

Surgical Microscopes OPMI® from Carl Zeiss

**Ophthalmic Surgery
in Its Highest Form.**

OPMI® VISU 210.



We make it visible.

OPMI® VISU 210.

A Shining Example.

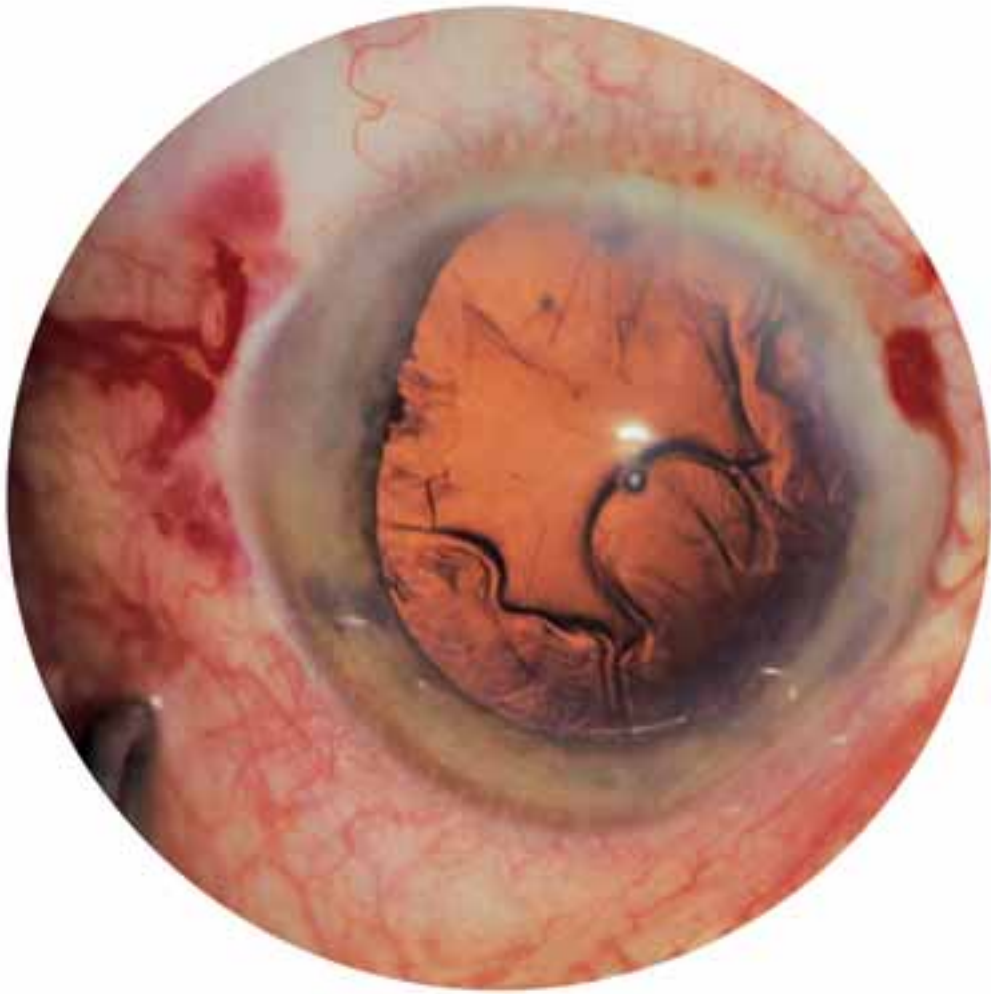




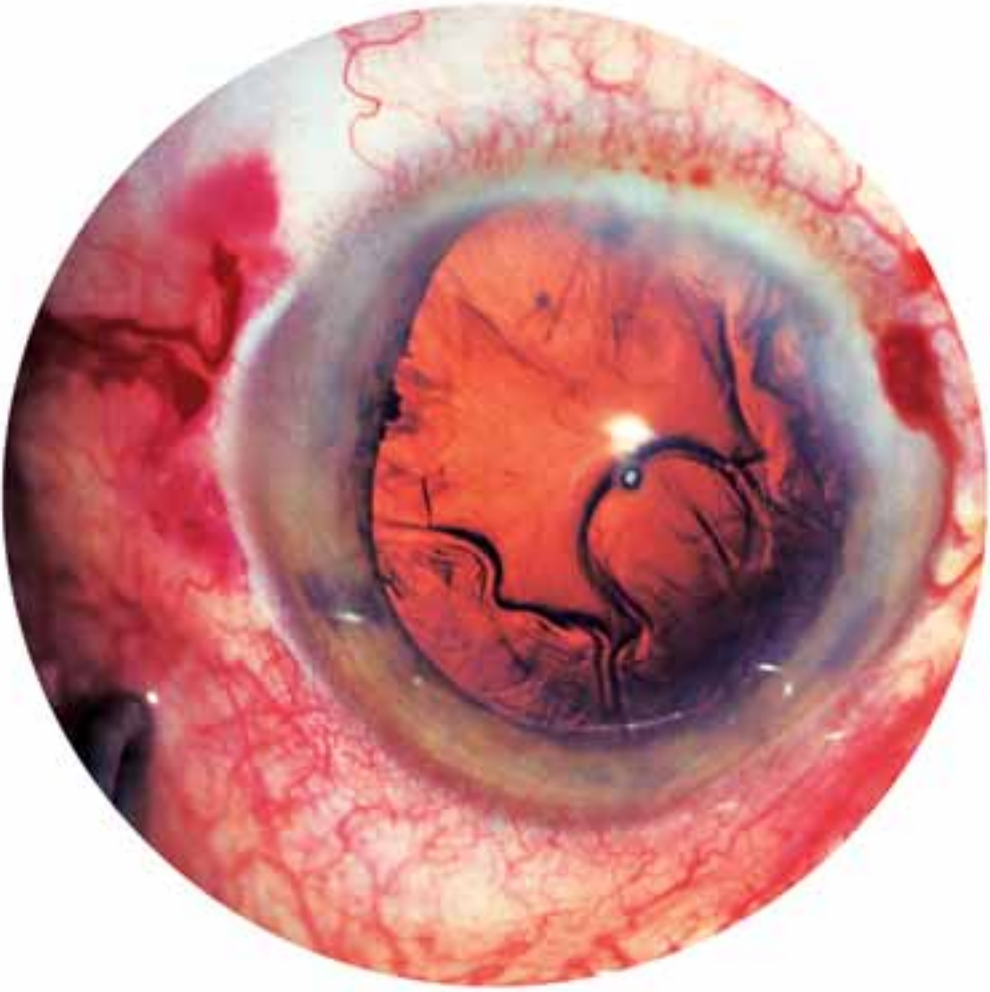
With the OPMI® VISU 210, Carl Zeiss has introduced a surgical microscope that can only be described as the state-of-the-art solution for ophthalmic surgery. The optical and technical configuration of the system is both innovative and versatile. OPMI® VISU 210 supports the surgeon's needs for a wide variety of procedures while offering new tools that provide enhanced depth of field, resolution, and contrast. With its completely integrated assistant's microscope OPMI® VISU 210 is also ideal for university hospitals.

- Superlux™ Eye xenon illumination. For exceptionally high-contrast, detailed, true-color microscope images.
- Completely integrated stereoscopic assistant's microscope.
- DeepView, the new depth of field management system allowing you to choose between optimized depth perception or maximum light transmission.
- Integrated slit illumination, for example for true retro-illumination during lens extraction.
- Ergonomic handgrips for precise positioning.
- Fully apochromatically corrected optics.
- With BrightFlex™ illumination, consisting of 2° and fading 6° illumination, for an excellent red reflex and outstanding light conditions in all situations.
- Extensive array of accessory options.

Halogen is Yesterday's News.



Xenon is the Future, Today.



Simulated depiction of halogen and Superlux™ Eye xenon illumination. Subject to deviations in color as a result of printing.

Xenon. Because White Light Doesn't Lie.

The white light of xenon produces brighter, higher-contrast and more authentic images with a natural color impression. Moreover, xenon has an ergotropic (stimulating) effect compared to the histotropic (relaxing) effect of halogen light.

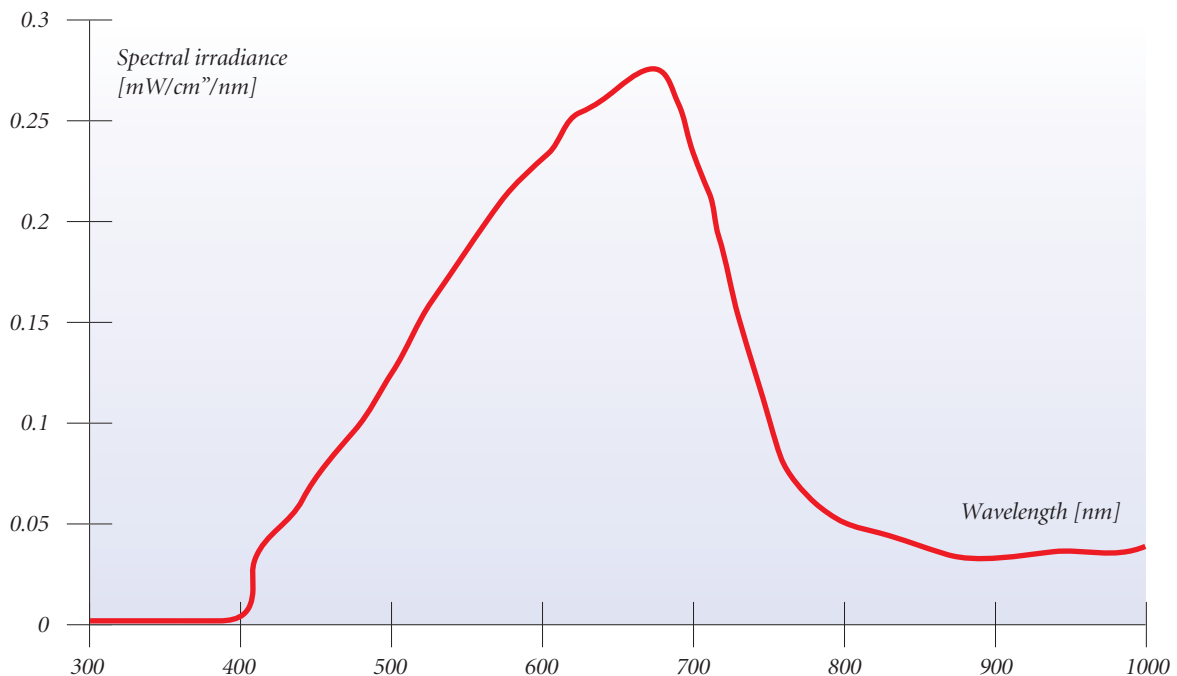
This knowledge is not only used by manufacturers of car headlights and office lighting equipment. Carl Zeiss has also been using xenon illumination for years. For example, in surgical microscopes for spinal surgery and neurosurgery.

Carl Zeiss has optimized xenon for ophthalmology.

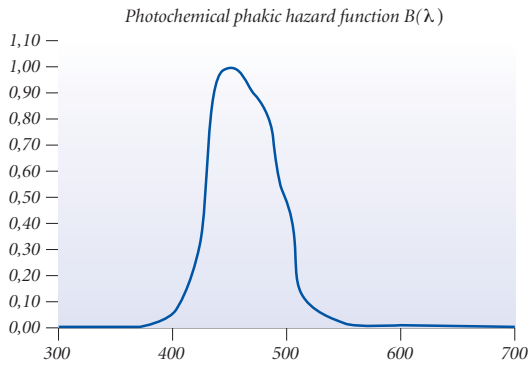
In general, all light sources can cause phototoxic damage to the retina – even the halogen and xenon illumination used in surgical microscopes and in diagnostic and surgical instruments.

It is a known fact that the UV and blue portion of the light spectrum presents a higher risk potential. For this reason, the UV portion below 408 nm is filtered in the OPMI® VISU 210.

Moreover, the illumination scale of the OPMI® VISU 210 is so designed that it permits estimation of the phototoxic risk:

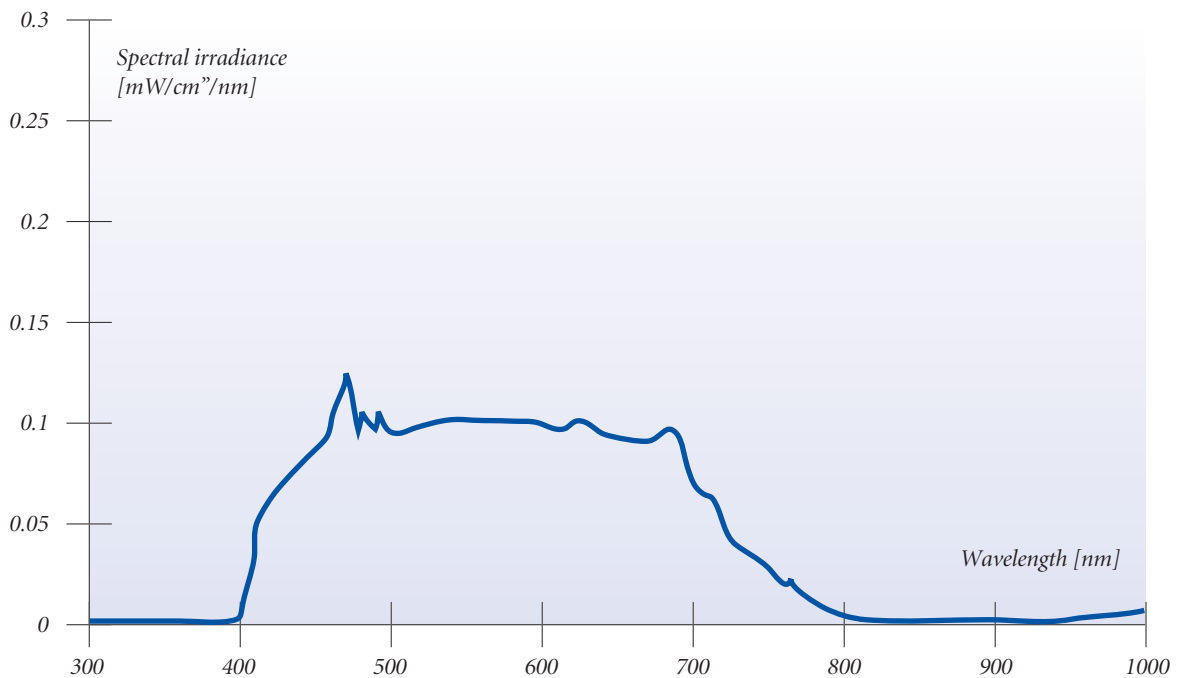


Spectral irradiance composition of the halogen light source.



It is designed so that the wavelengths are proportionately weighted according to their risk potential. The result is that risk potential of the Superlux™ Eye xenon illumination at a certain setting is comparable to that of halogen illumination with the same setting.

The graphic below illustrates the difference in light intensity distributed the light spectrum at an



Spectral irradiance composition of the xenon Superlux™ Eye light source.

illumination setting of 1.0 for Superlux™ Eye xenon illumination and for halogen illumination.

Xenon illumination is more evenly distributed and leads to higher color temperature and a high-contrast, natural appearance with high detail recognition.

An additional benefit: the Superlux™ Eye xenon illumination has a significantly lower infrared portion, which contributes to a reduction of the thermal exposure on the cornea and other tissues.

Xenon bulbs burn longer.

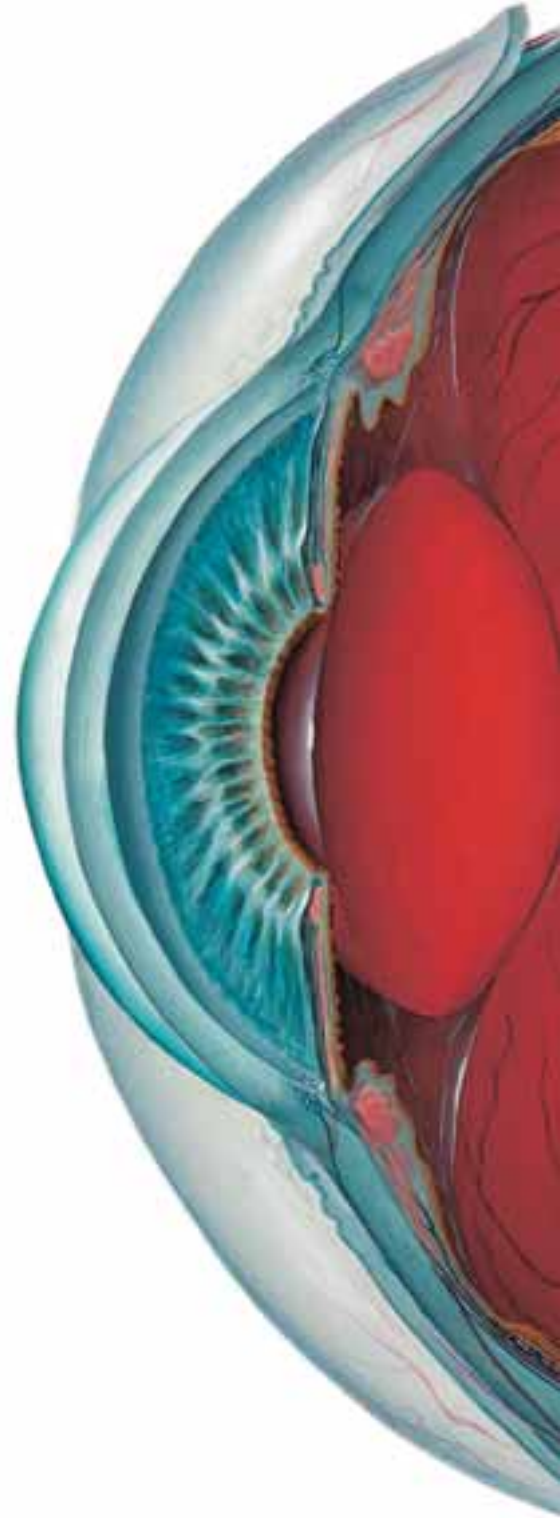
Xenon bulbs last up to 10 times longer than halogen bulbs. This saves the operating room staff valuable time.

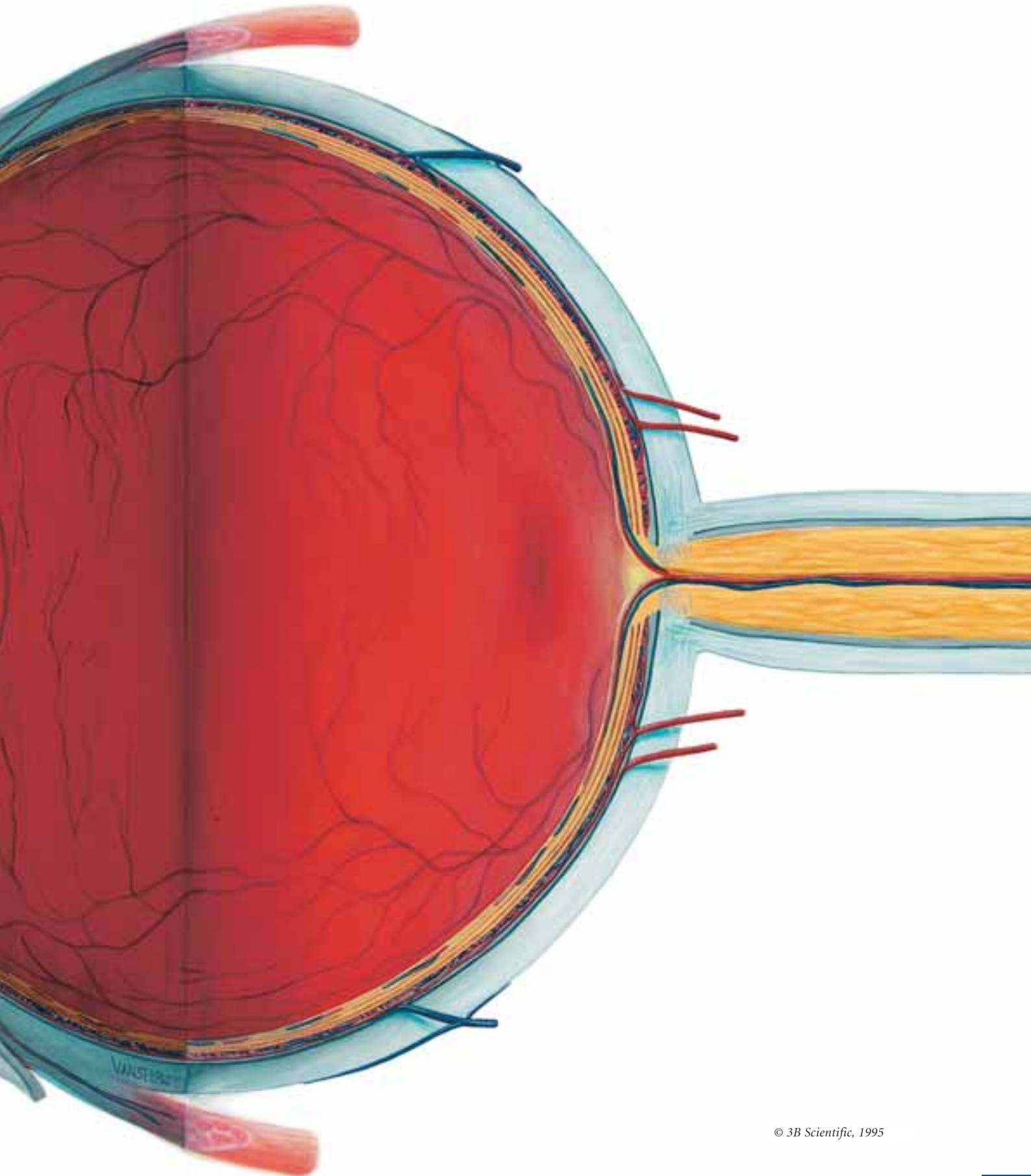
DeepView. You're in Control.

DeepView is a new, unique concept in surgical microscopes, offering both versatility and total control.

At the push of a button, the surgeon chooses what type of view will be seen through the microscope.

Activate DeepView for the optimum depth perception at all magnification levels. Deactivate DeepView for the brightest, clearest resolution even at low light intensities.





The Declaration of Independence.

The integrated, but totally independent assistant's microscope offers identical working conditions to both surgeons, while allowing independent adjustment of focus and zoom. Each surgeon has control over their individual magnification and focus settings, and the assistant's microscope does not detract at all from the main surgeon's lighting conditions.

There's no special set up required to switch from a left to a right eye procedure. Simply swing the assistant's scope from one side to the other – you're instantly ready to go.





Seeing Is Believing.

(1) **The power of illumination.**

The motorized, VISULUX™ fiber slit illuminator for bi-manual technique in retinal surgery. It can be optionally attached to the microscope. Choose from three different slit widths. Adjust the position smoothly along a continuous arc using the foot control panel. All this, and much, much more.

(2) **For picture-perfect documentation.**

Videos are facts in motion. Carl Zeiss provides video cameras for a wide range of requirements and budgets – from single chip cameras to the latest advancements in video technology.

(3) **Presentation and documentation made easy.**

At the push of a button, the MediLive™ ImageBox™ allows you to select an unlimited number of images from your videos and save them digitally on a CD-ROM. It's the perfect solution for presenting to your colleagues or enhancing patient files.

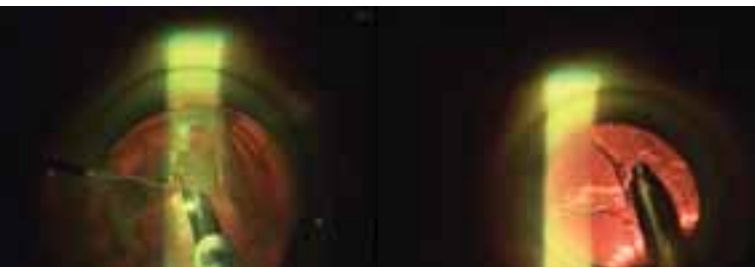
(4) **Simply stunning.**

The new MediLive™ MindStream continuously records operations – up to 120 hours of streaming video. With MediLive™ MindStream you can:

- Simultaneously save your recordings to the hard drive and DVD (or CD-ROM).
- Easily find sequences important to your presentation and extract them as video clips.
- Save single video images as digital stills.
- Quickly save video and stills to your USB stick after editing.

Plus, it provides excellent quality and crisp detail.

Standard. Slit Illumination.



OPMI® VISU 210 is equipped with integrated slit illumination. This innovative feature offers exceptional detail recognition. For example, for providing true retro-illumination during lens extraction.

Pictures: Joseph F. Gravlee, Jr., M.D., Fairhope, AL, USA



The Strong Arm of Ophthalmic Surgery.





The S88 floor stand and the S8/S81 ceiling mounts. Which of these variations is a better fit depends on your requirements, those of your team and, of course, the size of your operating room.

Common to all: the extraordinary load capacity (20 kg). The generous reach of the arm (130 cm radius on the S88 floor stand, 193 cm on the S8 ceiling mount and 153 cm on the S81 ceiling mount). And the magnetic brakes which allow effortless positioning of OPMI® VISU 210.

(1) **Your control panel.**

The memory center for personal system settings stores up to nine users. Select the speed of the zoom, focus, and XY, plus choose which accessories you want to control via the foot control panel, and much, much more.

(2) **It's better with Xenon.**

Superlux™ Eye xenon illumination comes standard. Or, if you prefer, we will also equip OPMI® VISU 210 with dual halogen, if required.

(3) **Smooth mobility.**

All four wheels on the S8 floor stand move independently, making millimeter-exact maneuvering with the ergonomic handle feel like child's play.

(4) **One quick grasp.**

and the S8 ceiling mount moves from the working to the standby position.

Technical Data.

Surgical microscope

Apochromatic optics with
T* anti-reflex multi-coating

Motorized zoom system.
Zoom ratio 1:6, $\gamma=0,4$ to 2.4

Focusing range: 50 mm

Binocular tube: 0-180° tiltable
(optional 45° inclined)

Eyepieces: 12.5x (10x optional)

Objective lens: f=200 mm (f=175 mm optional)

DeepView depth of field management system

Light Source

Superlux™ Eye xenon illumination with manual
bulb exchange

Option: 12 V, 100 W halogen bulb as light
source with fully-automatic bulb exchange
following failure

X-Y coupling

Adjustment range 40 mm x 40 mm

Key for initial position of the X-Y coupling and
focus

	12.5x Eyepiece Objective lens f=200 mm	12.5x Eyepiece Objective lens f=175 mm	10x Eyepiece Objective lens f=200 mm	10x Eyepiece Objective lens f=175 mm
Total magnification*	4.3x – 25.5x	4.9x – 29.1x	3.4x – 20.4x	3.9x – 23.3x
Field of view diameter*	8.6 mm – 51.8 mm	7.5 mm – 45.3 mm	10.0 mm – 60.6 mm	8.8 mm – 53.0 mm

* rounded

Illumination

BrightFlex™ Illumination:
■ 6° illumination, continuous fading
■ +2° illumination for red reflex

Integrated slit illumination
Vertical: width 2.5 mm
Horizontal: width 2.5 mm and 5 mm, movable

Integrated 408 nm UV cut-off filter

Swing-in GG475 filter to reduce blue portion

Swing-in KK40 daylight filter in suspension
system (with halogen illumination only)

Retinal protection device

Scleral glare reduction filter

Fiber light guide

Option: swing-in fluorescence filter in suspension
system (with halogen illumination only)

Weight

OPMI® VISU 210 (with 0-180° tiltable tube and
co-observation tube for assistant's microscope,
w/o accessories) 11.3 kg (24.9 lbs)

Suspension systems

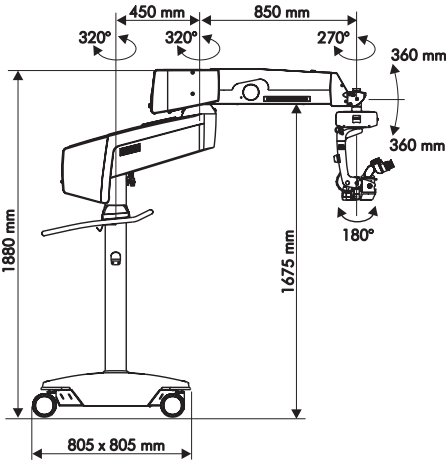
S88 floor stand
S8/S81 ceiling mounts

Compliance

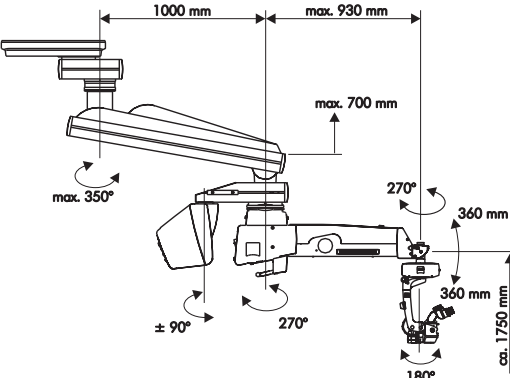
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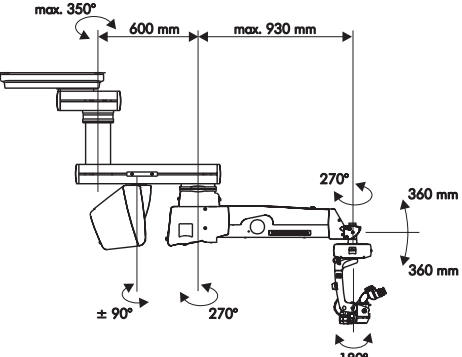
S88 floor stand



S8 ceiling mounts



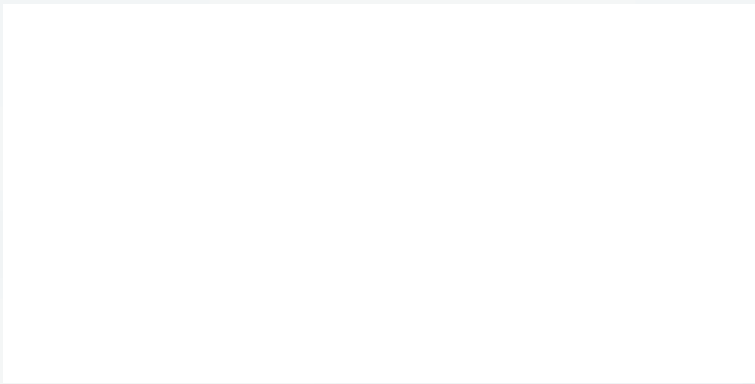
S81 ceiling mounts



Auflage fehlt!



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