit lamp microscopy.

The BQ 900 is equipped with an outstanding optical system, manufactured to the highest quality. The result is a superb view, allowing accurate diagnostics, safe patient treatment and stunning imaging results.

A truly modular device, the BQ 900 can be configured to meet the exact needs of the slit lamp user. It boasts numerous accessories, from a choice of advanced high-quality imaging solutions, to the addition of a zoom objective, second observer, beam splitter and Goldmann tonometer.

BQ 900 slit lamp
A modular, high-end slit lamp that meets the need of the individual user

BQ 900 with Imaging Module IM 900
Galilean microscope

The BQ 900 is equipped by default with a Galilean Microscope providing a magnification range from 6.3 x up to 40 x, selectable in 5 fixed steps. The high light transmission and the optical excellence ensure a superb clinical view. The large diameter of the exit pupils allows fatigue-free examination, even on long working days.

Goldmann tonometer

Because it is fast and reproducible, Goldmann applanation tonometry has been the ‘gold standard’ of tonometry for many decades. It is based on the Goldmann principle - tried and tested during more than 50 years of usage with millions of patients.

Haag-Streit offers two models of Goldmann applanation tonometers: the AT 900, a purely mechanical instrument and the AT 900 D, which introduces advantages from digital technology.

IM 900 & IM 600 imaging modules

The IM 900 and IM 600 imaging modules are fully-integrated compact imaging solutions for the BQ 900 slit lamp. These cameras, manufactured by Haag-Streit, have excellent sensitivity, a wide dynamic range and unique ergonomics that provide full control over the imaging process, without distracting from the clinical examination.

The EyeSuite software package is included, as standard. It contains a comprehensive imaging program and permits integration of the BQ 900 into your practice network.
Haag-Streit’s top-of-the-range BX 900 is specifically designed to assist the Ophthalmic Photographer in their demanding profession.

This state-of-the-art slit lamp boasts an integrated flash which achieves high-quality images every time. The flash is fully-synchronised with both the camera and the illumination produced from the slit lamp and pivoting background illumination. For ease-of-use, all image capture can be controlled through a release-mechanism directly beside the slit lamp joystick.

For added flexibility, adaptors are available for a variety of top-of-the-range Digital Single-Lens Reflex (DSLR) cameras.

The camera is mounted above the microscope, thus allowing ease of access to the patient. This is especially useful when photographing in conjunction with hand-held diagnostic lenses.
Xenon flash

The high-power flash illumination is delivered via a xenon tube that lies coaxially to the LED illumination and thus exactly reproduces the slit illumination pattern to provide images of stunning quality.

The brightness of the flash is individually adjustable for slit and background illumination.

Mirror housing

The heart of the BX 900 is the mirror housing with its built-in diaphragms. When capturing an image, all light is directed via a mirror to the camera. This allows the maximum utilisation of the available light: 100% for the examination and 100% for the image.

The built-in diaphragm setting with five apertures is applied automatically on image capture.

Shutter release

Conveniently mounted close to the operator’s hand, the shutter release can easily be utilised whilst continuously maintaining focus with the slit lamp joystick. As it is symmetric on the cross slide, it allows right and left-handed operation.
For many years, slit lamp imaging was almost exclusively the domain of the Ophthalmic Photographer, but since documentation and patient education has become increasingly important, more eye care professionals are demanding slit lamp imaging solutions.

As the leader in slit lamp imaging, Haag-Streit is meeting this need by offering two imaging systems – the IM 600 basic system and the IM 900 more sophisticated version. With both solutions, Haag-Streit sets new standards in digital slit lamp imaging.

It is now possible for every clinician to produce pictures of very high-quality, without being distracted from the clinical examination.

The IM 900 and IM 600 imaging modules are more than just cameras. They are fully-integrated compact imaging solutions providing slit lamp operators with features which make slit lamp imaging more convenient than ever before.
Ideal workflow - no distractions

The control panel allows you to operate both the camera and the slit lamp illumination. Located in front of the joystick of the slit lamp, it can be used blindly while you are focused on your patient. The release bar is at your fingertips.

The compact and modern design conforms to the design of the slit lamp, thus, the imaging module comes as a component of the whole system, thereby supporting an ideal examination workflow.

Simple image capture

The fast and accurate automatic exposure control ensures correct illumination of the image while you are concentrating on your examination.

Thanks to the history trigger function, you do not need to worry about the patient blinking or moving when you take an image. The history trigger does not just capture a single image, but records the last few seconds in real time and lets you select the perfect image.

Intuitive software

EyeSuite imaging is a straightforward imaging software that supports Haag-Streit imaging solutions. Easy image capture, efficient image editing and a well-structured patient management system make the software a perfect team player for daily practice.

EyeSuite makes your slit lamp networkable both with other Haag-Streit devices and your practice network. It does not require any proprietary third-party software to provide connectivity.
Accessories & add-ons
A comprehensive range to enhance the slit lamp

All Haag-Streit slit lamps are modular, and a comprehensive range of accessories are available to enhance the slit lamp device.

Leading the field in applanation tonometry, the AT 900 and AT 900 D Goldmann tonometers affix to the slit lamp and are swiveled in front of the microscope for the examination. The observation of the applanated surface is conducted monocularly – only through one eyepiece, and disposable tonometer prisms, such as Tonosafe, or reusable Goldmann measuring prisms, can be used.

Enhance your diagnostic capabilities with technology like the zoom objective, which allows magnification to be changed continuously and yellow barrier filters to add contrast, which improve imagery.

Items such as the inclined eyepiece adaptor allow for an ergonomic, comfortable working experience, while additions like the beam splitter and second observer tubes offer multiple parties the ability to participate in the examination.
Contrast enhancing filter

This yellow barrier filter provides additional contrast to fluorescein images. It can be mounted permanently on the slit lamp and easily inserted or removed, as required. Available on the BQ 900 slit lamp only.

Beam splitter

The beam splitter diverts a portion of the light to secondary attachments such as the second observer tube, video or digital cameras.

Beam splitters are available in different versions; the beam splitter for the camera diverts 70% of the light to the secondary attachment, the one for co-observation under equal conditions diverts only 50% of the light.

Video or digital cameras can be connected to the beam splitter with a range of C-mount adaptors, which offer different focal lengths for variable sensor sizes. Available on the BQ 900 slit lamp only.

Second observer tubes

Haag-Streit’s second observer tubes are designed to permit professional colleagues, students or technicians to participate in the examination.

There are two versions of second observer tubes available; one short version, for co-observing while sitting and a long version, for co-observing while standing. Available on the BQ 900 slit lamp only.
Zoom objective

With the zoom objective, the magnification can be continuously changed from 6 x up to 40 x. Reference points are set at magnifications 10 x, 16 x and 25 x to allow easy orientation.

The zoom objective offers excellent diagnostic capabilities - especially when used in conjunction with the video function. Any existing BQ 900 can be modified from a standard model to a BQ 900 - Zoom. Not available on other slit lamp models.

Inclined eyepiece adaptor

With the inclined eyepiece adaptor, the view into the microscope is inclined at 20° to the horizontal. Consequently, the examiner is able to maintain their head in a fatigue-free position. Available on the BQ 900 slit lamp only.

Stereo variator

Unique to the BQ 900, the stereo variator reduces the convergent stereoscopic angle from 13° to 4.5°. This facilitates the stereoscopic examination of the fundus, peripheral parts of the retina and the vitreous, even under unfavourable conditions such as high myopia and small pupils.

The reduction of the angle enlarges the stereoscopic field of view under the described conditions, maintaining depth information in the stereoscopic observation. Available on the BQ 900 slit lamp only.
‘Gold standard’ tonometry

Because it is fast and reproducible, Goldmann applanation tonometry has been the ‘gold standard’ in tonometry for many decades. It is based on the Goldmann principle – tried and tested during more than 50 years of usage with millions of patients.

Furthermore, thanks to the high-precision of manufacturing at Haag-Streit, the Goldmann applanation tonometer offers reliable performance over many years without the need for manufacturer maintenance.

The AT 900 is the original version of the Goldmann tonometer and works 100% mechanically. The AT 900 D digital Goldmann tonometer adds the advantages of state-of-the-art digital technology.

Wireless transfer of the IOP readings and left/right eye position allows direct integration of the AT 900 D tonometer into an existing patient information system, thus facilitating an ergonomic workflow.

Tonometer prisms

Goldmann reusable measuring prisms are distinguished by their optical and mechanical performance, which allows for fast and reliable measurements in daily practice. They are largely handmade by experienced workers, and are checked for tight tolerances in weight, optical quality, durability and for consistent measurement results.

Tonosafe disposable prisms have been developed for single-use only and, thus, reliably eliminates the risk of cross-infection, even in the most difficult situations. Calibrated to Goldmann standards, Tonosafe delivers accurate results with all Haag-Streit tonometers.

Diagnostic contact lenses

A range of Haag-Streit contact lenses was originally developed largely in conjunction with Professor Goldmann. These diagnostic accessories are designed for an optimal examination of the eye with the slit lamp, and include;

- 901 fundus contact lens - For the binocular slit observation of the pupil, the macula, its surroundings out to 30°, as well as the central vitreous body sections.
- 902 and 902 S one mirror glaucoma contact lens - For examination of the anatomical conditions in the area of the front of the iris.
- 903, 903 S and 903 L three mirror contact lens - For examination of the entire ocular fundus and the iridocorneal angle.
The Fundus Module 300 (FM 300) is a compact fundus imaging solution. It provides high-quality retinal images which can rival those of a fundus camera, making it very cost-efficient.

Images can be immediately transferred to the intuitive EyeSuite software, allowing easy documentation and increasing the quality and accuracy of referrals.

This innovative accessory offers all users of current Haag-Streit slit lamps access to instant documentation of the retina.

The impressive simplicity of the FM 300 allows integration of non-mydriatic retina imaging as part of the regular slit lamp examination. This can improve practice workflow and save both clinical and patient time.
Efficient workflow

With FM 300, the basic images required for clinical documentation can be acquired directly and quickly at the slit lamp, thus reducing the need for specialist technicians and equipment.

Taking the FM 300 from the cradle and putting it on the slit lamp only takes a few seconds. Once on the slit lamp it can either be placed in a working position, where it captures images of the fundus, or in a stand-by position, which allows normal use of the slit lamp.

Simple image capturing

The FM 300 allows non-mydriatic fundus imaging. Simply swivel the instrument into working position and align the camera with the slit lamp cross slide. The capture and illumination control are conveniently placed in front of the joystick on the slit lamp control panel.

Intuitive software

EyeSuite imaging is an effective and proven software application that supports a number of Haag-Streit instruments, including slit lamp imaging solutions. Images are easily captured and can be edited and displayed in this well-structured system that complements daily practice.

EyeSuite facilitates the distribution of images and data around the practice with a cost-effective networking solution and easily integrates with 3rd party EMR and DICOM systems.
Physical & optical conditions

The binocular examination of the eyes with the slit lamp takes place in a three-dimensional space with great depth of field. Normal slit lamp imaging is a two-dimensional documentation with a very small depth of field. The difference between the dynamic, stereoscopic clinical examination and the static two-dimensional image can be surprising and often disappointing. This section will tackle this issue and help users create high quality images.

Haag-Streit has developed specific imaging eyepieces with a cross hair which are available for all Haag-Streit imaging systems.

The accommodative abilities of the photographer’s own eye are normally not noticeable during examination. However it is important that the photographer establishes the correct eyepiece setting to compensate for any accommodation or refractive errors. Only viewing a sharp image of the cross hair overlaying a focused image of the eye ensures capturing of a sharply focused image.

It should also be considered that the examiner’s attention is focused on the details that are of interest and by selective viewing the brain suppresses certain artefacts. The camera however does not.

Types of illumination

The correct illumination will allow optimal recording of ocular pathology.

Diffuse illumination

The slit lamp beam should be completely opened and covered by the diffusing filter. The background illumination can be used in conjunction with the slit illumination for more uniform lighting. The diffuse illumination is normally used for overview pictures with low magnification (10x and 16x).

Direct focal illumination

Direct focal illumination refers to projecting the light on the subject at the plane of focus. Unlike diffused light, concentrated light penetrates transparent structures. With a centred slit beam there is always direct focal illumination.

Indirect illumination

With indirect illumination the light does not fall directly on the pathology. The slit beam is decentred and projected just adjacent to the subject area and it is illuminated by scattered internally reflected light.

Retroillumination

Retroillumination is a form of indirect illumination. Light reflected from the fundus or iris illuminates the pathology from behind. If the slit beam is decentred and higher magnification is used, unwanted reflections can be minimised.

Photography with three-mirror contact lens or 90-diopter lens

With these instruments there are more optical interfaces (air/glass and glass/cornea). All interfaces cause reflexes and therefore it is better to take images without the background illumination. Furthermore, any scratches or damage to the lens will increase the number of image artefacts. If the space between the diagnostic contact lens and the slit illuminator is very small, the background illumination can be locked in the centre position.

Pictograms

Narrow slit beam  Moderate slit beam  Wide slit beam  Slit beam with diffusor

Slit beam centred  Slit beam decentred  Background illumination  Microscope
# Image exposure guide for IM 900

## Overview – Diffuse illumination

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<tr>
<th>Magnification</th>
<th>10x or 16x</th>
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<tbody>
<tr>
<td>Slit illumination</td>
<td>open, 45°, diffused</td>
</tr>
<tr>
<td>Slit illumination level</td>
<td>4</td>
</tr>
<tr>
<td>Background level</td>
<td>3</td>
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<td>Aperture</td>
<td>6</td>
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<tr>
<td>EyeSuite exposure</td>
<td>auto-mode</td>
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The diffuse illumination with slit beam and background illumination gives a shadow-free illumination with natural colours and two light reflexes. This is most useful for low magnification overview images.

## Conjunctiva – Diffuse illumination

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Diffuse illumination provides evenly balanced lighting. Exposure control is more varied due to increased reflectivity.

## Cornea – Narrow slit

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<tr>
<th>Magnification</th>
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<tbody>
<tr>
<td>Slit illumination</td>
<td>&lt;0.2 mm wide, &gt;60 degrees from microscope</td>
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<tr>
<td>Slit illumination level</td>
<td>10</td>
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<td>Background level</td>
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A narrow focal slit beam is projected at a 45° to 60° angle. It cuts an optical section through the cornea like a knife. With this technique it is possible to locate the layer of the pathological changes.

## Cornea – Tangential illumination

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<th>Magnification</th>
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<tr>
<td>Slit illumination</td>
<td>&gt;4 mm wide, &gt;60 degrees from microscope</td>
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<tr>
<td>Slit illumination level</td>
<td>10</td>
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<tr>
<td>Background level</td>
<td>off</td>
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<td>Aperture</td>
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<tr>
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<td>auto-mode</td>
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This technique can provide more information as the oblique illumination is reflected and refracted by the cornea and any pathology. Experiment with the illumination angle slit beam width for optimum results.
**Cornea – Retroillumination**

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<th>Magnification</th>
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<tr>
<td>Slit illumination</td>
<td>1–3mm wide, decentred</td>
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<td>Slit illumination level</td>
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<td>Background level</td>
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<td>Aperture</td>
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A moderate slit beam is decentred and angled to project onto the iris directly behind the pathology. The light reflects and backlights the cornea. If there is some cataract present the lens can also be used to reflect light directly onto the area of interest.

**Lens – Narrow slit**

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<td>&lt;0.2mm wide &gt;60 degrees from microscope</td>
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<td>Aperture</td>
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A narrow focal slit beam is projected at a 45° angle to the lens as an optical section is made. Because of the problematic depth of field it is not possible to photograph the entire lens section in focus. It is therefore necessary to focus on the anterior or the posterior lens surface.

**Lens – Moderate slit**

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<td>Slit illumination level</td>
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</tbody>
</table>

A moderate slit beam is projected at a 45° angle to the lens pathology and is directly illuminated.

**Lens – Retroillumination**

<table>
<thead>
<tr>
<th>Magnification</th>
<th>16x, 25x or 40x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slit illumination level</td>
<td>1–2mm wide, &lt;5 degrees</td>
</tr>
<tr>
<td>Slit illumination level</td>
<td>5</td>
</tr>
<tr>
<td>Background level</td>
<td>off</td>
</tr>
<tr>
<td>Aperture</td>
<td>5</td>
</tr>
<tr>
<td>EyeSuite exposure</td>
<td>auto-mode</td>
</tr>
</tbody>
</table>

The slit illuminator is positioned in an almost coaxial position with the biomicroscope. A wide slit beam is decentred and adjusted to a half circle by using the slit width and height controls. The decentred slit beam is projected near the pupil margin through a dilated pupil. Careful composition can minimise the direct reflection.
### Iris – Tangential illumination

<table>
<thead>
<tr>
<th>Magnification</th>
<th>16x or 25x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slit illumination</td>
<td>Wide open, &gt;60 degrees from microscope</td>
</tr>
<tr>
<td>Slit illumination level</td>
<td>10</td>
</tr>
<tr>
<td>Background level</td>
<td>off</td>
</tr>
<tr>
<td>Aperture</td>
<td>6</td>
</tr>
<tr>
<td>EyeSuite exposure</td>
<td>auto-mode</td>
</tr>
</tbody>
</table>

The wide slit beam is projected at an oblique angle of 80°–90° onto the iris. This illumination creates strong shadows and the surface texture is enhanced. If the headrest doesn’t allow a wide oblique angle it is sometimes necessary to turn the patient’s head a little away from the light.

### Fundus - Central retina with a 90-diopter lens

<table>
<thead>
<tr>
<th>Magnification</th>
<th>10x or 16x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slit illumination</td>
<td>2–4 mm wide</td>
</tr>
<tr>
<td>Slit illumination level</td>
<td>5</td>
</tr>
<tr>
<td>Background level</td>
<td>off</td>
</tr>
<tr>
<td>Aperture</td>
<td>5</td>
</tr>
<tr>
<td>EyeSuite exposure</td>
<td>auto-mode</td>
</tr>
</tbody>
</table>

A moderate slit beam in the almost coaxial position gives the best results.

### Fundus – Central retina with a three-mirror contact lens

<table>
<thead>
<tr>
<th>Magnification</th>
<th>10x, 16x, 25x or 40x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slit illumination</td>
<td>2 mm wide</td>
</tr>
<tr>
<td>Slit illumination level</td>
<td>5</td>
</tr>
<tr>
<td>Background level</td>
<td>off</td>
</tr>
<tr>
<td>Aperture</td>
<td>5</td>
</tr>
<tr>
<td>EyeSuite exposure</td>
<td>auto-mode</td>
</tr>
</tbody>
</table>

The slit illuminator is positioned in an almost coaxial position with the biomicroscope. A wide slit beam is decentered and adjusted to a half circle by using the slit width and height controls. The decentered slit beam is projected near the pupil margin through a dilated pupil. Careful composition can minimise the direct reflection.