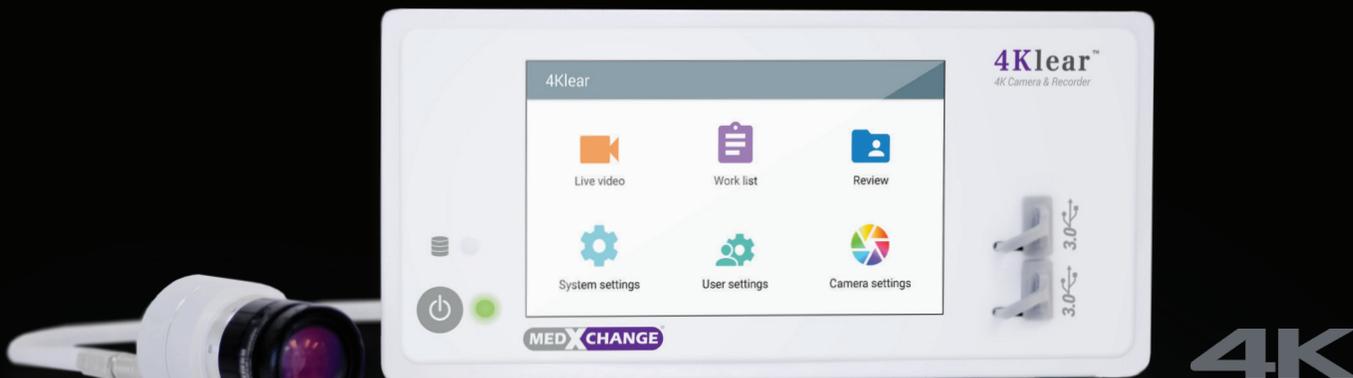


The 4Klear™ *Camera and Recorder*

A TRUE Native 4K All-In-One Medical Camera and Recorder Solution

The 4Klear is a Medical Grade Native 4K Camera & Recorder 2 in 1 solution designed for surgical microscopes. The remote camera head offers a large ½" Native 4K CMOS chip designed to better duplicate the surgeon's field of view (FOV) seen in the microscope. Produce live 4K video, record 4K video, control camera settings and manage entire patient workflow via an easy to use 12.7cm multi-touch screen.

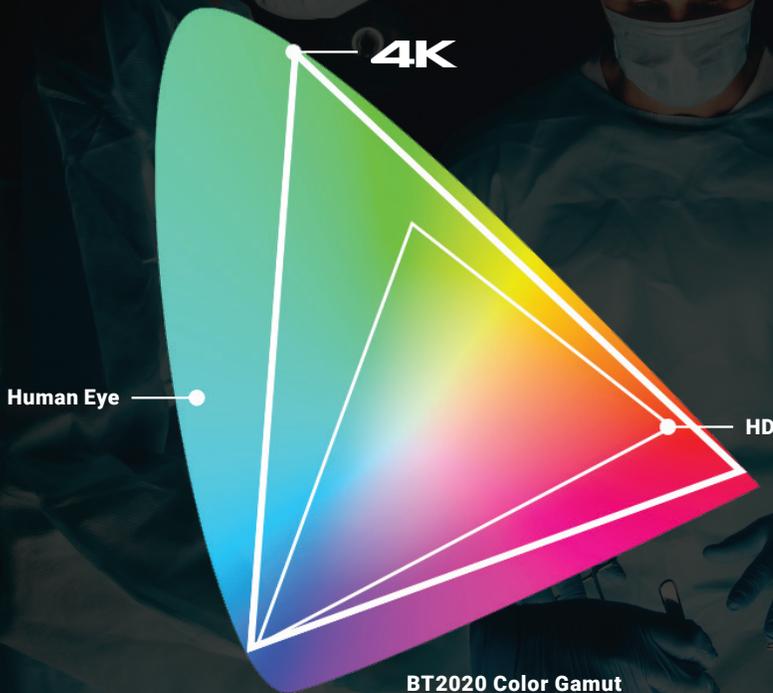


Camera & Integrated 4K Recording System

First to market as a c-mount Medical Grade Microscope native 4K camera with a wide BT2020 Color Gamut, 12G-SDI output and 4K recording capability.

BT2020 - 10bit 4:2:2 live video produces the best possible color representation to the human eye which allows for near perfect duplication of the optical pathway of a surgical microscope.

The state-of-the-art ½" back-illuminated 4K CMOS chip produces more light per pixel for light sensitive operations and reduces noise in the video all designed to give the surgeon and staff critical clarity for the surgical environment.



BT2020 Color Gamut
10bit 4:2:2 color @60Hz

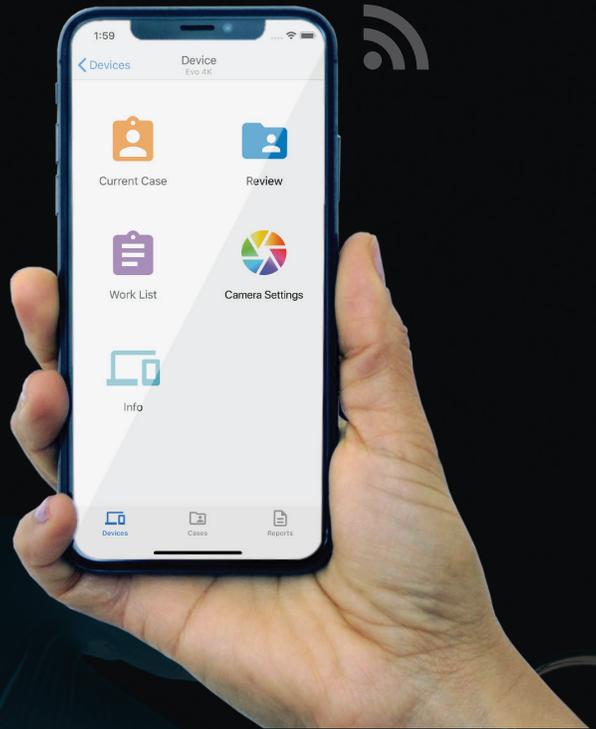
MEDICAL CERTIFICATIONS

IEC 60601-1:2012 (Ed 3.1)
IEC 60601-1-2:2014 (Ed 4.0)
No. U8 18 05 74193 030

CAMERA FEATURES

CAMERA FUNCTION

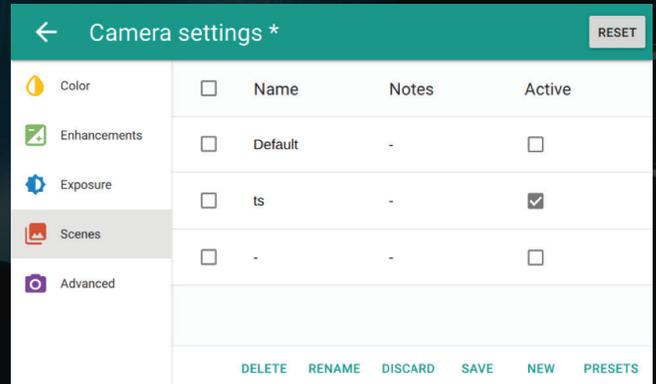
- Frame Rate** • 4K 60fps: 50/60Hz
- Exposure Shutter** • 1/60 – 1/30000 (Auto and Manual mode)
- Exposure Level** • 0-1000 (Auto, One-Shot, Manual Mode)
(Fine Tuning Exposure Histogram)
- Sensor Gain** • 0.0 – 27.0 dB (Auto and Manual mode)
- Binning Cross Gain** • Auto and Manual mode
- Binning Diagonal Gain** • Auto and Manual mode
- Sharpness** • 0-3180 (Default is 1500)
- Sharpness Floor** • 0-512 (Default is 32)
- White Balance** • Auto mode
- Hue** • -15 to +15 (Default is 0)
- Brightness** • -50 to +50 (Default is 0)
- Contrast** • -50 to +50 (Default is 0)
- Saturation** • -125 to +125 (Default is 0)
- Flare Composition** • 0-12 (Default is 0)
- Noise Filter** • Allowed values of:
0 (off), 1 (low), 3 (max)
- Output Colorspace** • RGB 4:4:4, YUV 4:2:2 or YUV 4:4:4
- Mirror/Flip Feature** • Options are Mirror, Flip or Mirror & Flip
- Scene Files** • Preset files loaded
(Ability to add unlimited user scene files)



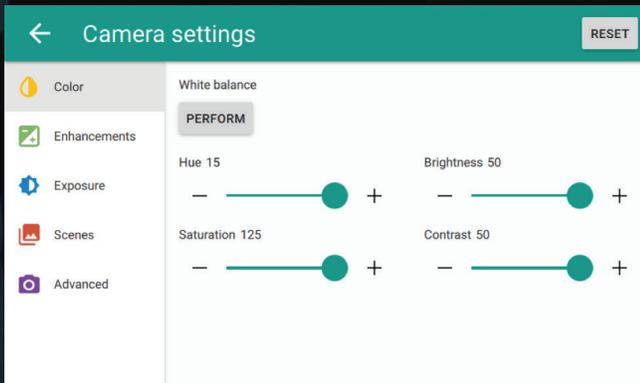
MedXStream Plus (Compatible iOS app)



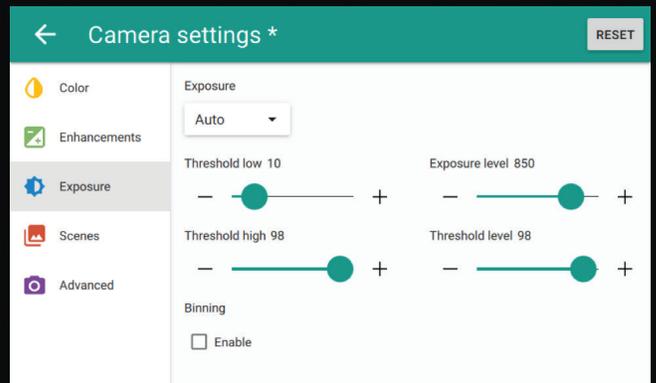
C-Mount Microscope Camera Head (Actual Size)



Camera settings tab > Scenes sub tab



Camera settings tab > Color sub tab



Camera settings tab > Exposure sub tab

RECORDING FEATURES

FULL 4K UHD & HD VIDEO/STILL IMAGE RECORDING

- 3840 X 2160P 30/50/60Hz
- 4K UHD recorded/captured files: H.264, .mp4, JPEG, PNG
- Record 4K UHD video and still images simultaneously with integrated 12.7cm touch screen
- Record to internal hard drive
- Record up to 2 USB 3.0 locations at the same time
- Record to network locations/DICOM
- 1 x 3G-SDI input for recording of external HD camera
(future software update)

INTEGRATED 12.7CM TOUCH LCD SCREEN

- Control entire software from integrated touch screen
- Multi-touch/swipe interface
- Duplicate the internal 12.7cm touch screen to any HID touch monitor via VGA

PATIENT DATA ENTRY/WORKFLOW

- Enter patient data, sort patients and start cases
- Append to completed cases

DICOM INTEGRATION

- Automatic DICOM c-store (PACS storage) & c-find (MWL)

LIVE VIDEO STREAMING OVER IP

Live stream camera video over IP via RTSP protocol

PRINTING/PLAYBACK/COPY/REVIEW

- Review completed cases
- Playback video/stills and copy to external USB/Network
- Auto print to Sony UPDR80MD medical grade printer

STORAGE, SETTINGS, OTHER

- 1 TB internal storage
- Networking, media and printing settings
- Simple USB software updates
- HIPAA Compliance encryption, auditing, logs, user/admin roles
- CyberSecurity compliance
- 6 - USB 3.0 ports
- Mic audio input port
- 2 - Gigabit network ports



MEDXSTREAM PLUS iOS APP

- Wirelessly control Camera settings & some recorder functions
- Encrypted WiFi connection
- Wireless/wired (lightning cable) transmission of still images/videos



LIVE VIDEO



WORK LIST



REVIEW



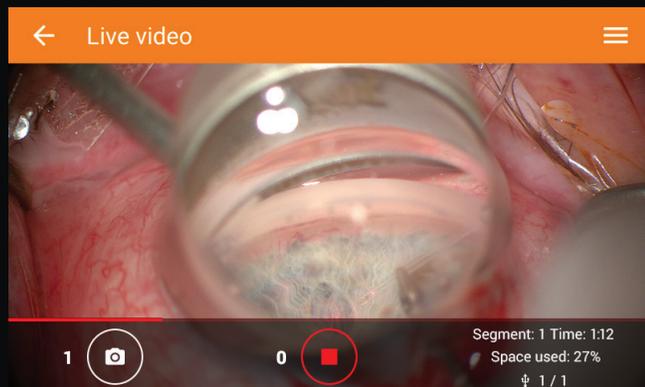
SYSTEM SETTINGS



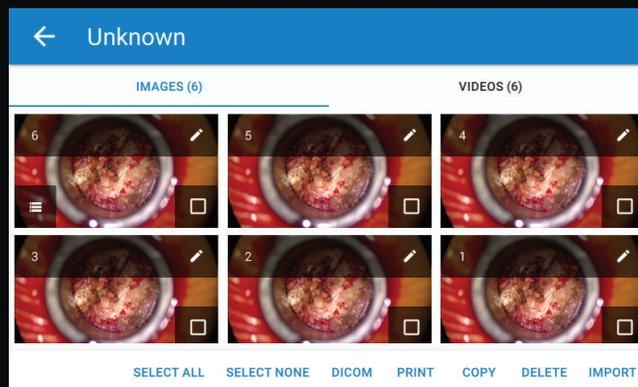
USER SETTINGS



CAMERA SETTINGS



Live video tab



Review tab

SPECIFICATIONS

- Image Sensor** • Native ½" 4K CMOS Chip
- Lens Mount** • C-Mount
- Output Signals** • HDMI 2.0 4K UHD, Full HD 1080p 50/60hz
- Quad-SDI 4K UHD
- 12G-SDI 4K UHD
- 3G-SDI, Full HD 1080p 50/60Hz
- DP 1.2 (*future*)

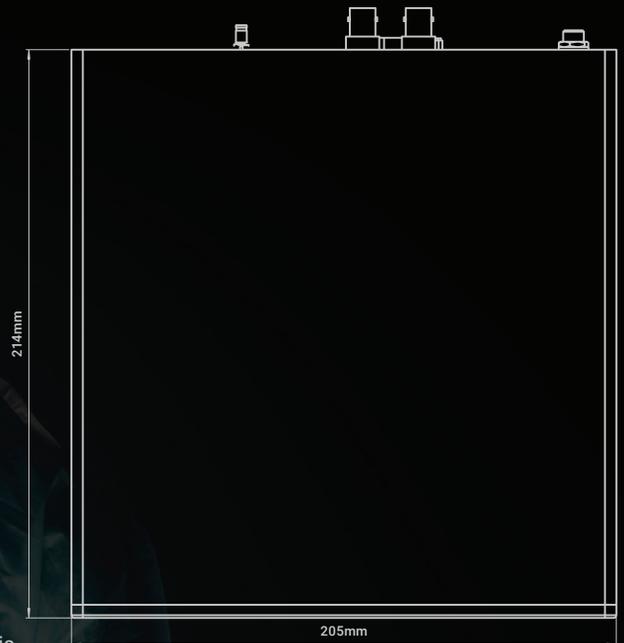
- Input Signals** • 3G-SDI (*future*)
- Camera Cable** • 3m, 6m, 9m or 15m
- Dimensions** • Camera Head:
36mm (Round) x 27.5mm (H)
- Camera Control Unit:
205mm (L) x 214mm (D) x 105mm (H)

- Weight** • Camera Head: 49g (1.72oz)
- Camera Control Unit: 2.72kg (6lbs)

- Power Requirement** • 12V 6.67A

- Power Consumption** • 100-240VAC, 1.3-0.6A, 50-60Hz

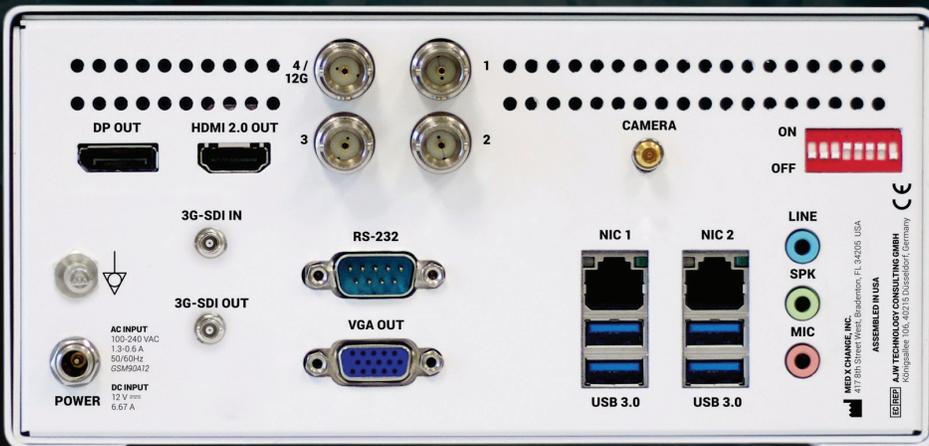
- Safety Certifications** • IEC 60601-1-2:2014 (Ed.4.0)
- IEC 60601-1:2012 (Ed. 3.1)
- No. U8 18 05 74193 030



PERFORMANCE

- Resolution** • 1900+ lines
- Sensitivity** • Sensitivity can change drastically; positively or negatively, based on the optics being used, therefore adding a value for this specification is irrelevant and misleading to the microscope user.

- Signal to Noise Ratio** • (SNR1s) 0.95 lx
Note: SNR1s (lx) is a new index proposed by SONY® for picture quality at low illumination



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U5022-02, 4.0