

From Eye to Insight

*Leica*  
MICROSYSTEMS

Designed in Switzerland for anterior and posterior ophthalmic surgery

EFFICIENCY YOU CAN FEEL,  
PRECISION YOU CAN TRUST

Proveo 8 Ophthalmic  
Surgical Microscope



“Features such as the excellent and brilliant red reflex combined with the IOLcompass guidance system makes it possible for me to work quickly and precisely obtaining the best possible surgical outcomes during refractive procedures”

Dr. Ulrich Jung, Medical Director at the ARTEMIS eye clinic



# EFFICIENCY YOU CAN FEEL, PRECISION YOU CAN TRUST

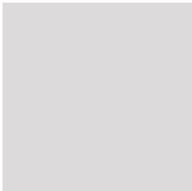
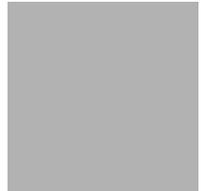
## Proveo 8 ophthalmic microscope



### Efficiency

- > Personalized settings to support precise surgical actions and uninterrupted workflow, fast
- > Individual procedures for each user and surgery type with Combination Mode
- > Ergonomic design for fatigue-free working

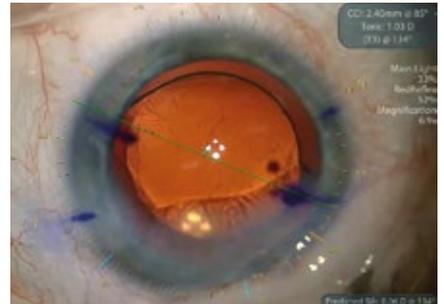
**See pages 4 to 5**



### Visualization

- > Stable red reflex with CoAx 4 coaxial LED illumination
- > Low light, high contrast with adjustable field of illumination via footswitch
- > Superb texture and high depth of field with FusionOptics
- > Same view for surgeon, assistant, and camera

**See pages 6 to 9**



### Flexibility

- > More space to work thanks to a floor stand with small footprint and long reach
- > Choose from floor stand, ceiling mount or telescope mount
- > Adaptable to your OR and surgery type

**See pages 10 to 11**

### Upgradeability

- > Built-in 3CMOS HD camera – 4K-ready
- > Easy integration of recording and documentation systems
- > Ready for innovative digital imaging solutions such as IOL guidance and Optical Coherence Tomography (OCT)

**See page 12**



# EFFICIENCY YOU CAN FEEL

Work interruption-free with the Proveo 8 ophthalmic microscope.

With a Proveo 8 microscope you will experience the real meaning of workflow when each step of surgery connects smoothly with the next. Like a precision timepiece every element of the Proveo 8 microscope interconnects and works in perfect synchrony, so you have the view you need, the moment you need it.



## All Information at a glance

Easily confirm your current settings with just one glance to the Surgeon Information Panel above the optics carrier. Information includes light settings, magnification, recorder status, focus level, IOL and vitrectomy mode.



## Supporting you step by step through your procedure

Typical ophthalmic surgeries are divided into phases, each requiring specific levels of light, focus, and magnification. With CombinationMode you can pre-define and program the settings you need for each phase of both anterior and posterior procedures. During surgery, simply tap the assigned footswitch button to activate the settings for the next phase and continue working without interruption.

- > Program up to 5 phases, i.e. for cataract surgery: capsulorhexis, phacoemulsification, irrigation/aspiration, posterior capsule polishing, IOL positioning
- > Choose between 7 different parameters
- > Save individual settings for up to 30 surgeons



Select Quick Focus to immediately switch between two different focal planes and Quick Tilt for workflow efficiency in glaucoma procedures



A range of screens available including 27" touch screen

Control recording with only a touch of the infrared remote control, touchscreen control panel, or footswitch

Pre-assign handle functions according to the preferences of each user for fast, smooth adjustment

### Simple to start, fast to finish

Save precious time between surgeries for yourself and your OR team, with easy preparation and fast transition. The intuitive touch-screen control unit makes set-up easy. At the end of the surgery simply move the swing arm up and all microscope functions automatically reset and the recorder stops. The microscope is immediately ready for the next case.

### Ergonomic means efficient

During surgery, your physical well-being can influence your concentration and efficiency. Choose from a large selection of binoculars and three different objective lens types to meet your individual physical requirements and those of your assistant.

### Smooth, comfortable working

Pre-program the wireless footswitch with key functions and maintain your surgical workflow in a comfortable posture. Switch functions with just a tap of the foot. Functions available include vitreoretinal (VR) mode, tilting position, quick focus, and diameter of red reflex illumination. Position the footswitch exactly where you need it thanks to the lightweight, cable-free design.

# IMAGES YOU CAN TRUST



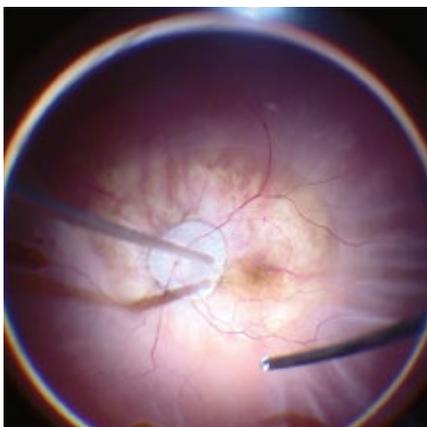
## FusionOptics technology

1. Two separate optical beam paths
2. One beam path provides depth of field
3. The other provides high resolution
4. The brain merges the two images into a single, optimal spatial image

Seeing every fine detail at every moment is the basis for achieving the best patient outcome.

The Proveo 8 ophthalmic microscope goes beyond conventional visualization. Its exclusive optical technology provides you with both constant red reflex and a rich texture view, throughout entire anterior and posterior procedures.

## Benefit from a texture-rich view: FusionOptics technology



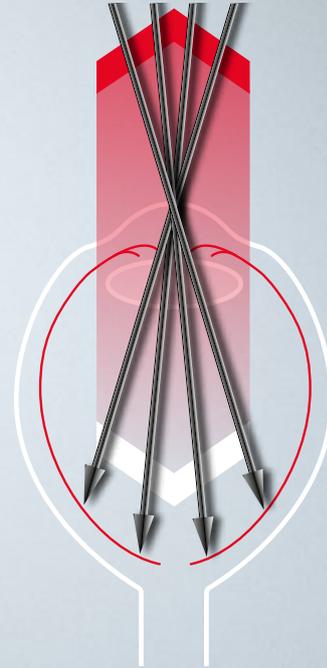
In posterior segment surgery, you need to carry out extremely precise work, often in low light conditions. Until now, this meant time-consuming refocusing, and limitations in image clarity and detail. Innovative FusionOptics is an exclusive technology from Leica Microsystems that delivers crisp, texture-rich images from the periphery to the retina.

FusionOptics captures different information from each of the two beam paths, delivering high resolution to the left eye and depth of field to the right eye. The brain easily merges the visual information into a high-contrast, detailed image with an expanded area in focus. Not only does this enhance your view, it enhances your workflow as refocusing is reduced.

“One of the benefits of Proveo 8 is the way the illumination is achieved by four coaxial LED lights. When this is combined with the optics of the microscope and the innovative extra depth of focus, it enhances our ability to visualize the procedure throughout the entire case.” Dr. Ike Ahmed, University of Toronto, Canada

## Rely on consistent red reflex: CoAx 4 illumination

Concentrate on your cataract surgery and rely on consistent, brilliant red reflex and optimal image contrast throughout the entire procedure with exclusive CoAx 4 coaxial LED illumination. CoAx 4 illumination uses four individual beam paths from two LED lamps. The beam paths all enter the eye at perpendicular angles to the retina which results in a stable red reflex for all observers throughout all steps of cataract surgery. The illumination diameter is adjustable from 4 to 23 mm allowing for optimal alignment of the illumination to each individual patient's eye. This means lower light can be used while still achieving maximum contrast. Even if the eye moves intra-operatively, it remains in the field of illumination.



Consistent red reflex during the entire cataract procedure

See more  
with less light



Featuring a high degree of light transmission, the Optichrome technology of Proveo 8 allows for low light while still delivering high contrast, high resolution and natural colors. Two LED lamps provide direct illumination with a consistent color temperature, light intensity and homogeneity over the complete life cycle of the microscope.

Share the benefits  
with your team



Proveo 8 makes the red reflex fully visible for all observers. CoAx 4 Illumination includes a linked zoom system, which provides the same uncompromised view to main surgeon, assistant, and video camera.

A shared view of the surgical field with excellent contrast, consistent red reflex, same magnification and 100% stereo vision, enhances teaching and collaboration in the OR.

## Your benefits for Anterior Surgery

As an anterior surgeon you rely on red reflex as it provides ideal contrast to visualize the posterior capsule, lens and anterior chamber structure. CoAx 4 LED illumination by Leica Microsystems takes your visualization to the next level: It provides consistent red reflex throughout the entire procedure, including phacoemulsification. Additional imaging and guidance technologies support your visualization and information needs during cataract surgery, helping you achieve the best possible surgical outcomes.



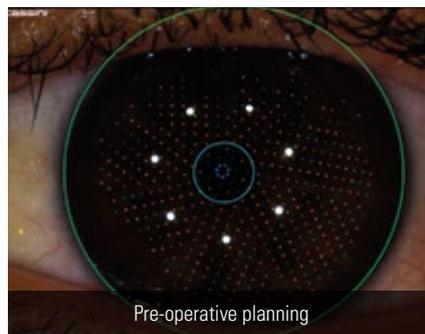
### Assistant fine focus

Benefit from the integrated assistant binocular tube with equal optical performance as main surgeon and camera.

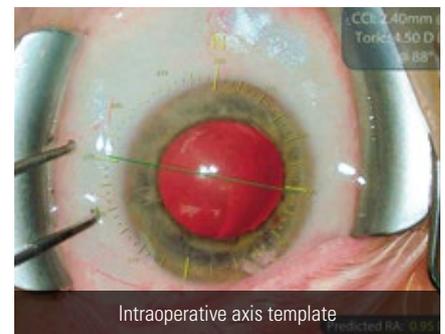
### Adjustable illumination diameter

Adjust red reflex illumination diameter with the knob or via the wireless footswitch.

### Built-in keratoscope



Pre-operative planning



Intraoperative axis template

### Keratoscope

Activate the integrated Keratoscope via footswitch to qualitatively evaluate the corneal curvature of the eye for astigmatism.

### Markerless IOL guidance for minimal residual astigmatism

Get the accurate guidance data you need to achieve precise patient outcomes by choosing the IOLcompass Pro guidance system available from Leica Microsystems. Integration with a choice of accurate topographers means precision from the start. Digital data transfer, sophisticated template registration and tracking, plus intelligent update of your surgical plan in response to changes, all help eliminate potential sources of error, for optimal results.



**Choose your ideal position**

Change the assistant binoculars from left to right in seconds according to the surgery set-up.

**Integrated inverters**

Automatically activated and synchronized when VR mode is selected

**Fine focus for the built-in 3CMOS HD camera**

**Integrated slit illumination**

Motorized internal slit illumination allows continuous adjustment of slit width from 2 mm to 6 mm and slit direction from right to left.

## Your benefits for Posterior Surgery

When performing posterior surgery you need to clearly see through the vitreous to every structure of the retina, without frequent refocusing. FusionOptics technology overcomes the boundaries of sight by uniting high resolution and depth of field for a crisp texture-rich view of fine details. A full selection of wide-angle viewing systems further supports your visualization and workflow during vitreoretinal surgery.

**Predefined modes for posterior surgery**

Use the pre-programmed settings for vitreoretinal or vitrectomy procedures. Select with a simple press of the footswitch and the microscope adjusts automatically.



**RUV800 wide-angle viewing**

The RUV800 retinal wide-angle viewing system with integrated inverter provides the surgeon, assistant and video camera with the same upright view of the retina.



**BIOM 5 with synchronized focus**

For contact-free, wide-angle observation of the fundus during vitreous surgery. Mount the BIOM 5 from OCULUS in a matter of seconds and swing into the beam path when needed. Synchronized focusing of the optics carrier and BIOM 5 means the front lens does not move vertically in relation to the eye.



**External slit illumination**

Get full slit functions and precise stereoscopic visualization with the external slit lamp. The slit beam path is adjustable in width and length and can be scanned over the cornea  $\pm 23^\circ$  from any position via the foot switch.

# RESPONSIVE TO YOUR NEEDS

Anterior or posterior surgery, spacious OR or small and crowded, the Proveo 8 responds to your needs.



## Control where you need it

Instead of all the functionality housed within the floor stand, when opting for a ceiling mount, your imaging technology will be integrated into a separate tower unit. Place on a trolley or on the wall, wherever is most convenient for you and your OR team.

## Easy positioning, wherever, whenever

With a compact footprint and long reach, the Proveo 8 floor stand offers you more space to work and the flexibility to smoothly position wherever is most convenient. Whatever other equipment you have in the OR, whatever surgery type, whatever the body frame of the surgeon and assistant, the Proveo floor stand can meet your needs. Easily roll it out of the way when not in use or share between operating rooms.





### Free your floor

In a crowded or small OR, the Proveo 8 ceiling mount options free up floor space and can be mounted on solid or suspended ceilings.

#### C42 Ceiling mount

- > Extended reach responds to different surgeries and body frames

#### CT42 Telescope mount

- > The most compact option for a small or multifunctional OR
- > Can be adjusted to different ceiling heights
- > Quickly raise or lower via the included remote control



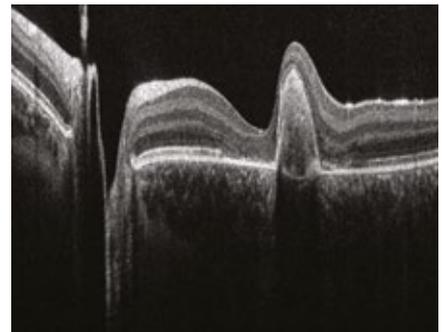
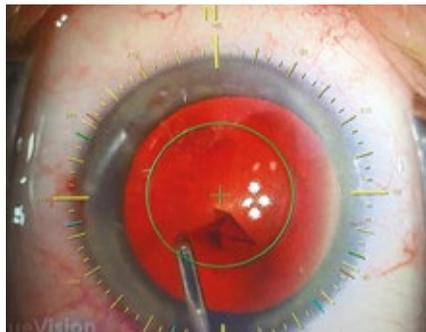
# CONFIGURE YOUR WAY

Highly efficient for today's challenges – open for tomorrow's technologies.

The Proveo microscope platform allows you to be at the forefront of technology, now and in the future. The sleek, fully integrated stand design houses a highly modular structure which allows every software and hardware element to slot into place and work in perfect synchronization. Simply select the configuration to meet your imaging and guidance needs today and rest assured you can upgrade at any time.



## Select your imaging technology



### Visualization and documentation

Proveo 8 features a built-in 3CMOS high definition (HD) camera with easily accessible, independent fine focus, that is compatible with emerging technologies like 4K. The C-mount adapter also allows use of various 1/3" cameras. Documentation systems such as EVO from MedXchange, imaging technologies, and camera CCUs are easily integrated into the microscope tower.

### Markerless IOL guidance

Support your goal of delivering minimal residual astigmatism to your patient with IOLcompass Pro available from Leica Microsystems. The system captures data from your accurate topographer to deliver comprehensive pre-operative planning support and generate precise intra-operative guidance templates that accurately track to your patient's eye.

### Optical Coherence Tomography (OCT)

Visualize subsurface details during posterior and anterior surgery with real-time, high resolution, deep-depth OCT images.

- > EnFocus Ultra-Deep OCT\* – high-resolution, 9  $\mu$ m, full anterior segment imaging of up to 11 mm imaging depth in tissue and > 20 mm scan length
- > EnFocus Ultra-HD OCT\* – fine axial resolution below 4  $\mu$ m, deep 2.5 mm image depth in tissue and > 20 mm scan length

# TECHNICAL SPECIFICATIONS

## Optics and Illumination

FusionOptics	For increased depth of field and high resolution for main surgeon and assistant
OptiChrome optics	For high contrast, high resolution, natural colors without chromatic aberrations
Magnification	6:1 zoom, motorized
Total magnification	4.1× to 24.5× with 10× eyepiece 5.1× to 30.7× with 12.5× eyepiece
Focus range	75 mm
Objective / working distance	WD 175 mm/f = 200 mm WD 200 mm/f = 225 mm WD 225 mm/f = 250 mm WD: Working distance, f: Focal length
Field of view	51.4–8.6 mm Ø with 10× eyepiece
Eyepieces	Wide-field eyepieces for persons wearing glasses 8.3×, 10× and 12.5× dioptic adjustment, ±5 diopter settings, adjustable eyecup
Direct illumination with 2 LED lamps	Main light > Integrated LED illumination system for intensive uniform illumination of the field of view > Continuously adjustable brightness with halogen-like color temperature  CoAx 4 coaxial illumination > Illumination unit for generating a clear and stable Red Reflex, decreasing stray light through the sclera and increasing the image contrast > Integrated keratascopes and slit illumination Conversion filters allow surgeon to select preferred color temperature of main illumination
Adjustable CoAx 4	Diameter of coaxial illumination is adjustable between 4 and 23 mm via footswitch
Fine focus	Available for assistant and integrated camera or external 1/3 camera with C-mount interface

## Upgradeability

OpenArchitecture	Prepared for integration of video camera systems, digital recording and imaging systems such as IOLcompass, EnFocus OCT, and monitors
Connectors	> Numerous built-in connectors for video and control data transfer > Internal power supply 12 VDC, 19 VDC, 24 VDC and AC terminals
2D/3D HD Video	Optional fully integrated 2D HD and/or 3D HD video and recording

## Maneuverability

Optics	> 360° rotation > 15° /+ 105° motorized inclination tilt
XY speed	Zoom linked XY speed
XY range	62 × 62 mm
Balancing	Adjustable gas spring via balancing knob
Brakes	Floor stand with 4 electromagnetic brakes
Monitor arm	860 mm flexible arm with 4 axis for rotation and inclination, max. weight 15 kg and up to 32"

## Control

Control unit	> User-friendly, individually programmable touch-screen (up to 30 surgeons) for control of motor functions and light intensity > Menu selection based on unique software for user-specific configuration > Built-in electronic auto-diagnosis and user support > Software independent hard keys and indicator for illumination > Data shown by means of LCD
Control elements	> Rotary handles > 14-function and 12-function wireless footswitch with optional back-up cable
IR sensor	Remote control of the HDR recorder
Indicators	> LED for video record status > Surgeon information panel for setting status

## Construction

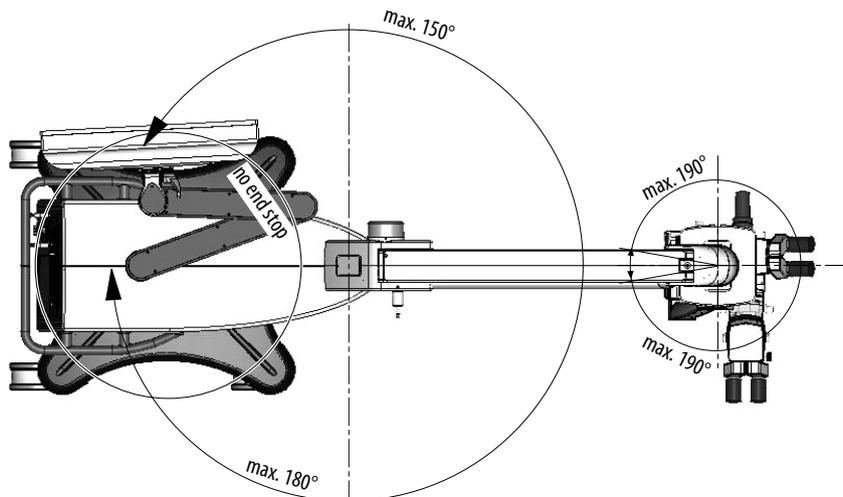
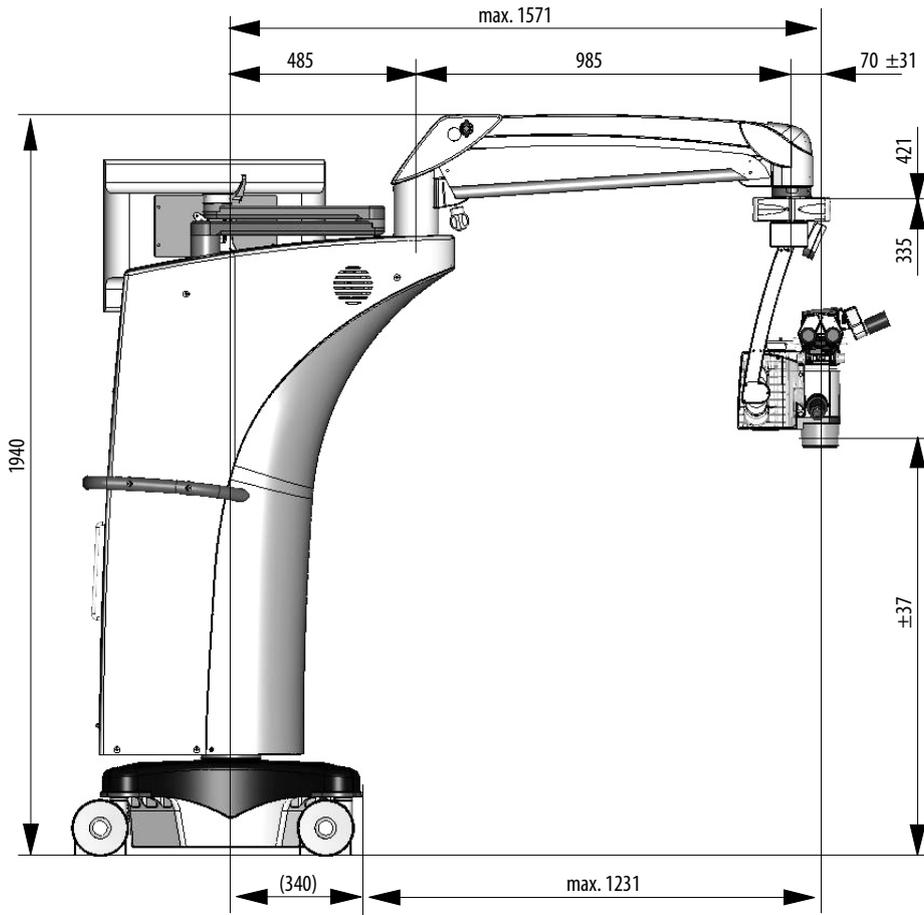
Floor stand	Four 360° rotating castors (Ø150 mm), parking brake
Materials	> Coated with antimicrobial paint > Conforming with RoHS
Load	> Floor stand max. 8.0 kg from microscope dovetail ring interface > C42/CT42 max. 8.0 kg from dovetail ring interface
Weight	> Floor stand approx. 350 kg without load > C42 ceiling mount total approx. 260 kg > CT42 telescope mount total approx. 200 kg

## Technical data

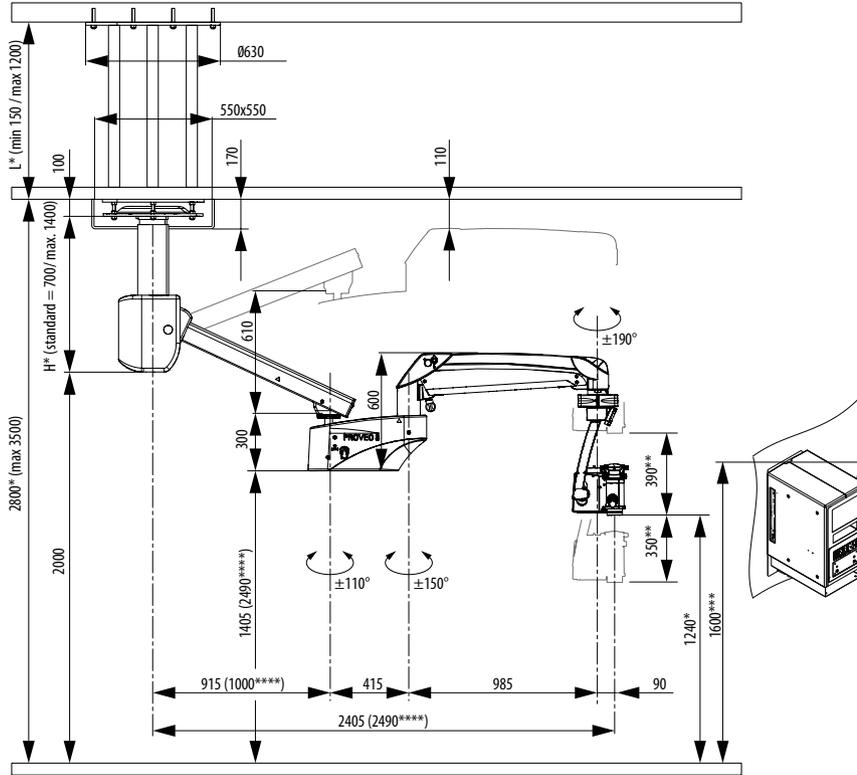
Power connection	> 1100 VA 50/60 Hz > 100–240 V~ 50/60 Hz > 2 × T10 AH 250 V
Protection class	Class 1

# TECHNICAL DRAWINGS

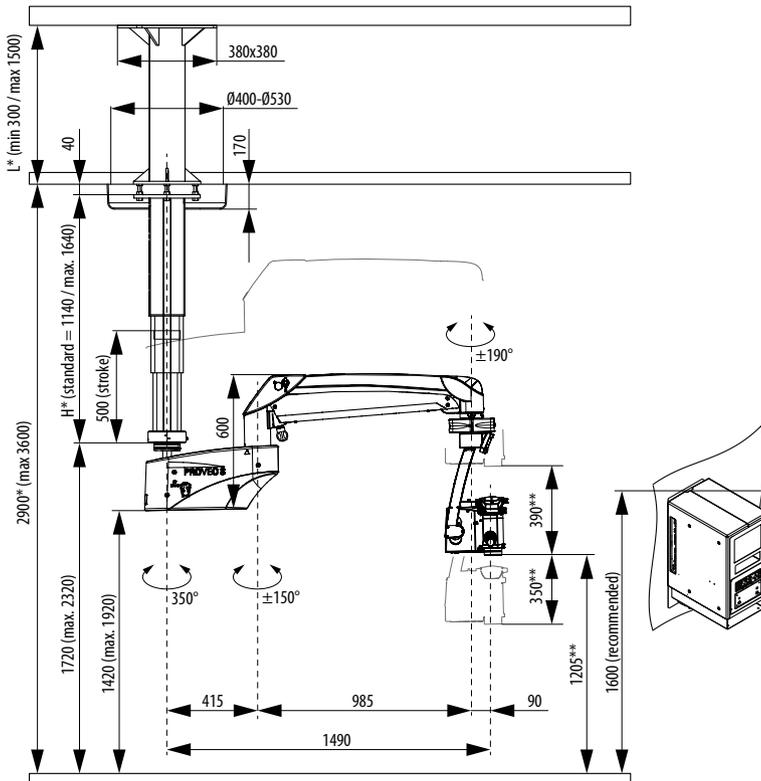
## F42 Floor Stand



## C42 Ceiling Mount



## CT42 Telescope Mount



\* variable, depending on OR height

\*\*up/down movement of Parallelogram. w/o Tilt-Focus

From Eye to Insight



**REGULATIONS AND STANDARDS**

Class I surgical microscope Proveo 8

> Council Directive 90/269/EEC on Medical Devices (MDD) and its amendments.

> IEC 1-60601 / EN 1-60601 Medical Electrical Equipment, Part 1: General requirements – including national differences of EU, CA, US.

> IEC 2-1-60601 / EN 2-1-60601 Electromagnetic Compatibility.

The Medical Division, within Leica Microsystems (Schweiz) AG, holds the management system certificates for the international standards ISO 13485, and ISO 14001 relating to quality management, quality assurance and environmental management.



**CONNECT WITH US!**



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