

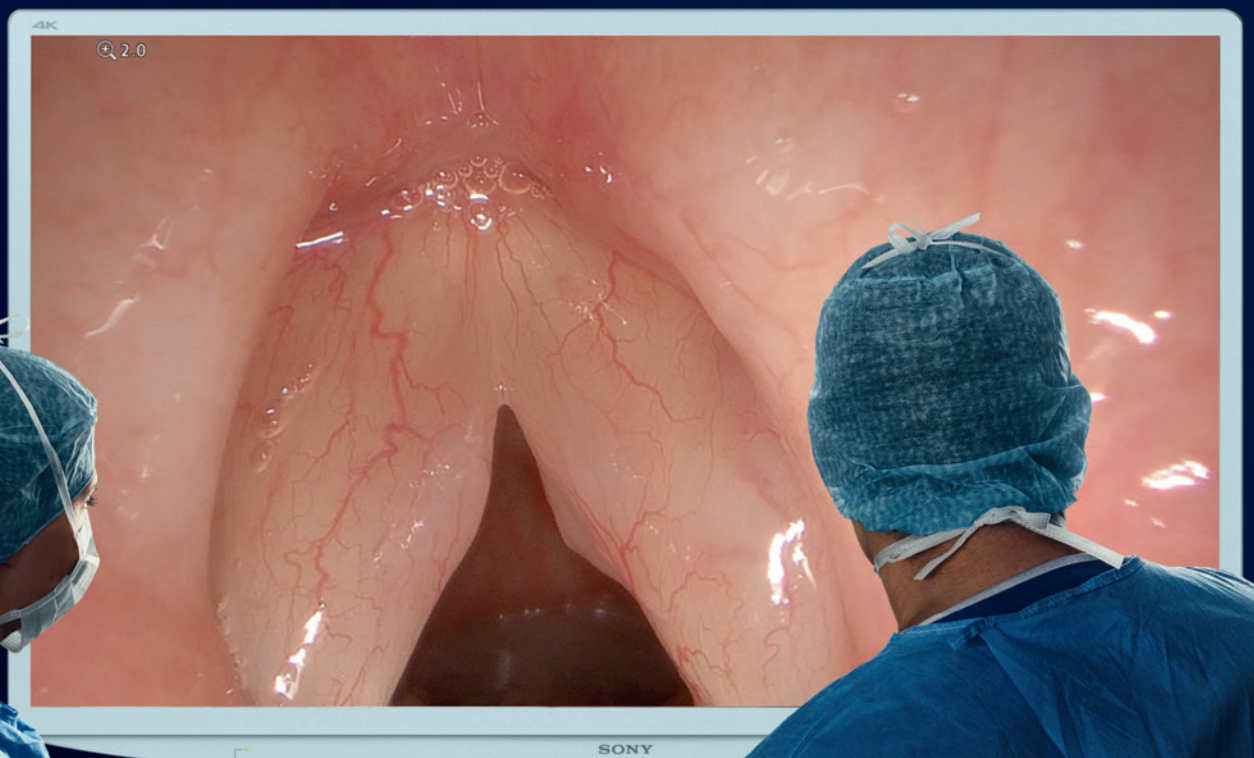
OLYMPUS

VISERA
4K UHD

4K

EAR, NOSE, THROAT
BIG SCREEN SURGERY

Get Closer with Full 4K



IMPROVEMENT OF VISIBILITY IN ENT

The Concept of the VISERA 4K UHD System

Olympus is always trying to achieve endoscopic visibility that is equivalent to open surgery by providing HD video imaging systems with advanced technologies.

With the 4K technology, Olympus is now striving to make endoscopic visibility revolutionary by adding features such as Ultra High Definition, Wider Color Gamut, and Magnified Visualization.

Ultra High Definition

This improves visibility and allows for more precise and safe surgery.

Wider Color Gamut

This realizes rich color reproduction and provides suitable colors for each clinical discipline.

Magnified Visualization

This improves visibility and operability with a large screen and electronic zoom.

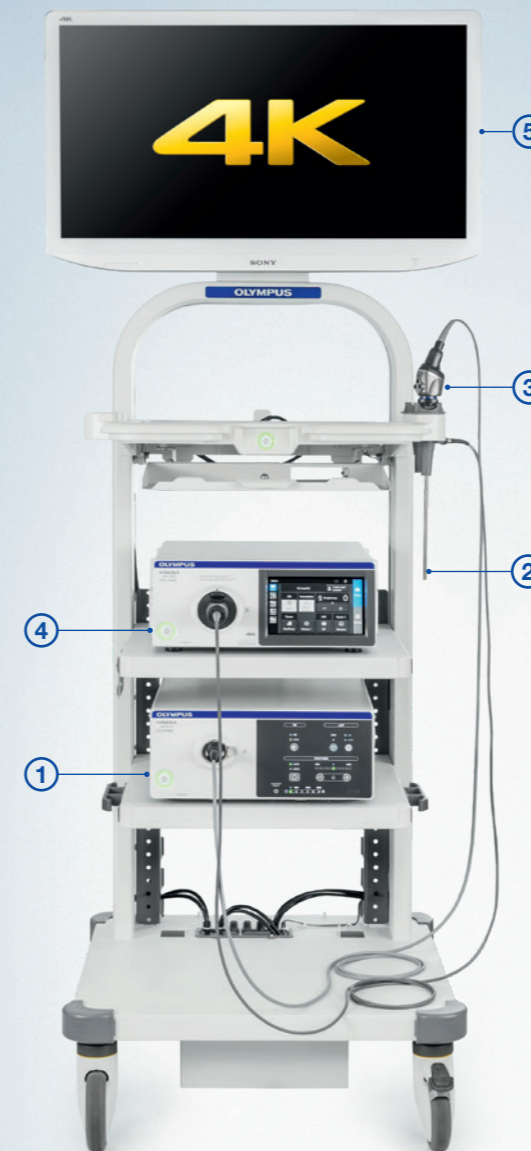
Innovation by Sony & Olympus

Sony Olympus Medical Solutions aims to align Sony's cutting-edge electronics technologies in areas such as digital imaging with Olympus' manufacturing and R&D expertise in the area of medical products including lenses and optical technologies in order to bring high-quality medical care to as many people as possible, and contribute to medical advancement.

Innovation by
Sony & Olympus



VISERA 4K UHD – IMAGING CHAIN

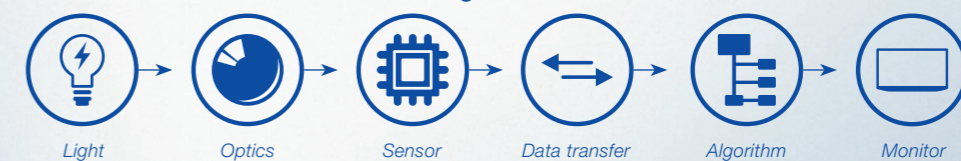


VISERA 4K UHD – Imaging Chain

All of the components work together seamlessly to generate improved visibility. Each component, **from the light to the monitor**, is built specifically for the 4K UHD/Full 4K.

- ① CLV-S400 – Xenon Light Source
- ② ULTRA Sinuscopes
- ③ CH-S400 – Camera Head
- ④ OTV-S400 – Camera Control Unit
- ⑤ LMD-X550S / LMD-X310S – 31" / 55" LCD Monitor

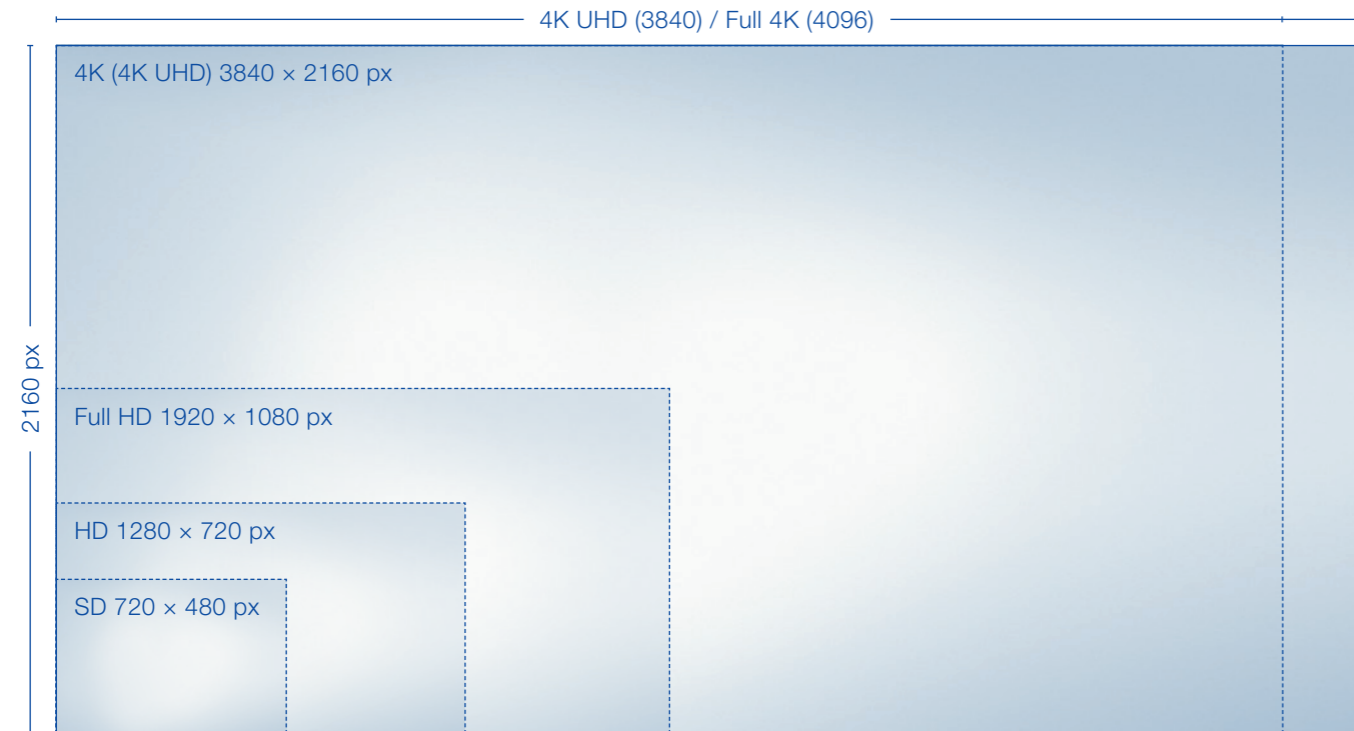
From the Light to the Monitor



ULTRA HIGH DEFINITION

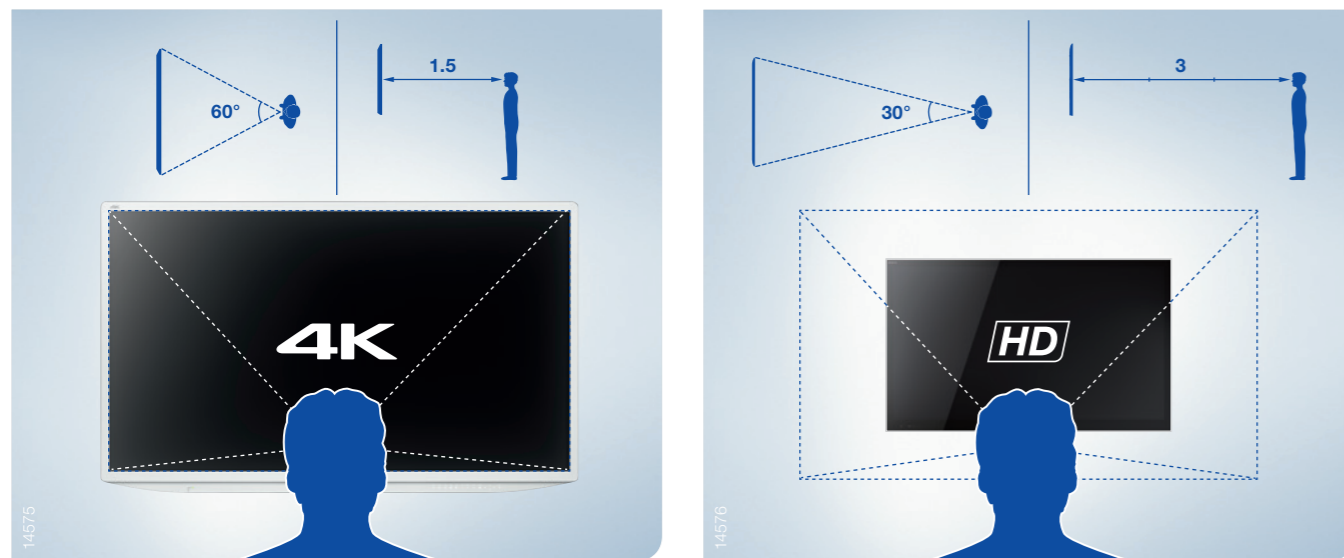
4K – Four Times the Resolution of Full HD

- Provides four times more information than conventional Full HD imaging systems
- VISERA 4K UHD supports both 4K UHD (3840 × 2160) and Full 4K (4096 × 2160) resolution



An Immersive Experience with a Closer Distance

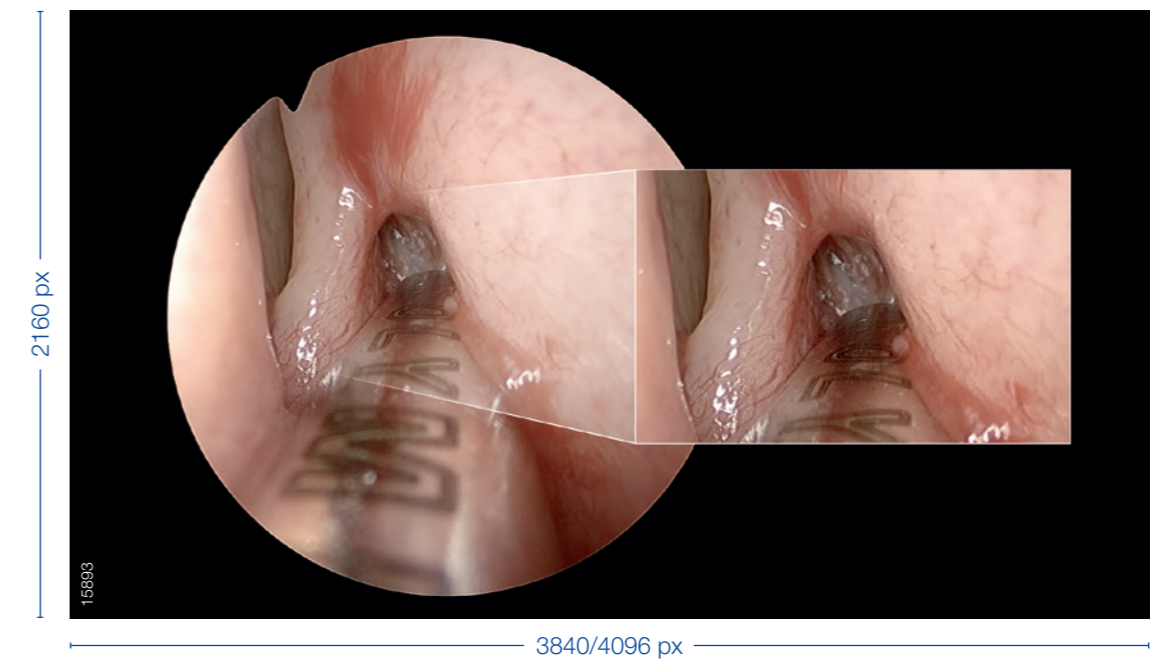
Four times more detail than Full HD – an immersive experience with a closer distance (half the distance of HD).



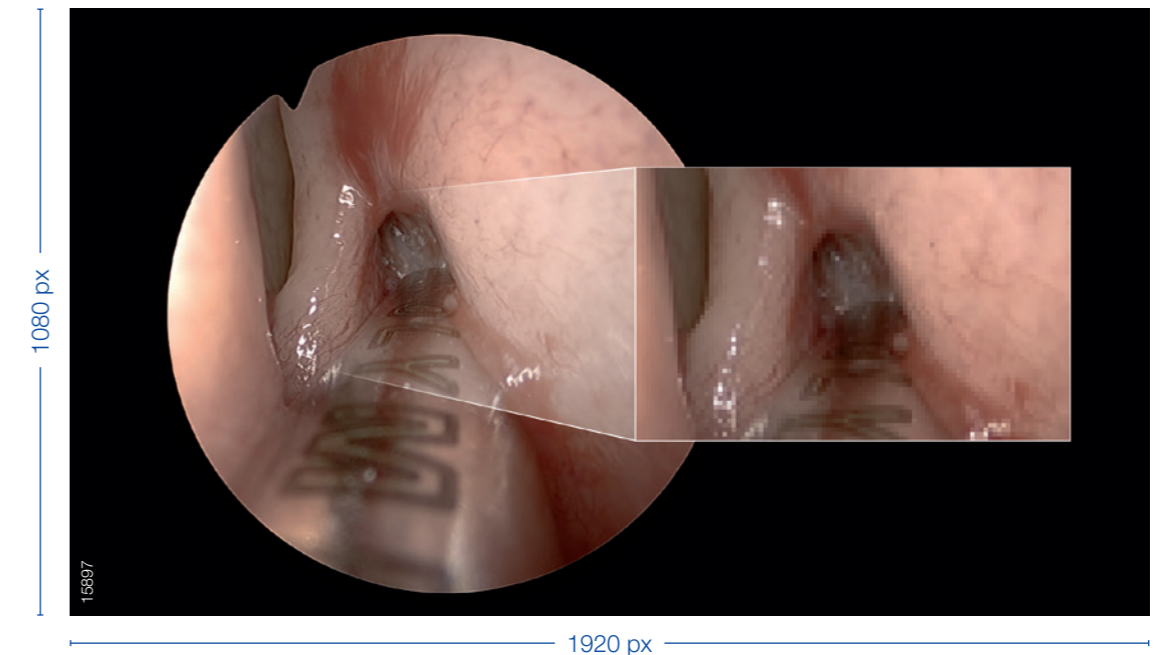
Viewing distance: 1,5 x screen diagonal

Viewing distance: 3 x screen diagonal

4K



HD



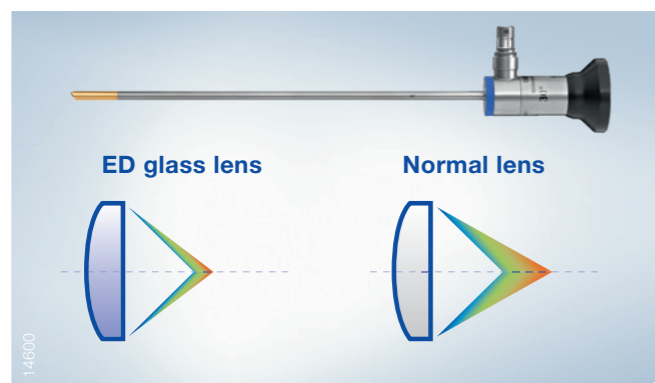
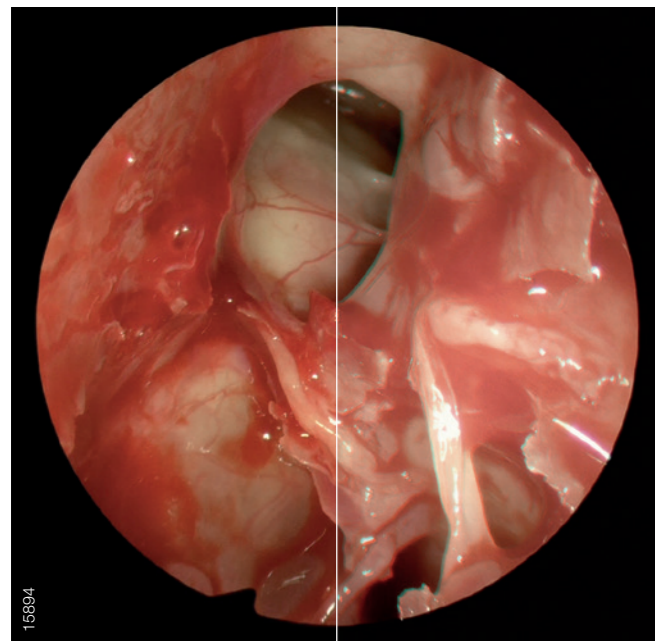
ULTRA HIGH DEFINITION

Optimizing the Entire 4K Imaging Chain

The fine-tuning of each layer of imaging and the ideal design of every function mean optimized images for surgery.

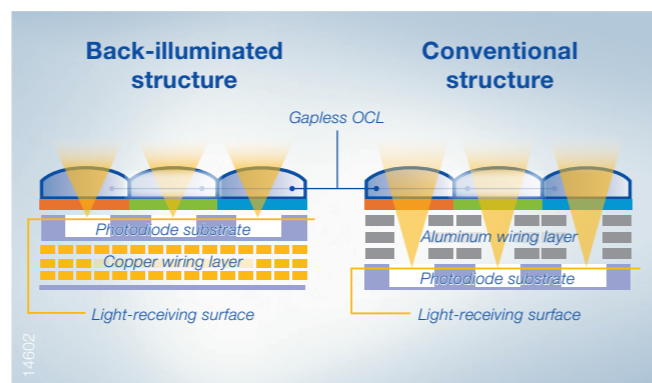
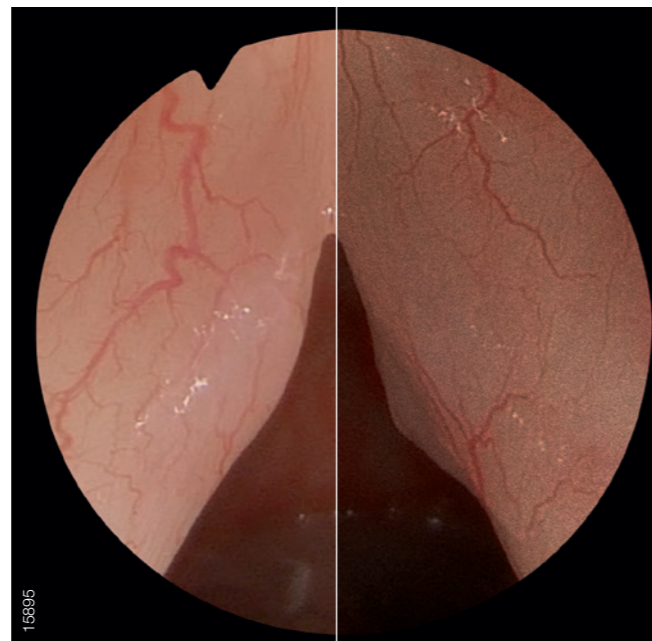
ED Glass Lenses – Razor-Sharp Images

- Optimized for high-resolution imaging
- High contrast at high spatial frequencies



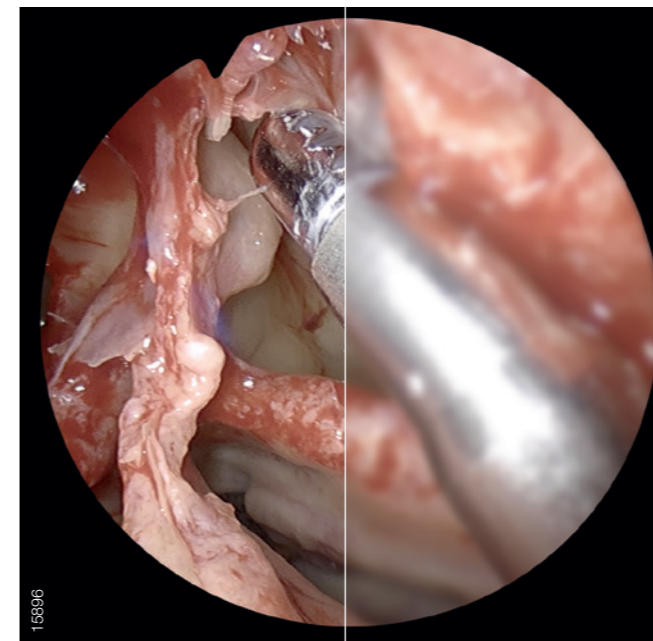
Exmor R® Sensor – Clearer Images in Every Condition

- Twice as sensitive as conventional sensors
- Higher image quality in low light conditions



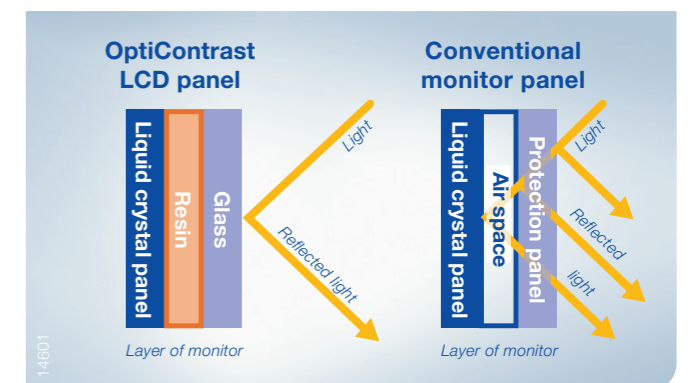
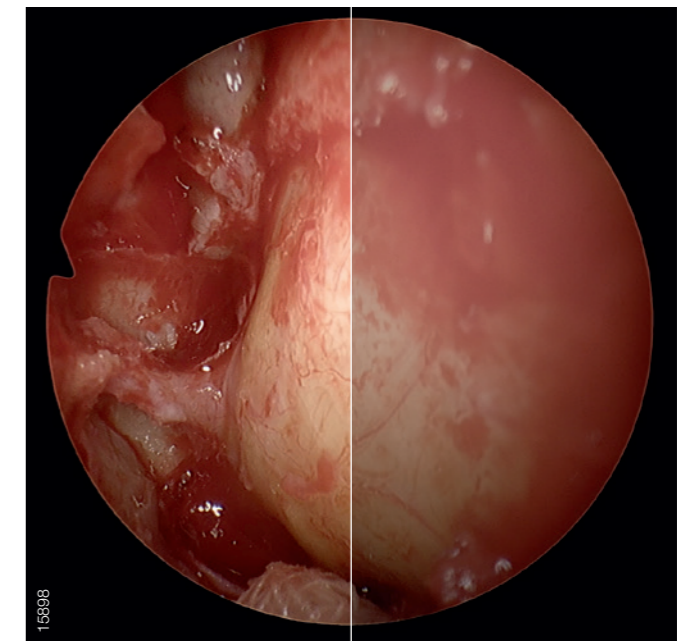
One-Touch Auto Focus – Fast and Accurate

- Achieves the optimal view
- Immediate focus of the image center
- Simplified usability during surgery



OptiContrast™ LCD Panel – Ideal Contrasts

- Reduced reflections
- Unclouded images during surgery



NARROW BAND IMAGING – TECHNICAL PRINCIPLES

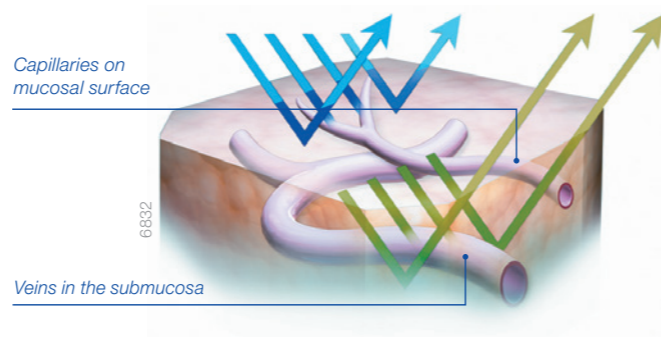
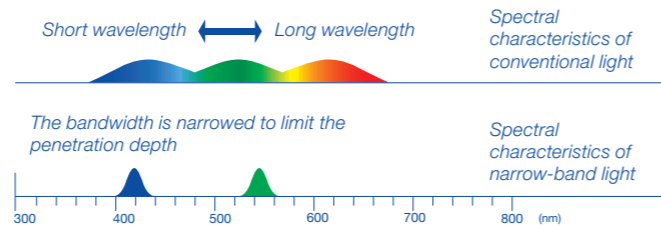
Narrow Band Imaging (NBI)

NBI is an optical image-enhancement technology that improves the visibility of vessels and other tissues on the mucosal surface. Narrow-band illumination, which is strongly absorbed by hemoglobin and penetrates only the surface of tissues, is good for enhancing the contrast between the two. As a result, under narrow-band illumination, capillaries within the mucosal surface are displayed in brown on the monitor, while veins in the submucosa are displayed in cyan.

Prospective Study Proves Advantages of NBI

NBI provides better definition of tumor staging and surgical margins in pre- and intraoperative settings. NBI is also valuable in post-operative settings due to its capacity for early detection of persistences, recurrences, and metachronous tumors.

Penetration Depth of Light according to Wavelength

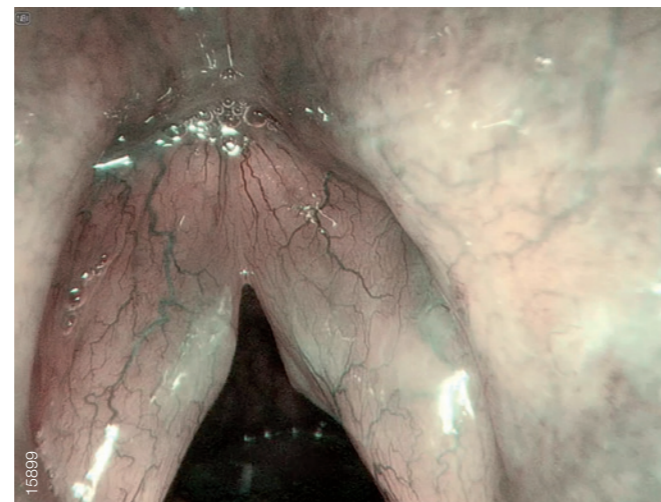


NBI image on the monitor

Capillaries on mucosal surface displayed in brown and veins in submucosa displayed in cyan.

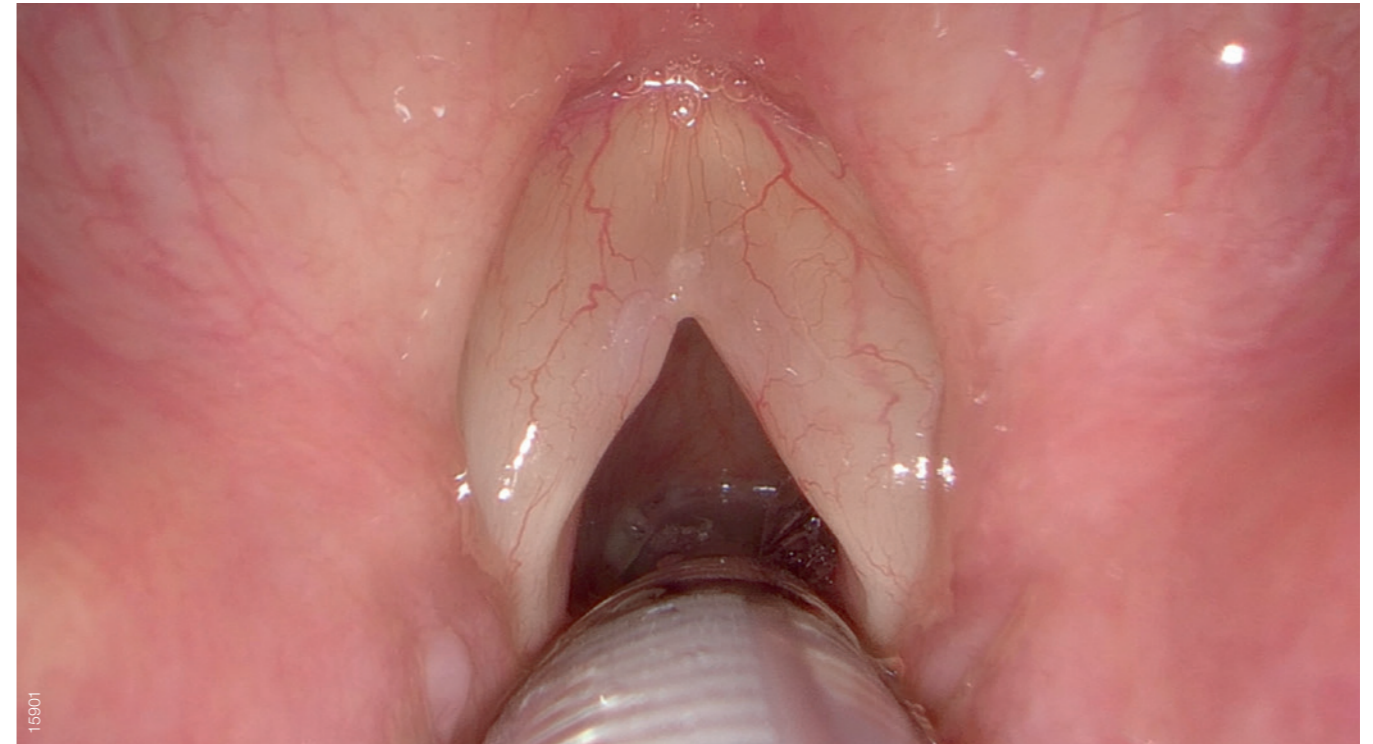


White light image

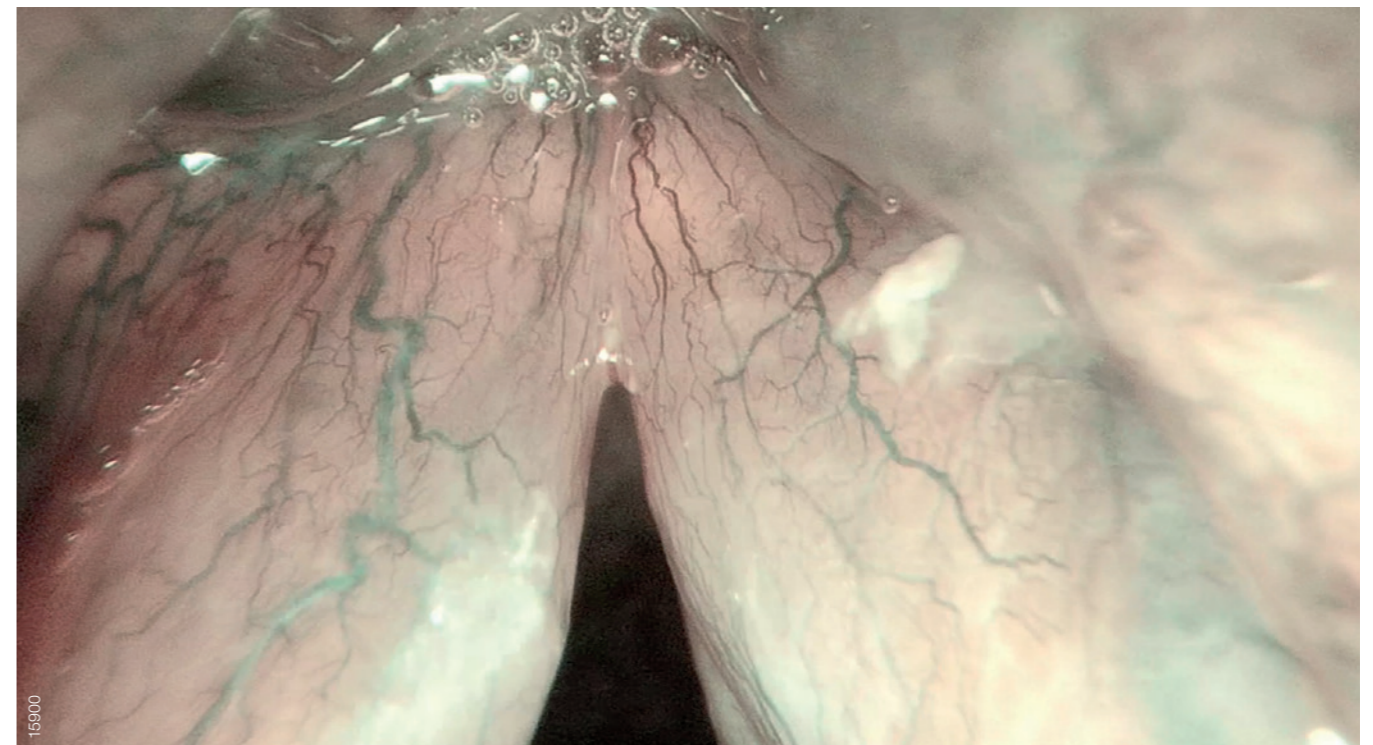


NBI image

NBI IN ULTRA HIGH DEFINITION



White light image



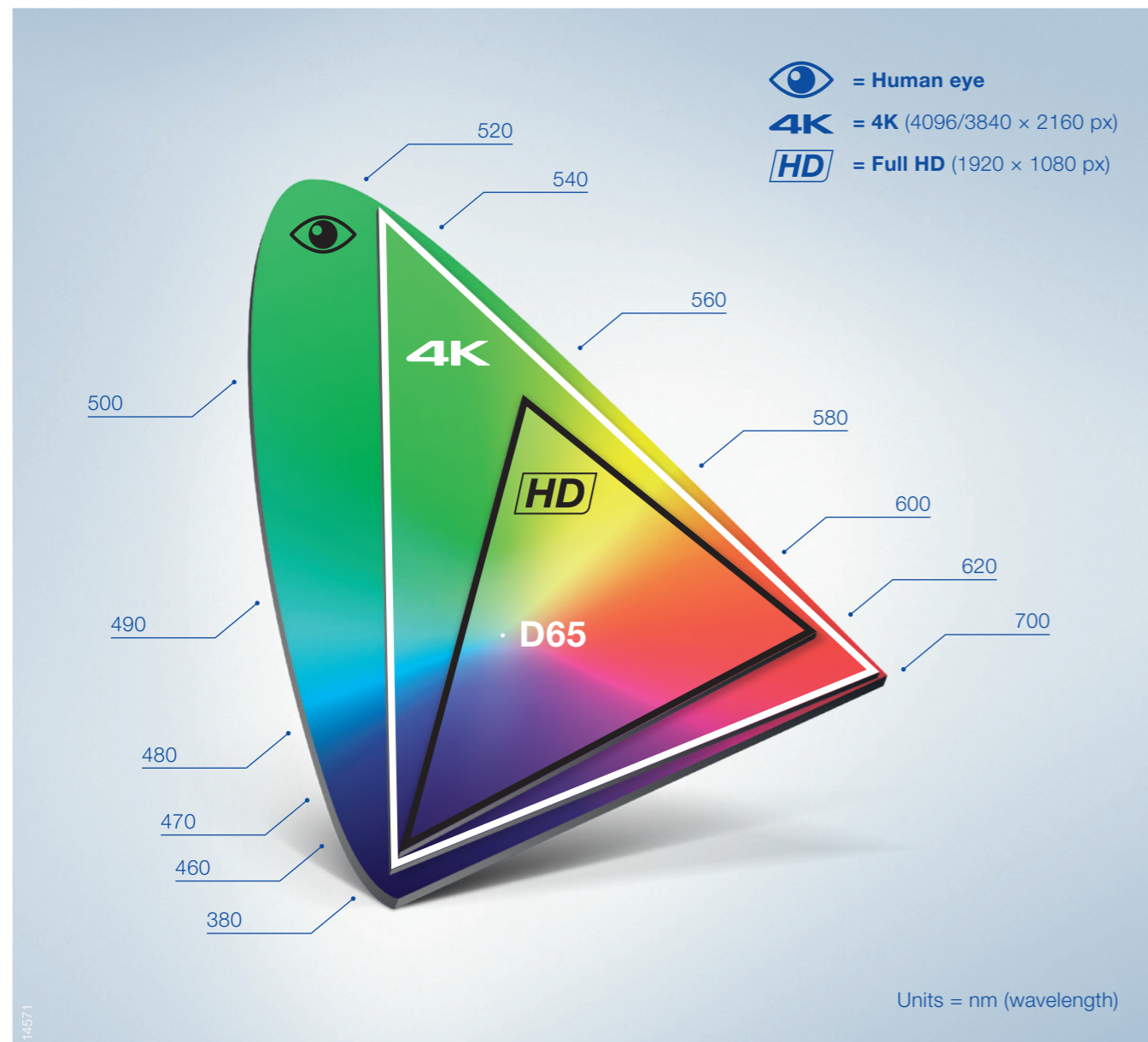
NBI Image

WIDER COLOR GAMUT

More Details, More Difference

The VISERA 4K UHD generates a wider color gamut by adopting the 4K color format (BT2020). This enables rich color reproducibility and provides suitable colors for each clinical discipline.

- Easier determination of tissue boundaries (fat, nerves, vessels, etc.)
- Better visualization of blood vessels and lesions



MAGNIFIED VISUALIZATION

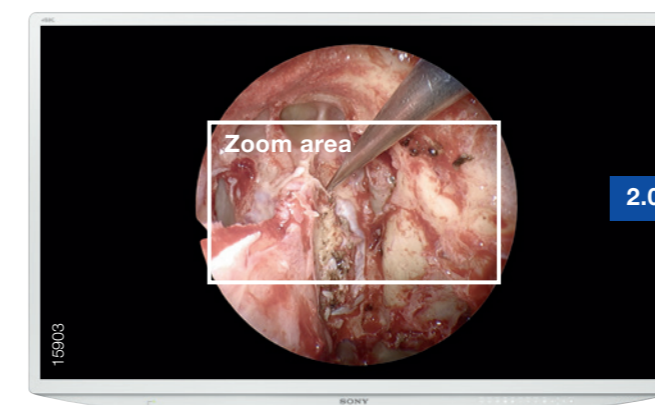
55" 4K UHD Monitor – Extend Your View

- The image creates a sense of immersion, allowing the OR team to focus entirely on the surgical procedure
- Panoramic view for the whole OR team with optimal viewing distance and wide viewing angle
- The lesion appears physically larger than on current monitors, enabling the surgeon to operate more precisely

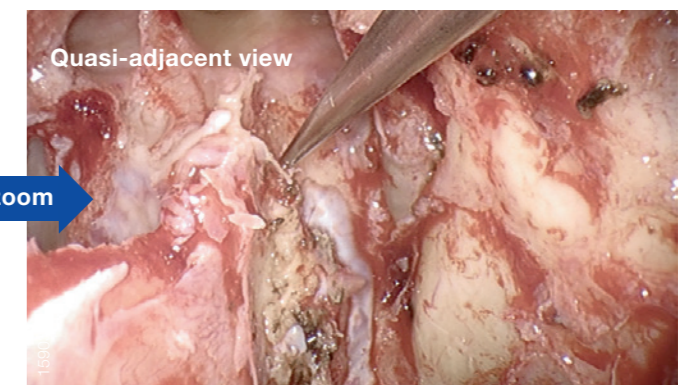
Closer to Every Detail

- Equivalent to Full HD resolution, even at 2.0x zoom – zoom in and move scope away from operation field
- Safer and more visible operating field, reducing “sword fighting” of hand instruments and preventing mist and smoke
- Allows surgeons to observe fine patterns and structures of tissues in the body in high precision even when enlarged

4K

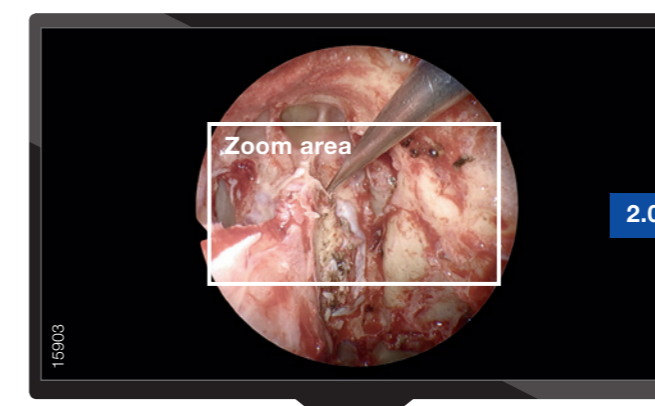


Scope pulled back from working area

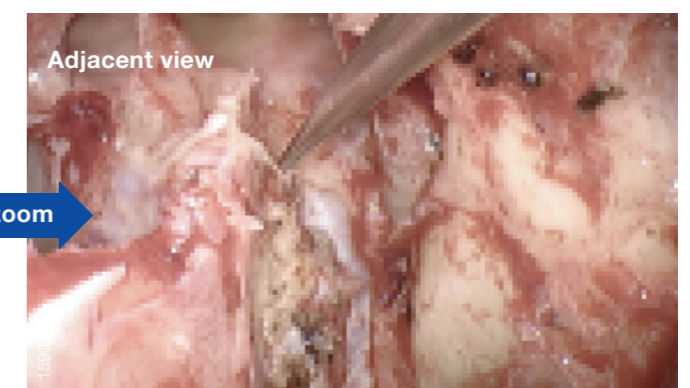


2.0x zoom; scope still pulled back – equivalent to Full HD resolution

HD



Scope pulled back from working area



2.0x zoom; low resolution

MAGNIFIED VISUALIZATION



PRODUCT OVERVIEW

4 mm ULTRA Sinuscope

State-of-the-art image quality

- Special ED glass lenses for a better color display, high contrast, and resolution

Versatility

- Available with 0°, 30°, 45°, and 70° directions of view, 176.5 mm working length
- Light-guide positioning on top or bottom



InstaClear – Lens Cleaner System

Clear View of the Surgical Site

- Cleaning sheath for 4 mm sinuscopes
- Hands-free foot pedal activation
- Adjustable flow rate for customized performance and surgical-site irrigation
- Sheaths fit perfectly onto endoscope without obstructing the lens
- Easy assembly and disassembly through grip hubs on the scope holder



CH-S400 – 4K Autoclavable Camera Head / 4K Camera Head

Sharper Images with Less Noise with the 4K Exmor R[®] CMOS Sensor and Optical-Fiber Transmission

- High sensitivity compared to normal CMOS sensor
- Less noise (dual noise-reduction function)
- No delay (4K high-speed transmission)

Optimal View (Fast and Accurate)

- One-Touch Auto Focus function always enables surgeons to see the fine details of tissue/texture
- Electronic zoom allows surgeons to observe the fine patterns and structures of tissues in the body – in high precision even when enlarged

Improved Operability (Ergonomic Design)

- Small, light, and compact camera head
- New coupler design

V-Pro compatibility

Autoclave Compatibility (CH-S400-XZ-EA only)



OTV-S400 – VISERA 4K UHD Camera Control Unit 4K High-Quality Image Processing

- Wide color gamut
- 16-axial color-phase adjustment (more precise color setting based on surgeon's preference)
- Improved AE (automatic exposure) function

Improved Operability

- Touch panel enables adjustments during procedure
- Easy registrations and loading of user presets



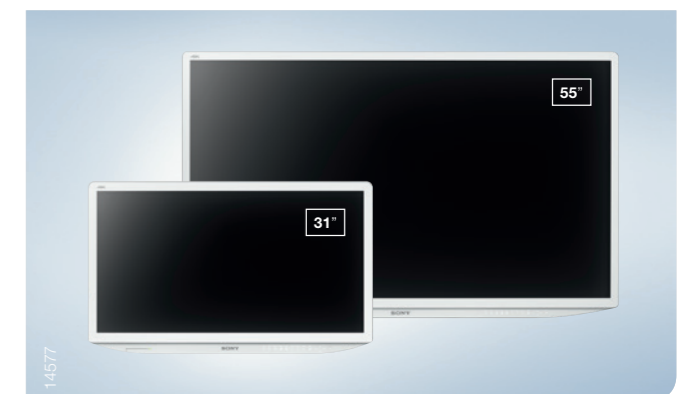
CLV-S400 – VISERA 4K UHD Xenon Light Source Custom Light Source for the 4K System

- 300 W xenon lamp
- Automatic light control
- NBI compatibility



LMD-X310S / LMD-X550S - 31" / 55" LCD Monitor Medical Monitor

- Provides a higher contrast with less color blurring with the OptiContrast™ panel technology
- Supports 4K resolution (4096 × 2160 / 3840 × 2160) and a wider color gamut
- Thinner and lighter compact design



 www.olympus.eu/4K



Clinical images courtesy of Prof. Otori (Japan), Dr. Omura (Japan) and Prof. Arens (Germany).
Specifications, design, and accessories are subject to change without any notice or obligation on the part of the manufacturer.

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