ZH480-S
HANDHELD CORONA DETECTION CAMERA

ZH480-S Corona Detection Camera is a cutting-edge handheld bi-spectral UV and Visible light imaging device for corona discharge detection. Nice out-of-band rejection performance achieves all-weather detection in daytime. Ergonomic & Compact coaxial optical design with a sleek and user-friendly interface, ZH480-S is easy to handle and take on the go. 5.5" 1080P touch screen; Bluetooth, WIFI, 5G, GPS, temperature and humidity sensor, Laser rangefinder, quick snap trigger, auto naming, etc. It is an ideal tool for substations, transmission and distribution lines, HV lab testing and maintenance services. Upgrade your inspection capabilities with the ZH480-S Camera – the future of corona defect diagnosis is here!

Wide Angle FOV	Multi Box ROI	1080P HD Resolution	Threshold Alarm	Out-of-band Rejection
5.5″ LCD	GPS	WIFI	5G	Bluetooth
Touch Screen	Temperature Humidity Sensor	Laser Rangefinder	Auto Naming	Auto Report

KEY FEATURES

Wide Angle F.O.V.
Wide angle F.O.V. facilitates the overall imaging of testing targets in limited testing space application such as substations/labs, greatly improving testing efficiency.

Multiple Communications
Multiple communications tools including WIFI, 5G, Bluetooth ensure the security and convenience of data. Quickly access private data platforms.

| Various Auxiliaries |
|---|
| GPS, temperature & humidity sensor, laser rangefinder and 5" 1080P HD LCD make on-site testing more convenient and quantitative testing more accurate. |

| Innovative Design |
|---|
| Ergonomic & Compact coaxial optical design with a sleek design. The single handle and touch screen design facilitates individual operations. |

Practical Functions
According to the pre-set threshold value of photon number, an automatic alarm will be triggered and shown on the screen. Hand trigger is designed for quick snap.

Automatic Result
The files for still images and videos will be automatically named in time sequence, and batch reports will be output, which will significantly reduce the time for later data processing and report.
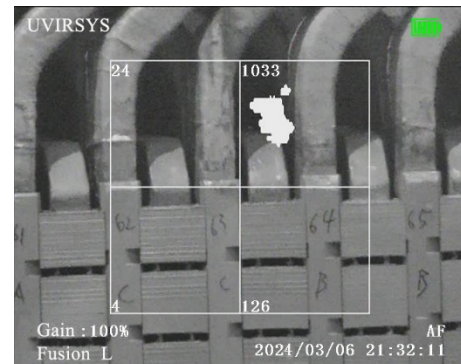
5 kinds of photon counting boxes for quantitative analysis
of different corona discharge zones of the same power facility
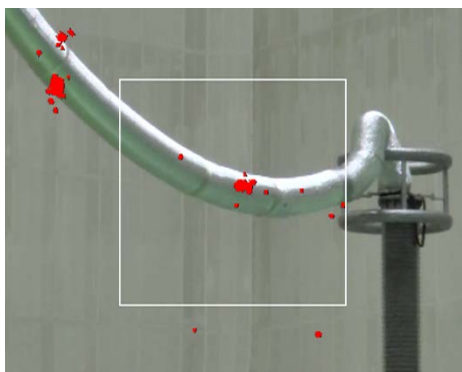
Continuous zoom in the fusion mode for wide-angle detection at long-distance

SPECIFICATIONS

PARAMETERS	DESCRIPTIONS
UV - OPTICAL PROPERTIES	
UV Spectral Range	240 ~280 nm
Our-of-Band Rejection	Provided, Can Be Used in Daytime Under Sunshine
Minimum Discharge Sensitivity	1.0 pC /12m (IEC 60270:2000)
Minimum RIV Sensitivity	3.6dBμV (RIV) @10m (NEMA107-1987)
Minimum UV Sensitivity	2.0×10^{-18} Watt/cm²
Focus & Focus Range	Auto/Manual(Follow visible light), 1.0m ~ ∞（Optional to 0.5m)
F.O.V & Zoom	20.0° * 11.2°, X2, X4
UV Integral Function	Provided, X2, X4, X8, X16
Gains & Detector Degradation	0-100% adjustable, Detector no degradation
Photons Counting	Provided
Counting Box	5 Kinds: Small, Medium, Big, Full Screen, Quad box
Alarm	Provided, Alarm Threshold Values Can Be Set
VISIBLE - OPTICAL PROPERTIES	
Focus & Focus Range	Auto, 1.0m ~ ∞
Minimum Visible Light Sensitivity	0.01 Lux
Zoom	Optical 4X, Digital 12X Continuous Zoom
Resolution	3840*2160
DISPLAY	
Modes	Combine (UV+VIS), UV only, Visible Only
UV/Visual Overlay Accuracy	1 mrad
LCD	5.5" Touch Screen
Brightness	1000 cd/cm²
Display Resolution	1920*1080
Corona Color	7 Kinds: Red, White, Blue, Yellow, Cyan, Green, Magenta
Status Information Display	Battery, Gains, Photons Counting, Focus Mode, Date, Alarm

PARAMETERS	DESCRIPTIONS
CONTROLS AND OPERATION	
Status Modes	Real Time, Standby, Power off
Continuous Operation	Continuous Operation, No Cooling System
Controls Command	One for One Keyboard Input
LED Light	Provided, ON/OFF
Laser Rangefinder	Provided, 0.5-40m
Communications（Optional）	WIFI, 5G, Bluetooth
Temperature & Humidity Sensor	Provided
Auto naming	Provided
Auto Report	Provided
SAVE AND PLAYBACK	
Video	Provided, MP4
Still Images	Provided, JPG
Data Save	64G SD Card
Playback Function	Videos and Still Images
Audio Annotation	Microphone Voice Input
PHYSICAL PARAMETERS	
Battery	Rechargeable Li Battery
Working Hours	≥4h
Adapter	DC7V-9V, 10W
Operation & Storage Temp	-20℃ to + 55℃ ， -20℃to +60℃
IP Grade	IP54
Dimensions L*W*H	30.0 × 15.5 × 11.2 cm
Weight	1.2 kg
Configurations	Basic Units, 64G Card, Card Reader, Carrying Strap, AC-DC Adaptor, 2 Batteries, Carrying Case, Software, Manual

ZH480

PORTABLE CORONA DETECTION CAMERA

ZH480 UV Camera is a powerful dual-channel UV imaging equipment with a wide-angle and telephoto lens. It can accurately locate corona and arc, display and record the photon number of discharge. With a moderate spectral range, the camera can be used in the daytime under sunshine. It can realize the prospective and pre-maintenance inspection of electrical equipment such as substation, transmission and distribution line, generator and railway line. It can also be used in mining, petroleum, heavy industry, fire prevention, insurance, detection services and other industries. Using a high-performance UV detector and filter, it has high sensitivity and can detect weak UV signals. High precision image registration and fusion algorithm are used to obtain accurate location and clear images and videos.

ZH480 Key Features

Dual F.O.V Lens: 13.3*10.6°(Wide Angle)& 5*3.75°(Telephoto)

Convenient Field Inspection

An external wide-angle or telephoto lens is more than 500 g. You need turn it on and off for calibration after changing the lens. ZH480 doesn't need to change the lens on site, and can be easily switched by the menu, the overall weight is only 1.8kg.

Wide scope of application

For a close target (substation), the whole component (such as bushing) needs to be imaged in a wide field of view. For long-distance target, you need a telephoto lens to clearly image the target. Traditional UV camera is hard to view the whole object in close range.

High Cost-performance

A separate wide-angle or telephoto lens costs a lot. ZH480 adopts built-in dual F.O.V lens, and one camera serves for multiple purpose, which can greatly save your cost.

Efficient Inspection

The test area can be increased by 4 times at the same distance by using wide angle lens. The comprehensive inspection efficiency can be increased by 4 times with ZH480 dual F.O.V UV camera.

※ High Sensitivity Detector

High-performance no attenuation UV detector is very powerful for weak UV signal generated from discharge corona.
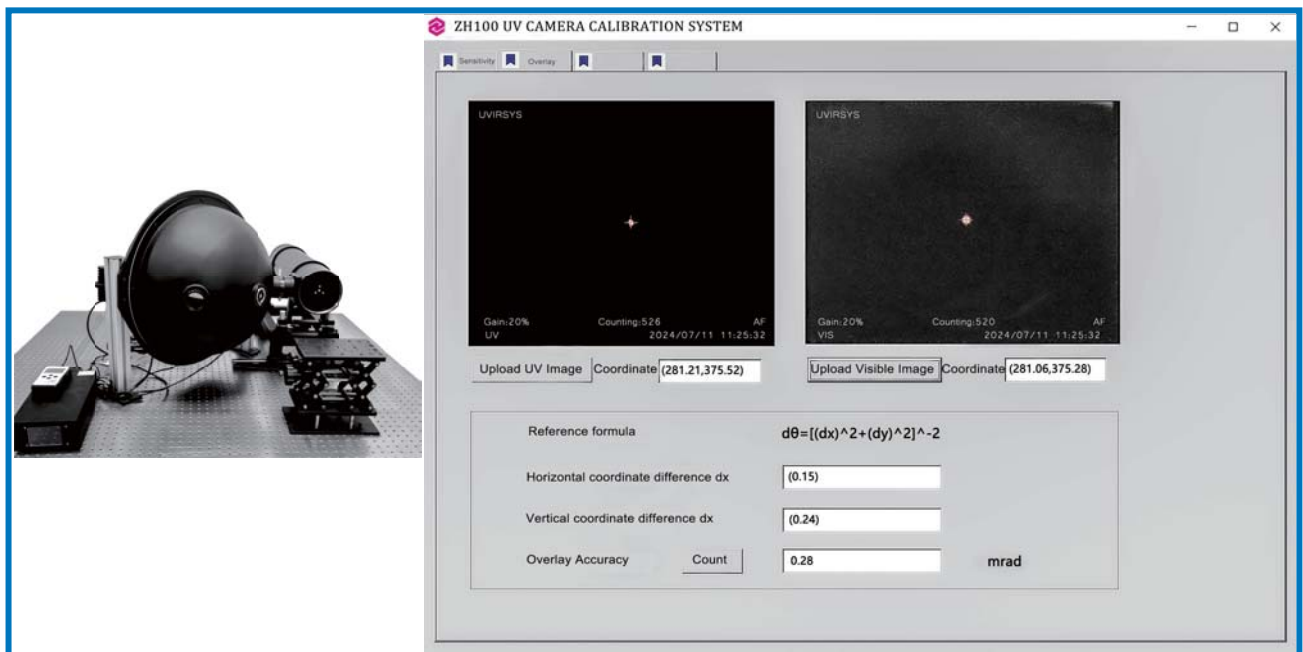
※ High performance Filter

High precision 240-280nm cutoff wavelength UV filter, which has excellent out-of-band rejection performance and will not interfered by sunlight

※ Accurate Photon Number

Up to 5 types photon counting boxes can be selected for quantitative analysis. Single or multiple areas corona photons counting.

※ Accurate Positioning

High precision image fusion algorithm can accurately locate the corona position, the overlay accuracy is 0.5mrad.

ZH100 UV CAMERA CALIBRATION SYSTEM

Sensitivity   Overlay

UVIRSYS   UVIRSYS

Gain:20%   Counting:526   AF   Gain:20%   Counting:520   AF
UV   2024/07/11 11:25:32   VIS   2024/07/11 11:25:32

Upload UV Image | Coordinate (281.21,375.52)   Upload Visible Image | Coordinate (281.06,375.28)

Reference formula $d\theta=[(dx)^2+(dy)^2]^{-2}$

Horizontal coordinate difference dx   (0.15)

Vertical coordinate difference dx   (0.24)

Overlay Accuracy   Count   0.28   mrad

※ Ergonomic Design

One press button, 64G TF card, 3 * 4.5 hours continuous operation; compact 1.8kg; portable and can be operated by one hand.
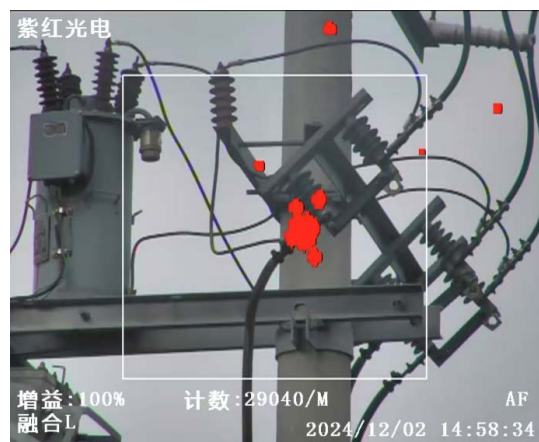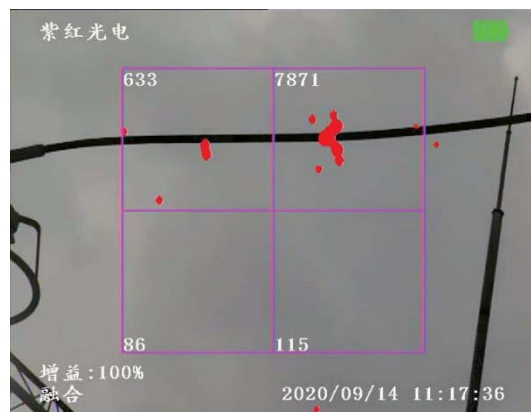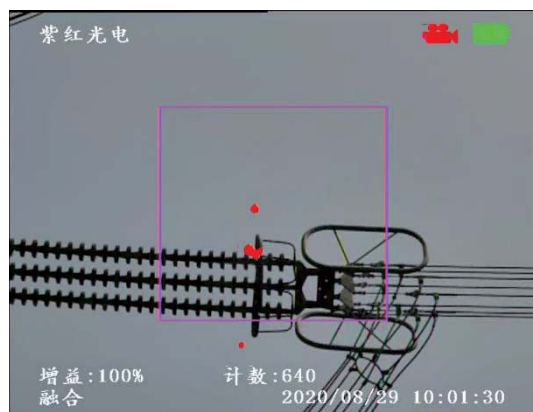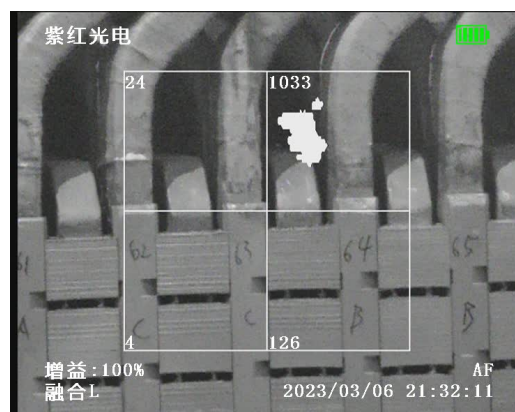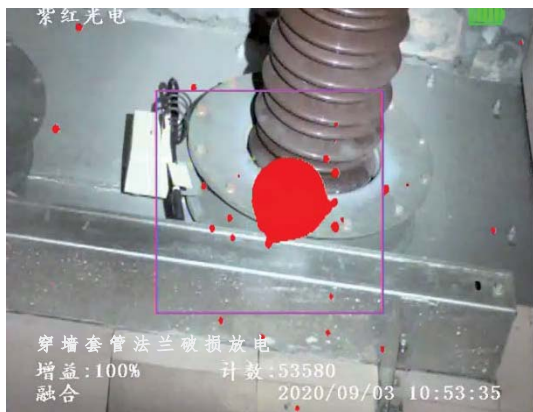
※ Expert Diagnostics

Provide professional test report from EPRI. Meet the 《Charged Device Technology Application Guidelines for UV Diagnositcs》.

※ Multiple Configuration

Standard configuration wih 3 pcs batteries. Tripod, image report unit, temperature and humidity sensors, distance sensors, GPS etc are optional.

※ After-sales Service

1+1 year warranty; enough spare parts; Local after-sales engineers will be trained to provide locally and rapidly repairment.

紫红光电

穿墙套管法兰破损放电
增益:100%　　计数:53580
融合　　　　2020/09/03 10:53:35

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24　　　1033
62　63　64　65
C　C　B　B
4　　126
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融合L　　2023/03/06 21:32:11

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融合　　2020/09/14 11:17:36

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增益:100%　计数:58560/M　超限　AF
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ZH480 Technical Specifications

UV - OPTICAL PROPERTIES	
Spectral Range	240 to 280nm
Minimum Discharge Sensitivity	1.0 pC @15m (IEC 60270:2000)
Minimum RIV Sensitivity	3.6 dBμV （RIV) @10m (NEMA107-1987)
Minimum UV Sensitivity	$2.0*10^{-18}$ Watt/cm^2
Focus & Focus Range	Auto, 1.5m to ∞, UV integral function: X2, X4, X8, X16
F.O.V & Zoom	Switchable, 13.3 * 10.6° & 5 * 3.75°，X2 detector no degradation
VISIBLE - OPTICAL PROPERTIES	
Focus & Focus Range	Auto/Manual(Follow visible light) , 1.5m to ∞
Minimum Visible Light Sensitivity	0.05 Lux
Zoom	x10 optical, x12 digital
DISPLAY	
Modes	Combine(UV+VIS), UV only, Visible only
UV/Visble Overlay Accuracy	1 mrad
Type	5 inch color Transflective Sunlight readable LCD
Brightness	1000 cd/cm^2
Display and Image Resolution	1280*720, 736*576
Status Informatioon Display	Battery, gains, counting number, date, focus, alarm
CONTROLS AND OPERATION	
Status Modes	Real time, sleep, power off
Continuous Opereation	Continuous operation, no cooling system
Controls Command	One for One keyboard input
SAVE AND PLAYBACK	
Video	Provided , Output BNC/HDMI/WIFI/BLUETOOTH(Optional)
Still Images	Provided
Data Save	64G TF Card
Video & Picture Format	MP4/AVI & JPG
GPS, Temperature and Humidity Sensor	Provided
Playback function	Video and Still Image
CHARACTERISTICS	
Detector	Life without attenuation
Images fusion	Images fusion algorithm
Colors	7 kinds of colors selectable
POWER SOURCE	
Battery	Rechargeable batter
Working hours	Rechargeable batter
Comsumption	DC14.8V, 15.4W
ENVIRONMENTAL	
Operation & Storage Temp	-20℃ to +55℃，-20℃ to +60℃，
PHYICAL PARAMETERS	
Dimensions L*W*H	244 x 135 x 96 mm
Weight	1.8kg

Compact Version
ZH480-UAV-S

Drone Carried Corona Detection Camera

ZH480-UAV-S is a a cutting-edge drone carried corona discharge imager that is designed to revolutionize your inspection process. Drone carried imaging system highly integrated UV, visible & laser sensors. Highly Compact with 520g and developed based on PSDK platform, precise PTZ adapter used for quick docking M300-RTK/M350-RTK. AI & image registration technology is used to pinpoint the corona discharge & get accurate photons counting which is important for evaluating the electric facilities defects level.

ZH480-UAV-S is an efficient inspection solution for transmission & distribution lines, railway lines, substations, forest fire prevention, maintenance services and other industries.
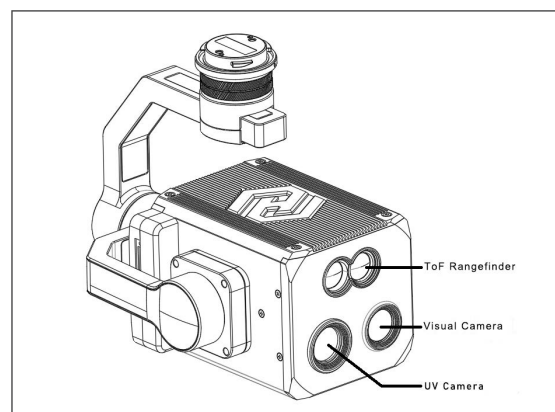
Standard Pan-Tilt	High-integration	Individual Operation	Joint Diagnosis	Quality Service

Features

- Standard Pan-Tilt & Excellent shock-resistance
- High integration of UV, VIS & Laser
- Individual Operation & Quality and Efficiency
- Drone pilot and UV photography certificate

ToF Rangefinder
Visual Camera
UV Camera

ZH480-UAV-S Technical Specifications

UV properties	
Spectral Range	240~280 nm
Discharge Sensitivity	1Pc @10 m
RIV Sensitivity	3.6 dBµV(RIV) @ 1 MHz@10 m
UV Sensitivity	3.0×10^{-18} watt/cm^2
FOV	20° ×11.2°
Gain	0-100%

VIS properties	
FOV	9°-52°
Sensitivity	0.1 Lux
Sensor size	20*30 mm
Digital zoom	10 x digital zoom

Display and output	
Display Mode	UV、VIS、UV +VIS
Overlay Accuracy	≤ 1mrad
Display Control	UAV flight control
Resolution	1280×720
Threshold Alarm	Support photon number, temperature reading settings
Image	JPG & RAW
Video	MP4/H.264
Corona Colors	Red, white, blue, yellow, cyan, green, magenta
Status Info	Mode、Gain、Counting、Color、Temperature、Alarm

IR properties (Options to ZH580-UAV-S	
Band	8-14µm
Temp Range	-20 ℃ — +550 ℃
Pixel Size	12µm
FOV	46° ×37°
Focus	Fixed Focus
Digital Zoom	1-4 x

Physical	
Dimension	118×83×58 mm
Weight	520g（without pan-tilt）；870g（with pan-tilt）
Protection Class	IP54
Accessories	Pan-tilt+Mainframe/64G card/Micro SD/Manual/Carrying case

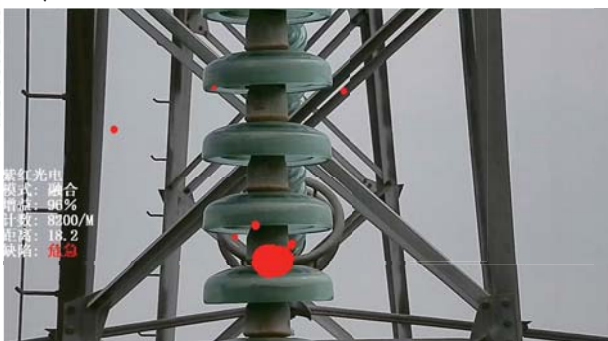| Drone（Options of M300-RTK or M350-RTK）	
Dimension	Unfold 810×670×430 mm Fold430×420×430 mm
Weight	3.6 kg、6.3 kg(With two batteries)
Maximum Load	2.7 kg
Flight Altitude	5000 m
Wind Speed	15 m/s
Flight Time	55 min
IP Rating	IP45
Operation Temp	-20℃-+55℃
Humidity	≤ 90%RH

◆ **Precise Pan-Tilt**

Precision aerial Pan-Tilt, excellent shock resistance, stability and adaptability, can be quickly loaded and unloaded within 2 minutes on site.
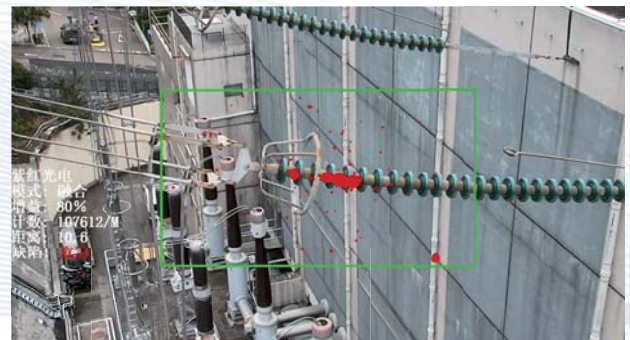

◆ **NDT Diagnosis for Discharge**

Use zoom function, the operator can detection corona defect at far distance. It will provide alarm info when signal over thredheld.

◆ **High Resolution**

High resolution to get clear images and videos to pinpiont the defects at safety distance.

ZH480-ONL
Online Corona Detection Camera

ZH480-ONL is a dual-spectrum integrated imaging system of UV and visible light, which can detect weak corona which has UV radiation of the partial discharge. It can conduct online real-time monitoring, quantitative indication, and intelligent analysis of HV electric facilities. Through the front-end, on-site inspection units with a control center, an on-line intelligent power facilities analysis system is constructed to effectively improve the operation safety, automation & intelligence level of the substation. It is an innovative technical means for the discharge monitoring of power equipment.

Advantages & Characteristics

- High sensitivity UV detector
- Accurate image fusion algorithm
- Accurate positioning
- High resolution visible camera
- 360° rotating high-precision pan-tilt Industrialized design, durable, stable
- Multi-screen for real-time monitoring
- Set the preposition of patrol inspection Unattended humanized control panel Multi-parameter control and
- Accurate UV photon counting
- Daytime usable, unaffected by sunlight
- One-line design of communication and control central remote signal transmission
- Powerful background analysis and diagnosis

- Integrated design for monitoring
- Early warning
- Lightning protection, interference prevention
- Grounding measures
- Accept customization
- No attenuation detector
- Digital image filtering and noise reduction

ZH480-ONL Corona Camera Core Unit

ZH480-ONL Online Corona Detection Camera Technical Specifications

| Features of UV Camera	
Spectral Range	240～280 nm
Minimum Discharge Sensitivity	1Pc/10m
Minimum RIV Sensitivity	3.6dBμV (RIV) @ 10m
Minimum UV Sensitivity	2.0×10^{-18} watt/cm^2
F.O.V.	Switchable, 12.6 * 7.2 & 5 * 3.75
Focus Range	1.5m～∞
Focus	Auto
Variable Speed Pan-Tilt Features	
Horizontal Range of Motion	0°～360° continuous rotation
Horizontal Speed	0.01°～60°/S
Vertical Range of Motion	-75°～+40°
Vertical Speed	0.01°～30°/S
Preset	Support 128 presettings
OSD	English/Chinese/Japanes menu, real-time display
Relay Output	4 ways
Angle Backhaul&Control	Real-time backhaul and control
Lens Control	Available, configure lens preset interface
Features of VIS Camera	
Imaging Device	1/4 inch SuperHAD CCD
Parameter of Lens	10x optical zoom, 18x digital zoom
Minimum illumination	Chromatic color 2Lux，0.004Lux;black&white 0.2Lux
Horizontal Resolution	Chromatic color 600TVL，black&white 700TVL
Electronic Shutter	1/100-1/10000s
Slignal-Noise Ratio	52dB
Dynamic Detection	Available
Resolution	Effective pixel 1920(H)x 1080(V)
Control Interface	Ethernet, RS-485/232

ZH580

Multi-spectral Camera (UV+IR+VIS)

Corona and Temperature Measurement For Power and Electricity

ZH580 Daytime Corona Cameras is a non-destructive testing (NDT) technology which is now widely used for substations, transmission and distribution lines corona and temperature related defects detection. ZH580 takes the UV detecting technology, infrared thermal detection technology and visual optical fusion algorithm technology. It uses out-of-band rejection UV filter technology which can eliminate the disturbance of sunlight background and detect wear UV signals generated by corona. ZH580 is an advanced multi-spectral camera with the combinations a UV camera, an infrared (IR) camera and a visible light camera, which provides the possibility of performing a corona and thermal inspection simultaneously and efficiently.
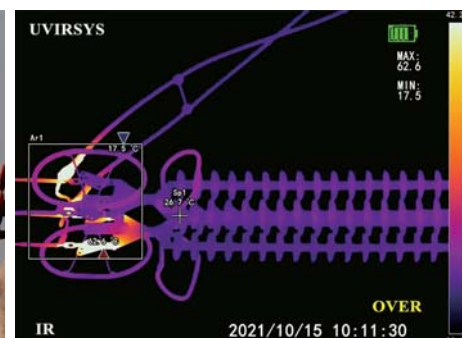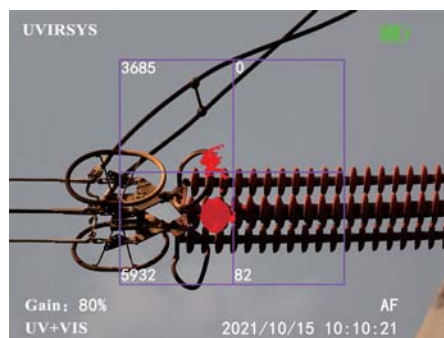
Application	· Substation	· Transmission & Distribution Lines	· HV Laboratory
	· Power Plant	· Railway & Subway power Facilities	· Inspection Service for Electric & Power

- ◇ No tailing, pinpointing for precise positioning
- ◇ Photons counting for quantitative analysis
- ◇ Daytime and night application
- ◇ Adjustable UV gain from 0-100%
- ◇ Closed encloser, low heat, continuous stable operation
- ◇ 5.7 inch Large deluxe reflective LCD

- ◇ High IR pixels: 640*480
- ◇ Temperature Range: -20 - 150 ℃
- ◇ Temperature Accuracy:± 2℃
- ◇ High Overlay Accuracy
- ◇ More than 3 hours of battery operation
- ◇ Portable and compact, 2.9kg

High Sensitive UV Sensor

High performance UV Sensor, can detect very weak Corona signal, 240-280nm out-of-band rejection Technology,can be used daytime and night.

Precise Defects Positioning

With 1 mard overlay accuracy for the fusion visible, IR, UV images. By adjust gains, to obtain pinpoint UV signal and analyse the exactly location of the defects.

Photons Counting

By 1-4 Region of Interest (ROI), accurate photon numbers can be obtained to analyse the serious of defects.

Still Pictures and Video

Still pictures and videos can be recorded and played back. All data can be stored in 32G TF card for further analysis.

Ergonomic Design

Compact structure with built-in Li battery, One key one function. Easy operation. Portable, 2.9 kg. Standard tripod mounting hole. Large size sun shading board.

Rugged Reliable

Rugged reliable design, applicable to severe atmospheric environment for continuous stable operation.High quality material with excellent performance.

Simultaneous and Efficient

Integrated information about the faults, jointly locating partial discharges and abnormal temp spots.

High Pixels IR Sensor

640*480 pixels Infrared Sensor with ±2 accuracy.Display the temperature point and its position in real time.

ZH580 Technical Specifications

UV - OPTICAL PROPERTIES	
Spectral Range	240 to 280nm
Minimum Discharge Sensitivity	1.0pC @15m
Minimum RIV Sensitivity	3.6dMμV （RIV) @10m
Minimum UV Sensitivity	$2.0*10^{-18}$ Watt/cm²
Focus & Focus Range	Auto,/manual, 0.5m to ∞, UV integral function: X2, X4, X8, X16
F.O.V	10.0 * 8.0 °
VISIBLE - OPTICAL PROPERTIES	
Resolution, Focus & Focus Range	1920x1080, Auto/manual, 0.5m to ∞
Minimum Visible Light Sensitivity	0.1 Lux
Zoom	x10 optical, x12 digital
IR - OPTICAL PROPERTIES AND DISPLAY	
IR Pixels & Spectral Range	640 x 480, 8-14μm
Temp Range & FOV	-20 - 600℃ , 12.4° x 9.9°
Temp Accuracy & Sensitivity	± 2℃/ ±2% , NEDT 50mK
Display Modes	Combine(UV+VIS), UV only, Visible only
Display Type	5.7 inch color Transflecctive Sunlight readable LCD
Display Brightness and Resolution	800cd/cm²
CONTROLS AND OPERATION	
Status Modes	Real time, sleep, power off
Continuous Opereation	Continuous operation, no cooling system
Controls Command	One for One keyboard input
SAVE AND PLAYBACK	
Video	Provided
Still Images	Provided
Data Save	64G TF Card
Video Format	MP4
Stills Format	JPG
Playback function	Video and Still Images
CHARACTERISTICS	
Detector	Life without attenuation
Images fusion	images fusion algorithm
Colors	multiple colors selectable
POWER SOURCE	
Battery	Rechargeable batter
Working hours	3 hours
Comsumption	DC14.8V, 18.5W
ENVIRONMENTAL	
Storage & Operation Temp	-20℃ to +60℃ , -20℃ to +55℃
PHYICAL PARAMETERS	
Dimensions L*W*H	229 x 131 x 105 mm
Weight	2.8kg

Standard Pan-Tilt	High-integration	Individual Operation	Joint Diagnosis	Quality Service

ZH580-UAV-S

Drone Carried Multi-spectral Camera

ZH580-UAV-S is a drone carried multi-spectral imaging system with high integration of UV, IR, visible & laser, which has characteristics of integrated design, lightweight, multi-spectral and quick-handling. Developed based on the PSDK platform, through the high-precision special pan-tilt quickly docking M300RTK and other mainstream drones. Images were fused by high-precision image registration to obtain the exact location of corona discharge, temperature anomaly, missing damage and other defects.

ZH580-UAV-S is very suitable for UAVS transmission and distribution lines, railway lines, substations, forest fire prevention, operation and maintenance services and other industries.

Features

- Standard Pan-Tilt & Excellent shock-resistance
- High integration of UV, IR, VIS & Laser
- Individual Operation & Quality and Efficiency
- 4 in 1 Multi-spectral joint diagnosis
- Secured equipment & Good after-sale service
- Drone pilot and UV photography certificate

ZH580-UAV-S Technical Specifications

UV properties	
Spectral Range	240~280 nm
Discharge Sensitivity	1Pc @10 m
RIV Sensitivity	3.6 dBμV(RIV) @ 1 MHz@10 m
UV Sensitivity	3.0×10^{-18} watt/cm^2
FOV	20° ×11.2°
Gain	0-100%

VIS properties	
FOV	9°-52°
Sensitivity	0.1 Lux
Sensor size	20*30 mm
Digital zoom	10 x digital zoom

Display and output	
Display Mode	UV、IR、VIS、UV +VIS、UV+ IR、UV+ IR+VIS
Overlay Accuracy	≤ 1mrad
Display Control	UAV flight control
Resolution	1280×720
Threshold Alarm	Support photon number, temperature reading settings
Image	JPG & RAW
Video	MP4/H.264
Corona Colors	Red, white, blue, yellow, cyan, green, magenta
Status Information	Mode、Gain、Counting、Color、Temperature、Alarm

IR properties	
Band	8-14μm
Temp Range	-20 ℃ —+550 ℃
Pixel & Size	640 × 512，12μm
FOV	46° ×37°
Focus	Fixed Focus
Digital Zoom	1-4 x

Physical	
Dimension	118×83×58 mm
Weight	550g（without pan-tilt）；900g（with pan-tilt）
Protection Class	IP54
Accessories	Pan-tilt+Mainframe/64G card/Micro SD/Manual/Carrying case

Drone（Optional）	
Dimension	Unfold 810×670×430 mm Fold430×420×430 mm
Weight	3.6 kg、6.3 kg(With two batteries)
Maximum Load	2.7 kg
Flight Altitude	5000 m
Wind Speed	15 m/s
Flight Time	55 min
IP Rating	IP45
Operation Temp	-20℃-+55℃
Humidity	≤ 90%RH

◆ **Precise Pan-Tilt**

Precision aerial Pan-Tilt, excellent shock resistance, stability and adaptability, can be quickly loaded and unloaded within 2 minutes on site.
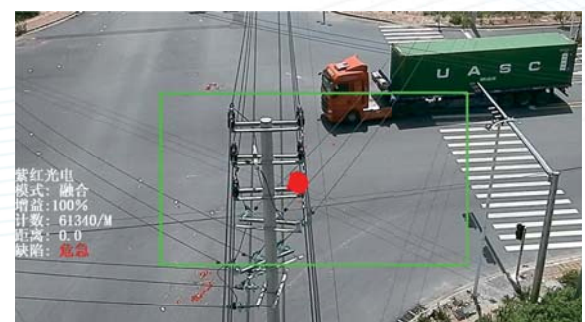

◆ **Joint Diagnosis**

Multi-spectral imaging technology combined, improving the diagnostic accuracy and detection efficiency, reduce the false alarm and miss alarm rate.

◆ **Highly Integrated**

High sensitivity UV movement, IR movement, high-definition VIS camera and laser ranger are highly integrated, one machine multi-capability.

ZH580-ONL

# Multi-spectral Camera (UV+IR+VIS)

Online Corona and Temperature Measurement For Key-point Electric Facilities

ZH580-ONL is an online monitoring and imaging system with high resolution of UV, IR and visible light channels. Partial discharge and overheat are often early signs of electrical equipment failure. 24-hour online monitoring of power equipment is crucial at key locations. It can regularly monitor the power equipment within the field of view based on pre-set inspection points and paths, and provide real-time alarm and coordinate. It can be widely used for monitoring converter stations, substations, and transmission lines.

Technical Specifications

- Pixels: UV 736×576, IR 640×480, Visible light 1920×1080

- Up to 256 group of pre-set inspection points and paths

- Auto alarm and real-time coordinate

- Multiple analysis: up to 20 points, 10 zones, 10 lines & 10 isotherms, highest/lowest temp of RIO

- UV detector without attenuation

- Up to 18 sets of equipment for Online Intranet monitoring

- 485 serial port supports PELCO-D protocol & Gigabyte Ethernet for fast video streaming

- SDK and DEMO provided, Customized software
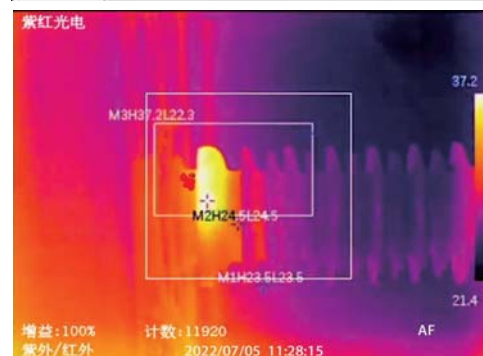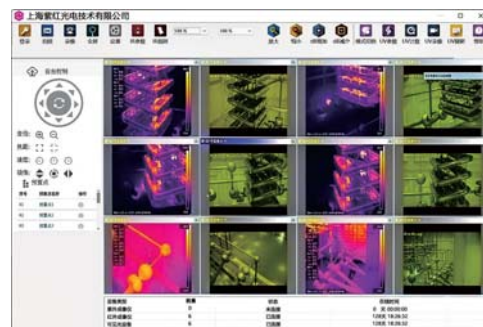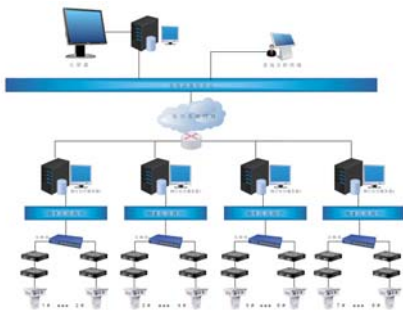
ZH580-ONL Technical Specifications

Type		ZH580-ONL
Applications		Electricity, research, substation/transfer station monitoring
UV	UV Sensitivity	2.2×10^{-18}watt/cm^2
	Discharge	1pc@10m
	Overlay Accuracy	5mard
	UV Imaging Lines	30
	Spectral Range	240-280
	Pixel	736×576
	F.O.V	13.3°×10°
	Counting Frame	Five Counting Modes
	Corona Color	7 colors adjustable
IR	F.O.V	25°×19°
	Type	Uncooled focal plane trace heat type
	Pixel	640×480
	Overlay Accuracy	0.28mard
	Spectral Range	7～14.5μm
	Temperature range	-20℃～+650℃
	Accuracy	±2℃/±2% take the large value
	Sensitivity	50mk@30℃
	Focus	Auto, Motorized
VIS	Sensitivity	0.007lux
	Pixel	1920×1080
	Zoom	30x optical zoom
	Signal System	PAL
	SNR	52dB
Interface	Network Interface	RJ45 with fixing holes
	Serial Port	RS-485
	Temp Transfer	JMODBUS protocol
	Relay	1 output，DC24V/1A
Network	Network Type	GB Ethernet
	Network Protocol	TCP,UDP,HTTP
	Transfer Content	Control commands, images, video transmission
	User Privileges	Up to 10 users, with 3 levels of administration
	Security Mode	Authorized username, password, secure IP address filtering
	Fault Alarm	IP address conflict detection, masking detection
PTZ	Horizontal range	0°---360° continuous rotating
	Horizontal Speed	0.01°---60°/s
	Vertical Range	-75°---+40°
	Vertical Speed	0.01°---30°/s
	Preset Bit	256
	Return&control	Real-time return and control
Software	Display	Multi-screen display, Multi-way control
	Customization	Support customized development
Power	Power Supply	12/24V DC
	Charge Type	DCPcharger
Environment	Operating Temp	-20℃～+50℃
	Storage Temp	-40℃～+70℃
	Humidity	≤90%(Non-condensing)
	IP Rating	IP54
Configure	Standard	UV、IR、VIS camera、adapter, network cable, starter manual, warranty card, software
	Optional	Laptop

ZH580-AIBO

Robotic UV Imaging System

ZH580-AIBO is a robot dog equipped with a multi-spectral imager for power inspection. The instrument integrates UV, IR, HD VIS light and laser rangefinder, which can carry out inspection tests of corona, temperature and visible light meter on the charged equipment. ZH580-AIBO combined with intelligent inspection and self-management system. With path planning function, according to the task arrangement of independent inspection and real-time sensing data back to the management platform for identification, diagnosis, solve the traditional inspection of poor reliability, low operation and maintenance efficiency and other problems.

Multi-Spectrum   Navigation   Alarm   Platform   Network

Features

◼ Multi-spectral Instrument

◼ High sensitivity UV detector

◼ High accuracy fusion, support 4 x fusion zoom test

◼ 1280×720 UV fusion HD video stream

◼ 640×480 auto-focus of infrared camera

◼ 1920 x 1080 visible, 30x optical zoom, 18x digital zoom

◼ 40m TOF laser distance measurement

◼ Threshold alarm, automatic capture

◼ 2.4G / 4G

◼ Robot Dog

◼ SLAM algorithm for 3D radar, create terrain contour maps

◼ Multiple positioning methods for visual management

◼ Multiple open source external interfaces and card slots

◼ Strong environmental adaptability, air-cooling system

◼ Lidar location building for target following

◼ Adapts to 20 cm high steps and 35 degree steep slopes

◼ Resistance to external disturbance of balance control

◼ IP68 with high sensitivity dynamic obstacle avoidance system

ZH580-AIBO Specifications

UV Channel	
Wavelength range	240~280nm
UV Sensitivity	2×10^{-18}watt/cm^2
PD Sensitivity	1Pc@10m
RIV Sensitivity	3.6dBμV(RIV)@1MHz@10m
F.O.V.	21.5°×12.5°
Focus	AUTO
Distance	1.5m-∞
Pixel	1280×720
Photon Countings	MIN/SEC

VIS Channel	
Focus	AUTO1.5m-∞
Sensitivity	0.1 Lux
Optical Zoom	×30
Digital Zoom	×20
Resolution	1920×1080
Signal-to-noise ratio	52 dB
Dynamic detection	Supported
Control interface	RS-485/232、Net Gape

Wheel Robot	
Travel speed	1m/s
Wading capacity	≤ 100mm
Obstacle clearing ability	50mm
Climbing ability	≥ 15°

Navigation and communication	
Navigation	Lidar navigation
Accuracy	±10 mm
Wireless COMM.	2.4 GHz High frequency radio station
COMM. ability	20 Mbps，1000 m
Intranet transmission	Mobile 4G private network

IR Channel	
F.O.V.	32.9°×26.6°
Type	UFPA
Pixel	640×512
Spatial resolution	0.28 mard
Wavelength range	7～14.5 μm
Temp range	-20℃～+550℃
Temp accuracy	±2℃ /±2%
Heat sensitivity	50mk@30℃
Foucs	Auto、Electric

PTZ	
Horizontal range	0°～360°Continuous rotation
Horizontal velocity	0.01°～60°/S
Vertical range	-10°～+90°
Vertical velocity	0.01°～37.1°/S
Preset bit	≥254
Lens control	Supported. Configure the lens preset interface
Supply voltage	DC12V （Plug）
Control interface	Net Gape

Robotig Dog	
Max Speed	4.95m/s
Endurance mileage	15km
Endurance time	2-4h
Climbing ability	≥ 30°

Physical characteristics	
Work Temp	-20℃～+60℃
Power	AC 220 V ，Frequency 50 Hz
Collision avoidance	Support anti-collision and fall
Class of protection	IP54
Standard configuration	Host, communication device, software system, factory data