

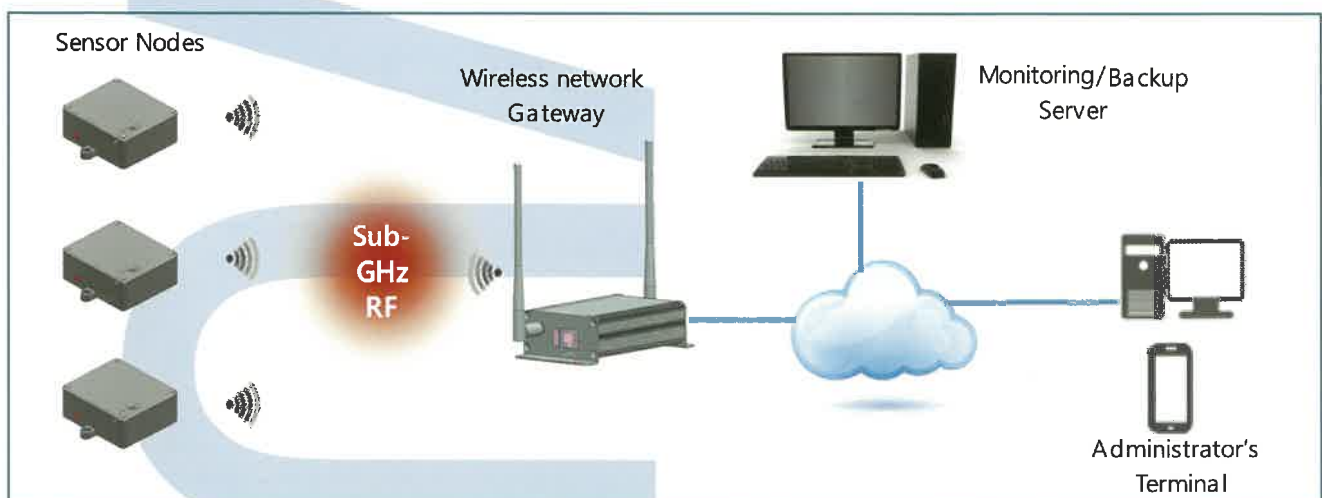
DWED-100 Wireless Sensor node can report the temperature and humidity without cabling. It is an essential device to monitor the temperature and humidity of an equipment and environmental region.



Features & Functions

- Wireless Temperature and Humidity Sensor
- Robust Sub-GHz RF technology
- Can measure -40°C up to 125 °C
- Can be streamed via Internet
- Star topology configuration with gateway(DWGW)
- Wireless sensing distance within 40m
- Ultra-low power consumption
- Can be used up to 10 years without changing Battery
- A lightweight sensor with easy installation

Configurations



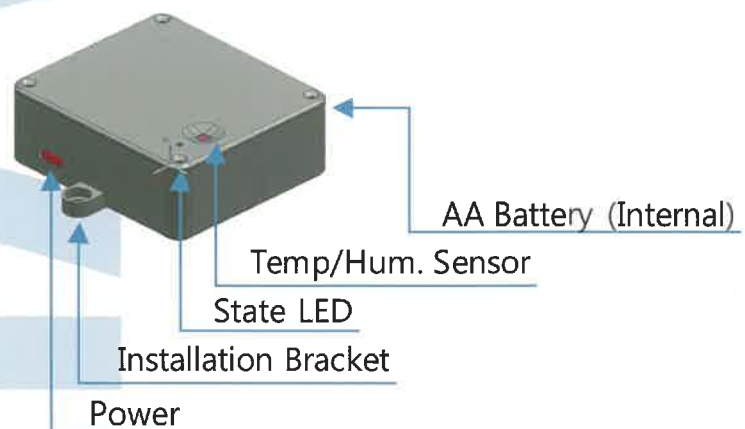
Applications

- Ambient Temperature and Humidity Monitoring in chamber, room, process equipment and etc.
- Industrial moving Process and Chamber temperature monitoring
- Logistic chamber temperature and humidity monitoring
- HVAC temperature and humidity monitoring

Specifications

Sensor MCU	ARM Cortex-M3
Standard	IEEE802.15.4e/g
Frequency Bands	868, 915MHz ISM
Data Rate (Max)	1,000Kbps
TX power	14dBm
Temperature Sensor	-40°C ~ 125°C, $\pm 0.3^{\circ}\text{C}$ (-25 ~ 120°C range)
Humidity(Relative) Sensor	0 ~ 100 %RH, $\pm 2\%$ RH(20 ~ 60°C range)
Battery (Operating Temp.)	3.6V 1,700mA(-5.5°C ~ +130°C)
Environmental Part	
Water/Dust Ingress	IP68
Operating Temperature	-40°C ~ 85°C
Operating Humidity	95% RH (w/o condensation)
Power Consumption	DC 3.6V, 30mA
Weight	100g
Dimension	64 X 72 X 175(mm)

Interface



Contact

Wireless IoT Solutions

DWGW-100

Wireless network GateWay & Server System

- Wireless data logging and real-time monitoring Solution
- Scalable Sensor monitoring and data back-up solution

LPWA Technology



- ✓ Low Power Wireless
- ✓ Sub-GHz RF
- ✓ TDMA/Channel Hopping/Low latency
- ✓ Up to 1Km transmission

Smart Services



- ✓ Smart Mobility
- ✓ Smart Logistics
- ✓ Smart Ship
- ✓ Smart Farm/Factory
- ✓ Secure Management

Real-time Data logging & Monitoring

Real-time monitoring



- ✓ Web-based integrated UI
- ✓ Real-time Data Trend viewer
- ✓ Data recording by second

History Management



- ✓ Interface with external server hardware
- ✓ Data Storage up to 1 year
- ✓ Data search & viewer

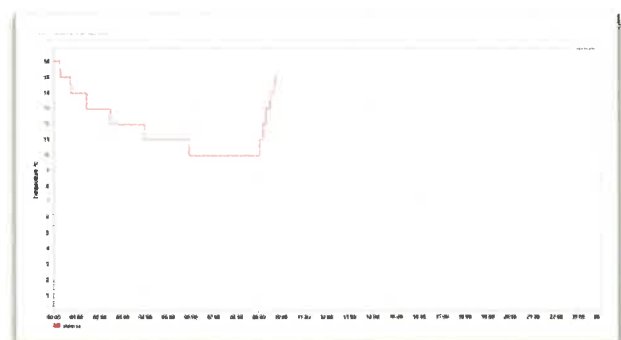
Applications

- Industrial Process Monitoring
- Shipping and Transportation Monitoring
- Smart Ship Management
- Smart Farm and Agricultural Monitoring
- Smart Grid and Metering
- Construction Site Monitoring

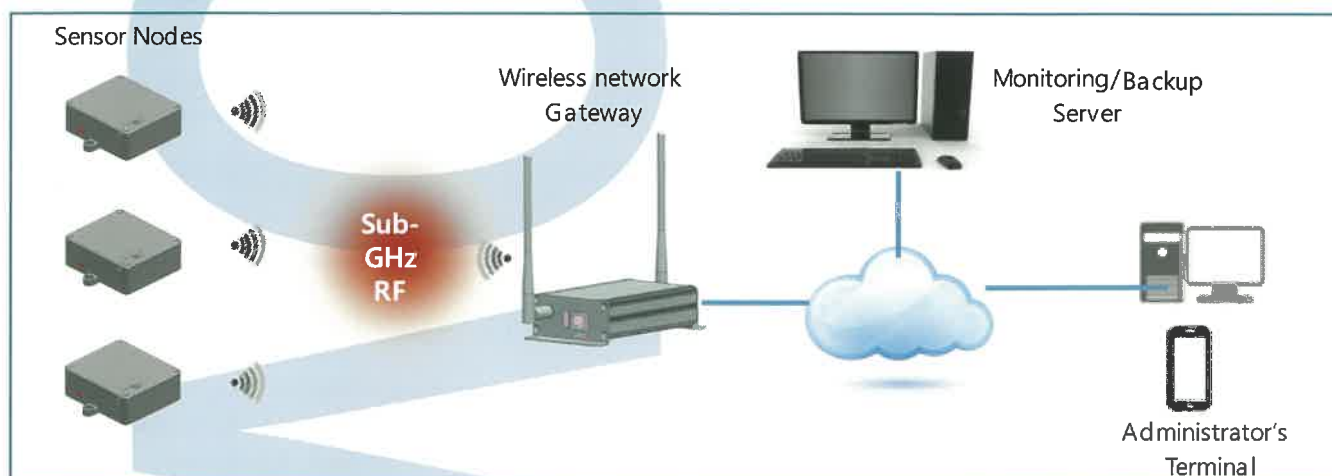
[Equipment Management UI]



[Trend Viewer UI]



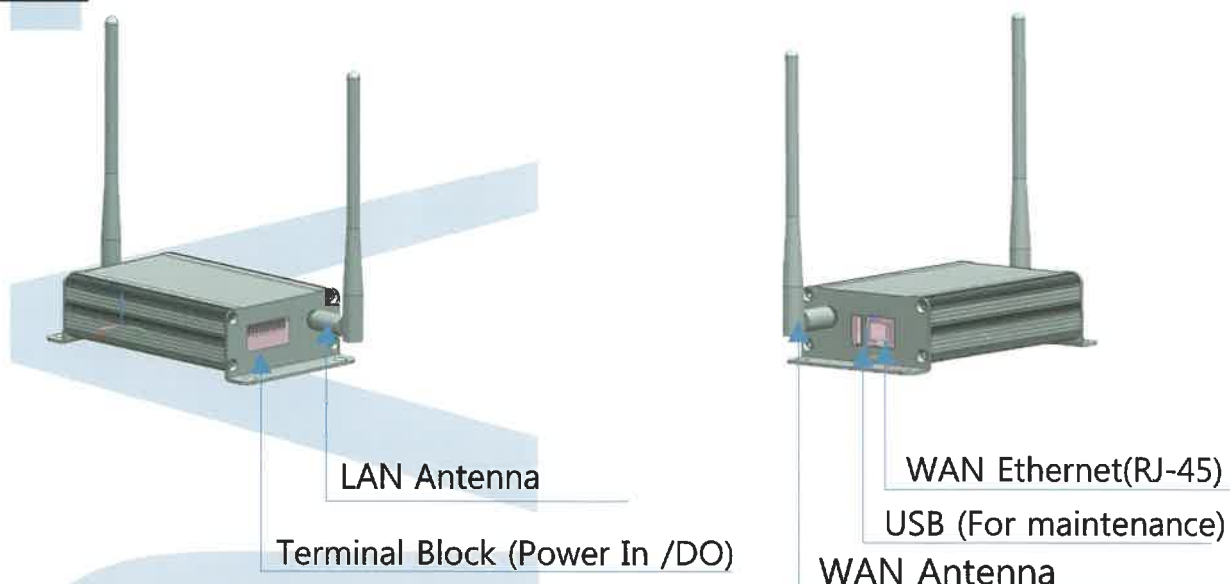
Configurations



Specifications(HW)

Functional Part		Environmental Part	
MCU Type	ARM Cortex-A7 Quad core	Operating Temp	-20°C ~ 50°C
Memory	DDR 512MB, NOR Flash 2MB	Operating Humi.	95% RH (w/o condensation)
WAN(wired)	Ethernet(IEEE802.3i/u, 10/100Mbps, PoE)	Power Input	24VDC, Terminal Block
WAN(wireless)	IEEE802.11a/b/g/n	Power Consump.	DC 24V, 150MA
LAN(wireless)	IEEE802.15.4e/g, 868/915MHz ISM	Enclosure Mater.	AL60xx
Storage	Micro-SD card / 32GB max.	Weight	300g
Ext. I/O	DO Isolated 1CH	Dimension	75 x 35 x175(mm)

Interface



Contact

Wearable Camera Solutions

DWC-500

AR-Based Wearable Camera System

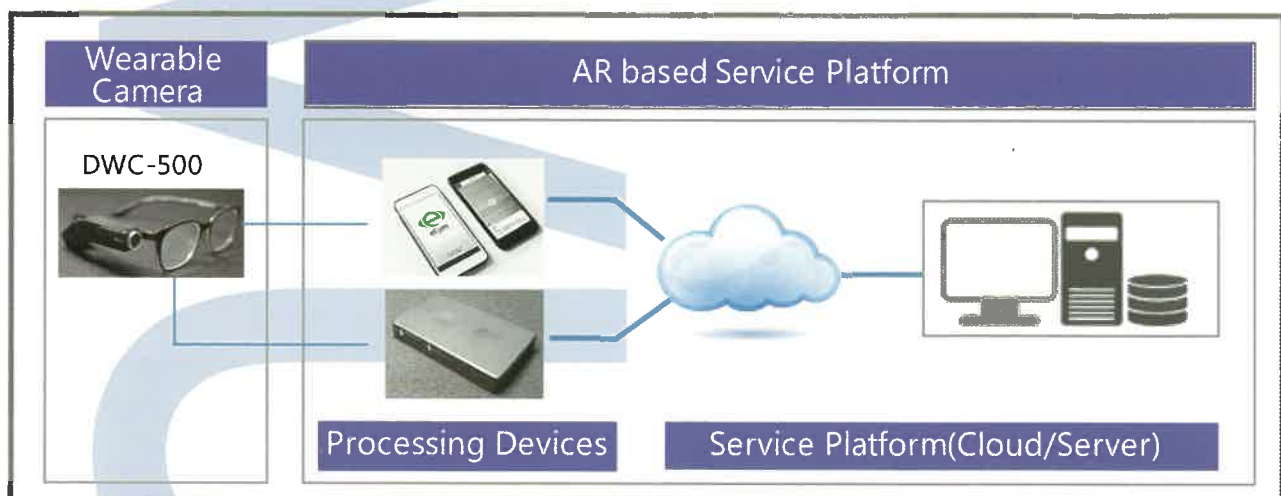
DWC-500 Wearable Camera an AR-based device assists the visually impaired person. The device uses voice commands to guide or warn the user of nearby obstacles by virtue of computer vision, AR(Augmented Reality) and machine learning technology



Features

- Attachable compact wearable camera
- 1920x1080(FHD) with 30fps video capture
- Can be connected with any UVC compatible device, PCs and smart devices
- Preview option to check the camera connection and smartphone operation.
- Captured video and images can be saved in smartphone
- Real-time video and audio communication via smart phone

Service Configurations



Application Examples

[Service Categories]



Shopping



Reading



Traffic Light



Color Recognition



Borrow a book



Bill Recognition

[Gestures Examples]



Pointing



Text Store



Speed of voice guidance



Pause/Play



Color recognition

Specifications

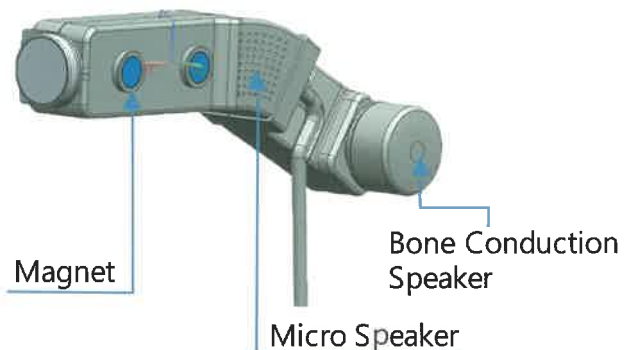
Functional Part

Image sensor	1/2.7" 1080p 60FPS CMOS
FOV(Field of View)	110°(H)
MOD(Minimum Object Distance)	0.3m ~ ∞
Encoded Video	JPEG 1080p 30FPS
MIC Sensitivity	60dB
Standard Interface and Protocol	USB2.0, UVC
Power Input	DC5V
Physical Interface Connector	Micro USB and USB Type-C

Environmental Part

Water/Dust Ingress	IP68
Operating Temperature	-10°C ~ 50°C
Operating Humidity	95% RH (w/o condensation)
Power Consumption	DC 5V, 40mA
Weight	35g
Dimension	95 X 40 X 35(mm)

Interface



Contact

Wearable Camera Solutions

DWC-300

Compact Wearable Camera System

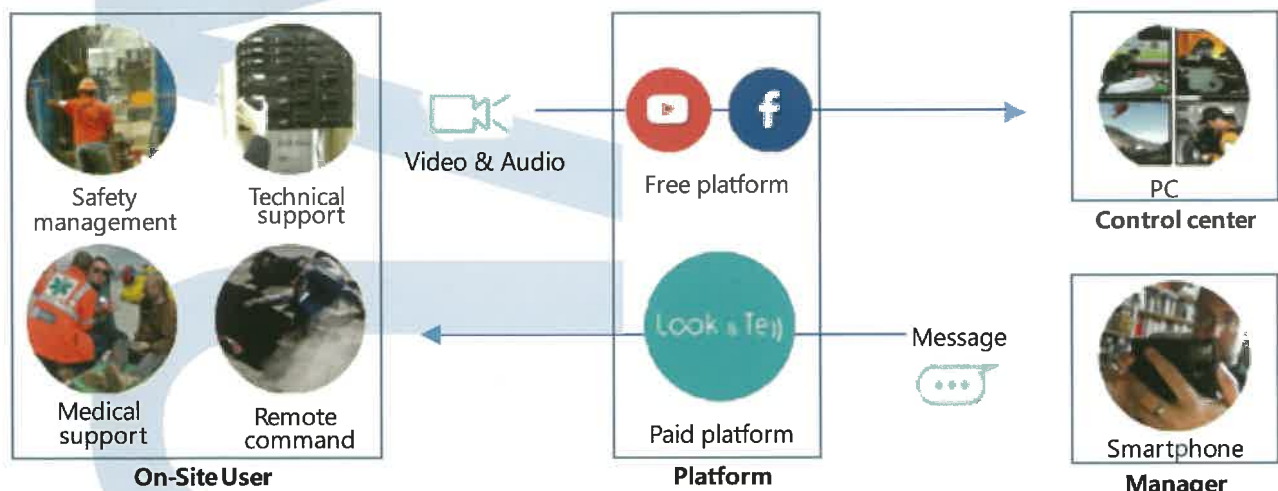
DWC-300 an ultra-compact wearable camera can be connected with a smart phone. It can transmit the video and audio of a work site to the control center through the smart phone app. The real-time situation can be monitored on the PC or smart phone of the control center. It helps in the communication between the remote site and the control center.



Features

- A lightweight compact wearable camera
- 1920x1080(FHD) with 30fps video capture
- It comes with a neckband and clip cradle to fix the camera
- Can be connected with any UVC compatible device, PCs and smart devices
- Preview option to check the camera connection and smartphone operation.
- Captured video and images can be saved in smartphone
- Real-time video and audio communication via smart phone

Configurations



Applications


On-site safety
management



Field Worker

Video & Audio
Message



Safety Officer


Remote
technical support



Field Technician

Video & Audio
Message



Experienced Engineer

Specifications

Functional Part

Image sensor	1/2.7" 1080p 60FPS CMOS
FOV(Field of View)	110°(H)
MOD(Minimum Object Distance)	0.5m ~ ∞
Encoded Video	JPEG 1080p 30FPS
MIC Sensitivity	60dB
Standard Interface and Protocol	USB2.0, UVC
Power Input	DC5V
Physical Interface Connector	Micro USB and USB Type-C

Environmental Part

Water/Dust Ingress	IP68
Weight	20.5 g
Supported App	Android
Protocols	RTSP/RTMP/HLS
Communication with control center	Text and Voice Chat
Network(Smart Device)	5G/LTE/3G/WiFi

Interfaces



Contact

Wearable Camera Solutions

DVM-300

Real-time Video Management System

- Real-time on-site video/audio transmission to the control center
- Supervisor can control the on-site activities from the remote control center



UI examples



[UI examples on PC]

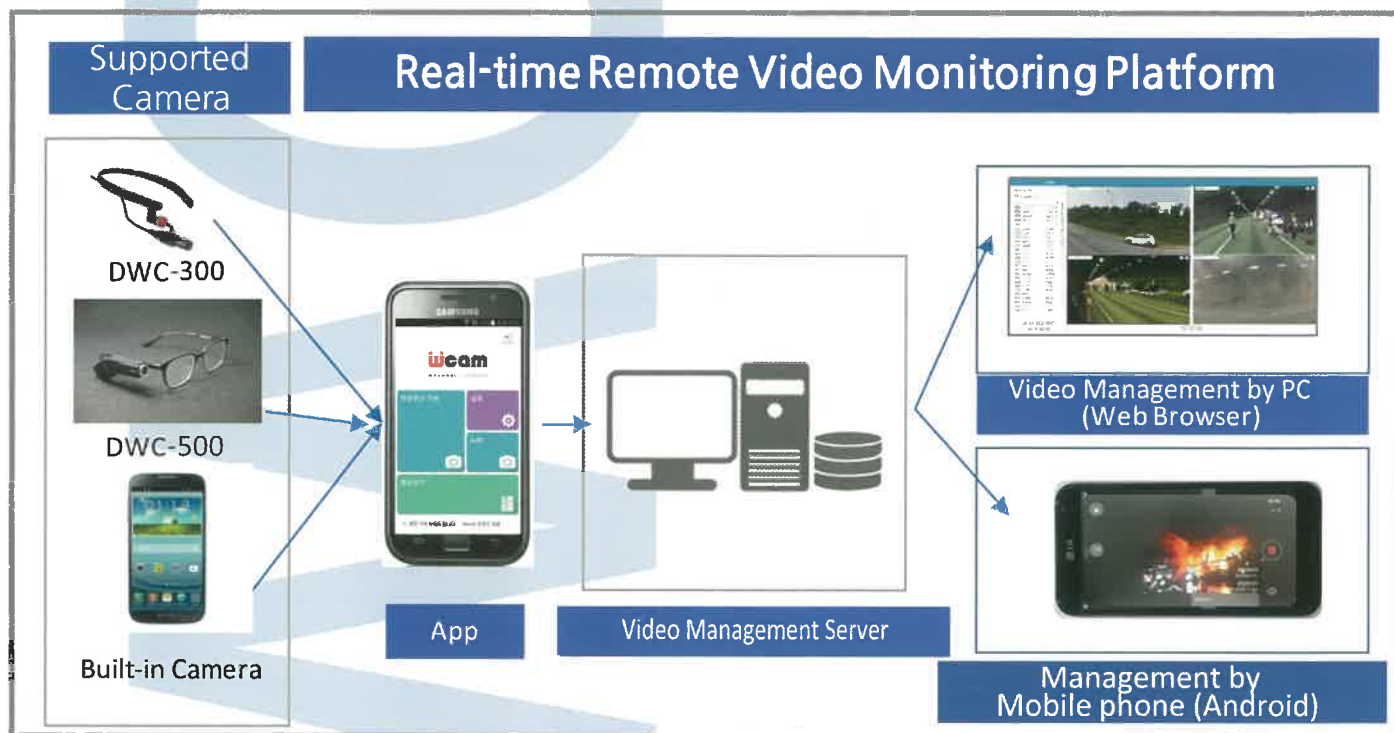


[UI examples on Smart Device]

Features

- Multi-viewing of real-time video with 1, 4, and 9 channels
- Bi-directional communications : Supervisor can communicate via text and voice, User(on-site) receives TTS voice.
- Record the location of on-site user and video which is synchronized with GPS location.
- User log-in and permission control
- Play the recorded video of any user selected by the user location on the map

Configurations of platform



Specifications(Server)

Protocol Part	
Network	Ethernet(100/1000Mbps)
Media Transmission Protocol	RTMP/RTSP
Real-time Video Transmission	1080p/30fps
Video Recording	Up to 60fps of 1080p
Video Channel	Selectable 1/4/9 Ch.
Video Search and View	Support for recorded video
Recommended Hardware	
CPU	Xeon E5-2620/6C 2.0GHz, Dual Core
Memory (10 cameras/50 cameras)	16GB / 32GB
Storage (10 user)	5TB min.(depends on the no. of camera and recording time)
Peripherals	
Network Interface	Ethernet 100/1000Mbps
Power	

Contact

Night Vision Solutions



DNV-500

Rugged Night Vision Camera System

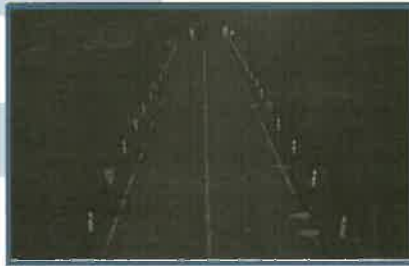
The DNV-500 Night Vision Camera can capture images even at starlight. It is an essential equipment for patrolling and surveillance purposes at night which can result in saving lives.



Comparison under low-light



[Human Vision]



[OWL-VU Vision under starlight]



[OWL-VU Vision under half-moon]

Features

- Video monitoring with built-in LCD display and external and external monitor
- Remote controller for zoom and focus
- Real-time video streaming via internet
- IP67 dust and water proof
- Can be used portably or on a cradle

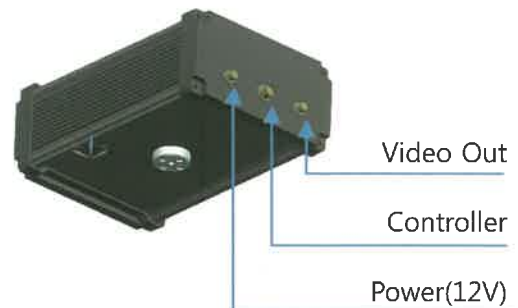


Applications

- Coast Guard for Rescue and Patrol
- Surveillance for Borders and Coasts
- Night Sailing Vessels, Private Sailboat and Fishing Boat
- Police, Firefighter and Military Defense

Specifications

Sensor Part		Video Transmission Part	
Image sensor	1/2 inch CCD	Video Compression	MJPEG, MPEG4, H.264
Sensing mode	NIR(Near Infrared) 400~1100nm	Image resolution	640x480(VGA), 320x240(QVGA), 160x120(QQVGA)
Effective Pixels	437,000Pixels (752(h) x582(v))	Max frame rate	30fps@640x480
Minimum Illumination	0.0000025lx F1.4	Stream Type	HTTP, RTSP/RTP/RTCP, 3GPP
S/N	More than 52dB	Network Interface	WLAN(802.11b/g/n), Ethernet(10/100-base-T)
Lens Part		Ext. Interface	
Focal Length	10 ~ 120mm ±5%	Video Out	Circular 3p
FOV(Field Of View)	35.9°~3.3°(H)	Remote Control Box Interface	Circular 12p
Zoom Ratio	X12 Optical	Power In	Circular 3p
M.O.D		Network	Circular (TBD)
Internal Battery		Antenna	SMA (2.4GHz Dipole)
Voltage	12V	Laser Illuminator Part (Optional : DNV-500A)	
Capacity	2.6Ah	Laser Mode	Multimode
Environmental		Wavelength	808/915nm ±10
Water/Dust Ingress	IP56	Optical Power	7W
Operating Temperature	-10°C ~ 50°C	Illumination Distance	500m
Operating Humidity	95% RH (w/o condensation)	Spot Shape	Circular
Power Consumption	DC 12V, 2A	Laser Class	IV
Weight	2.4Kg	NOHD Distance(Safety Distance)	TBD
Dimension	155 X 83 X 240(mm)	Power Consumption	24W
Others			
Package	Monitor, Joystick box Charging Adapter		



Contact

Night Vision Solutions



DNV-100

Rugged Night Vision Camera System

The DNV-100 Night Vision Camera can capture images even at starlight. It is an essential equipment for patrolling and surveillance purposes at night which can result in saving lives.



Comparison under low-light



[Human Vision]



[OWL-VU Vision under starlight]



[OWL-VU Vision under half-moon]

Features

- Video Monitoring under extreme low light with external Monitor
- Video Recording with DVR
- Can be streamed via Internet
- IP67 Dust and Sea Water Proof
- Reasonable price



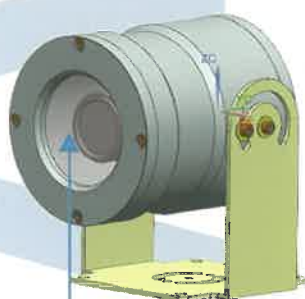
Applications

- Coast Guard for Rescue and Patrol
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Specifications

Sensor Part	
Image sensor	1/2 inch CCD
Sensing mode	NIR(Near Infrared) 400~1100nm
Effective Pixels	437,000Pixels (752(h) x 582(v))
Minimum Illumination	0.0000025lx F1.4
S/N	More than 52dB
Lens Part	
Format	2/3"
Focal Length	16mm
Aperture	F 1.4
Iris Type	Manual
Environmental	
Water/Dust Ingress	IP56
Operating Temperature	-10°C ~ 50°C
Operating Humidity	95% RH (w/o condensation)
Power Consumption	DC 12V, 110mA
Weight	850g
Dimension	95 X 110 X 105(mm)
Ext. Interface	
Video Out	RCA Receptacle
Power In	5 Jack

Interface



Video Out(CVBS)
Power Input(12V)

Lens Protection Window

Contact