



Date: - 05th November, 2019

Corrigendum
for
4K Laparoscopy Imaging System with ICG
compatibility for the Department of Surgical
Gastroenterology

NIT Issue Date	: 21 st August, 2019
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The following revised and additional specification will be added:-

1. Page No. 10, Item: “Technical Specification” S.No. 01). Full 4K High Definition Video Image processor,:

For

i. A full 4K high definition video processor should have native resolution of 4096 x 2160 pixels system with facility for ICG fluorescence guided imaging by near infra-red light - Quantity-1

a) Should also provide 3840 x 2160 or 1920 x 1080 should also be selectable (Should provide both 4K output and HD output)

b) Video processor & Monitor having BT 2020 video format to display true 4K color format.

c) Should have touch panel operation for easy control.

d) Should provide colour gamut of ITU-BT2020.

e) Should have AE (Automatic Exposure) – Iris function.

f) Picture in picture visualization modes

g) System settings should be held in memory even after video system processor is switched OFF.

h) Should have compatibility for selecting 3G-SDI or HD-SDI signal output (transmission method).

i) System should be ready to be used with video choledocoscope or other flexible endoscopes.

Read

i. A full 4K high definition video processor should have native resolution of 3840 x 2160 pixels system with facility for ICG fluorescence guided imaging by near infra-red light

a) 4K and ICG both either in same processor or two separate units as required to give 4K and ICG output.

b) Video processor & Monitor to display true 4K colour format.

- c) Should have touch panel operation for easy control
 - d) Should provide colour gamut of ITU-BT2020
 - e) Picture in picture visualization modes
 - f) System settings should be held in memory even after video system processor is switched OFF.
 - g) Should have compatibility for selecting 4K and Full-HD output
- System should be ready to be use with flexible video choledochoscope with chip on tip for CBD exploration.

2. Page No. 10, Item: “Technical Specification” S.No. 02). Powerful 300W or more Xenon Light Source or equivalent light source,:

For

- i. Should be compatible with 4K system and for fluorescence imaging for ICG application-
Quantity 1
 - a) A Powerful 300 Watt Xenon Lamp with emergency lamp facility
 - b) Automatically adjusts light intensity to achieve ideal illumination
 - c) Built-in special filter for early cancer detection
 - d) Backlit front panel indicators.
 - e) 300W Xenon light source with emergency spare lamp having "NBI technology" or equivalent.
 - f) Automatic switching to emergency lamp.

Read

Should be compatible with 4K system and for fluorescence imaging for ICG application either in same light source or two different unit as required

- a) A Powerful 300 Watt Xenon Lamp or equivalent LED light source
- b) Automatically adjusts light intensity to achieve ideal illumination
- c) Built-in special filter for early cancer detection
- d) Backlit front panel indicators.
- e) 300W Xenon light source with spare lamp (10 extra bulbs) having " NBI technology" / ICG technology

3. Page No. 10, Item: “Technical Specification” S.No. 03). Light Guide Cable,:

For

- i. Should be compatible with existing working 4K Ultra High Definition Laparoscopic System and for ICG applications-**Quantity 2**
 - a) High Resistance protection tube and must be autoclavable
 - b) Reduced diameter (4mm) with high fiber density and 300cm in length.
 - c) Small bending radius for comfortable use
 - d) Should be ROHS compliant.

Read

- i. Should be compatible with 4K Laparoscopic system and for ICG applications-**Quantity 2**
 - a) 4K and ICG in same light cable or two different as required
 - b) High Resistance protection tube and must be autoclavable
 - c) Reduced diameter (4mm or above) with high fiber density and 300cm in length.
 - d) Small bending radius for comfortable use
 - e) Should be ROHS /US FDA compliant.

4. Page No. 11, Item: “Technical Specification” S.No. 04). Full 4K Camera head,:

For

- a) Camera head should incorporate optical fiber transmission providing 4K resolution through thin cable.
- b) System should have facility for optical contrast differentiation system and it should have special filter for observation of capillary vessels and fine patterns in the superficial layer of mucosa for early detection of lesions.
- c) Should have Xmor-R CMOS sensor providing high sensitivity and less noise for clear image

- d) Should provide One-touch Auto focus function
- e) Should provide electronic Zoom Function (button controlled) – x 2.0 electronic zooming in 6 steps (x1.0, x1.2, x1.4, x1.6, x1.8, x2.0)
- f) Should be immersible in disinfectant solution and sterilization through ETO
- g) Should have focal length $f = 18$ mm or more
- h) Capable of displaying ICG application

Read

- a) Camera head should incorporate optical fiber transmission providing 4K resolution through thin cable.
- b) System should have facility for optical contrast differentiation system and it should have special filter for observation of capillary vessels and fine patterns in the superficial layer of mucosa for early detection of lesions.
- c) Should have CMOS sensor providing high sensitivity and less noise for clear image
- d) Should provide one-touch auto focus function or equivalent
- e) Should provide electronic Zoom Function (button controlled) – x 2.0 electronic zooming in different steps
- f) Should be immersible in disinfectant solution and sterilization through ETO
- g) Should have focal length $f = 18$ mm or more
- h) ICG and 4K in same camera head or two different as required to show 4K and ICG output.

5. Page No. 11, Item: “Technical Specification” S.No. 05). 4K Medical Grade Monitor,:

For

- a) 4K medical grade 31 inch or more UHD LCD/LED backlit monitor with ultra -high definition resolution 3840x2160. - Compatible with all processor of displaying 4K and ICG application
- b) Should have multi-image display format
- c) Picture-out-picture and flip pattern to rotate the image.
- d) Should have various input/output terminals, including 3G/HD/SD SDI, DVI-D, BNC (x5) and HDMI.
- e) Monitor should have Opti-contrast Panel providing higher contrast image and less color blurring.

Read

- a) One 4K medical grade **31 inch or more** UHD LCD/LED backlit monitor with ultra - high definition resolution 3840 x 2160 and One 4K medical grade **55 inch or more** ultra HD monitor with resolution of 3840 x 2160 for better view with stand
- **Compatible with all processor of displaying 4K and ICG application**
- b) Should have multi-image display format
- c) Picture-out-picture and flip pattern to rotate the image.
- d) Should have various input/output terminals, including 4K and full HD compatible output
- e) Monitor should have Opti-contrast Panel providing higher contrast image and less color blurring.

6. Page No. 11, Item: “Technical Specification” S.No. 06). Ultra Telescope,:

For

- a) 4K Ultra Telescope having ED glass lenses for distortion free and razor sharp images, with wide field of view and fully autoclavable
- b) Compatible for both 4K and ICG application
- c) 10mm - 0 degree and 30 degree; Working Length: 290mm and above
- d) 5mm - 0 degree and 30 degree; Working Length: 290mm and above
- e) Homogenous light distribution in the peripheral region.
- f) Eyepiece type connection – for uniform compatibility.

Quantity Required:

- 1) 5mm Ultra Telescope 0 degrees - 1 No.
- 2) 5mm Ultra Telescope 30 degree - 1 No
- 3) 10mm Ultra Telescope 0 degrees -1 No.
- 4) 10 mm Ultra Telescope 30 degree - 2 No

Read

06) Telescope:

- a) 4K compatible telescope having lenses for distortion free and razor sharp images, with wide field of view and fully auto-clavable; Should be able to capture and transmit ultra-high definition images
- b) Compatible for both 4K and ICG application
- c) 10mm - 0 degree and 30 degree; Working Length: 290mm and above
- d) 5mm - 0 degree and 30 degree; Working Length: 290mm and above
- e) Homogenous light distribution in the peripheral region.
- f) Eyepiece type connection – for uniform compatibility.

Quantity Required: Compatible for providing ultra-high definition display

- 1) 5mm Telescope 0 degrees - 1 No.
- 2) 5mm Telescope 30 degree - 1 No
- 3) 10mm Telescope 0 degrees - 1 No.
- 4) 10 mm Telescope 30 degree - 2 No

7. Page No. 11, Item: “Technical Specification” S.No. 07). High flow CO₂ Gas Insufflator with automatic smoke evacuation facility,:

For

- a) Should be digital, microprocessor controlled & automatic type
- b) Large digital display on front panel for status checking
- c) Powerful Insufflation flow rate of 45 L/min required
- d) Automatic feedback control for any malfunction.
- e) Should have automatic smoke evacuation facility with existing energy source in the OT
- f) It should have CO₂ gas cylinder switching valve to allow freely switch between two gas cylinders without the hassle of replacing cylinders (Optional)
- g) Need to provide a pin type CO₂ hose plug which can be connected to Pin type CO₂ cylinders- 2 No's

Read

- a) Should be digital, microprocessor controlled & automatic type
- b) Large digital display on front panel for status checking
- c) Powerful Insufflation flow rate of **45 L/min** or more required
- d) Automatic feedback control for any malfunction.
- e) Should have automatic smoke evacuation facility with different energy source in the OT
- f) It should have appropriate system/valve to attach with central CO₂ supply or with CO₂ gas cylinders)
- g) Need to provide a pin type CO₂ hose plug which can be connected to Pin type CO₂ central supply / cylinders- 2 No's

8. Page No. 12, Item: “Technical Specification” S.No. 08). Image and Video recording and data archiving management system: (01 in No.),:

For

- a) Digital storage of still image, video sequences and audio files
- b) Should be a 4K UHD, 3D & full HD medical grade video and still images recorder
- c) Should have full featured graphical user interface
- d) Should have US FDA or European CE certification
- e) Recording media: Internal HDD (1 TB or above), External USB and DVD-R
- f) Should have dual channel simultaneous recording for 4K UHD & full HD
- g) Should have customized windows based operating system.
- h) Should have simultaneous recording and playback feature.
- i) Should have facility of patient's data
- j) Should have integrated CD/DVD player and writer.
- k) USB support for storage on USB device.
- l) Input / recording resolution: 4K UHD, 3D ,1080p ,1080i, 720p, NTSC & PAL
- m) Compatibility with HIS/DICOM/PACS.

- n) User should have full control of the system from the sterile field via camera head buttons, optical touch screen, optical foot switch.
- o) Should have support for physician print, media, annotations, patients field, procedure settings and individual surgeon profile & preferences.
- p) Connectors;
 - a. Input/output: DVI, S Video, 3G HD –SDI, composite & audio
 - b. Other interfaces: USB 2.0, USB 3.0 RJ-12, network RJ-45 and Remote control
 - c. All necessary cables should be supplied
- q) should have following additional features;
 - a. foot pedal control
 - b. endoscopy remote head trigger
 - c. microscope RS-232 communications
- r) following accessories should be supplied;
 - a. Cordless mouse and cordless silicone keypad -01 in no.
 - b. foot pedal control -01 in no.
 - c. endoscopy remote head trigger -01 in no.
 - d. remote control-01 in no.
- s) All the necessary cable should be supplied.
- t) Color laser printer (ink-tankss)- compatible with above system.

Read

- a) Digital storage of still image, video sequences and audio files
- b) Should be a 4K UHD, /full HD medical grade video and still images recorder
- c) Should have full featured graphical user interface
- d) Should have US FDA or European CE certification
- e) Recording media: Internal HDD (**2 TB or above**), External USB / DVD-R
- f) Should have dual channel simultaneous recording for 4K UHD /full HD
- g) Should have customized windows based operating system.
- h) Should have simultaneous recording and playback feature.
- i) Should have facility of patient's data entry
- j) Should have integrated CD/DVD/USB player and writer.
- k) USB support for storage on USB device.
- l) Input / recording resolution: 4K ,1080p ,1080i, 720p, NTSC & PAL
- m) Compatibility with HIS/DICOM/PACS.
- n) User should have full control of the system from the sterile field via camera head buttons, touch screen, foot switch.
- o) Should have support for physician print, media, annotations, patients field, procedure settings and individual surgeon profile & preferences.
- p) Connectors;
 - a. Input/output: Compatible for 4K / Full HD & audio
 - b. Other interfaces: USB 2.0, USB 3.0, network RJ-45
- q) should have following additional features:
 - a. foot pedal control
 - b. endoscopy remote head trigger
 - c. microscope RS-232 communications
- r) following accessories should be supplied;
 - a. Cordless mouse and cordless silicone keypad -01 in no.
 - b. foot pedal control -01 in no.
- s) **All the necessary cable should be supplied.**

09) **Trolley (Number -1)** Imported endoscopic trolley compatible with the above system from the same manufacturer should be provided

9. Page No. 13, Item: “Technical Specification” Under Heading Note,:

For

NOTE: Any other essential hardware/software/items required to make all above things functional should be quoted, otherwise it will be treated that same will be supplied free of

cost. All products should be same manufacturer & should be US FDA or European CE approved (with four digit notified body number)

Read

NOTE: Any other essential hardware/software/items required to make all above things functional should be quoted, otherwise it will be treated that same will be supplied free of cost.

All products should be US FDA or European CE approved (with four digit notified body number)

All products should be having 5-year warranty.

Demonstration of complete system is mandatory after pre-bid meeting.