

**Dated: 29<sup>th</sup> February 2016**

**Ref: OMSI/15-16/1633**

To,  
The Director  
Regional Institute Of Medical Sciences,  
Imphal, Manipur

**Sub: Proprietary Article Certificate - 4 K FULL HIGH DEFINITION LAPAROSCOPY IMAGING SYSTEMS.**

Dear Sir,

This is to certify and confirm that following technologies are Olympus proprietary technologies used in chosen product line up:

- A full 4K high definition processor having native resolution of 4096 x 2160 pixels in 31 inch Monitor with 17:9 Aspect ratio and resolution of 3840 x 2160 in 55 inch screen
- 300 watt Xenon light source Light source with emergency spare lamp having " NBI technology" - Narrow Band Imaging for visualization of fine capillaries and vessel pattern on mucosal surface for abnormal lesions
- Video processor & Monitor having BT20 20 video format to display true 4K colors .
- Full 4K Camera head having patented Exmor-R sensor providing high sensitivity and Less noise for clear image
- 4K Medical Grade Monitor : Opti- contrast Panel providing higher contrast image and less color blurring.
- 4K Ultra Telescope having ED lenses for distortion free and razor sharp images,with wide field of view and fully autoclavable.

This is to further certify that this equipment is being solely manufactured by Olympus Corporation, Japan having its office at Shinjuku Monolith, 3-1 Nishi-Shinjuku 2 – chome, Shinjuku-ku, Tokyo 163-0914, Japan.

This is proprietary of Olympus Corporation, Japan.

Thanking you,

**For Olympus Medical Systems India Pvt. Ltd.,**

117  
Authorised Signatory



## USES AND ADVANTAGES OF 4K CAMERA

4K is certainly becoming a hot trend on the consumer front. What medical specialties will benefit from 4K technology and why?

4K's increased level of resolution and clarity can give surgeons and their teams a better view of general anatomy and blood vessels which, in the end, can help improve workflow and patient outcomes.

This technology can be revolutionary for minimally invasive and microsurgical procedures, including neurology and ophthalmic. Four times the amount of visualization results in virtually no pixilation and gives a greater sense of depth to the image.

Sony 4K technologies are already proven in motion picture and television production, digital projection in movie theaters, sports broadcasts, live events, and home viewing on consumer 4K TVs. The clarity, resolution and detail of 4K images hold great potential for increased visualization during or after a surgical procedure.

- We know you are also a leader in 3D for medical. What's the ideal balance of 3D and 4K solutions? Will healthcare facilities use both?

Both technologies – 3D and 4K – offer an incredible range of benefits for a medical environment and, yes, healthcare facilities can certainly use both.

3D technology is already being used to help improve surgical procedures. The ability to record and display in 3D versus 2D gives surgeons a realistic depth of field and helps them navigate through a procedure easily. 3D also provides a more in-depth and immersive surgical training experience.

Sony is also developing 4K technologies for medical to allow surgeons and their teams to see a procedure or an image on a monitor in new ways.

Whatever the surgical application, Sony has the right technology to help deliver optimized results. Whether it's adding the enhanced depth perception of 3D to what have until now been 2D surgeries, or bringing previously unseen details to life in 4K resolution.

Since the first laparoscopic appendectomy was performed in 1983, the use of minimally invasive surgical techniques has been growing. Recent research<sup>1</sup> suggests that further adoption of minimally-invasive techniques is predicated on establishing competency.

But what does that mean practically? Surgeons want to know that procedures can be completed with the same quality outcomes as open surgery – that the benefits of minimally-invasive surgery won't be outweighed by the reduction in vision and visibility of the patient, with subsequent negative impact on outcomes.

And that's where technology can help. 4K displays, while becoming more commonplace in television and cinema, are now coming to the operating room. People often ask how 4K can benefit surgery, and if it's here to stay. So here are the most frequently asked questions we hear about 4K in the OR.

What is 4K?

In essence, the term 4k refers to a display having a horizontal resolution on the order of 4,000 pixels, resulting in four times the resolution of high definition (HD).

Why should the healthcare sector be interested in 4K?

In the OR, there is a move towards minimally-invasive surgery, at least in selected, more routine procedures. There are clearly benefits to patients and healthcare systems from this type of surgery, but it means that surgeons are, to an extent, subject to limited vision due to their reliance on laparoscopic cameras...

That's an obvious issue for surgeons – existing technology is no replacement for the surgeon's own eyesight, and current displays, even high definition displays, lack depth and perspective.

Do 4K screens improve on high definition displays?

Absolutely! 4K offers detail-rich, color-correct images with greater depth perception so the OR team can see more detail during procedures.

For the first time, surgeons doing minimally-invasive procedures can have confidence that what they're seeing is an accurate picture of what's happening during the surgery, and the entire surgical team can make clinical decisions with all the information and guidance they obtain from the cameras. This is clearly in the best interest of the patient.

Who benefits from 4K?

Surgeons, surgical teams and patients can all benefit from 4K in the OR. Also keep in mind that surgeries proceeding according to plan benefit the entire health system; by helping avoid procedures running over time, or even converting from laparoscopic to open procedures. ORs can be very busy, congested spaces and efficient management of this resource is critical to the entire hospital.

We also know that minimally-invasive procedures can result in lower length of stay and fewer complications – better for the patient and again better for health systems, so new technology to support increased use of this type of surgery is a positive step for our increasingly stretched health systems.

Outside the OR, what are the applications for 4K?

4K is set to be the next standard technology adoption so we'll see 4K being used more inside and outside of hospital settings. In fact, any hospital setting that uses a display, for example in patient wards, could benefit from 4K.

Date: 29<sup>th</sup> February 2016

To,  
The Director,  
Regional Institute of Medical Sciences,  
Imphal.

**Sub- Quotation for 4K camera System in the Department of General Surgery.**

Respected Sir,

Quotation:

Part No.	Description	Qty	Price-Excluding taxes
OTV-S400	4K Processor	1	65,00,000/-
CLV-S400	4K Light Source	1	
CH-S400-XZ-EB	4K Camera Head	1	
WA4KL130	4K 10mm, 30deg Telescope	1	
WA03310A	Light Guide Cable	1	
LMD-X550S	4K 55" Monitor	1	
Trolley for Monitor	Monitor Stand Only	1	

**TERMS AND CONDITIONS:**

**PRICES**

Price Quoted is firm in Indian Rupees on F.O.R Hospital Site.

Taxes(CST/VAT) extra as applicable.

The above-mentioned prices do not include Octroi, or any tax levied by the State and/ or Central Government and/ or municipality. Road permit to be provided by the buyer.

**VALIDITY**

Our offer would be valid for 30 days from the date of this offer.

**ORDERING PROCEDURE**

Please place your order in the name of our authorised dealer who will raise the bill and challan for the same.

**M/s Langol Chemist and Druggist Agency**

**RIMS South Gate,  
Imphal -795001**

Manufacturer's Name: Olympus Medical Systems

NEWDELHI ● KOLKATA ● MUMBAI ● CHENNAI ● BANGALORE ● THIRUVANANTHAPURAM



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**PAYMENT TERMS**

As per the terms of the hospital

**DELIVERY**

6-8 weeks from the date of receipt of confirmed order along with the payment.

**WARRANTY**

Equipment with the exception of consumables, is warranted against defective workmanship and material for period of 24 months from the date of supply. This warranty does not cover defects arising from damage by incompetent use, failure to provide and maintain suitable operating environment, normal wear and tear and failure to follow explicitly the instructions specified. Equipment proving defective within the warranty period will be repaired.. The decision to replace or repair the equipment rests solely with the company.

**FORCE MAJEURE**

Standard Clause apply.

For Healthware Private Limited

  
Indroneil Mukherjee  
Branch Manager.  
Cell. 09874600594

NEWDELHI ● KOLKATA ● MUMBAI ● CHENNAI ● BANGALORE ● THIRUVANANTHAPURAM



VISERA 4K UHD – GET CLOSER

**OLYMPUS**  
Your Vision. Our Future

**4K**

**GET CLOSER**  
Four Times the Resolution of Full HD.



**OLYMPUS**

Manufacture, design and control are subject to change without a special notice.  
**OLYMPUS MEDICAL SYSTEMS CORP.**  
Chiyoda-ku, Nishi-Shinjyuku, Tokyo 163-1515, Japan

For a complete listing of sales and distribution locations visit: [www.olympus.com](http://www.olympus.com)

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## VISERA 4K UHD – IMPROVEMENT OF VISIBILITY

### The Concept of the 4K UHD System

Olympus is always trying to achieve laparoscopic 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 laparoscopic visibility by adding features such as Ultra High Definition, Wider Color Gamut, and Magnified Visualization.

#### Ultra High Definition

This will improve visibility and support for 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.

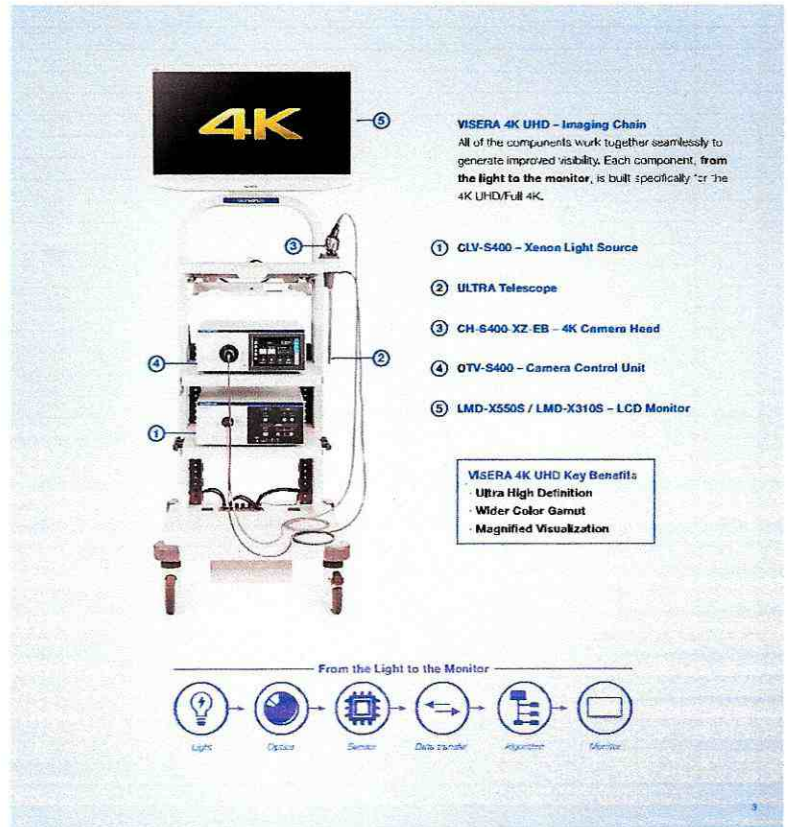
### Innovation by Sony & Olympus

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.

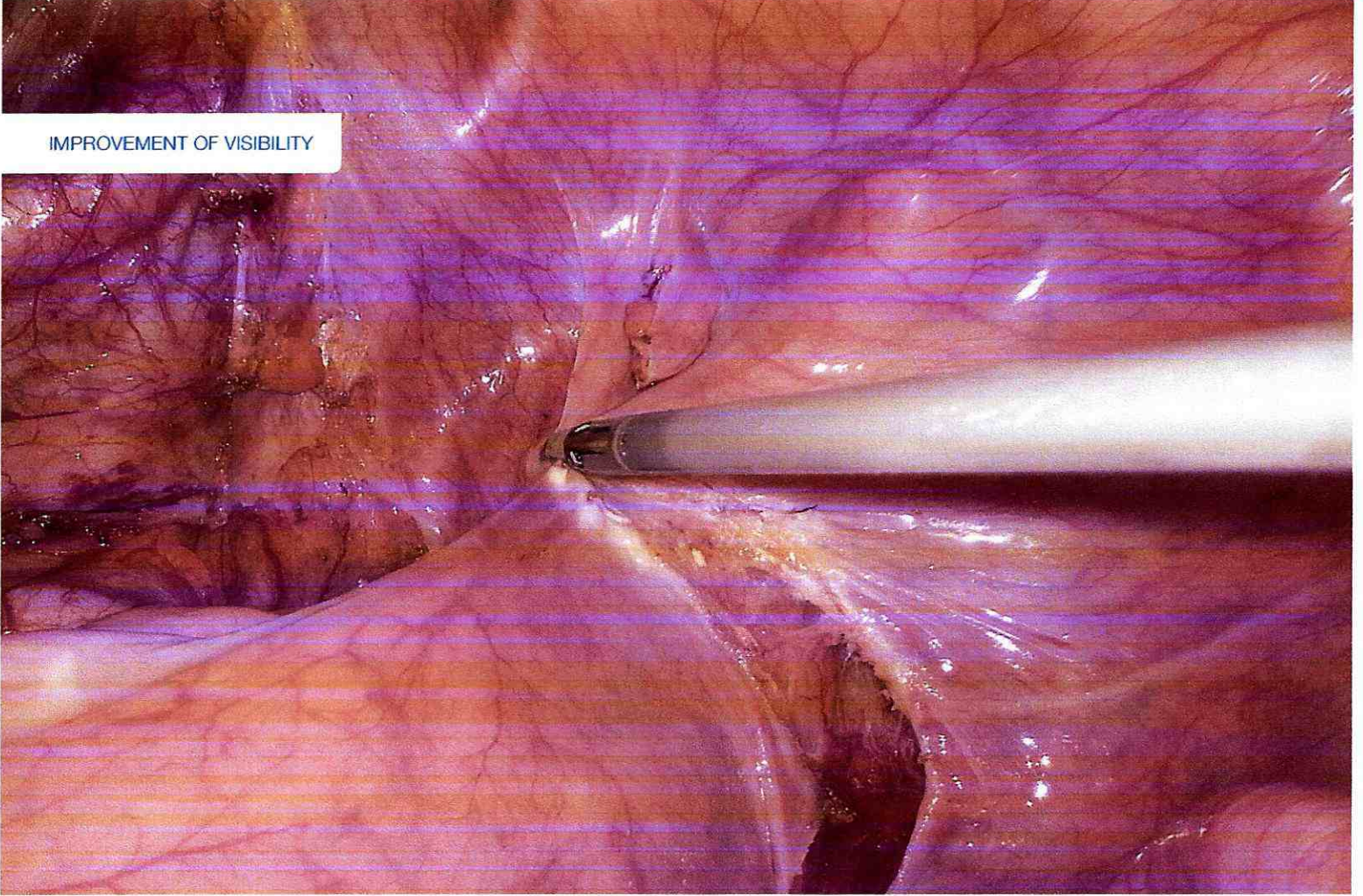
Innovation by  
**Sony & Olympus**



## VISERA 4K UHD – IMAGING CHAIN



IMPROVEMENT OF VISIBILITY

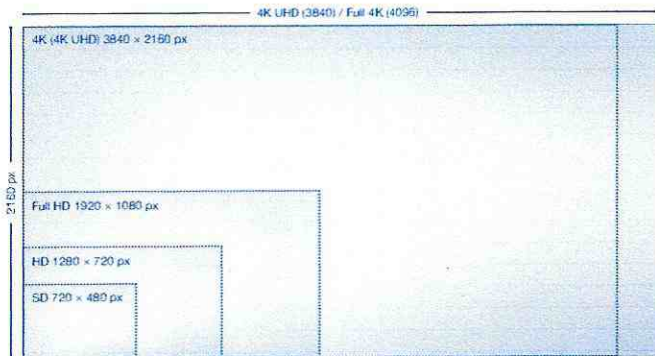




## ULTRA HIGH DEFINITION

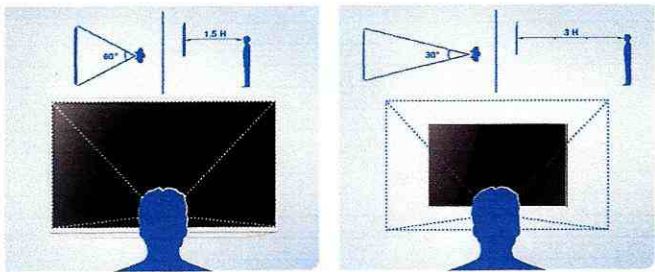
### 4K - Four Times the Resolution of Full HD

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

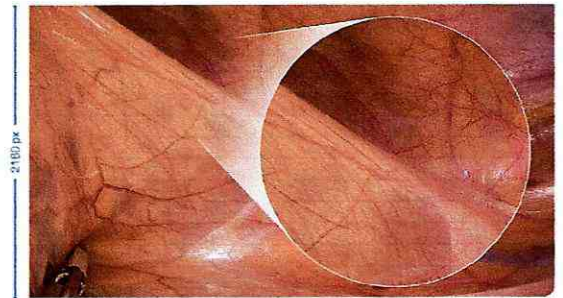


### An Immersive Experience with a Closer Distance

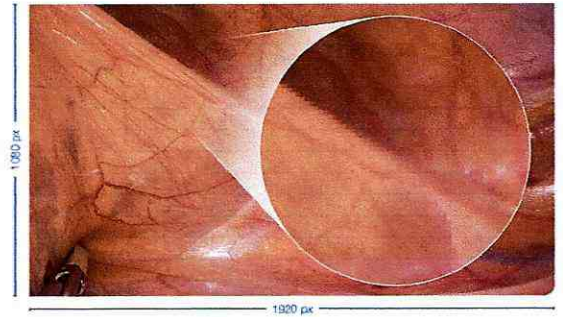
Four times more detail than Full HD – enjoy an immersive experience with a closer distance (half the distance of HD).



**4K**



**HD**



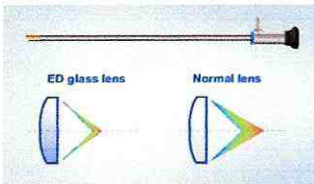
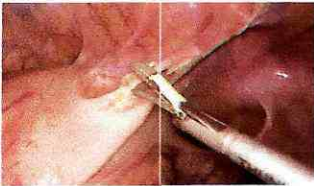
## ULTRA HIGH DEFINITION

### 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.

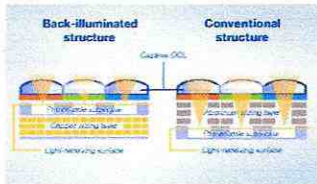
#### ED Glass Lenses – Razor-Sharp Images

- Optimized for high-resolution imaging
- Decreased chromatic aberration
- High contrast at high spatial frequencies



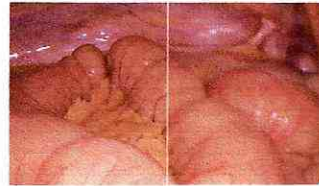
#### Exmor R<sup>®</sup> Sensor – Clearer Images in Every Condition

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



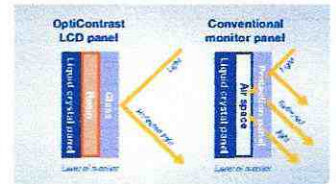
#### One-Touch Auto Focus – Fast and Accurate

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



#### OptiContrast LCD Panel – Ideal Contrasts

- Reduced reflections
- Uncolored images during surgery

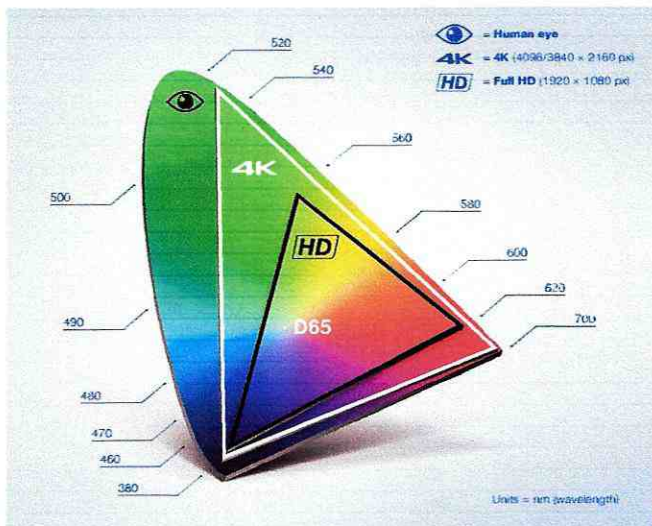


## WIDER COLOR GAMUT

### More Details, More Difference

The VSERA 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.

- Supports surgeons to identify tissue boundaries (fat, nerves, vessels, etc.)
- Better visualization of blood vessels and lesions



## MAGNIFIED VISUALIZATION

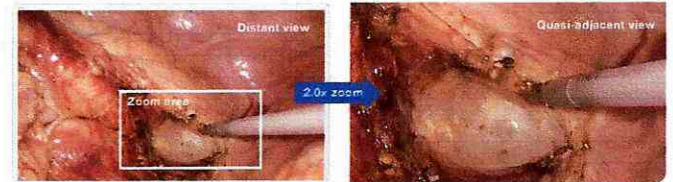
### 55" 4K UHD Monitor – Extend Your View

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

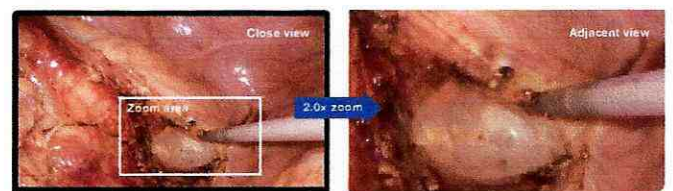
### Closer to Every Detail

- Equivalent to Full HD resolution, even at 2.0x zoom – 71cm in and move scope away from operation field
- Reducing "sword fighting" of hand instruments and preventing mist and smoke by visible operating field
- Allows surgeons to observe fine patterns and structures of tissues in the body even when enlarged

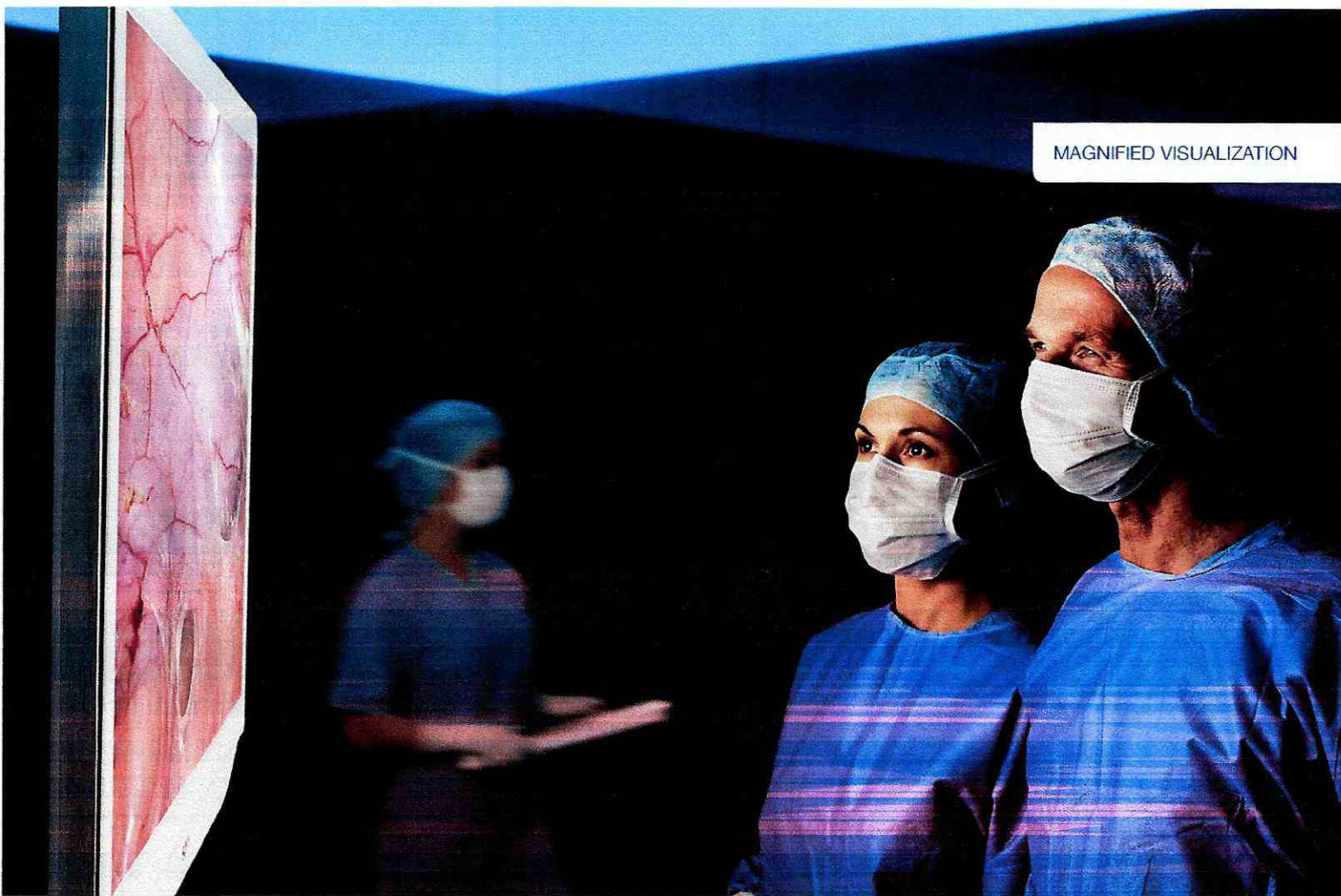
## 4K



## HD



MAGNIFIED VISUALIZATION



## PRODUCT OVERVIEW

### ULTRA Telescope

#### ED Glass Lenses – Razor-Sharp Images

- Optimized for high-resolution imaging
- Decreased chromatic aberration
- High contrast at high spatial frequencies
- Comparable working length for 5.4 mm and 10 mm

#### Wider Field of View

- 20% wider field of view than conventional HD telescopes\*

#### Full Autoclavability

- Reduced waste due to full reusability of the telescopes

#### Nearly Distortion-Free Images

- (especially for 5.4 mm telescope)
- Clear images even at the edges



### CH-S400-XZ-EB – 4K Camera Head

#### Sharper Images with Less Noise with the 4K Exmor R<sup>®</sup>

#### 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 – even when enlarged

#### Improved Operability (Ergonomic Design)

- Small, compact camera head
- New coupler design



### OTV-S400 – VISERA 4K UHD Camera Control Unit

#### 4K High-Quality Image Processing

- Wide color gamut
- 16-axis 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

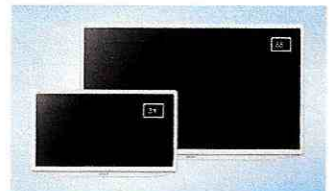
- 300 W xenon lamp
- Automatic light control
- NBI compatibility



### LMD-X550S / LMD-X310S – LCD Monitor

#### Medical Monitor

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



\* Compared to an endoscope (0E / 0F / 04 mm) or 0E / 0F / 0E / 10 mm (0A / 0B / 0C)