A MILESIGHT TECHNOLOGY MOMENT

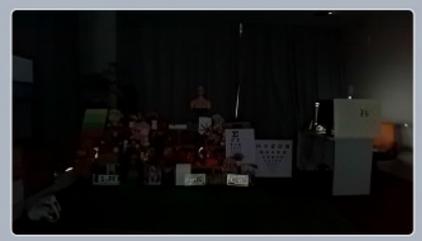
Milesight

TrueColor AI –
Powered by Milesight R&D Team

Even in 0.0005Lux,
We See in True Color.

TrueColor is not just a technology — it's Milesight's answer to the impossible. Backed by next-gen chips, advanced optics, AI-powered ISP, and our finest engineering, it delivers true-to-life color even in 0.0005Lux ultra-low-light scenes.

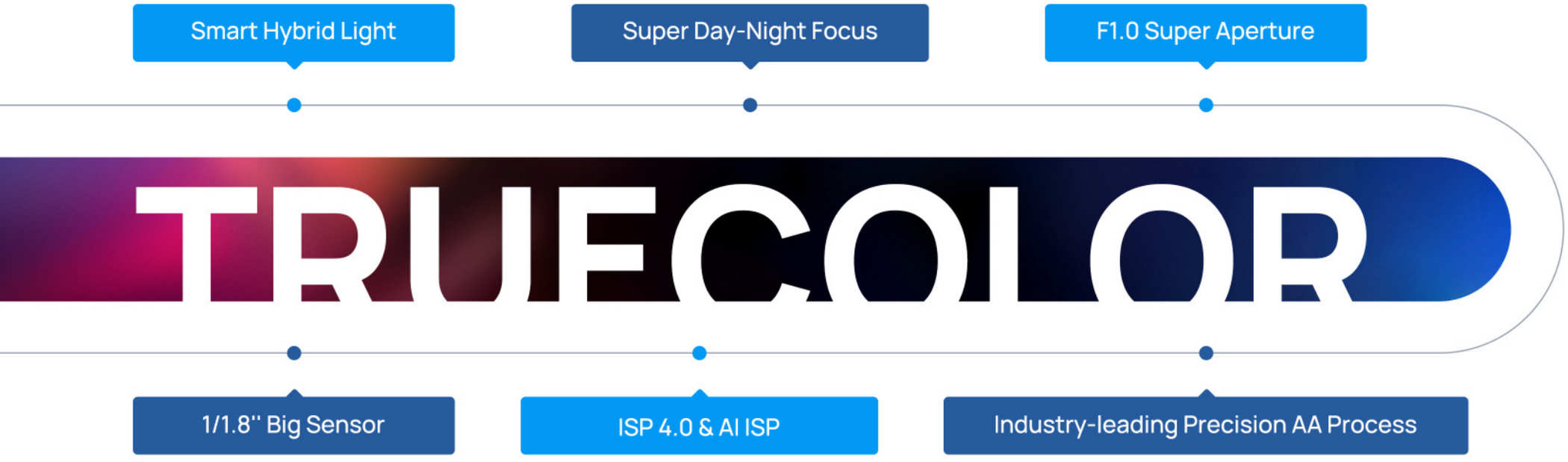
Milesight Camera



Environmental Brightness

WHAT IS MILESIGHT TRUECOLOR TECHNOLOGY?

Milesight introduced Color+ as the entry-level full-color product, and now, **TrueColor as its G2 evolution**, combing software and hardware advancements to deliver truly full-color imaging.



SMART HYBRID LIGHT FOR PROACTIVE DEFENSE

In surveillance environments, where security risks can escalate quickly, the ability to respond in real-time is essential. With Milesight's Smart Hybrid Light, users can predefine the specific AI events they wish to monitor in their camera's coverage area. These events can include detecting intruders, recognizing vehicles, or other suspicious activities that might indicate a potential threat.

01

IR Mode Activated

Infrared lights turn on in a quiet environment, delivering clear images for round-the-clock monitoring.

02

Event Detected – Switch to Full-Color

Camera automatically switches full-color lighting upon detecting an event, revealing more details with vivid clarity.

03

Active Deterrence Triggered

Built-in strobe lights and speaker activate instantly to warn the intruder.

04

Return to IR Mode

Once the event has passed, the system switches back to IR mode, ensuring efficient and non-intrusive surveillance.

How it works

• Before an Event: IR Light without Light Interference

When the camera is not detecting any unusual activity, the system operates in IR mode, using infrared light to provide clear, detailed images in low-light conditions or total darkness. This mode ensures that the area is continuously monitored without the need for visible lighting, which helps preserve the natural environment and reduce light pollution.

• During an Event: Immediate Response with White Light

When the system detects an AI-triggered event—such as an intruder, vehicle, or suspicious movement—the camera automatically switches to white light, ensuring full-color, high-definition images.

- ☑ Enhanced Identification: The white light renders the scene in full color, making it easier to identify key details such as human features or vehicle attributes.
- ☑ Visual-Audio Deterrence: The sudden illumination and the loud sound of speakers acts as a powerful deterrent to potential intruders, signaling that the area is under surveillance and that any suspicious activity is being captured and record in real-time.
- ☑ Instant Video Recording: Simultaneous recording is triggered at the moment of detection, ensuring that every critical detail is documented for future review and legal evidence.

• After an Event: Ready for Further Investigation

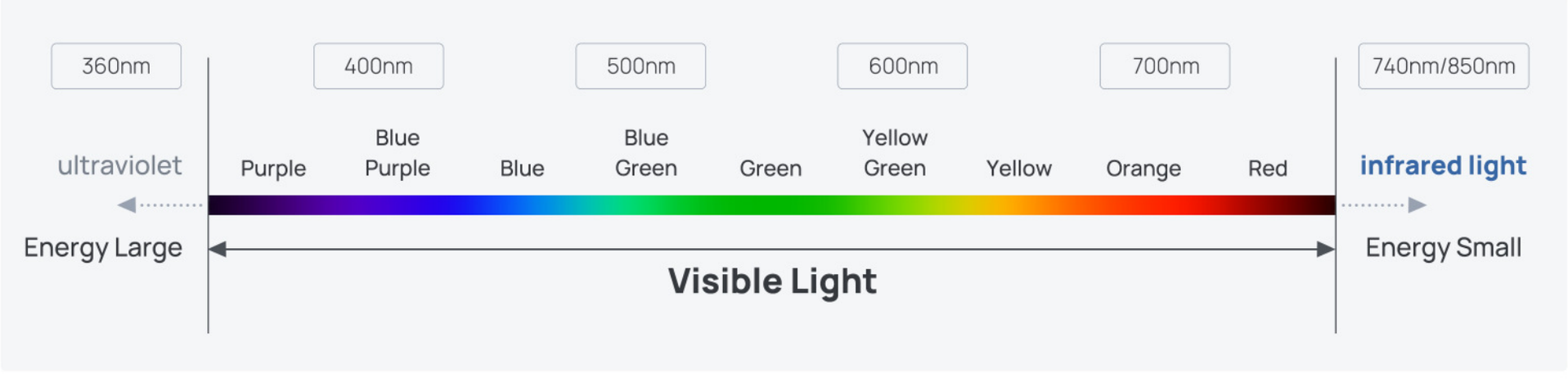
Once the event has passed and no further suspicious activity is detected (default 60s) , the system returns to IR mode, resuming its low-light, energy-efficient monitoring. Meanwhile, event recordings and alarm data are transmitted to third-party VMS for centralized management. Thanks to the true-color image capture, users can later perform smart search during investigations , making post-event analysis faster and more precise.

SUPER DAY-NIGHT FOCUS:
STABLE IMAGING AMID SUDDEN LIGHT CHANGES

To fully empower Smart Hybrid Light Technology, Milesight introduces Super Day-Night Focus — a powerful combination of optical precision and algorithmic intelligence that ensures the image remains crystal clear, even when lighting conditions change suddenly between visible and infrared modes.

Why It Matters

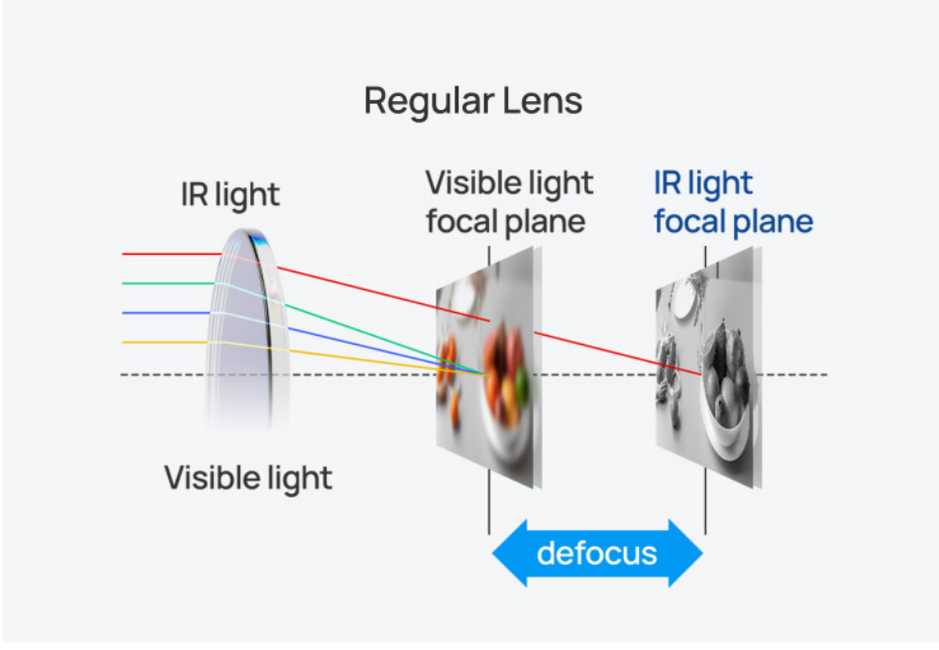
Smart Hybrid Light dynamically switches between visible light and infrared (IR) depending on scene activity. However, due to the different wavelengths of visible light (400–750nm) and IR light (above 750nm), traditional surveillance systems often suffer from focus shift, overexposure, or disruptive IR artifacts during transitions. These issues are most critical at the moment an event occurs, when clear, accurate footage is essential.



How it works

- **Day-Night Co-focus Lens (Hardware)**

Milesight adopts specially engineered lenses that ensure both visible and IR light converge on the same focal plane. This eliminates the need of re-focusing and guarantees stable, sharp imaging regardless of the light source.

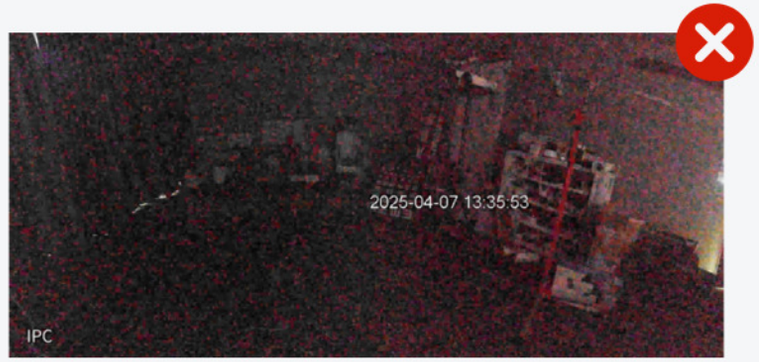


• Dual-path Algorithm for Adaptive Light Transition (Software)

Even with a co-focus lens ensuring precise imaging, sudden changes in lighting—like switching between IR and visible light — much like how our eyes react when exposed to abrupt brightness changes.
Imagine turning on a bright light at night — you see a sudden white flash. Or turning it off — you're momentarily blind until your eyes adjust.

To overcome this, Milesight developed an advanced dual-path algorithm to handle transitions intelligently:

☑ From Visible to IR:
Exposure is temporarily restricted to avoid sudden overexposure. Once the IR environment stabilizes, gain is restored for optimal clarity.



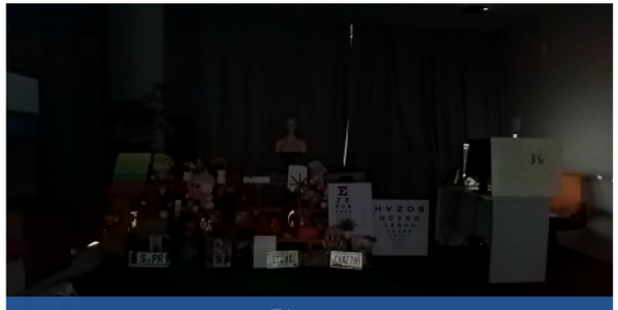
A typical result from competitors

☑ From IR to Visible:
Leveraging the ISP 4.0 and massive tuning datasets, the camera ensures smooth brightness adaptation and color recovery, avoiding the typical flash-out effect.

A typical result from competitors

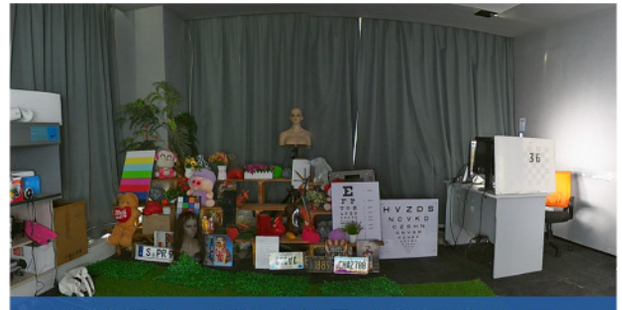
Watch How Milesight Outperforms Conventional Cameras During Sudden Light Switch

0.0005ULTRA LOW-LIGHT TECHNOLOGY: SEE CLEARLY, WITH NO LIGHTING



Phone

Regular Camera



0.0005Lux Milesight TrueColor Camera

In real-world surveillance scenarios, light conditions vary significantly — from the brightness of midday sun to the near darkness of moonless nights. Milesight cameras are rigorously tested under full illumination spectrum conditions, ensuring reliable imaging performance at every hour of the day.

100,000 lux	5 lux	0.2 lux	0.02 lux	0.0002 lux
Bright sunlight	Street lighting	Full moon	Quarter moon	Starry night

Milesight's ultra low-light technology achieves an industry-leading sensitivity of 0.0005 lux, enabling the camera to "see" even in near-total darkness — without relying on supplementary lighting.

What Makes It Possible?

• F1.0 Super Aperture

The F1.0 lens dramatically increases light intake, gathering 2.56× more light than traditional F1.6 lenses. This allows more light to hit the sensor, enhancing brightness and detail in dark environments.

• 1/1.8'' Big Sensor

A bigger sensor means a larger photosensitive area, which boosts the signal-to-noise ratio and improves clarity in low-illumination conditions — capturing more light per pixel.

• ISP Technology

As visual perception becomes the gateway of information in the digital age, image signal processing(ISP) technology has advanced to meet increasingly complex demands.ISP technology transforms the raw optical signals collected by a lens into high-quality, meaningful images. Through complex processing pipelines — including noise reduction, tone mapping, color correction, and exposure optimization — it gives cameras the ability to not only see the world, but to see it clearly and accurately, even under challenging conditions.

- Milesight ISP 4.0:
  The fourth-generation ISP architecture, ISP 4.0, is a refined and field-proven imaging pipeline engineered for surveillance excellence. It delivers significant enhancements across key modules — including FPN (Fixed Pattern Noise) suppression, DPC (Defective Pixel Correction), WDR, Edge Enhancement, and TMNR (Temporal Noise Reduction) — ensuring outstanding clarity across dynamic scenes.

- Milesight AI ISP (Coming Soon):
  The next-generation intelligent ISP, empowered by AI computing and deep learning. It dynamically adapts to scene types and object contexts, applying smarter enhancements that go beyond static rule-based processing.

INDUSTRY-LEADING PRECISION AA PROCESS: PRECISION BUILT AT THE MICRO LEVEL

Why It Matters

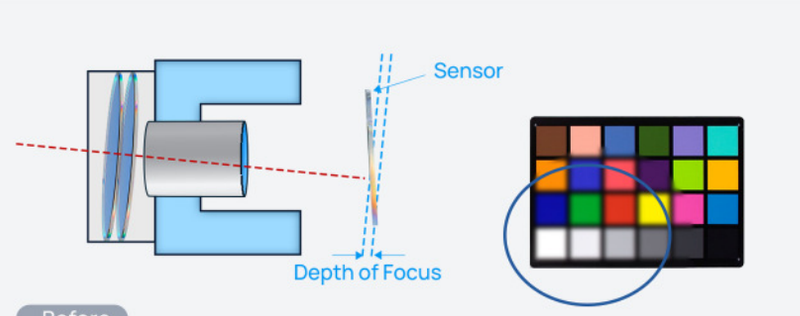
Behind every ultra-clear image is a level of precision that can't be seen — but can always be felt.

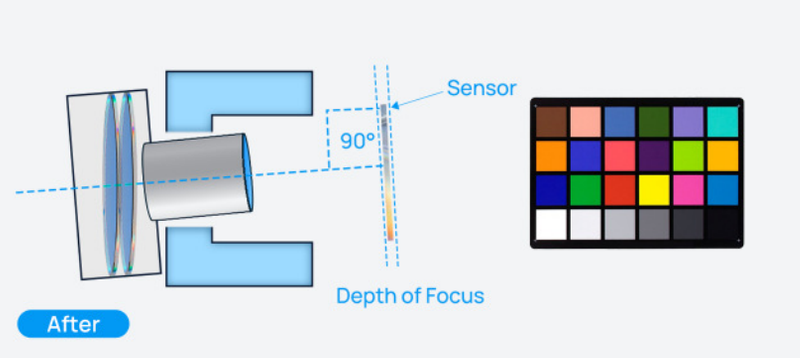
As image sensors evolve with higher resolution and ever-smaller pixel sizes, the margin for error shrinks. Each pixel gathers less light, demanding wider apertures to maintain brightness — but wider apertures lead to shallower depth of field. At the same time, large-format sensors are far more sensitive to even slight tilt or misalignment. These advancements push the limits of imaging hardware, creating a new challenge: **any misalignment between lens and sensor, no matter how small, can dramatically affect imaging clarity.** That's where Milesight's Precision Active Alignment (AA) Process comes in.

How It Works

With 0.1μm micro-level accuracy, Milesight cutting-edge AA process ensures flawless alignment of optical and imaging components — **not just in position, but also in tilt and angle.**

This ultra-fine alignment guarantees that light hits the sensor at the optimal angle, eliminating focus shift and edge distortion. The result? Sharper images, better color consistency, and a remarkable 50% increase in overall product imaging quality.





RELATED PRODUCTS

Milesight Q Camera Series

Milesight AI TrueColor Dual-sensor 180° Panoramic Network Camera

Make Sensing Matter

Add: 220 NE 51st Street, Oakland Park,
Florida 33334, USA
Tel: +1-800-561-0485

Add: 925, Anyang SK V1 Center, LS -ro
116beon-gil, Dongan-gu, Anyang-si, Korea
Tel: +82-31-990-7732

Add: Building C09, Software Park Phase III,
Xiamen 361024, Fujian, China
Tel: +86-592-5922772