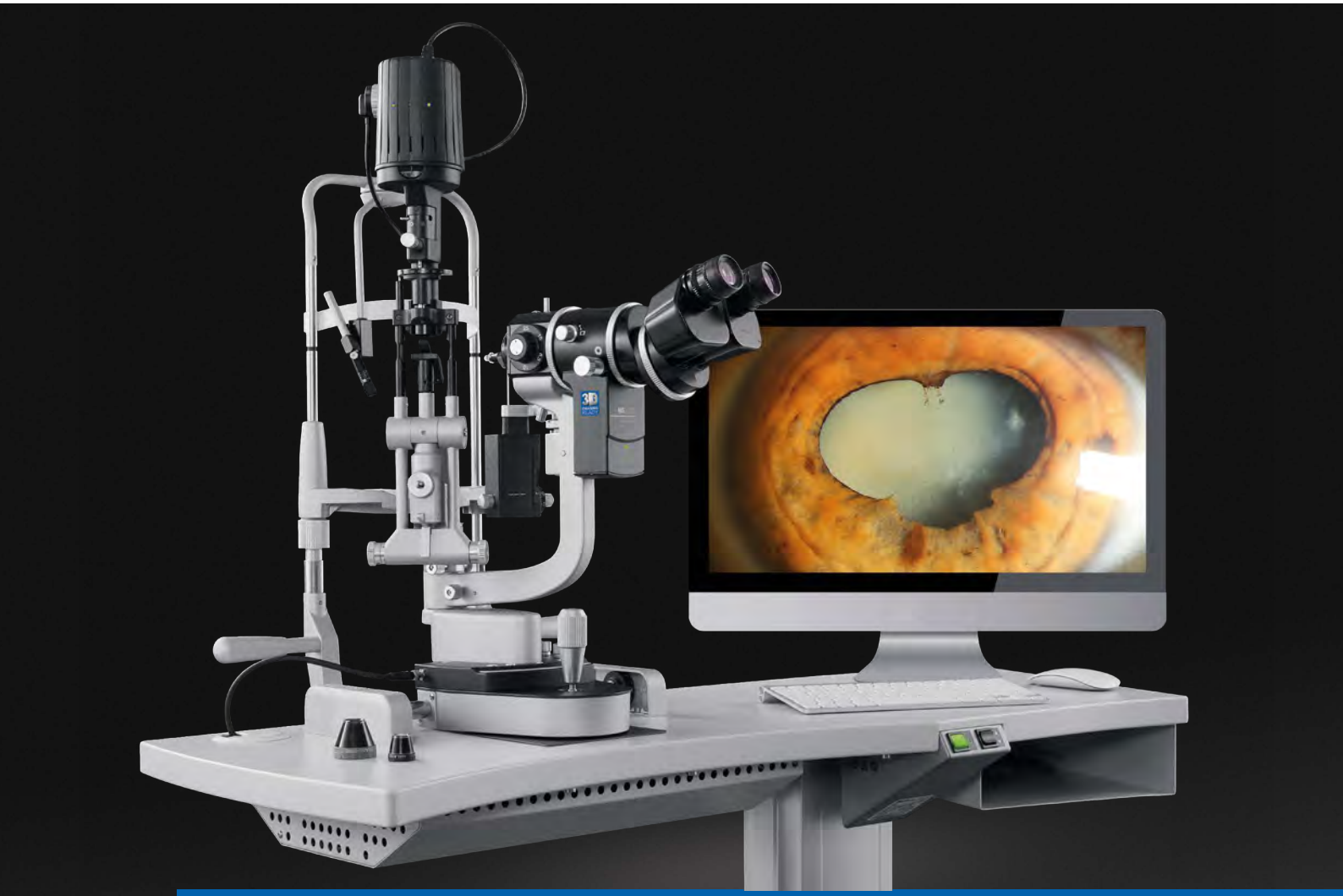


GETTING THE MOST FROM YOUR HAAG-STREIT SLIT LAMP

From adding technology, to learning new techniques...

HAAG-STREIT UK

Look closer. See further.

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, and the fully-integrated IM 910 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.

ELABORATE MICROSCOPES

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.


HIGH-PRECISION

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.

Sustainable investment

Haag-Streit slit lamps boast excellent optics, high-precision mechanics and exceptional durability. All Haag-Streit slit lamps come with an extensive 10-year warranty period.
The longevity resulting from high-quality manufacturing makes them a fantastic and sustainable investment for any practice. This emphasizes total commitment to the quality of our craftsmanship. For us, it's just a tiny step, but for our customers, it is "confidence that lasts."

10-YEAR WARRANTY

Comprehensive education programme
Outstanding slit lamp training, designed to meet the needs of every user

Established in 2016, the Haag-Streit Academy 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.

Haag-Streit Academy is committed to providing training following a slit lamp installation. All customers receive an on-site training workshop, as standard. Bespoke advanced training can also be delivered either at your premises or at our dedicated training facility in Bishop's Stortford, Hertfordshire.

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 lamps.

Free, e-learning courses are also available providing slit lamp users with an opportunity for self-directed education, at their own pace through an online portal.

The portal includes interactive modules, PDF user guides, videos and PowerPoint presentations, which are all available 24-7.

Slit Lamp Workshop

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 team, 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.

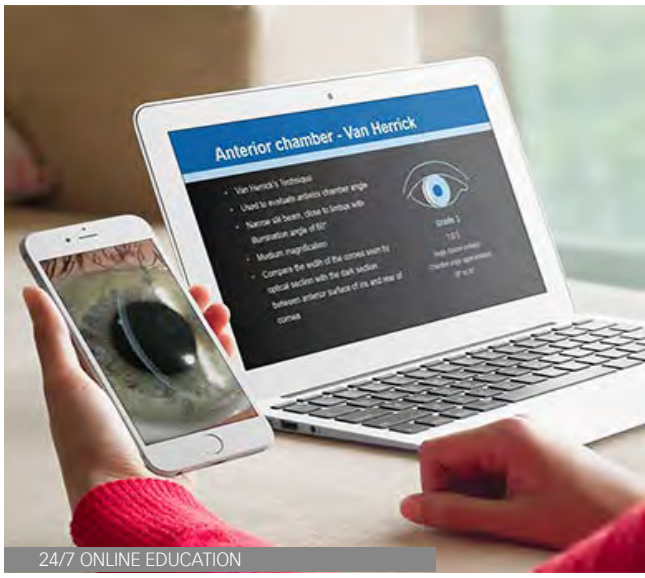
Bespoke advanced training on your slit lamp can also be arranged either at your premises or at HS-UK's dedicated training facility in Bishop's Stortford. '*Techniques for assessment of the fundus using non-contact lenses*', '*Using illumination techniques to enhance slit lamp imaging*' and '*Using barrier filters for the assessment of fluorescein staining*' are examples of topics that can be covered in advanced training sessions.

LIVE INTERACTIVE SLIT LAMP TRAINING

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 imaging. Workshop sessions give attendees a unique opportunity to examine live subjects using state-of-the-art slit lamp imaging devices and Eyesi training equipment. These exciting events also give delegates an opportunity to gain valuable CPD points.



24/7 ONLINE EDUCATION

Flexible online e-learning courses

The Haag-Streit Academy 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.

ON-SITE TRAINING WORKSHOPS

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 world-wide 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.

BM 900

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.


10 X AND 16 X MAGNIFICATION

LED ILLUMINATION


SMOOTH & EFFORTLESS MOVEMENT

BI 900 slit lamp
An entry-level slit lamp for those that require 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 Heath 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.

BI 900 with imaging set

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.

10 X AND 16 X MAGNIFICATION

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.


COMPACT IMAGING SOLUTION

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.


PROVIDING FULL CONTROL

BP 900 slit lamp
The progressive slit lamp

Designed for routine practice, the BP 900 combines Haag-Streit's oustanding 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 a progressive slit lamp 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.

BP 900 with Imaging Module IM 600

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.

10 X TO 25 X MAGNIFICATION

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.

IM 600

Optional 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.


YELLOW BARRIER FILTER

BQ 900 slit lamp
A modular, high end slit lamp with outstanding imaging to improve your workflow

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 second observer, beam splitter and Goldmann tonometer.

BQ 900 with Imaging Module IM 910

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.

6.3 X TO 40 X MAGNIFICATION

Goldmann tonometer

Because it is fast and reproducible, Goldmann applanation tonometry has been the 'gold standard' of tonometry for many decades. Compatible with all Haag-Streit slit lamps, it is based on the Goldmann principle - tried and tested during more than 50 years of usage with millions of patients.

AT 900 D TONOMETER

IM 910 & IM 600 imaging modules

The IM 910 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 IM 910 offers manual or auto aperture control, incorporates a best image algorithm, and provides a seamless integration.

Take advantage of the Imaging Module 910 3D (IM 910 3D) and say goodbye to "flat" images. This dynamic 3D live-stream creates a detailed, authentic representation of the slit lamp exam, supporting better documentation, and more collaborative teaching.

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.


IMAGING SOLUTIONS

BX 900 slit lamp
Designed specifically for the Ophthalmic Photographer

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.

BX 900

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.

FLASH ILLUMINATION

MIRROR HOUSING

SHUTTER RELEASE

IM 910 & IM 600 imaging modules
Setting new standards in digital slit lamp imaging

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 modular imaging systems – the IM 600 system and the highly advanced IM 910. 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 910 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.

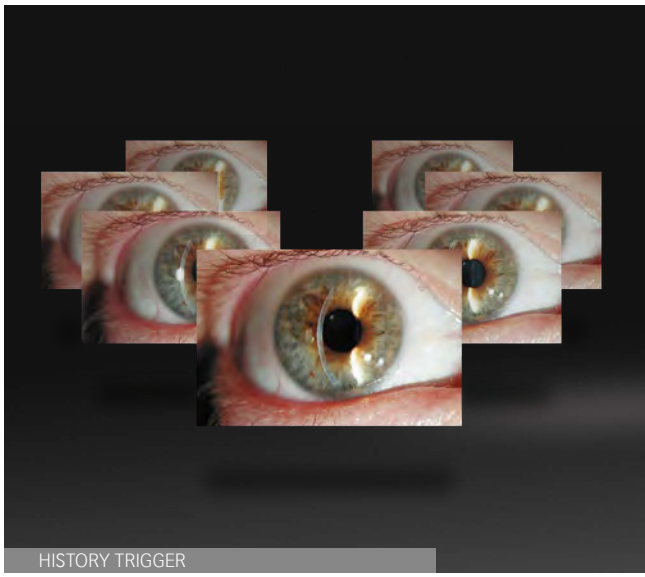
The compact and modern design of the slit lamp means the IM 910 comes as a component of the whole system, supporting a complete examination workflow.

CONTROL PANEL

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.



HISTORY TRIGGER

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.

EYESUITE IMAGING SOFTWARE

IM 910 3D
Immersive 3D perception of the slit lamp examination

The IM 910 already provides high-resolution video stream – but only in 2D. With the addition of the IM 910 3D, we elevate the capabilities of the IM 910 by offering a dynamic 3D live-stream of impressive quality.

Now with 3D-ready functionality, the IM 910 is not just a slit lamp camera – it's a platform on which we continue to innovate within the field of slit lamp imaging.

The 3D images create greater confidence when performing a slit lamp examination, giving ophthalmologists the ability to share a more detailed representation of the eye with their patient. This gives patients a deeper understanding of their eye condition, and can strengthen the trust between the ophthalmologist and the patient. It also creates a more effective learning platform for trainees.

Immersive 3D perception

With the addition of the IM 910 3D, we elevate the capabilities of the IM 910 by offering a dynamic 3D livestream of impressive quality. Two 4K cameras capture two images simultaneously: one per eye in ultra high-definition – the result: an immersive depth impression, unveiling more detail, and a richer viewing experience.

Document your findings in 3D

The IM 910 3D enables the recording of 3D content, including both images and videos, which render a more detailed and authentic representation of the slit lamp examination.

The inclusion of depth information in the visual representation makes the perception of anatomical relationships easier to identify, thereby enhancing the overall clarity and interpretability of the observed content.

Collaborative learning experience

In addition to superior documentation, the IM 910 3D includes features to make teaching ophthalmology and optometry more efficient and comfortable for resident and examiner alike.

By providing a digital 3D visualization of the slit lamp exam, co-observers no longer need to adopt an uncomfortable posture such as hunching into the tube to closely track slit lamp movements, enhancing the overall experience during collaborative activities.

Moreover, in many instances, 2D solutions sometimes fail to accurately convey the visual information intended for the co-observer. This creates a challenge for the examiner in ensuring that the resident accurately observes the relevant details when operating the slit lamp. With the IM 910 3D, the co-observer has the same view on the monitor that the examiner does through the oculars.


IMMERSIVE 3D PERCEPTION


DOCUMENT FINDINGS IN 3D


COLLABORATIVE LEARNING EXPERIENCE

Accessories & add-ons
A comprehensive range to enhance the slit lamp

The BI 900 and BM 900 slit lamps are modular, and a comprehensive range of accessories are available to enhance these devices.

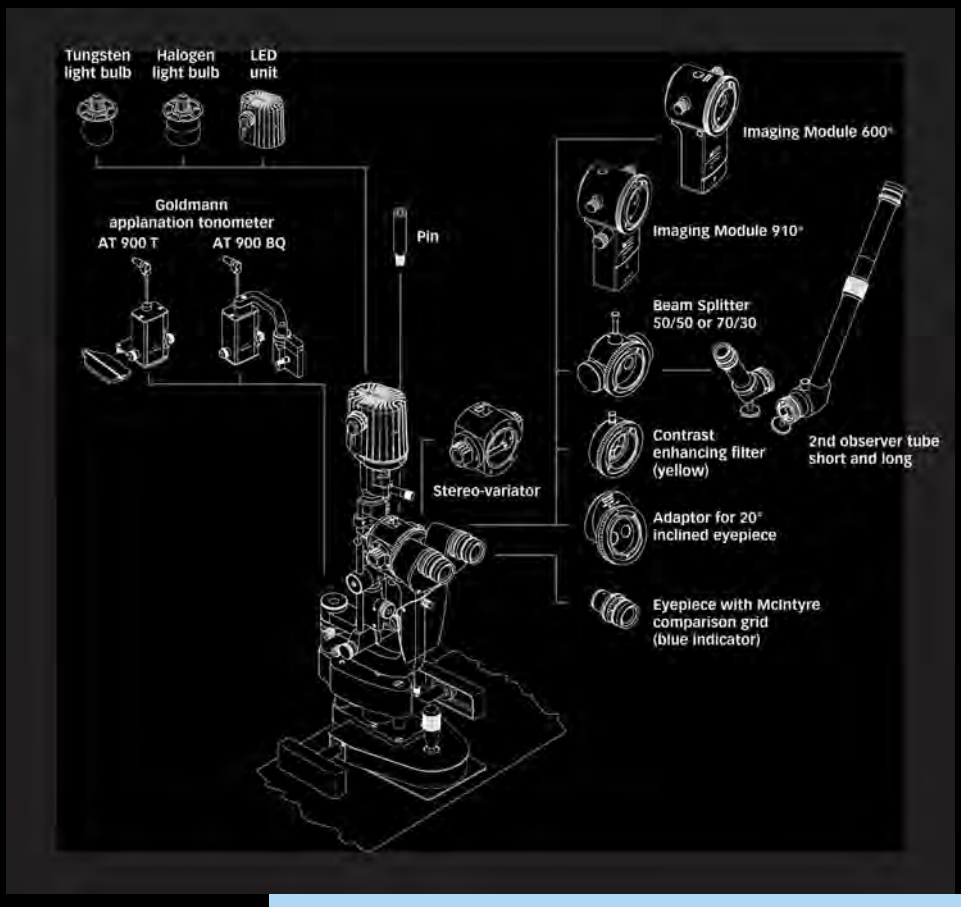
Leading the field in applanation tonometry, the AT 900 Goldmann tonometer affixes to the slit lamp and, depending on which fixture you have, it can be swiveled in front of the microscope for the examination.

Disposable tonometer prisms, such as Tonosafe, or reusable Goldmann measuring prisms, can be used.

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 two people the ability to participate in the examination.

Enhance your diagnostic capabilities with technology like the yellow barrier filters to add contrast to improve imagery.

Accessories



Contrast enhancing filter

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

YELLOW BARRIER FILTER

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.

BEAM SPLITTER

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.

SECOND OBSERVER TUBES

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.

INCLINED EYEPIECE ADAPTOR

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.

STEREO VARIATOR

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. Contact lenses are available to purchase on our e-shop.

GOLDMANN CONTACT LENSES

‘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.

AT 900 D

Goldmann reusable 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.


GOLDMANN PRISMS

Tonosafe disposable prisms

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


TONOSAFE PRISMS

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 (10 x and 16 x).

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.

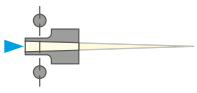
Retroillumination

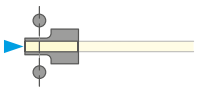
Retroillumination is a form of indirect illumination. Light reflected from the fundus or iris illuminates the pathology from behind. If the slit beam is decentred and higher magnification is used, unwanted reflections can be minimised.

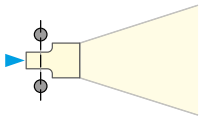
Photography with three-mirror contact lens or 90-diopter lens

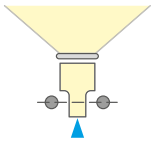
With these instruments there are more optical interfaces (air / glass and glass / cornea). All interfaces cause reflexes and therefore it is better to take images without the background illumination. Furthermore, any scratches or damage to the lens will increase the number of image artefacts. If the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

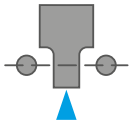
Pictograms

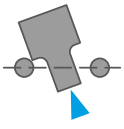

Narrow slit beam

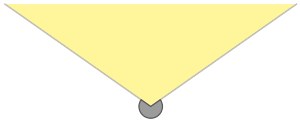

Moderate slit beam


Wide slit beam


Slit beam with diffusor


Slit beam centred


Slit beam decentred


Background illumination

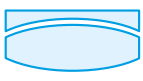
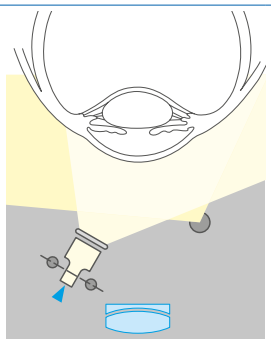
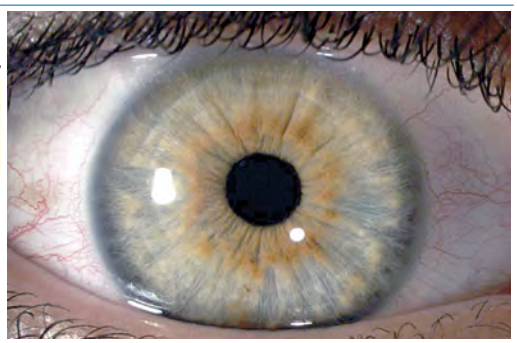

Microscope

Image exposure guide for IM 910

Overview – Diffuse illumination

Magnification	10x or 16x
Slit illumination	open, 45˚, diffused
Slit illumination level	4
Background level	3
Aperture	6
EyeSuite exposure	auto-mode

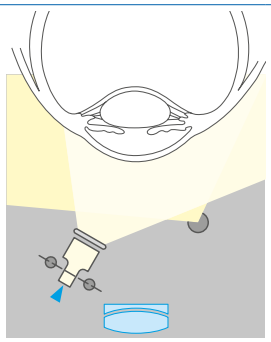


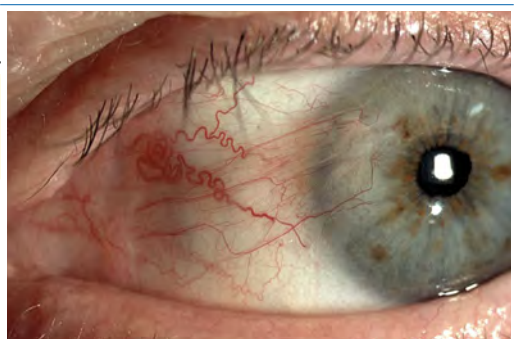


The diffuse illumination with slit beam and background illumination gives a shadow-free illumination with natural colours and two light reflexes. This is most useful for low magnification overview images.

Conjunctiva – Diffuse illumination

Magnification	10x or 16x
Slit illumination	open, 45˚, diffused
Slit illumination level	3
Background level	3
Aperture	6
EyeSuite exposure	auto-mode

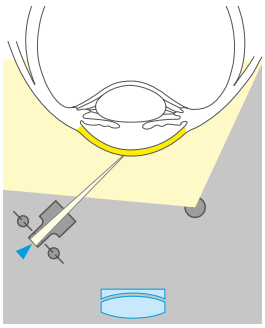




Diffuse illumination provides evenly balanced lighting. Exposure control is more varied due to increased reflectivity.

Cornea – Narrow slit

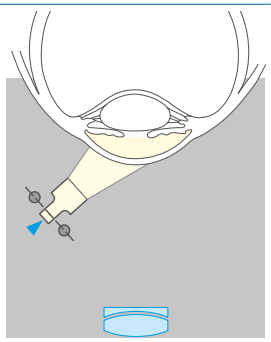
Magnification	16x or 25x
Slit illumination	<0.2mm wide, >60 degrees from microscope
Slit illumination level	10
Background level	1
Aperture	3
EyeSuite exposure	auto-mode

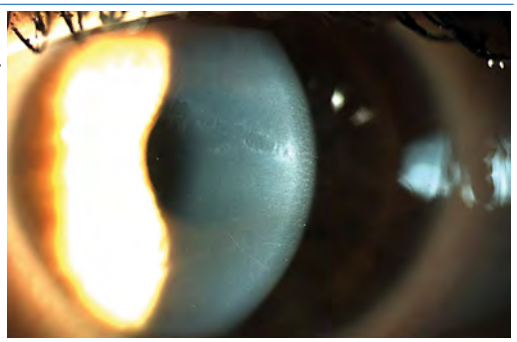


A narrow focal slit beam is projected at a 45° to 60° angle. It cuts an optical section through the cornea like a knife. With this technique it is possible to locate the layer of the pathological changes.

Cornea – Tangential illumination

Magnification	16x or 25x
Slit illumination	>4mm wide, >60 degrees from microscope
Slit illumination level	10
Background level	off
Aperture	6
EyeSuite exposure	auto-mode

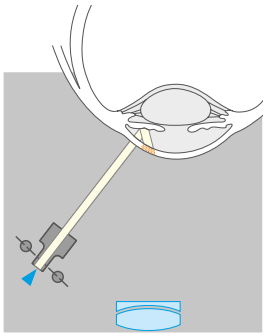


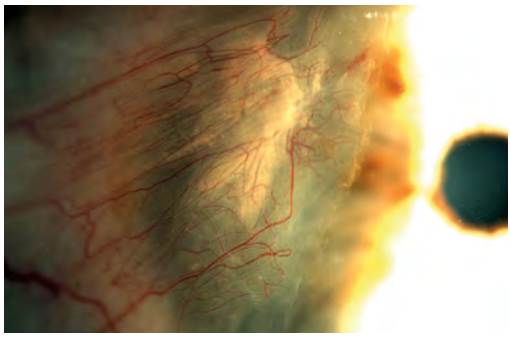


This technique can provide more information as the oblique illumination is reflected and refracted by the cornea and any pathology. Experiment with the illumination angle slit beam width for optimum results.

Cornea – Retroillumination

Magnification	16x or 25x
Slit illumination	1–3mm wide, decentred
Slit illumination level	10
Background level	off
Aperture	5
EyeSuite exposure	auto-mode

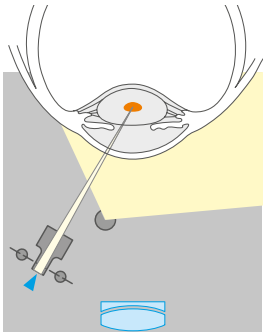


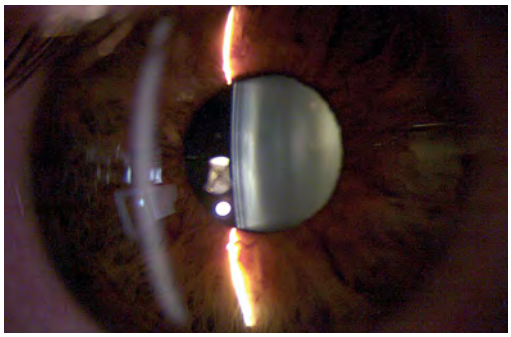


A moderate slit beam is decentred and angled to project onto the iris directly behind the pathology. The light reflects and backlights the cornea. If there is some cataract present the lens can also be used to reflect light directly onto the area of interest.

Lens – Narrow slit

Magnification	16x or 25x
Slit illumination	<0.2mm wide >60 degrees from microscope
Slit illumination level	10
Background level	1
Aperture	4
EyeSuite exposure	auto-mode

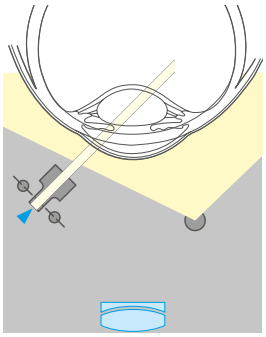


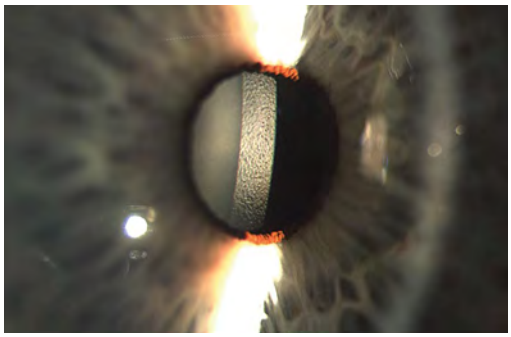


A narrow focal slit beam is projected at a 45° angle to the lens as an optical section is made. Because of the problematic depth of field it is not possible to photograph the entire lens section in focus. It is therefore necessary to focus on the anterior or the posterior lens surface.

Lens – Moderate slit

Magnification	16x or 25x
Slit illumination	2–4mm wide, >60 degrees from microscope
Slit illumination level	10
Background level	1
Aperture	6
EyeSuite exposure	auto-mode

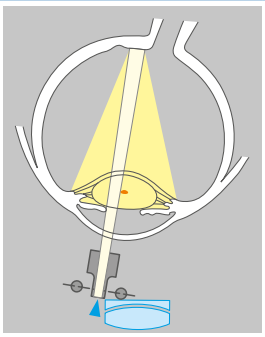


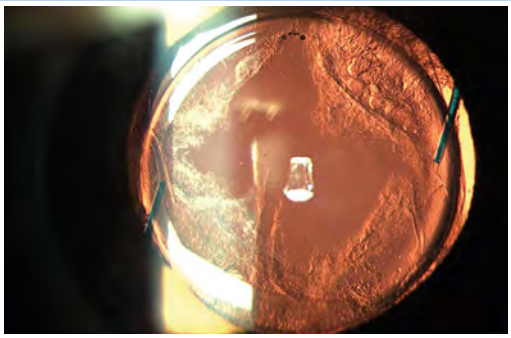


A moderate slit beam is projected at a 45° angle to the lens pathology and is directly illuminated.

Lens – Retroillumination

Magnification	16x, 25x or 40x
Slit illumination level	1–2mm wide, <5 degrees
Slit illumination level	5
Background level	off
Aperture	5
EyeSuite exposure	auto-mode

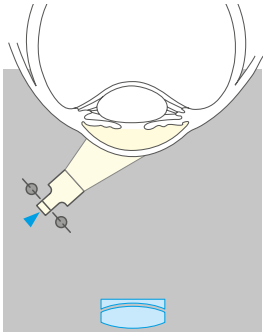




The slit illuminator is positioned in an almost coaxial position with the biomicroscope. A wide slit beam is decentred and adjusted to a half circle by using the slit width and height controls. The decentred slit beam is projected near the pupil margin through a dilated pupil. Careful composition can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

Iris – Tangential illumination

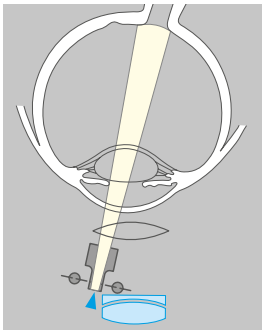
Magnification	16x or 25x
Slit illumination	Wide open, >60 degrees from microscope
Slit illumination level	10
Background level	off
Aperture	6
EyeSuite exposure	auto-mode

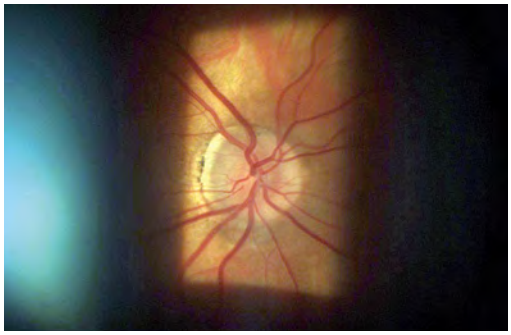


The wide slit beam is projected at an oblique angle of 80°–90° onto the iris. This illumination creates strong shadows and the surface texture is enhanced. If the headrest doesn't allow a wide oblique angle it is sometimes necessary to turn the patient's head a little away from the light.

Fundus - Central retina with a 90-diopter lens

Magnification	10x or 16x
Slit illumination	2–4mm wide
Slit illumination level	5
Background level	off
Aperture	5
EyeSuite exposure	auto-mode

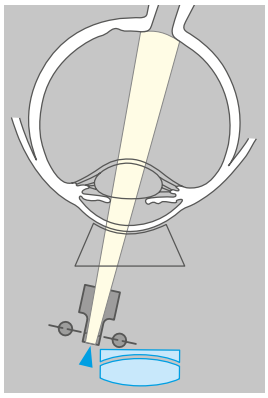


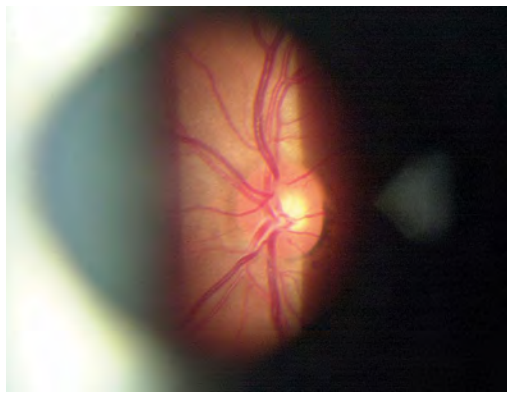


A moderate slit beam in the almost coaxial position gives the best results.

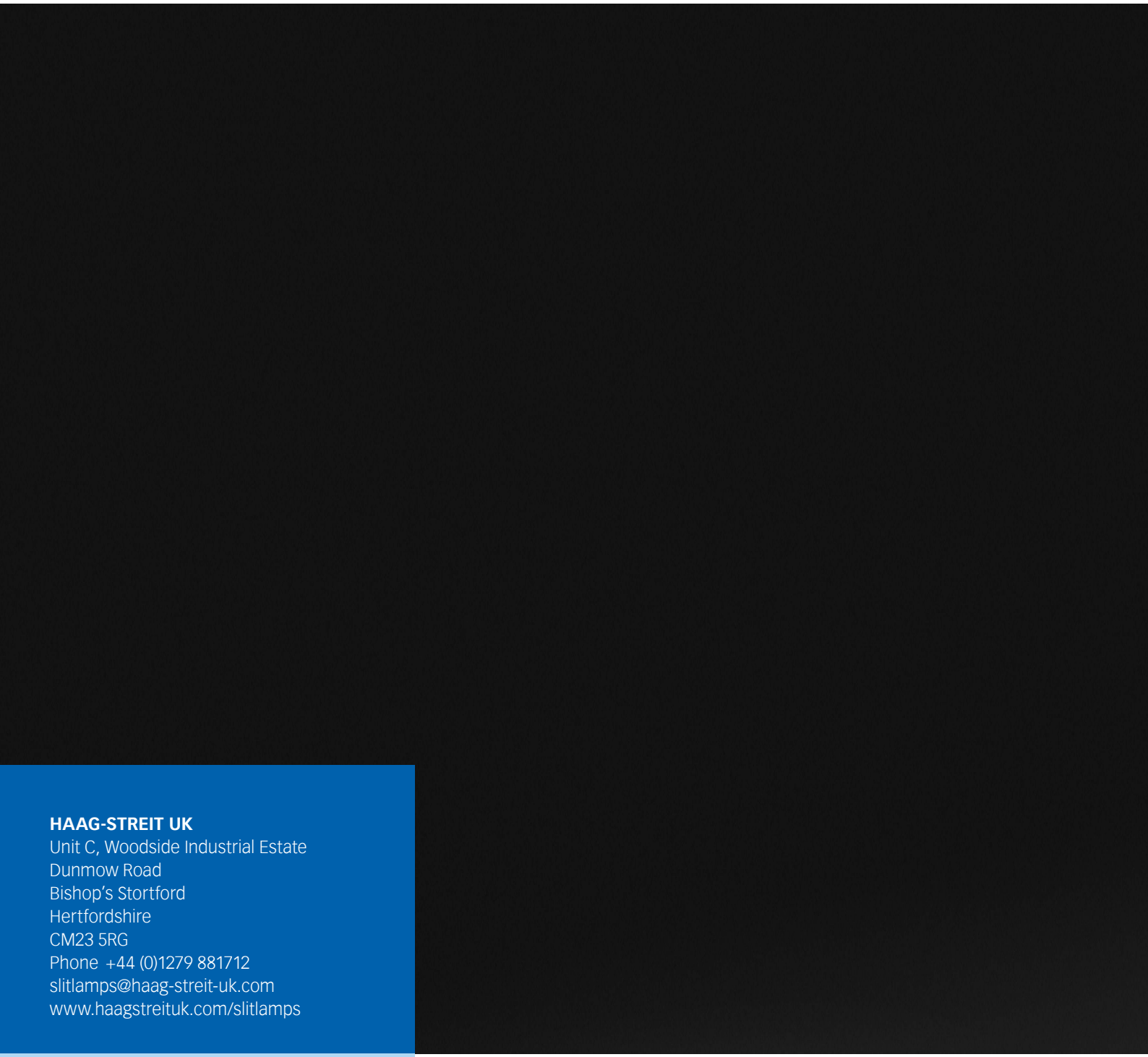
Fundus – Central retina with a three-mirror contact lens

Magnification	10x, 16x, 25x or 40x
Slit illumination	2mm wide
Slit illumination level	5
Background level	off
Aperture	5
EyeSuite exposure	auto-mode





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 decentred slit beam is projected near the pupil margin through a dilated pupil. Careful composition can minimise the direct reflection.



HAAG-STREIT UK
Unit C, Woodside Industrial Estate
Dunmow Road
Bishop's Stortford
Hertfordshire
CM23 5RG
Phone +44 (0)1279 881712
slitlamps@haag-streit-uk.com
www.haagstreituk.com/slitlamps