3002 Type - WiSen® Vision Unit with X0 Camera & X1 Camera

Basics

Primary Battery Power	Qty. x 4 (3.6V Lithium primary D-Cell ER34615)
Secondary DC Power	7- 32VDC @ Min. 2A, including: A. IP68 110-240VAC to 12VDC adaptor B. M001- External Battery Unit C. M101- Solar Unit
4G Network Stop Voltage	2.1V
Local Storage	≥ 180 days @T=10min, i.e., 26000 Images
Dimension (L x W x H)	180 x 140 x 60mm
Weight	≤ 2.0kg
Cable Gland	Qty. 1 x EMC-CMA12 for Camera connection (through cable diameter, 3-6mm); Qty. 1 x EMC-CMA14 for external DC input power connection (through cable diameter, 4-8mm)

LEDS/Buzzer and On-Site Warning Issuing

Volume	Max. 90dB@10cm	
No. of LEDs	LED x 3 of Green/Blue/Red Colours + Low Power LED x 1 of Green	
LED Flashing/Buzzer Frequency	Red + Buzzer Warning (the highest warning level)	Twice at every 2s
	Blue + Buzzer Warning	Once at every 3s
	Green/Low Power Green Mode (normal level) No Buzzer	Once at every 4s

External Interface

Wireless Module	ONLY Wisen 7600G or plus Daughter Board @ Micro SIM card, 2.4GHz WiFi module, etc.
Wired Port	RS232, Ethernet module

WSN Interface

Mesh Wireless Interface	WiSen® Protocol

Standard System Parameter

Temperature	Range:-40 to 85°C; Accuracy: ±1°C; Resolution: 0.1°C
Voltage	Accuracy: ±0.1V

Industrial Standard

Casing and Painting Materials	Aluminium-Alloy Die Castings 12 (Epoxy Polyester Powder Coating)
IP Rating	≥ IP66
Operating Temperature	-40 to 85°C
Fire Proof	Approved

Applications

1. When a Vision Unit is deployed at Control centre/Data centre, the LED warnings can be configured with one or more projects. So that a visual and auditory warning system can be established in the centre. This frees the operators from frequent checking of warning emails;

2. When a Vision Unit is deployed on site: A. the image data can help on illustrating the progress of the construction works; B. the LED and Buzzer warnings can present a systematic visual and auditory warning to the on-site team so that the maximum safety can be achieved.

Note: Vision Unit relies on a stable 4G connection, so its image data can be transferred smoothly and furthermore, the LED warnings can be received from a remote control centre.

Non-Standard Accessory

1. RS232 to USB connection cable;
2. Outdoor adaptor, IP68: 110-240VAC to 12VDC@3.3A.

Highlights

1. **Camera Unit Default Actions after a Power-On:**

   With the latest firmware, after the camera unit is powered on, it:

   1) takes the 1st default T=3min to connect to the server and obtain the time stamp;
   2) takes the 2nd default T=3min to take a photo and send to the server;
   3) automatically changes to the T configured previously by the customer.

   Note: ensure to wait for at least 3-5min before a power on.

2. When a Vision Unit connects to a remote server, "NET" LED on the PCB board will be constantly on;
3. Please do not stare at the flashing LEDs at close distance：
4. Night vision tips:

   A. For the best quality under night vision mode, please ensure the camera is not installed close to any object (e.g., trees, poles, etc.). Otherwise, strong infrared flashing will be reflected causing the distant object not clearly seen;

   B. As the maximum distance under night vision is approximately 8m, a user can stick Leica reflectors on the most concerned points, then a reflector (of 8cm x 8cm) can be seen from 100m+. This gives the user extended range of monitoring.

Camera Option A – Wisen X0 Camera – Ultra Low Powered

Image sensor	CMOS 2MP Colour
Image resolutions	1920 x 1080
Image compression	JPEG
Angle of view	Horizontal Plane 85°/ Vertical Plane 45°
Lens	3.6mm
External Cable Length	1.0m
Night vision image	Black & White
Night Vision Distance	1.0 to 8.0m

Installation Demo

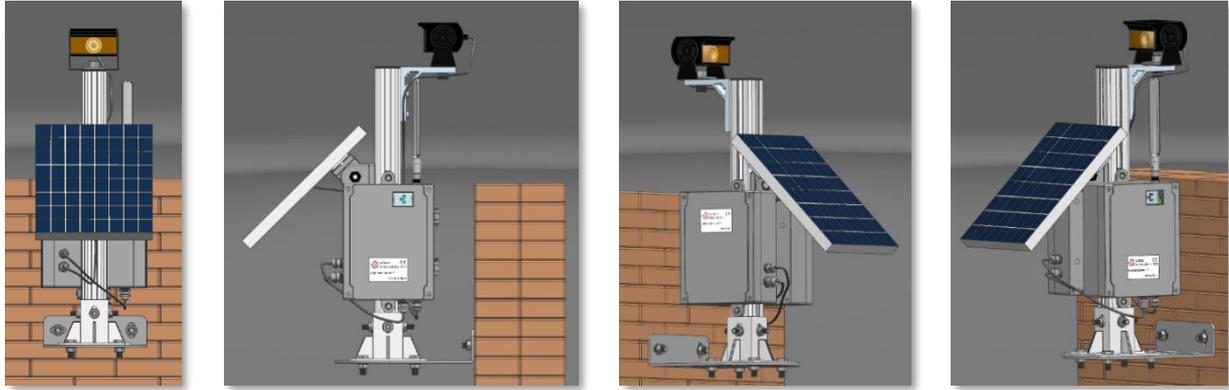Figure. Vision unit overview (Connected with X0 Camera).

Figure. Vision unit powered by M101 Solar Unit (Connected with X0 Camera).

Figure. Image taken during daytime from X0 Camera.

Figure. Image taken during night time from X0 Camera.

Camera Option B – Wisen X1 Camera – High Definition 8MP / Full Colour / Black Light Grade / Waterproof
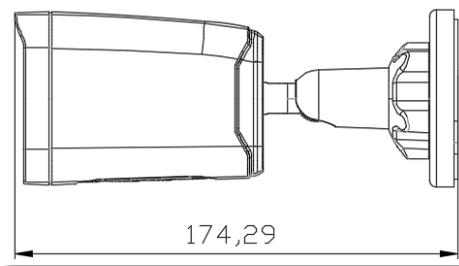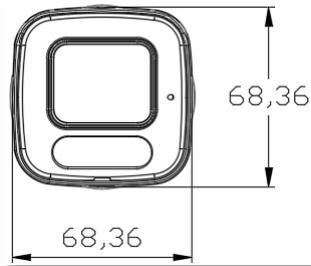

Black Light

Auto electronic shutter

Auto ICR

IP67 Waterproof

Application

The Wisen X Camera is suitable for places with ultra-low light conditions and requiring high definition image quality, such as roads, warehouses, underground parking lots, bars, pipelines, parks, etc.

Details

Image Resolution: 3840 x 2160	Image Compression: JPEG
HD Lens: 5.0mm	Angle of View: Horizontal 93° / Vertical 50°
LED Range in a complete darkness	White colour light, 20-30m
Operating Temperature:-20°C to 65°C	Operating Humidity: 10% to 90%RH
IP Rating: IP67	Weight: 360g
Enclosure Material: Aluminium alloy	External Cable Length: 1.0m
Dimension: 68mm x 68mm x 174mm	

Installation Demo

Figure. Vision unit overview (Connected with X1 Camera).

Image Examples

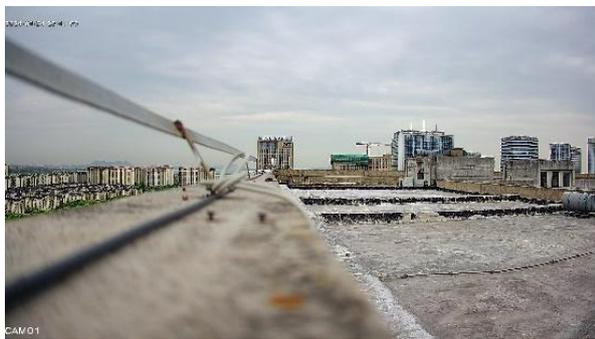Figure. Image taken during daytime from X1 Camera.

Figure. Image taken during night time (Light density ≥ 0.001Lux) <u>without</u> LED On from X1 Camera.

Figure. Image in dark room test (Light density < 0.001Lux) <u>with</u> Camera LED Turned On.
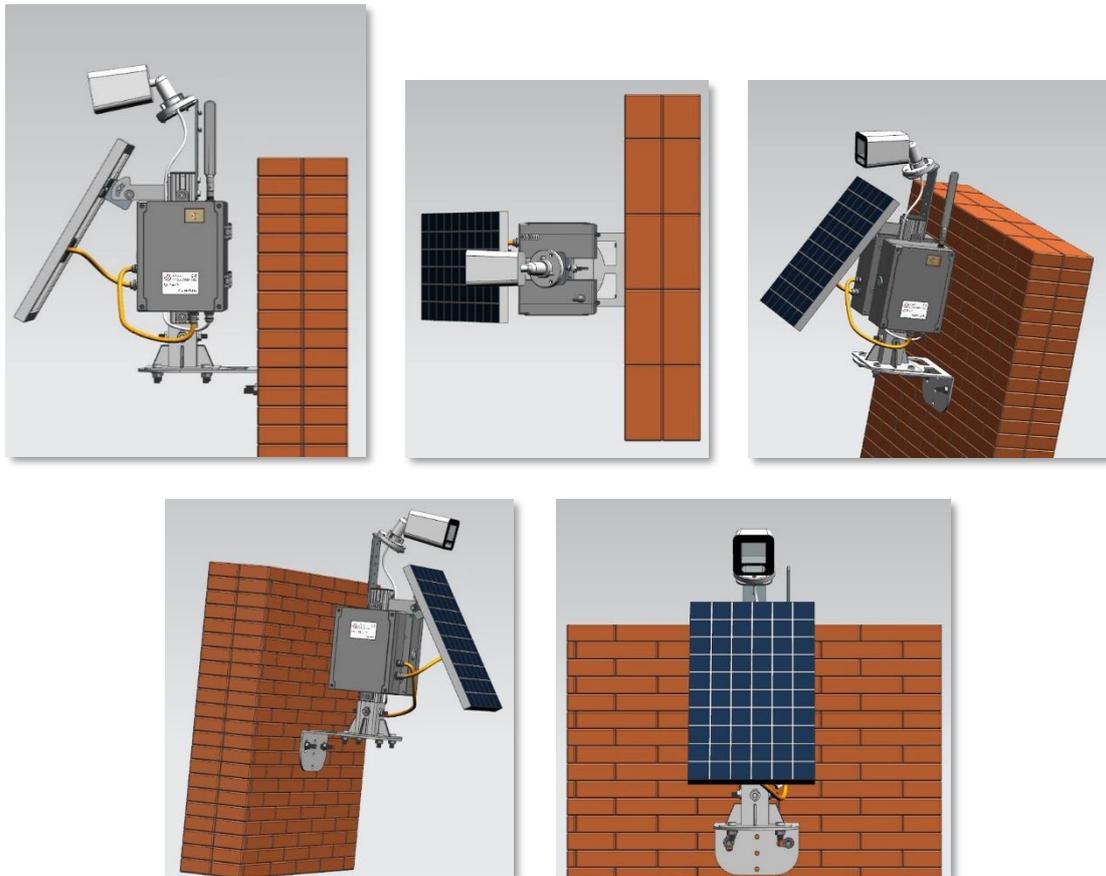

Figure. X1 Camera with 3002 Unit with Solar Unit Connected.

Battery Life Comparison

	T/min	X0 Camera Internal Batteries	T/min	X1 Camera Internal Batteries	

	Days	Months		Days	Months
5	22.1	-	-	-	-
10	53.4	1.7	10*	4.3	-
15	84.7	2.7	15	6.4	-
30	178.7	5.8	30	12.6	-
60	**366.6**	**11.8**	60	25.0	-
120	742.3	23.9	120	49.9	1.6
180	1118.1	36.1	180	74.7	2.4
240	1493.9	48.2	240	99.5	3.2
720	4500.1	145.2	720	298.2	9.6
1440	9009.4	290.6	1440	596.2	19.2

*Note: a minimum T=10min is suggested on X1 camera.

Comparison Table	Wisen X0 Camera	IDS Camera	Wisen X1 Camera
Image Size	2.0M Pixel	6.41M Pixel	8.0M Pixel
Image Resolution	1920×1080 Pixel	3088 x 2076 Pixel	3840 x 2160 Pixel
Lens	3.6mm	9.6mm	5.0mm
Angle of View	Horizontal 85° / Vertical 45°	--	Horizontal 93.1° / Vertical 49.6° / Diagonal 110.8°
Daytime Vision	Colour	Black & White	Colour
Night Time Vision (Light density ≥ 0.001Lux)	Black & White (LED On)	Black & White (No LED options)	Colour (LED Off)

Dark Room Vision (Light density < 0.001Lux)	Same as above	No photos	Auto internal LED (set via remote command)
Operating Temperature	-30°C～85°C	-20°C ～ +55°C	-20°C ～ 65°C
Operating Humidity	0%～95%RH	20%～80%RH	10%～90%RH
IP Rating	IP67	IP67	IP67