

4K MEDICAL CAMERA IMAGEING SYSTEM

OEM MODULE ACCESSORIES/ ODM FINISHED PRODUCT CUSTOMIZED SOLUTION PROVIDER

COMPANY

WE established in 2014. The core technical backbone members of the company originated from Huawei. They have product development and design experience in the video imaging industry, involving embedded image acquisition processors and various image application systems such as industrial inspection and medical imaging.

It has in-depth customization cooperation with international major chip manufacturers such as Sony, Panasonic, and Texas Instruments. The products are widely used in medical imaging endoscopy microscopes, industrial inspections, scientific research and military industries.

The company is headquartered in Shenzhen, and has established R&D branches in Shanghai and Hangzhou.

A strong R&D technical group can support customized services according to customer needs. We look forward to in-depth cooperation with customers.

2014: Company established in Shenzhen


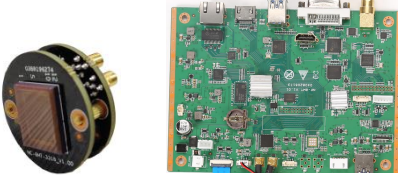

2015: Release the first generation 1080P camera system

2016: Hangzhou R&D Center was established, and released the second generation 1080P camera system

2017: Shanghai R&D Center was established and 4K system was released

2021: Started R&D of the fourth-generation FPGA 4K camera system, 3D, fluorescence, flexible and rigid together

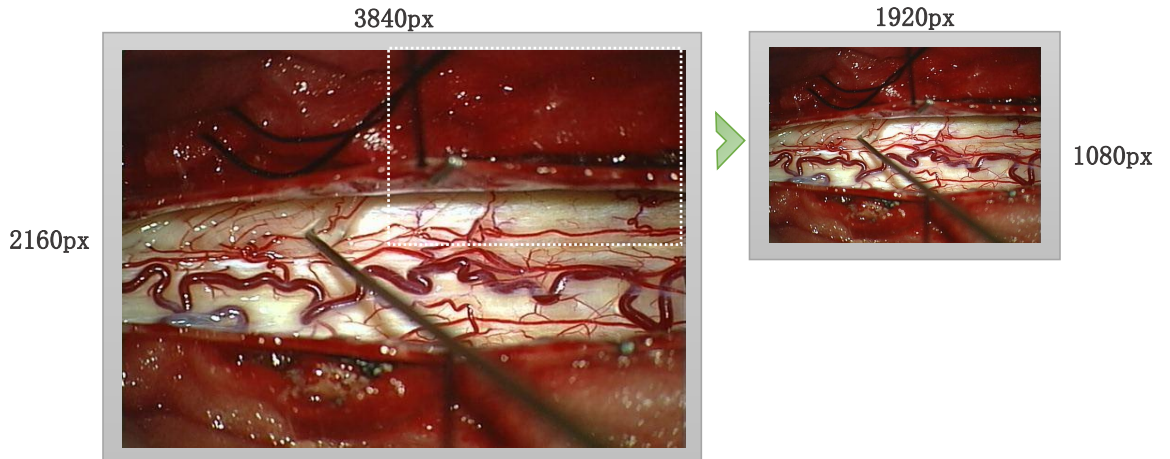
CATALOG

MODEL	FEATURE	PHOTO	SIZE
1th	<ul style="list-style-type: none"> ● Model: 2MF ● 1920*1080P60 fps 2.0MP ● 1/2.8" or 1/1.8" SONY COMS ● USB RECORD CAPTURE 		CAM: ϕ 29mm CCU: 100*147mm
2th	<ul style="list-style-type: none"> ● Model: 8MT ● 3840x2160P 4K60fps 8.0MP ● 1/1.8" or 1/1.2" SONY COMS ● USB RECORD CAPTURE ● VIDEO AND PHOTO PLAYBACK ● Mouse operation ● APP NETWORK ● Touch menu and video on one panel 		CAM: ϕ 28mm CCU: 120*168mm
3th	<ul style="list-style-type: none"> ● Model: 8MF ● 3840x2160P 4K60fps 8.0MP ● 1/1.8" or 1/1.2" SONY COMS ● USB RECORD CAPTURE ● VIDEO AND PHOTO PLAYBACK ● Mouse operation ● APP NETWORK ● Touch menu and video on one panel ● Wired and wireless remote control 		CAM: ϕ 28mm CCU: 69*93mm

INTRODUCTION

1. 4K ultra-high-definition resolution: 3840*2160 in line with UHDTV standard, frame rate up to 4K60 frames, real-time no jitter;

The resolution of 4K can provide more than 8 million pixels, achieving film-level picture quality, which is equivalent to more than four times the current full HD 1080p resolution.



2. 12Bit color depth: support rec. 2020 color gamut standard, the camera collects raw data of the sensor, enters DSP processing, and outputs R, G, B, Y four adjustable color phase matrices through 12bit HDMI2.0, to get richer Color reproduction, color difference $\Delta C00 < 3$

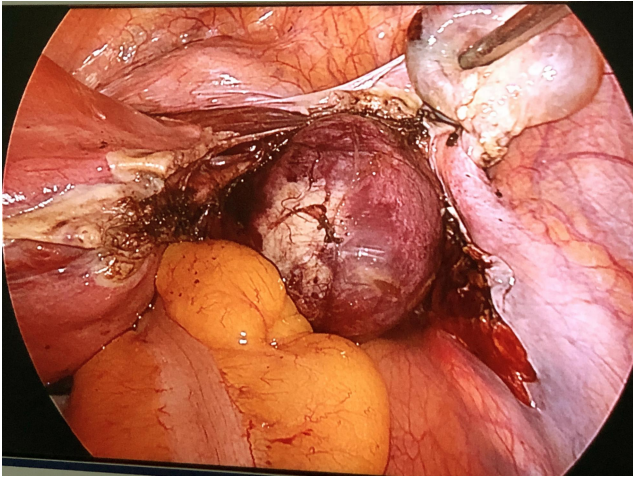
8BIT 的1080P 画质

12BIT 的4K 画质

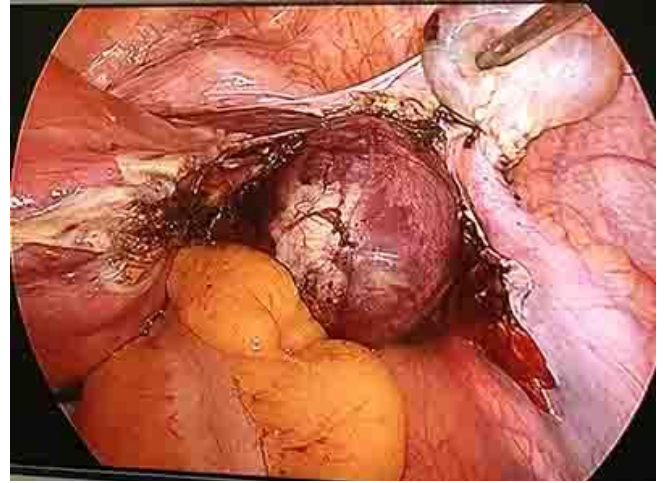


3. Endoscope application:

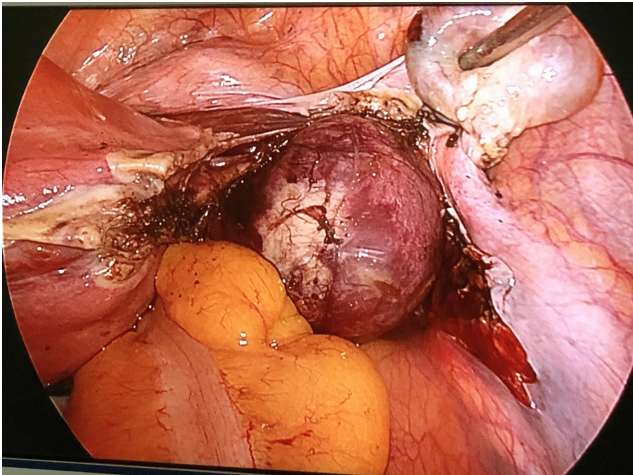
Vascular enhancement on



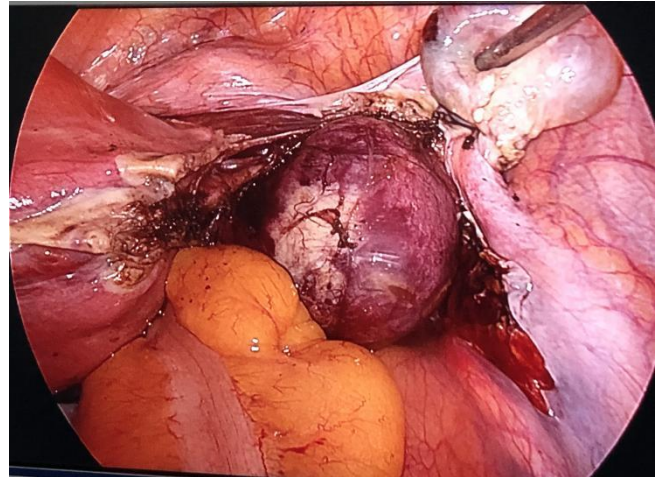
vascular enhancement off



White balance corrected



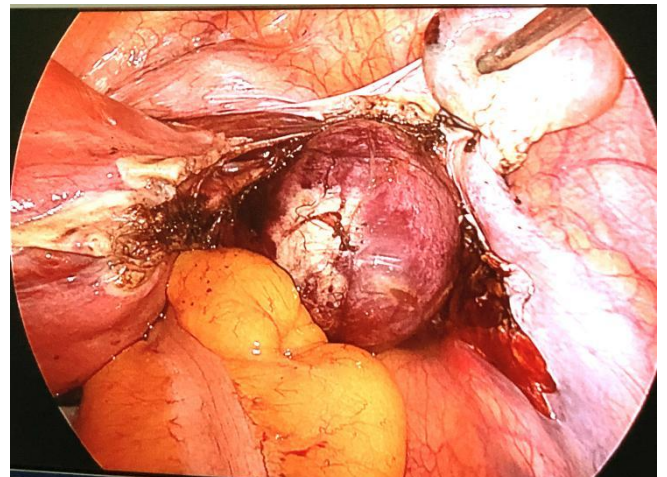
White balance uncorrected



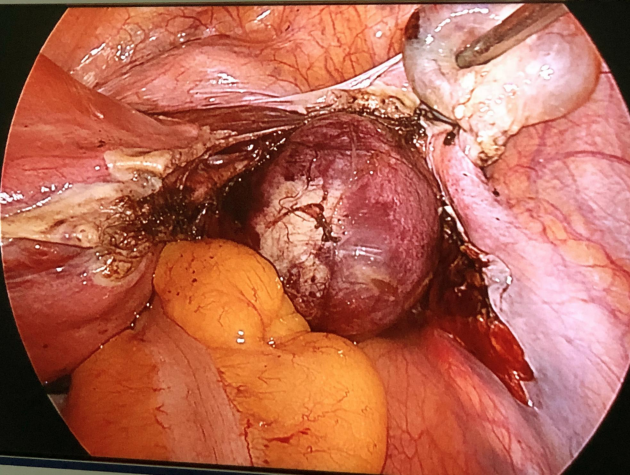
Strong light suppression



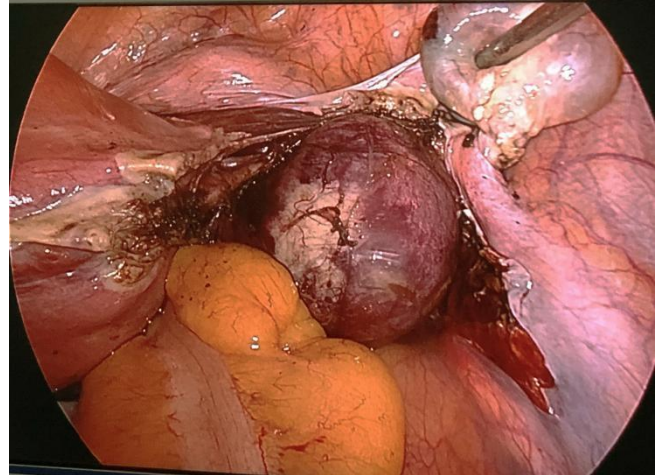
Strong light untreated



Permeability-increasing



Permeability unreinforced



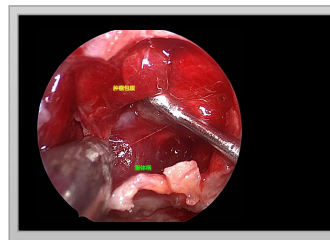
4. CAMERA CASING

- The waterproof rating of the handle shell reaches IP68, and it supports high temperature and high pressure disinfection;
- 4 shortcut keys on the handle can customize functions

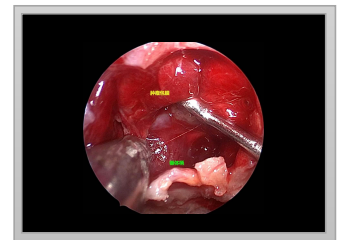


5. OFFSET

Before offset



After offset



6. SUPPORT RECORD AND PLAYBACK:

- Support 4K or 1080P video storage and 8 million pixel camera
- Watch playback videos and pictures on the host, or copy data to a U disk.



7. SUPPORT NETWORK APP WEBCAST:

- Provide mobile phone APP and PC computer software, network on-demand shooting real-time images, taking pictures, recording, video editing, etc.;
- One-click sharing of clinical pictures and videos in the cloud



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8. PROVIDE 5/7 INCH HD LCD PANEL:

- Image video and touch menu on one LCD panel



八. CUSTOMIZED SERVICES:

- Customize camera menu
- Touch UI interface
- Boot LOGO screen
- PCB hardware design



ADVANTAGE

	Advantages of our products	Other cameras
Structure	<p>1. Miniature size camera (such as coin size): The camera handle shell can be designed to be very light and ergonomic.</p> <p>2. Camera module ISP split design, low power consumption, no heat, more stable, low failure rate.</p> <p>3. The copper shaft cable connection is simple and has strong shielding performance, is not easy to be interfered, and the after-sales maintenance cost is lower.</p>	<p>1. At present, most of the low-end cheap endoscopic cameras on the market use security surveillance cameras, that is, the sensor and the processor are on the same circuit board, which generates a large amount of heat and has a high defect rate after long working hours.</p> <p>2. The low-end camera is basically a patchwork of the camera and the back-end signal transfer board, and the signal is easy to attenuate and unstable.</p> <p>3. Failed to pass the medical EMC and safety certification, and the rectification process is very complicated.</p>
Software	<p>1. The large target surface (1/1.8") of the camera sensor is more suitable for endoscope applications: under low light, the color and clarity are still excellent.</p> <p>2. Specifically for the color temperature of the light source of the medical microscope, the color is corrected under the professional color temperature light box to ensure color reproduction and ensure no color cast after bleeding.</p> <p>3. With the inherent advantages of Sony's back-illuminated sensor, the ultra-high sensitivity is more suitable for use in ophthalmic microscopes; ultra-high and wide dynamic: the near teeth are blocked, and the distant tissues are still visible.</p> <p>4. The self-developed light metering intelligent algorithm suppresses the reflection of the instrument and improves the comfort of the doctor's operation</p>	<p>Most of the industrial security cameras are based on the software debugged in the industrial security environment, and the clarity and color reproduction of the endoscope under low illumination are average;</p> <p>Industrial security cameras have not debugged software specifically for medical surgery scenarios: inaccurate white balance, color cast after bleeding, poor permeability and dynamic range; no treatment is done when encountering metal equipment reflections</p>
Application	<p>1. Up to 4 ports can output video to the monitor, which is convenient for the attending doctor/assistant to watch the screen at the same time from different angles.</p> <p>2. Support high-definition images and touch interface on the same screen display, integrated design, simple, convenient and fast.</p> <p>3. Support wired and wireless remote control foot switches, USB mouse and keyboard devices, directly edit case information, and even print reports.</p> <p>4. Support network on-demand and sharing, mobile phone watch video, support medical standard DICOM protocol.</p> <p>5. Support remote U disk upgrade, no need to go to the customer site for maintenance.</p>	<p>1. Most of the video signal adapter boards do not support the recording function and require an external video module, which adds extra cost and is unstable and the picture quality is lost.</p> <p>2. There is a lack of many applications specifically for medical endoscopes. The scalability is low, and any other applications cannot be modified or expanded.</p>

SPECIFICATION

MODEL	2MF	8MT	8MF
RESOLUTION	1920*1080P60FPS	3840*2160P60FPS	
SENSOR	1/2.8" 1/1.8" COMS	1/1.8" 1/1.2" COMS	
TV LINES	≥800 Line	≥1600 Line	
COLOR	3500k、6500k、7500k、USER		
SHROTCUTS	AWB, freeze, video, photo, scene switching, zoom, color, brightness		
SURGICAL	LAPAROSCOPE/OTO&NEURO/ARTHOSCOPE/FIBERSCOPE/LARYNGO/GYN&URO/PTED		
STORAGE	U disk or mobile hard disk	U disk or mobile hard disk and SD	
PLAYBACK	VIDEO AND PHOTO		
RECORD	1920*1080P	3840*2160P	
FILES	30 MINUTES/MP4	30—120 MINUTES/MP4	
CORDING	H264	H265	
PHOTO	2MP/JPG	8MP /JPG	
VIDEO OUT	2xHDMI+1xDVI+1xSDI+1xCVBS +2xUSB+NET	HDMI (2.0) +HDMI (1.4) +DVI+SDI+3xUSB3.0+NET	HDMI (2.0) +2xUSB3.0+SD +AUDIO+REMOTE+NET
SDK	RS232	RS232, NETWORK PROTOCOLS	
AUDIO	NO	YES	
REMOTE	YES		
MOUSE	YES		
FOOT SWITCH	YES		
LANGUAGE	Chinese, English, Russian, Spanish, (Portuguese, German, French optional)		