

Infrared Digital Scouting Camera
User's Manual
Scouting Camera SG560K-8mHD



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1 Instruction

1.1 General Description


This camera is a black IR scouting camera with great performance.

It can be triggered by any movement of human (or animals) in a certain region of interested (ROI) monitored by a highly sensitive Passive Infra-Red motion sensor (PIR), and then take high quality pictures (up to eight mega pixels) or video clips.

It also has time lapse function, which means the camera can capture pictures or video clips at specified time intervals regardless of whether there is a motion of human or animals.

The device is equipped with dark glow IR LEDs(940nm invisible infrared LEDs), it takes clear pictures or videos (B&W) even in the dark night, while it takes color pictures or videos under sufficient daylight.

The camera consumes very little power (μA level) at surveillance mode. Powered by 8 new AA alkaline batteries, the camera stands by about 6 months. Once a motion by human or animals is detected, the digital camera unit will be awoken up at once and then automatically take pictures or videos according to previously programmed settings.

The device is designed for outdoor use and is resistant against water and snow. Furthermore, the camera can be used as a portable digital camera. Pictures or videos can be taken manually by pressing  on the operation panel.

1.2 Application

This camera can be used as an automatic surveillance device for guarding and recording unexpected intrusion to homes, shops, schools, depots, offices, taxies, worksites etc. It can also be used as trail camera for hunting or

monitoring animals by recording the traces of wild animals. It can be left alone for weeks and months and it will save event records automatically in digital format.

1.3 Camera Interface

1.3.1 Camera Body Interface

The camera has the following interfaces: a 2.0" TFT LCD display screen, operation panel, USB connector, SD-card slot, TV output and external DC power connector. Fig.1 shows the front view of the camera and its function parts. Fig.2 shows the operation panel and display screen. Fig.3 shows the bottom view of the camera and its I/O interface.

Take a few moments to familiarize with the camera controls and displays. It is helpful to bookmark this section and refer to it when read through the rest of the manual.

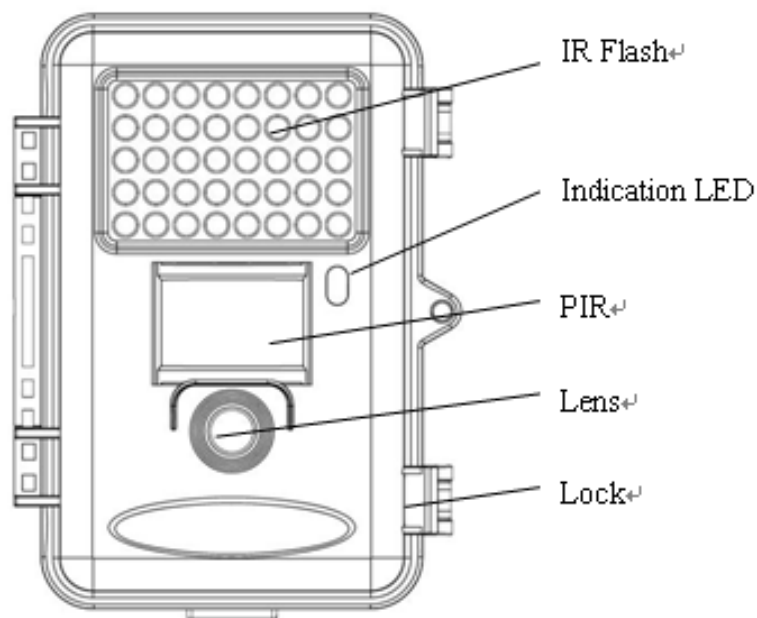


Figure 1: Front view

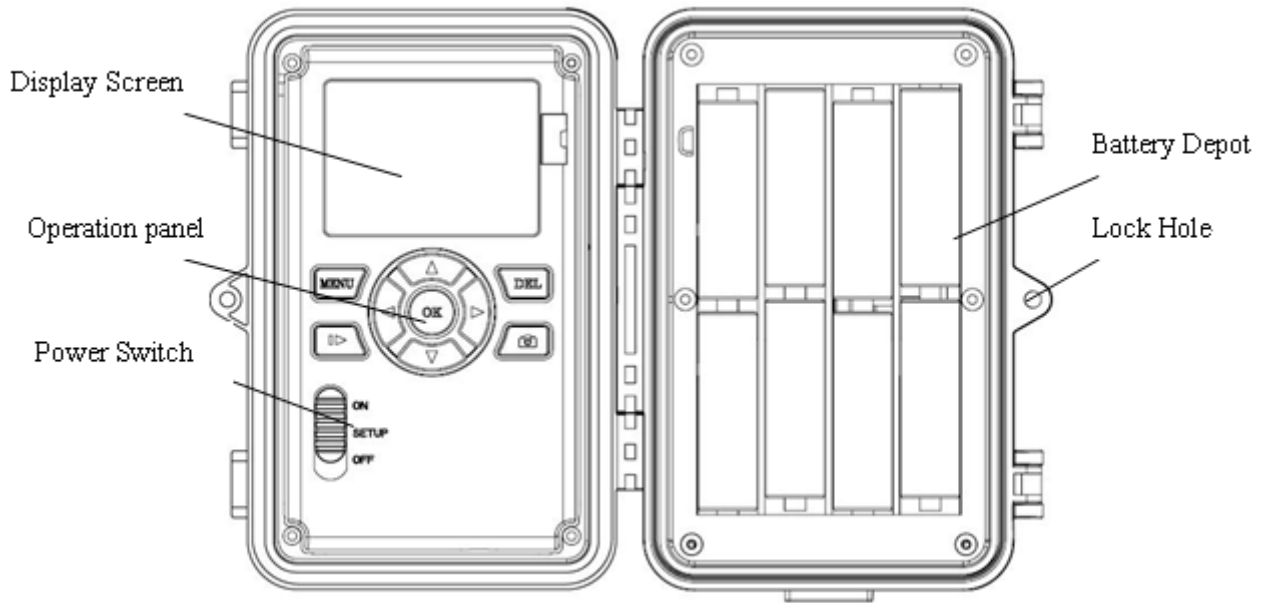


Figure 2: Operation interface

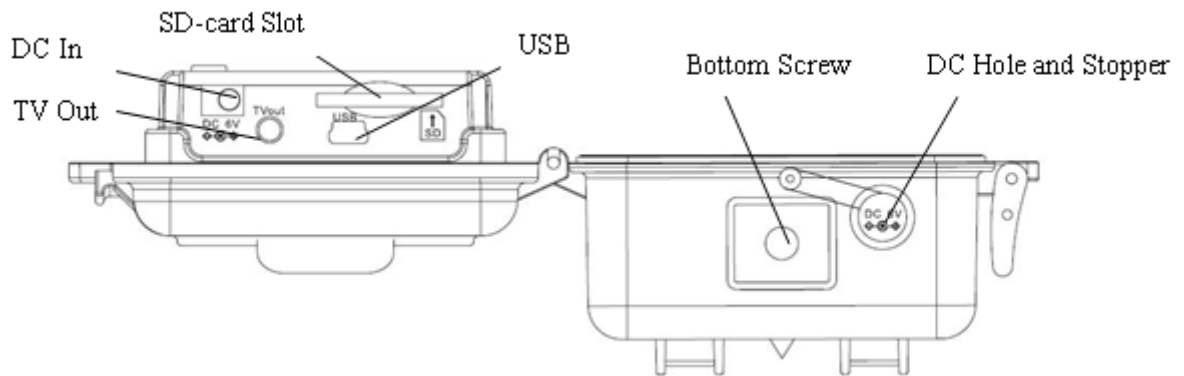


Figure 3: Bottom view

1.3.2 Key Notes

“MENU” : to enter the program menu in preview mode;

“▲”“▼”“◀”“▶” : for parameter settings as described in the user’s manual;

“OK” : to save parameter settings and play videos;

“▶” : to exchange between playback mode and preview mode;

“DEL” : to delete an image;

“📷” : to capture a photo or record a video manually.

1.3.3 Shooting Information Display

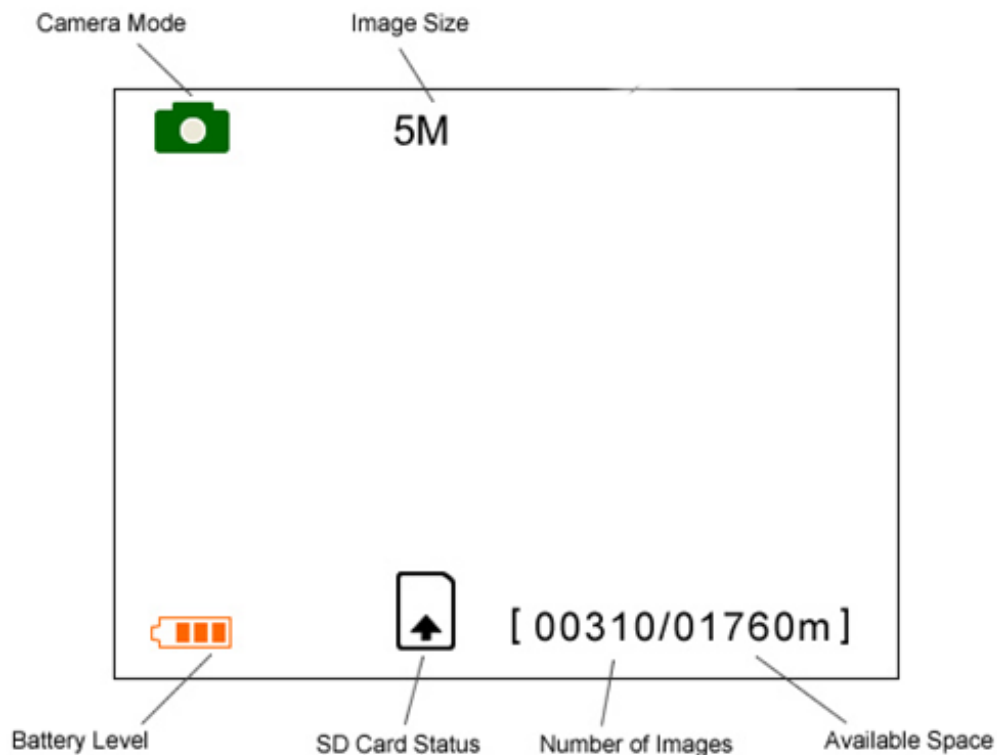


Figure 4: LCD display

1.4 Saving Images or Videos

The Camera uses a SD card to save images (in .jpg format) and videos (in .avi format). Before inserting the SD card be sure that the SD card is unlocked. The camera is compatible with SD card from 8MB to 8GB.

2 Cautions

- ★ The working voltage of the camera is 6V. The camera is supplied by eight AA batteries.
- ★ Please install batteries according to shown polarity.
- ★ Please unlock the write-protect before inserting the SD card.
- ★ Please insert the SD card when the power switch is at **OFF** position before testing the camera. The camera has no internal memory for saving images or videos. If no SD card is inserted, the camera will shut down automatically after a continuous indication sound.
- ★ Please do not insert or take out the SD card when the power switch is at **ON** position.
- ★ It is recommended to format the SD card by the camera when used at the first time.
- ★ In the **TEST** mode, the camera will shut down automatically after 3 minutes if no operation is done. Please turn on the power again if you want to continue to work with the control.

3 Easy Operations

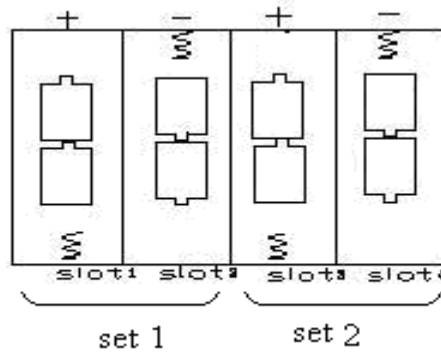
3.1 Power Supply

Use 8 or 4 AA batteries or 6v external battery for power supply.

Install the fully charged batteries into the depot according the polarities sign shown. The following batteries with 1.5V output can be used:

1. High-density and high-performance alkaline batteries (recommended)
2. Rechargeable alkaline batteries
3. Rechargeable NiMH batteries

When in low-battery state, camera will be automatically shut down after the indication LED flashing for a while. Please change the batteries in time.



3.2 Insert the SD card

The camera has no internal memory for saving images or videos. If no SD card is inserted or SD card is locked, the camera will shut down automatically after a continuous indication sound.

3.3 Power on and Entering into the ON Mode

The Camera has three basic operation modes:

1. **OFF mode:** to turn off the camera.
2. **TEST mode:** to set operational parameters, or to playback the photos or video clips via display screen.
3. **ON mode:** to work under surveillance state.

After switching the camera to ON position, the motion indication LED (red) will blink for about 10s. This time interval is for you to make the camera ready for automatic surveillance operation, e.g., to close the bottom cover and to lock it, to fix the camera on a tree and to walk away. After entering into the ON mode, no manual controls are needed and possible. The camera will take pictures or videos automatically according to the previous programmed settings, when human or animals enter into the monitoring region.

3.4 Enter into the TEST Mode

There are 3 states in TEST Mode: preview state (preview the scene in the front of the camera), setting state (make customer settings), and playback state (view photos or videos via 2.0" TFT display).

3.4.1 Preview



After switching the camera to TEST Mode, it enters into the preview state.

Press  to exchange between playback mode and preview mode;


3.4.2 Customer Settings

Press **MENU** to manually customize the camera settings which displayed on the screen. The detailed operations will be described in “Advanced Operations” chapter.

3.4.3 Manual Capturing


Press  to manually capture photos or record videos. Press again  to stop the manual capturing of a video.

3.4.4 View Images or Videos

Press  to view images or videos, the latest image or video will be

shown on the LCD screen. Press “▲” or “▼” to view the previous or next image or video and press **OK** to see a video.

3.4.5 Delete Images or Videos

Press **DEL** to delete images or videos .Note the **DEL** button just works in Playback state. So if it’s in Preview state, you should press  to enter into Playback state.

3.5 Triggering modes

There are 3 triggering modes of the camera: PIR triggering, Timer triggering and PIR&Timer triggering.

3.5.1 PIR Triggering

PIR triggering is the default setting. The camera works only when motions get detected, while, if PIR sensitivity is set as **PIR OFF**, the camera stops PIR triggering.

3.5.2 Timer triggering

The **Timer Interval** Default setting is **OFF** which means the timer triggering is disabled. While changing the timer triggering interval to a non-zero value, the camera starts to work at a preset interval. User need to **OFF** the PIR triggering (choose **PIR sensitivity** as **PIR OFF**) if want the camera to work only via Timer triggering.

3.5.3 PIR&Timer triggering

If want both PIR triggering and Timer triggering, the user need go to **PIR sensitivity** to set “normal, high or low” sensitivities according to the external environments, and need to set the **Timer interval** to a desired non-zero value. The camera will capture pictures or videos in a preset time

interval even there is no motions detected, the camera will also capture pictures and videos if motions get detected.

3.6 Power Off

Switch the camera to **OFF** position to power off the camera. Please note that even in the **OFF** mode, the camera still consumes certain power at μA level. Therefore, please remove the battery if the camera will not be used for a long time.

4 Advanced Operations

After familiar with the basic operations of the camera, you are now ready for advanced operations, and the options and parameters of the camera are explained in more detail.

4.1 Settings Menu

To view the camera settings menu, press **MENU** in the **TEST** mode (Power switch is at **TEST** position). The settings menu will be shown on the LCD on the camera.

Setting Items	Description
Camera Mode	<p>There are two camera modes: Photo or Video. You can enter the MENU interface to set the camera mode or use shortcut key to switch the camera mode.</p> <p>Via shortcut key: press “▲” key to set to Video and press “▼” key to set to Photo in SETUP mode.</p>
Format SD	<p>If you choose “Enter”, the system will delete all images or videos stored in the SD card. So make sure that you have made a backup of important data.</p>
Photo Size	5MP , 8MP (mega pixels) or 1.3MP.
Video Size	720p HD (1280x720) or VGA (640x480) .
Set Clock	<p>You can change the date and time when necessary, e.g., after every battery change. The date format is month/day/year, the time format is hour: minute: second. Press “▶” to select item, press “▲” or “▼” to change the value. The valid value for year is between 2009 and 2050.</p>
Photo Burst	<p>It means the shooting number of each triggering in Photo mode. You can choose from 1 to 3 Photos.</p>

Video Length	It extends from 1 to 60 seconds with a step of one second.
PIR Sensitivity	<p>This parameter defines the sensitivity of the PIR. There are three parameters: High, Normal, Low and Off. The default value is “Normal”. The higher degree indicates that the camera is more easily triggered by motion, taking more pictures or recording more videos. It is recommended to use high sensitivity degree in a room or environment with little interference, and to use low sensitivity for outdoor or environment with lots of interferences like hot wind, smoke, near window etc. Furthermore, the sensitivity of the PIR is strongly related to the temperature. Higher temperature leads to lower sensitivity. Therefore it is suggested to set a higher sensitivity for high temperature environment.</p> <p><i>Please note that if the Timer Interval is set to Off, then the PIR Sensitivity can't be set to Off.</i></p>
PIR Interval	<p>This parameter means how long the PIR sensor will be inactive after each triggering. During this time the PIR of the device will not react to the motion of human (or animals). The minimum interval is 0 second (meaning the PIR works all the time). The maximum interval is 60 minutes (meaning the PIR will be disabled for 1 hour after each triggering). Please note that there are a few seconds of internal processing delay between each triggering, even if 0 second is set.</p>
Timer Interval	<p>This parameter means the camera can capture images or videos at a preset time interval regardless of whether motions are detected. The default parameter is Off, which means the timer function is disabled. Changing this parameter to a non-zero value turns on the Timer Interval mode, and camera will take photos at given time interval.</p>

	<i>Please note that if the PIR Sensitivity is set to Off, then the Timer Interval can't be set to Off.</i>
Timer Switch	This parameter defines a certain time lapse in a day when the camera can be triggered, while in the rest of the time lapse the device is shut off. The effective value ranges from 00:00 to 23:59. The default set is Off which means the camera works all long, Timer switch On means the camera works only during the time lapse according to the preset settings.
Flash Range	This parameter means that you can choose the illumination range. The camera has two options : 8M or 15M.
Time Stamp	This parameter defines whether the date and time should be stamped on the pictures and video clips or not.
Default Set	Restore customer settings to default values.

4.2 Default Settings and Live Monitoring

Choose **Default Set**, all the settings will be changed to the factory default settings. Please refer to the following table for the default settings:

Parameter name	Default	Other settings
Camera Mode	Photo	Video
Format SD	Enter	
Photo Size	5MP	8MP,1.3MP
Video Size	1280x720	640x480
Set Clock	Enter	
Photo Burst	1 Photo	2 Photos , 3 Photos
Video Length	10 Sec	1-60 Sec

PIR Sensitivity	Normal	High, Low
PIR Interval	1 Min	0-55 Sec, 1-60min
Timer Interval	Off	10-55 Sec,1-59 Min,1-8Hour
Timer Switch	Off	On(00:00 -23:59)
Flash Range	15m	8m
Time Stamp	On	Off
Default Set	Save	

4.3 Firmware upgrade

This camera provides an upgrading function for the users. Upgrading is needed only when an improved firmware is available.



5 Mounting the Camera

When use the camera in outdoor environment, such as hunting or monitoring the living habits of wild animals, you need to mount the device on a certain place properly. It is recommended to mount the camera on a tree with diameter about 5.9 inches. To get the optimal picture quality, the recommended distance is 16ft from the tree to the target monitoring area and recommended height from the ground is 4.9ft~6.5ft. Adjust the viewing angel properly (view angle of this camera is 60°).

There are two ways to mount the camera: using a band shaped belt or bottom screw.

Using the belt: Using the belt to fix the camera on a tree is illustrated in Fig. 5. Take the belt toes to go through the two back holes of the camera. At the end, tie the two toes to the tree to finish fixing.

Using bottom screw.



Figure 5: Fixing the camera with belt

Appendix I: PIR Detection Zone

Fig.6 shows Bolymedia’s 4 kinds of detection range at different detection angles. This camera is extra long range with 55 degree.

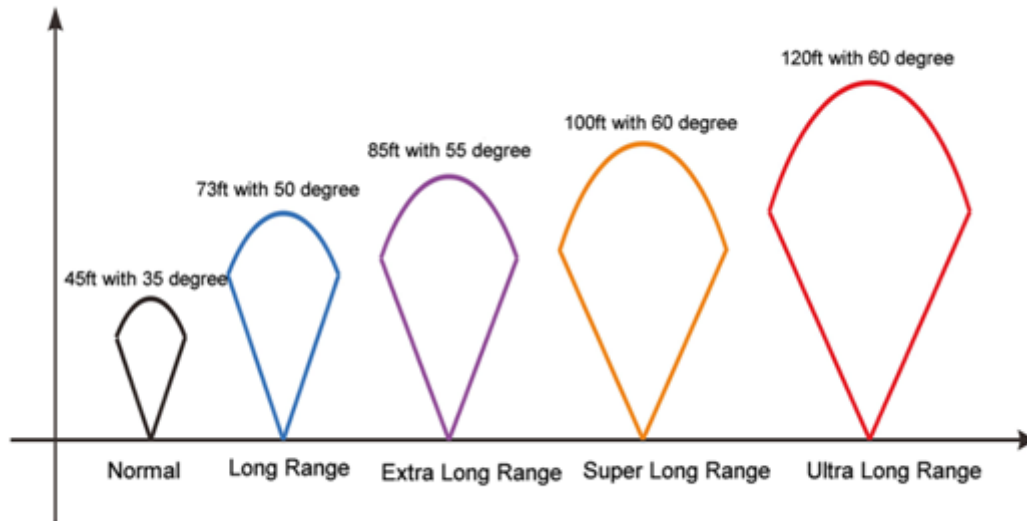


Figure 6: PIR Detection Zone

The PIR detection angle (α) is just smaller than the field of view (FOV) angle (β). The advantage of this design is to reduce empty picture rate and capture most, if not all, motions.

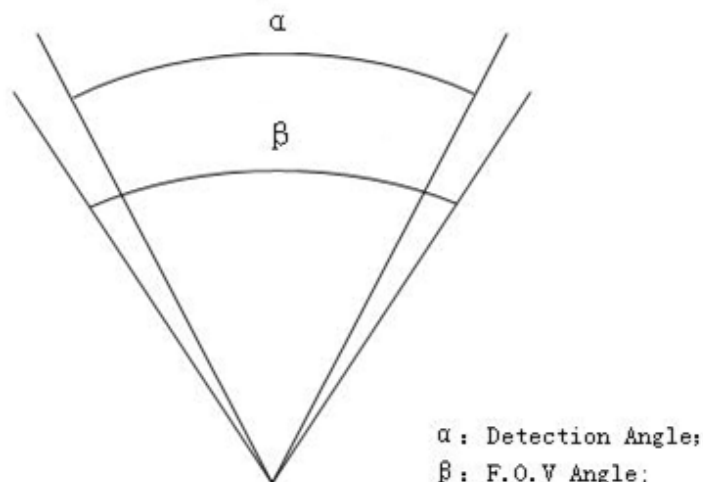


Figure 7: Detection angle vs. FOV angle

This camera has a new design of PIR and this new PIR is patented. The Fig.8 shows the compared detection zone between normal PIR and the new patented PIR.

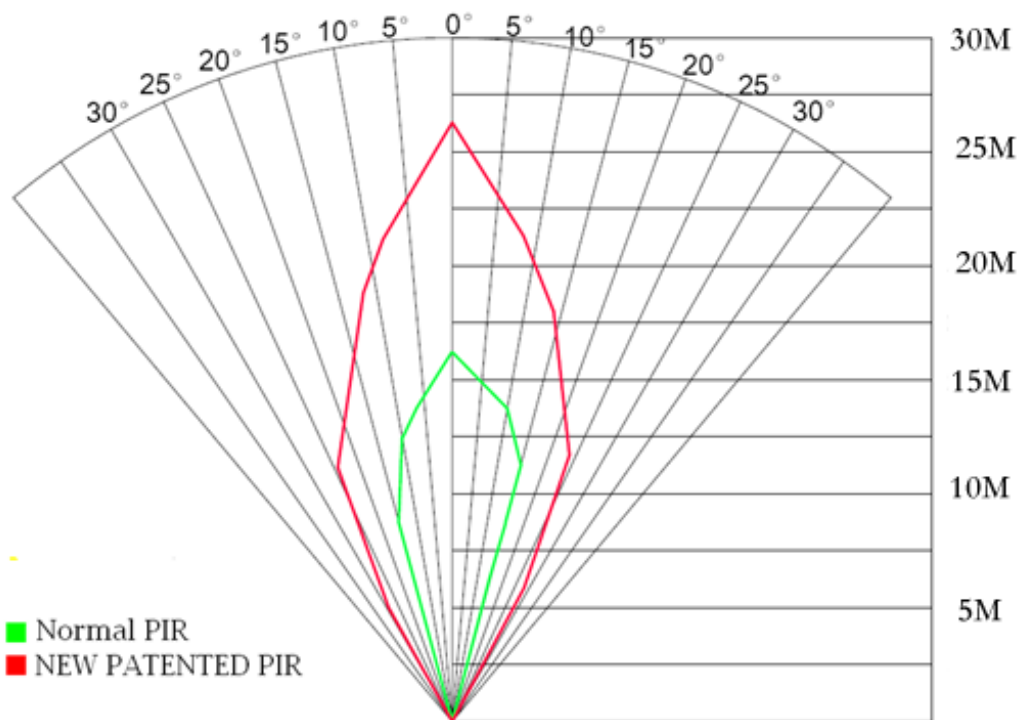


Figure 8: Comparison of Detection Zones of new and existing PIR

Appendix II : Technical Specifications

Image Sensor	5MP Color CMOS; 8MP and 1.3MP interpolation;
Lens	F/NO=2.2 FOV(Field of View)=60°
PIR Detection Range	85ft
Display Screen	2.0" TFT
Memory Card	From 8 MB to 32 GB
Picture Resolution	8MP = 3328 × 2496 5MP = 2560 × 1920 1.3MP = 1280 × 960
Video Resolution	720P HD (1280 × 720) VGA (640 × 480)
PIR Sensor	Multi Zone
PIR Sensitivity	Adjustable (High/Normal/Low)
Trigger Time	1.2s
Weight	0.24 kg
Operation/Storage Tem.	-20 - +60°C / -30 - +70°C
Interval	1s – 60 min.
Photo Burst	1–3
Video Length	1–60s
Power Supply	8× AA (recommend), 4× AA (urgent)
Stand-by Current	< 0.3 mA (< 7mAh/Day)
Power Consumption	150 mA (+450mA when IR-LED lighted)
Low Battery Alert	LED Indicator
Display Screen	LCD display
Mounting	Rope/Belt/Python lock
Dimensions	140x 80x 50 mm
Operation Humidity	5% - 90%
Security authentication	FCC, CE, RoHS

*without battery

AppendixIII: Parts List

Part Name	Quantity
Digital Camera	One
USB Cable	One
Belt	One
User Manual	One
Warranty Card	One

(Version 1.4)