

From Eye to Insight

Leica
MICROSYSTEMS

Ophthalmic microscope for anterior and posterior segment surgery

TECHNICAL SPECIFICATIONS

Proveo 8x 3D Digital Microscope



TECHNICAL SPECIFICATIONS

MODULAR CONFIGURATION OPTIONS

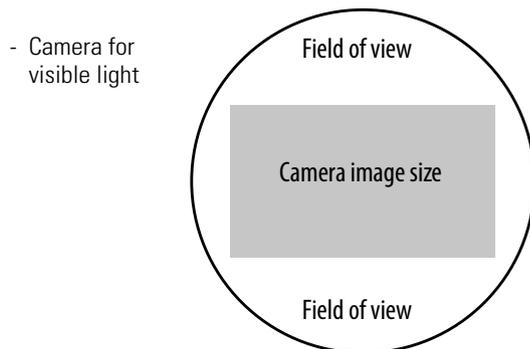
Proveo 8x 2D 4K IVC (binocular-based configuration)	Optics carrier with integrated 2D 4K camera, integrated inverters, and binocular tubes for the main surgeon and the side assistant. Upgradeable to 3D.
Proveo 8x 3D 4K IVC (3D configuration)	Optics carrier with integrated 3D 4K camera, integrated inverters, and main surgeon binoculars for heads-up surgery and hybrid use. Compatible with MyVeo. Stereo attachment for second observer.

MONITORS FOR 3D-SURGERY AND OBSERVATION

32" 3D 4K cart-mounted monitor	Heads-up display for superior and temporal working positions <ul style="list-style-type: none"> - Flexarm allows for convenient positioning even over the OR bed - Viewing distance: 690-1380 mm - Models: Eizo LCD or Sony LCD
55" 3D 4K cart-mounted monitor	Heads-up Display for superior and temporal working positions <ul style="list-style-type: none"> - Viewing distance: 1000-2000 mm - Models: FSN OLED or Sony LCD

LEICA MEDICAL 3D 4K CAMERA

Image sensor	1× 1/3" for 2D 4K IVC 2× 1/3" for 3D 4K IVC
Resolution	3840×2160
Field of view (FOV) for camera	The illustration shows the camera image size with respect to the observer's FOV.



Please be aware that the FOV is not fully covered by the documentation system.

MANEUVERABILITY

Optics	- 380° rotation - -15° /+105° inclination tilt (without retinal viewing accessories)
XY speed	Zoom linked XY speed

XY range	62 × 62 mm
Balancing	Adjustable gas spring via balancing knob
Brakes	Four electromagnetic brakes
Microscope-mounted monitor arm	960 mm flexible arm with 4 axis for rotation and inclination Maximum weight 16 kg

OPTICS AND ILLUMINATION

OptiChrome optics	For high contrast, high resolution, natural colors without chromatic aberrations
Magnification	6:1 zoom, motorized magnification factor
Total magnification	4.1× to 24.5× with 10× eyepiece 5.1× to 30.7× with 12.5× eyepiece
Fine focus	Available for assistant and 2D 4K camera
Focus range	75 mm
Objective / working distance	OptiChrome WD 175 mm/f = 200 mm WD 200 mm/f = 225 mm WD 225 mm/f = 250 mm <small>WD: Working distance f: Focal length</small>
Eyepieces	Wide-field eyepieces for persons wearing glasses 8.3×, 10× and 12.5× dioptic adjustment, ±5 diopter settings, adjustable eyecup
Illumination	Main light <ul style="list-style-type: none"> - Integrated LED illumination system for intensive, uniform illumination of the field of view CoAx 4 coaxial illumination <ul style="list-style-type: none"> - Integrated LED illumination unit for generating a clear and stable Red Reflex, decreasing stray light through the sclera and increasing the image contrast - Continuously adjustable brightness with halogen-like color temperature
Adjustable Iris	Diameter of CoAx 4 coaxial illumination can be adjusted from 4 to 23 mm
Keratoscope	Adapter available
Integrated laser filter for camera	For laser filters from 532 nm to 810 nm (default in Proveo 8x 3D, optional for Proveo 8x 2D)
Fixation light	Allows patient to focus on a target in order to keep the eye stable during cataract surgery
Fundus Viewing System	Compatible with BIOM® 5, BIOM® Ready, RUV800, and flat contact lens

MICROSCOPE FLOOR STAND

Power connection	- 1300 VA - 100–240 V~ 50/60 Hz
Protection class	Class 1
Material	- Use of RoHS conform materials - The Proveo 8x microscope is coated with a white paint which provides an antibacterial effect on surfaces
Base	770 × 770 mm with four 360° rotating castors with a diameter of 150 mm each, one parking brake
Weight	Approx. 380 kg without load
Load of optics carrier	Max. 8.0 kg from microscope dovetail ring interface
Max. height	1950 mm in parking position
Integrated imaging & documentation system	Built-in 2D/3D Leica Recording System: - Record in 2D or 3D quality utilizing a high-compression 4 TB storage space - Quickly store images and export via USB - Optimized data processing and connectivity for PACS and DICOM
Cybersecurity	Built-in security to protect patient data
RemoteCare	Designed with industry-leading security standards, RemoteCare detects system anomalies and alerts our Service team to proactively solve problems before they become critical.
Compatibility	- EnFocus OCT-system by Leica - Compatibility with EVA NEXUS phaco system of D.O.R.C (a Zeiss company) - Cassini Guidance System for toric IOL placement by Cassini Technologies

USER INTERFACE

Control units	- 10-inch LCD touch panel on microscope stand - 27-inch 4K touchscreen with user-friendly graphical user interface for control of all microscope and OCT functions
Control elements	- Rotary handles - 14-function wireless footswitch
Surgeon Information Panel	- To easily confirm current settings, such as light, magnification, recording status, focus level and surgical modes at a glance

AMBIENT CONDITIONS FOR PROVEO 8X

In use	+10° C to +40° C +50° F to +86° F 20% to 90% relative humidity (RH), non-condensing 800 mbar to 1013 mbar atmospheric pressure
Storage	-30° C to +70° C -22° F to +158° F 10% to 95% RH, non-condensing 500 mbar to 1013 mbar atmospheric pressure
Transport	-30° C to +70° C -22° F to +158° F 10% to 95% RH, non-condensing 500 mbar to 1013 mbar atmospheric pressure

MYVEO HEADSET

Power	24 V, max. 3A
Classification	Class I Device
Compatibility	Proveo 8x - 3D 4K IVC
Size of headset	355 × 186 × 150 mm
Weight of headset	< 600 g
Cable length	- 0.85 m fixed to headset - 5.20 m between headset & hub
Image orientation	Main surgeon (0°)
IPD range	52 – 76 mm
Diopter range	-5 dpt / +5 dpt
Latency of headset	< 20 ms (main surgeon)
Display resolution of the near-eye screens	High resolution displays (Full HD) for each eye

MYVEO HUB

Size of hub	270 × 270 × 90 mm
Input/output interfaces	3 x outputs for 3 viewer 2 x video output for external 3D screens
Touch-screen display	- Brightness control of the near-eye screens - Activation and deactivation of the adjustment image - Image orientation modes for all users
Mechanical fixation	Mechanical fixation to microscope

TECHNICAL SPECIFICATIONS

ENFOCUS OCT-SYSTEM

Axial resolution in tissue	≤ 4.0 μm
Lateral resolution	< 31 μm for 175 mm objective < 35.4 μm for 200 mm objective
Imaging depth in tissue	5 mm +/- 0.1 mm
Lateral field of view (scan range)	up to 20 mm x 20 mm across entire range of microscope magnification
Image display resolution	1920 x 1080 pixel
Image acquisition speed	≥ 32000 scans/s, 30Hz B-scan display refresh rate
OCT optical power	≤ 750 μW
Imaging center wavelength	860 nm ±5 nm
175 mm objective lens working distance (WD)	178 mm
200 mm objective lens WD	203 mm
OCT compatible fundus viewing systems	Compatible with BIOM 5, BIOM Ready, and flat contact lens
Workstation Operating System	64-bit, Windows 10
Removable scan head	Yes
OCT scanner dimensions	5.43 cm (h) x 11 cm (w) x 24.53 cm (l)
Scan head weight	1.3 kg (2.9 lbs)
Proveo 8x floor stand	Built-in EnFocus OCT-system with optimized scan head design

WITH ULTRALOW III BINOCULAR TUBE

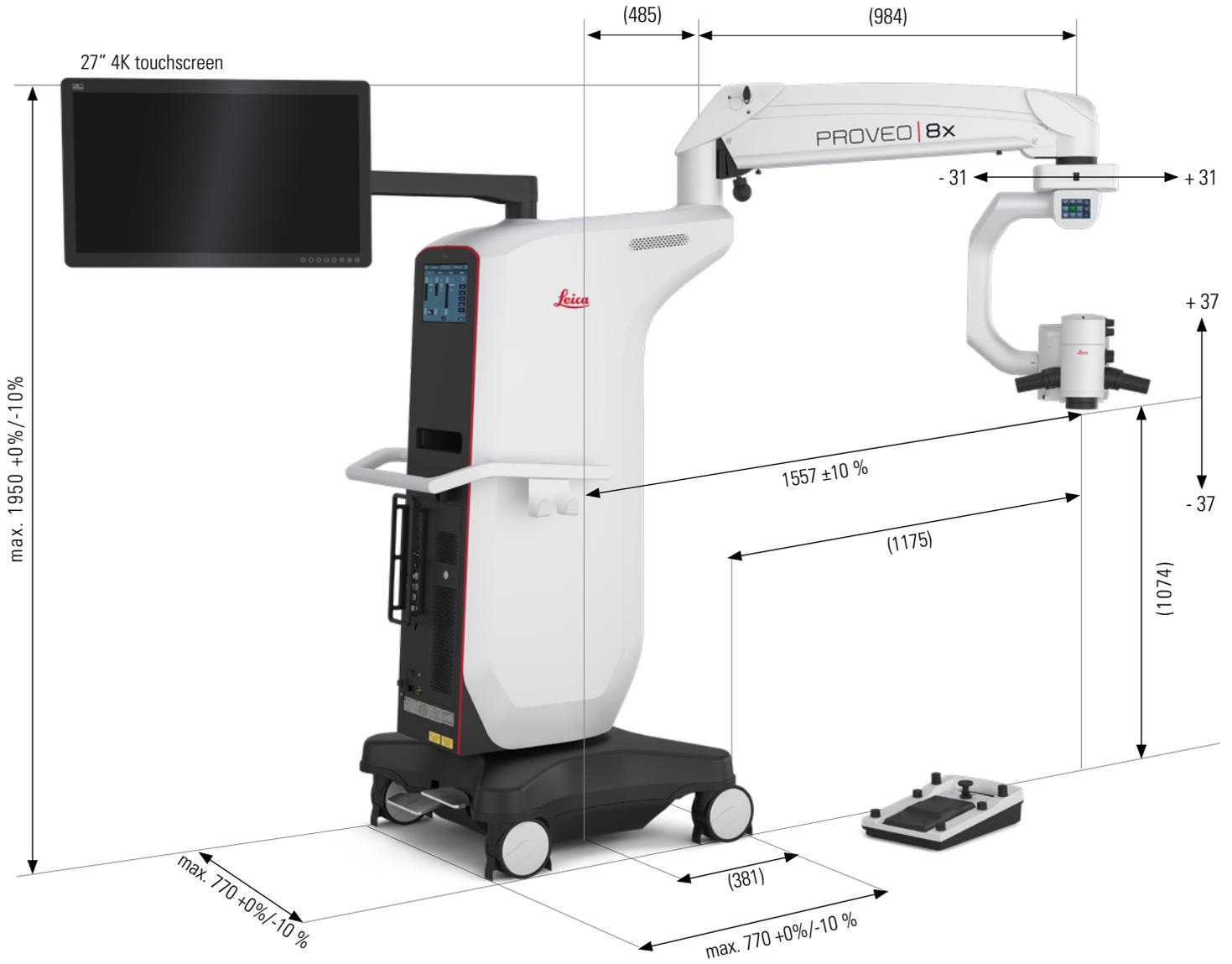
Focal length f = 200		Working distance		Focal length f = 225		Working distance		Focal length f = 250		Working distance	
		175 mm				200 mm				225 mm	
		M _{tot}	FoV [mm]			M _{tot}	FoV [mm]			M _{tot}	FoV [mm]
Eyepiece 8.33×	min.	3.4	53.9	Eyepiece 8.33×	min.	3	60.6	Eyepiece 8.3×	min.	2.7	67.3
	max.	20.4	9		max.	18.2	10.1		max.	16.3	11.2
Eyepiece 10×	min.	4.1	51.4	Eyepiece 10×	min.	3.6	57.8	Eyepiece 10×	min.	3.3	64.3
	max.	24.5	8.6		max.	21.8	9.6		max.	19.6	10.7
Eyepiece 12.5×	min.	5.1	41.6	Eyepiece 12.5×	min.	4.5	46.8	Eyepiece 12.5×	min.	4.1	52
	max.	30.7	6.9		max.	27.3	7.8		max.	24.5	8.7

M_{tot} = Total magnification

FoV = Field of view

Values contain a tolerance of ±5 %

DIMENSIONS



Specifications in mm



55" 3D 4K cart-mounted monitor for heads-up display (HUD) surgery



32" 3D 4K cart-mounted monitor with flex-arm for HUD surgery



MyVevo all-in-one surgical visualization headset for 3D live surgery

Any description of EnFocus mentioned in this document refers to the registered medical device EnFocus 2300 Integrated OCT System.



Class I MyVevo surgical headset



Proveo 8x and EnFocus 2300 Integrated OCT System are class IIa medical device



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