



# Distinctive IR Design

The Unique IR Structure and Smart IR II Technology

A Milesight Technology Moment

## Introduction

Milesight 12X/20X/23X Mini PTZ Dome Network Camera features with distinctive IR Design which allows it to capture video in low light and no light(0 Lux) areas. With IR LEDs positioned around the outer edges of the camera lens which gives the camera its "Night Vision", in addition, the Smart IR II Technology and pioneered IR Anti-reflection Design, the camera is going to achieve the superb IR performance with excellent quality and clarity video.

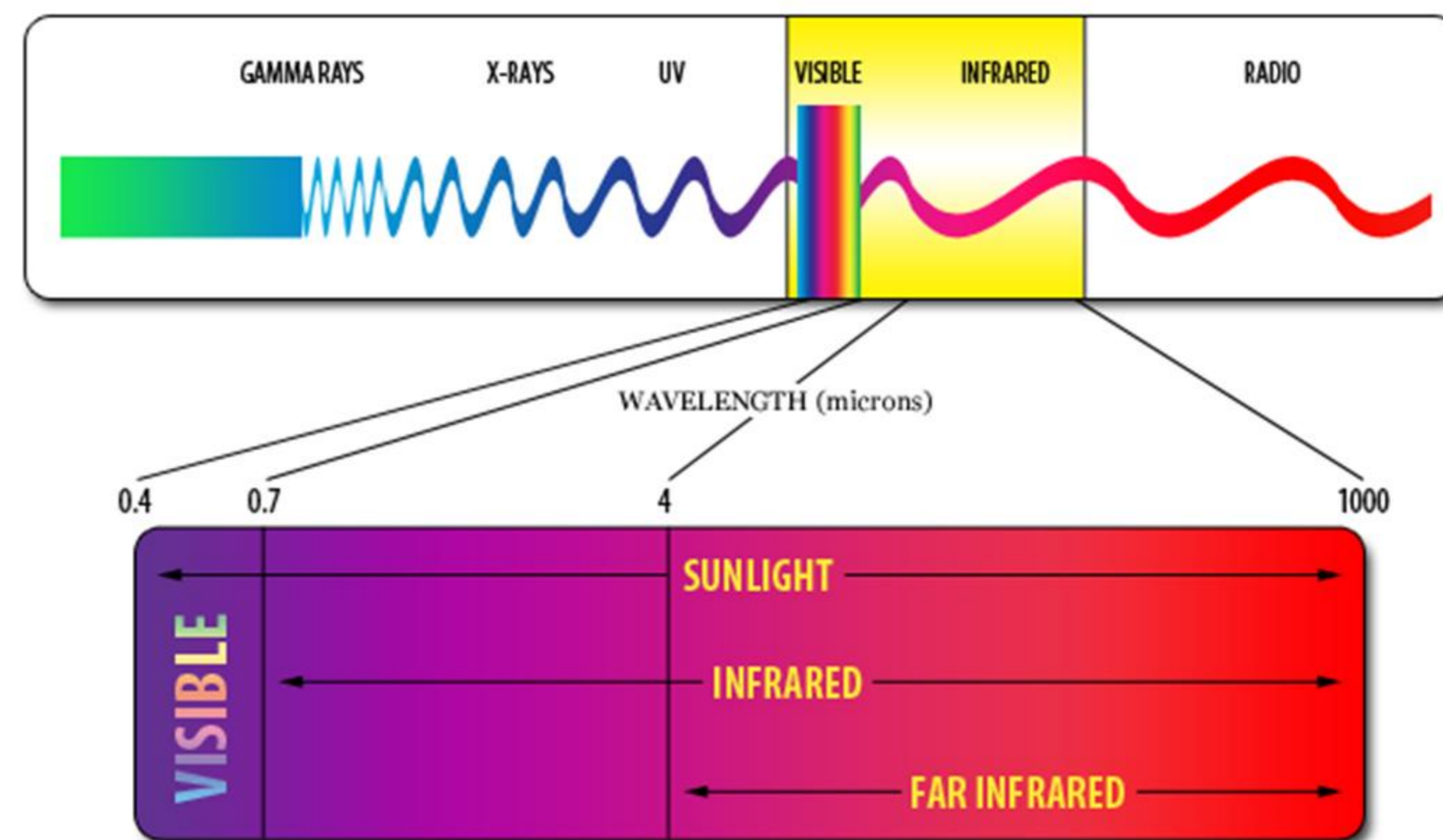


Figure 1

## Why do you need IR illumination?

Camera with IR means that the camera comes with IR Light Emitting Diodes(LEDs) that provide illumination when the camera is placed in very low light environments. IR light is at a higher wavelength(typically 800-980nm), making it invisible to the human eye(typically 390-750nm) while providing the camera the ability to “see”(Figure 1). The camera has an IR-cut filter that removes influential light during the day. IR light is filtered out so that it does not distort the colors of images as the human eye sees them. As light diminishes below a certain level, the camera can automatically remove the IR-cut filter allowing the camera to make use of IR light. Since IR light has a higher wavelength than the color spectrum, the resulting image will be in monochrome(black and white), but can capture crucial detail in complete darkness.

## Why the Pioneered IR Anti-reflection Design Helps

### ◆ If There Is No IR Anti-reflection Panel?

At night, the camera emits IR light to all directions to capture clear images. The IR light will enter the lens after reflecting for many times in the dome cover if there is no IR Anti-reflection Design. And as a result, those lights enter the sensor and make the image dimness. Especially, if there's dust or water on the cover, the IR reflection influence gets more serious. Obvious white spots appear on the image, which will badly reduce the image quality.

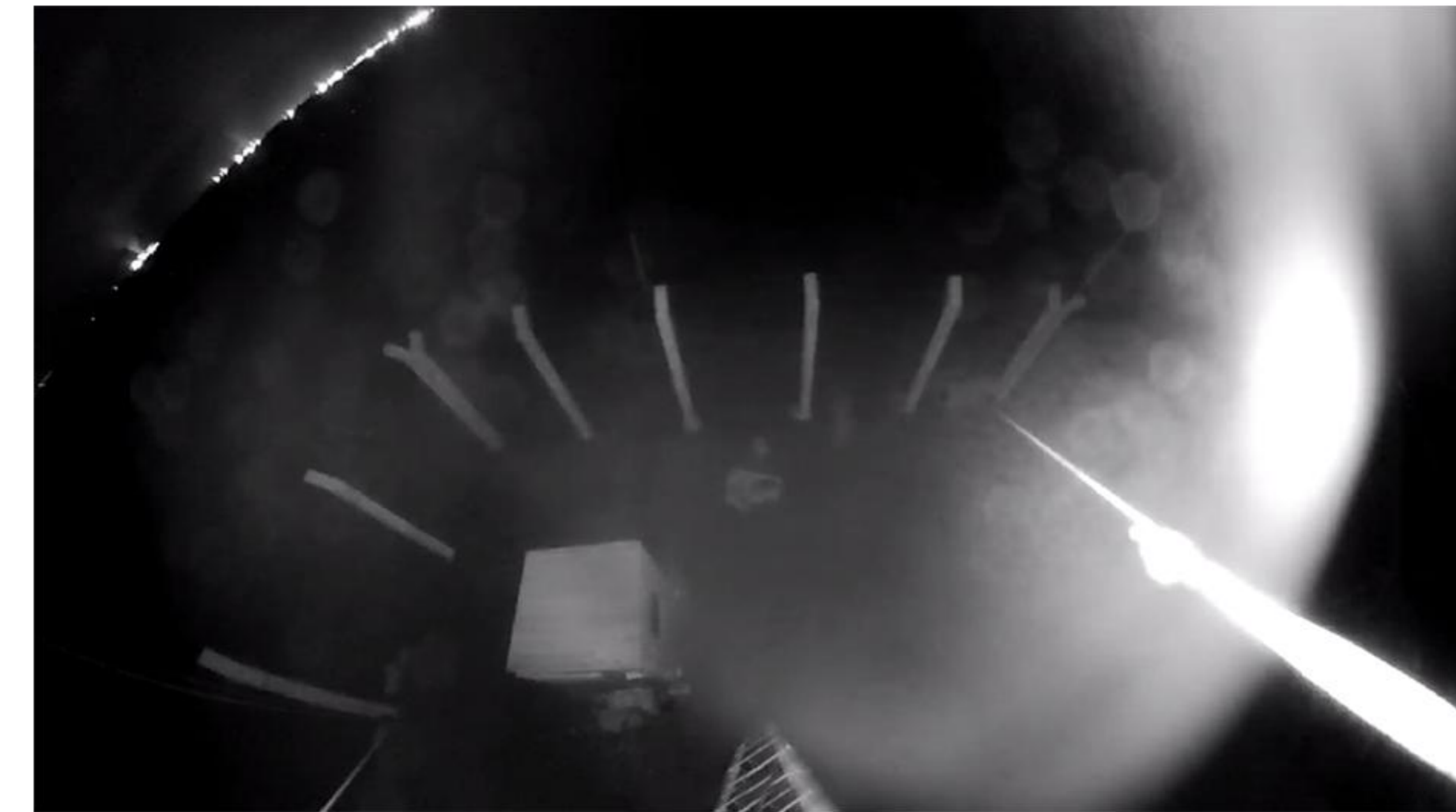
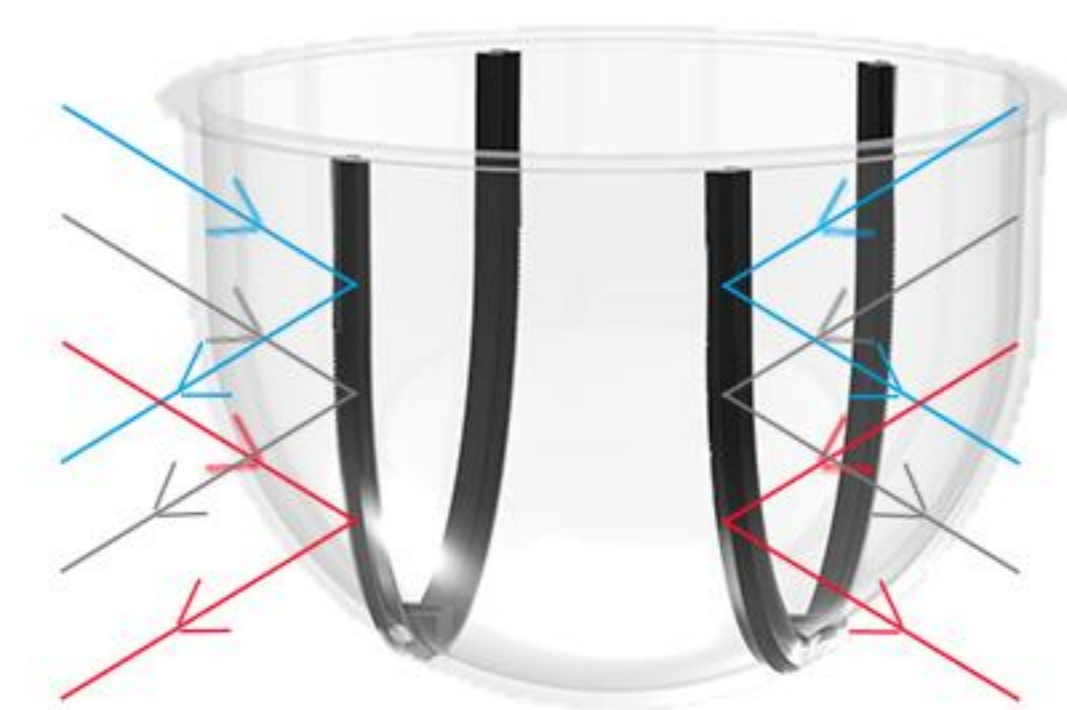


Figure 2

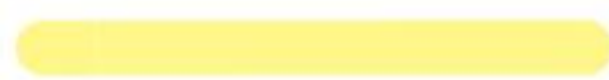


IR Anti-reflection Panel

Figure 3

### ◆ What Is the Speciality of the IR Design?

To solve the troubles caused by the IR reflection especially for dome models, Milesight applied IR Anti-reflection Panel to remove the worries to produce best images. Embedding it into the dome cover, Milesight for the first time separates the lens and the IR LEDs to realize optimal result. The IR reflection would be completely prevented to influence the lens and sensor, so that the IR performance can be furthest ensured.



## Why Milesight Smart IR II Technology

Efforts in providing the excellent products and the IR technology has been greatly upgraded to Smart IR II to offer a better night viewing experience.

### ◆ Latest generation IR LEDs

When using the previous generation LEDs, it often encounters the drawbacks of poor heat dissipation, low energy efficiency and undurable quality. To address this problem, Milesight employs the latest generation IR LEDs in the Smart IR II technology. Different from previous two generation LEDs, the latest one controls the luminous decay within 18 months of the new infrared light source under 10% by a unique capsulation technology. The performance of the Smart IR II is greatly improved and the quality of LEDs is naturally better than the previous generation. To be specific: long life-span, greater efficiency, smaller size, higher brightness and durable quality.



Figure 4

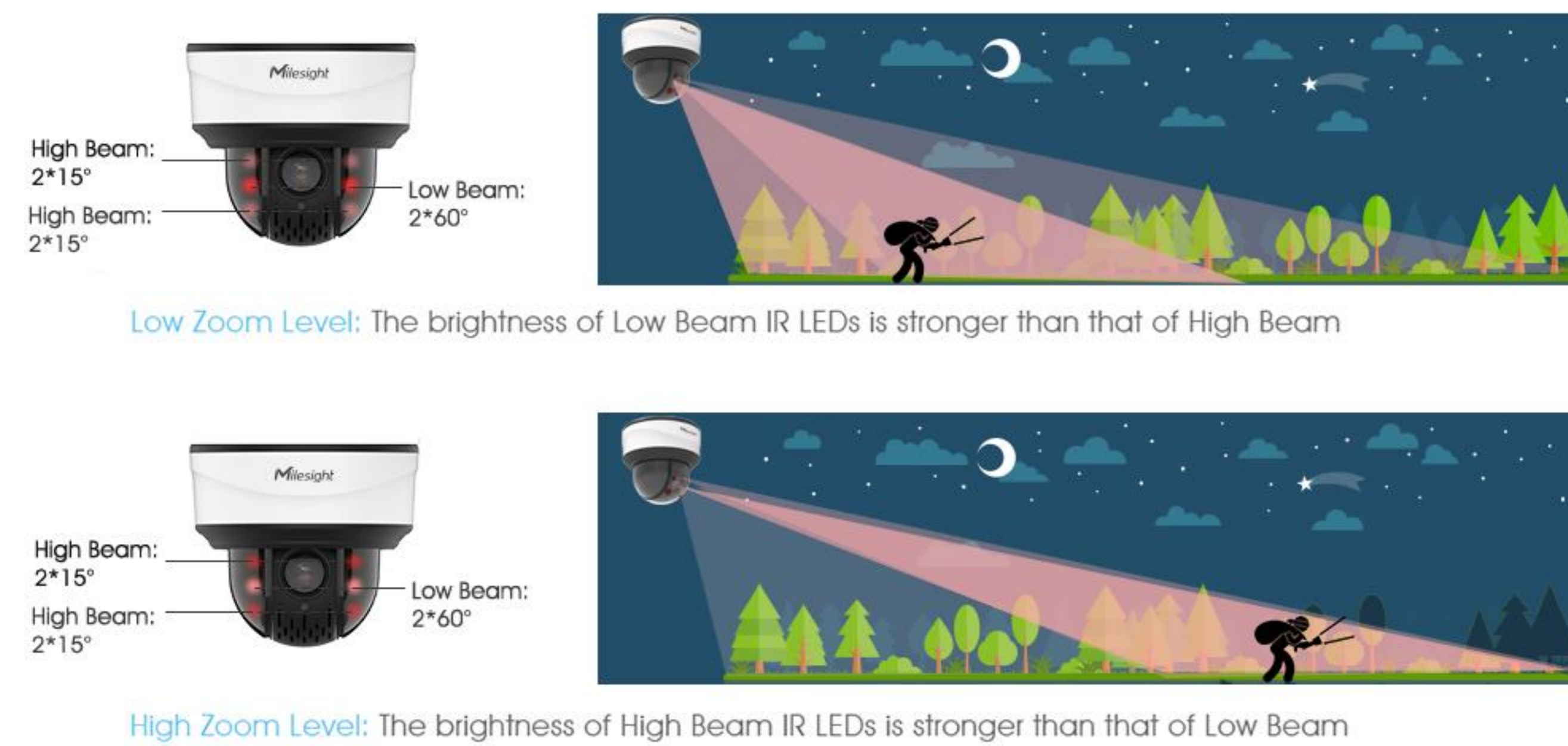


Figure 5

### ◆ Unique arrangement of the LEDs

To make the latest generation IR LEDs fully used, Milesight engineers have done so many tests and finally find the best arrangement of the six IR LEDs in the Mini PTZ Dome. The camera would zoom in with narrower field of view when monitoring long distance target area. On the contrary, zoom out with wider field of view. The flexibility of such a system requires the IR light to cover wide range distances with both narrow and wide angles. That is the reason why the twin lighting system is applied. When zooming in, four LEDs with scattering angle of 15° work as High Beam to focus on the areas farther away; while when zooming out, the other two with scattering angle of 60° work as Low Beam to focus on the areas closer to the camera(Figure 5).

Also, the Low Beam and High Beam's brightness can be adjusted manually or automatically on the basis of the Zoom ratio(Figure 6).

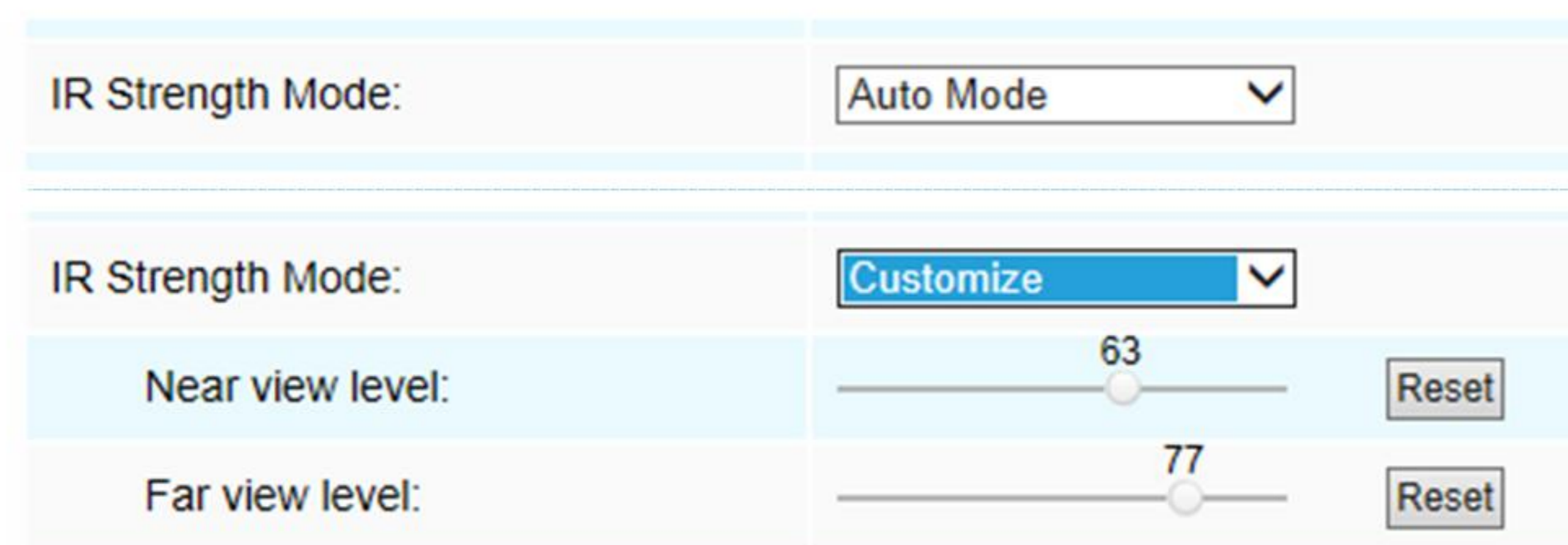


Figure 6

## Advantages

With well-designed structure and advanced technologies, the IR features is going to achieve its maximum performance.

- Pioneered IR Anti-reflection Design;
- Smart IR II Technology;
- Providing IR distance up to 120m;
- Increasing infrared light transmittance.

## Conclusion

Night vision is of great importance for a dome cameras especially the PTZ Dome camera. With the revolutionary IR Anti-reflection Design and Smart IR II Technology, the IR performance can be 100% guaranteed.

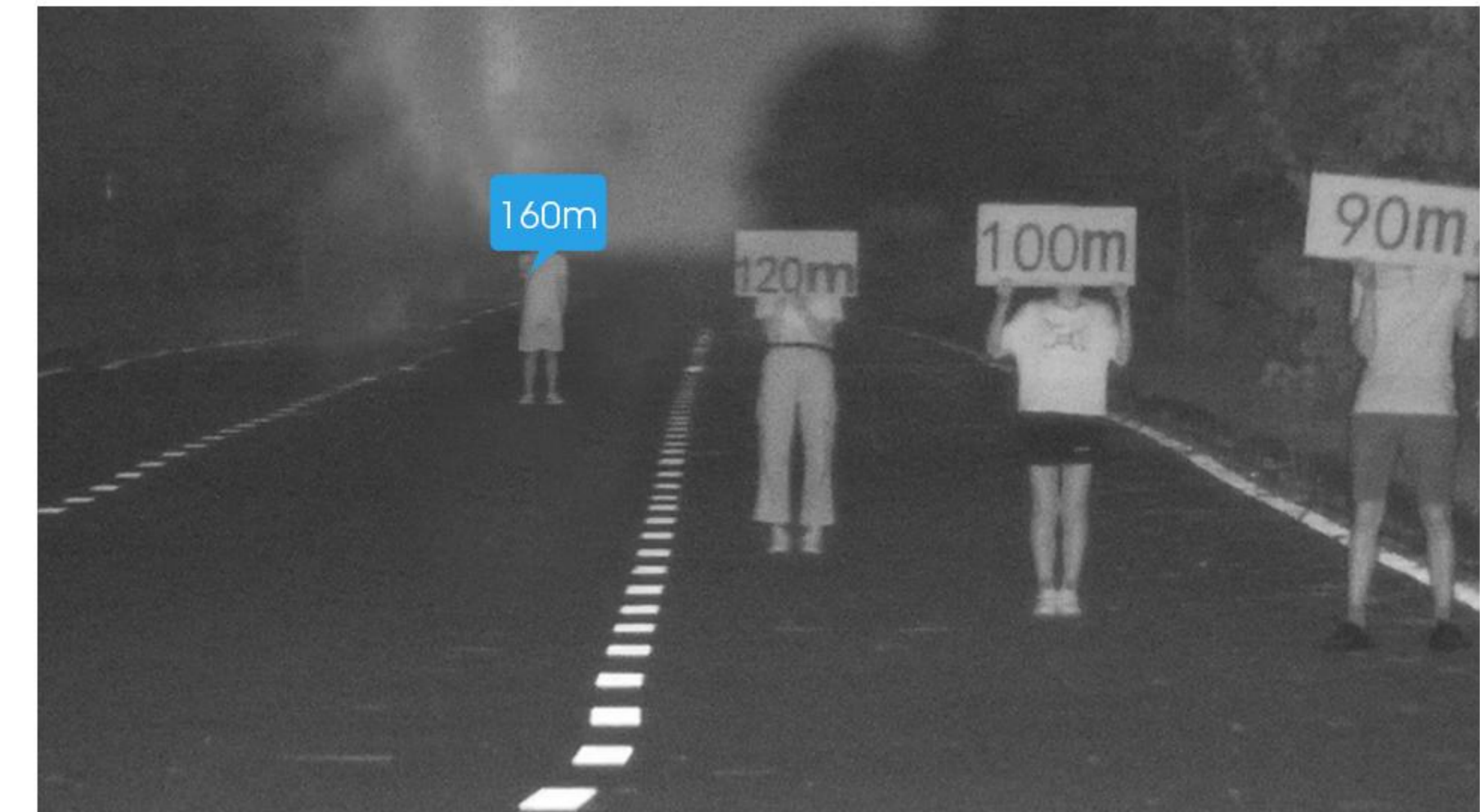


Figure 6

## Milesight Technology

Established in 2011, Milesight Technology is a high-tech company, specializing in design, developing and manufacture of best-in-class AIoT video surveillance solutions including Network Cameras, NVRs, Software and APP with superior image quality, exceptional flexibility and reliability for the global market. Milesight Technology markets its products through a worldwide network of distributors and resellers, offering excellent pre/after-sales and technical support services that exceed customers' expectation.

For more information about Milesight Technology, please visit our website [www.milesight.com](http://www.milesight.com).

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