

Varifocal Lens Selection Guide for Security Monitoring Systems with CHANCCTV Custom Support and Service



Fuzhou, Fujian Aug 13, 2026 ([IssueWire.com](https://www.issuewire.com)) - Security monitoring systems rarely operate in static, predictable environments. The required observation distance, critical target area, and ambient lighting conditions frequently shift based on evolving project parameters, site layouts, and complex surveillance demands. In these dynamic scenarios, a varifocal lens provides the critical flexibility to adjust the focal length, directly altering the field of view and target magnification without physically relocating the camera

hardware. A reliable [Custom Varifocal Lens Supplier](#) serves as a vital partner for integrators, providing multiple focal ranges, C/CS mount compatibility, motorized control options, and the necessary optical customization to ensure seamless system adaptation across various installation sites.

Fuzhou ChuangAn Optics Co., Ltd. (CHANCCTV) supplies a comprehensive portfolio of adjustable optics, encompassing **3.6–18 mm**, **5–50 mm**, and **10–50 mm** varifocal categories. Rather than relying on generalized performance claims, the manufacturer publishes concrete optical specifications, including resolution limits, aperture values, infrared (IR) correction capabilities, and operating temperature tolerances for specific models like the CH906D and CH3693A. Selecting the right varifocal lens requires more than simply choosing an adjustable component; it requires translating optical behavior into tangible security requirements. Buyers must systematically match the sensor format, installation distance, protective housing constraints, and control interfaces. By connecting detailed product specifications with robust application data, custom engineering support, and an accessible sample testing policy, CHANCCTV transforms procurement challenges into actionable, verifiable optical solutions.

Why Varifocal Lenses Fit Adjustable Monitoring Zones

The core value of a varifocal lens lies in its ability to adapt to unpredictable field conditions. Unlike fixed-focus optics that restrict a camera to a single, unchangeable perspective, a varifocal lens allows installers and integrators to modify the focal length during deployment. This adjustability changes the field of view and target size, enabling a single security camera to effectively cover different monitoring distances without requiring a physical change in its installation location.

CHANCCTV provides a diverse array of varifocal lenses covering broad operational needs across the security sector. These lenses are engineered with standard **C and CS mounts** to ensure broad compatibility with industrial and security camera housings, supporting high-resolution sensors **up to 12 MP** for demanding imaging environments. Key product categories address specific distance requirements:

- **6–18 mm varifocal lenses:** Ideal for standard indoor and outdoor monitoring where wide to medium coverage is needed, such as lobbies and parking garage entrances.
- **5–50 mm varifocal lenses:** A versatile middle ground for perimeter monitoring, building exteriors, and variable-distance checkpoints.
- **10–50 mm varifocal lenses:** Suited for longer-distance observation, where identifying details at a distance—such as license plates or facial features at property gates—is required.

However, possessing an adjustable focal length does not automatically guarantee optimal image capture. The final effective field of view must be rigorously field-verified by evaluating the camera's sensor format, the exact installation distance, the physical dimensions of the target, and the precision of the focus setting. A varifocal lens provides the mechanical capability to adapt, but successful deployment relies on matching that capability to the physical and spatial realities of the monitoring zone.

Select By Sensor, Focal Range, Aperture, And Control Method

Effective varifocal lens procurement requires a synchronized evaluation of multiple technical parameters. Buyers must verify the sensor format compatibility, the required focal range, resolution limits, maximum aperture, mount type, IR correction for day/night transition, iris type, zoom and focus control mechanisms, and the designated operating temperature range.

To illustrate the difference in specifications, consider how different models address specific performance demands:

- **CH906D:** Designed for a 1/2.8-inch sensor format, offering a sweeping **5–100 mm** focal range at **5 MP**. It features an **F1.8** aperture, CS mount compatibility, and IR correction for continuous day/night performance, making it highly effective for standard perimeter security.
- **CH3693A:** Built for a larger 1/1.7-inch sensor format, providing an **11–50 mm** focal range at a sharper **8 MP**. It features a faster **F1.4** aperture, P-Iris technology for precise exposure control, motorized zoom and focus capabilities, and is rated for operating temperatures from **-25 to 85° C**. This model is engineered for high-precision, automated adjustment in harsh environmental conditions.

These model variances directly determine the effective monitoring range, the camera's low-light performance, and the capacity for remote optical adjustments. When sourcing equipment, integrators should replace generalized terms like "high definition" or "long-range" with concrete parameters, ensuring the selected lens perfectly aligns with the camera sensor, protective housing, control interface, and the actual observation distance.

Connect Focal Length Behavior To Security Monitoring

While the fundamental optical behavior of a varifocal lens—changes in framing and perspective—can be understood through traditional photography applications, security projects require a more rigorous and consequential framework. In surveillance, focal length adjustments must be calculated against specific monitoring distances, target recognition sizes, low-light constraints, and system control methodologies.

A shorter focal length expands the field of view, making it ideal for capturing broad scenes such as entrances, long corridors, and open public areas where overall situational awareness is prioritized. Conversely, a longer focal length compresses the field of view and magnifies distant targets, providing the necessary detail for monitoring critical access points, specific checkpoints, or focused perimeters where target identification is paramount.

The CCTV lens category developed by CHANCCTV explicitly targets these security applications. By framing the varifocal lens within a security context, the selection process moves beyond simple photographic composition. It grounds the procurement decision in practical scene coverage and strict camera system configuration, ensuring that the optics fulfill the security mandate of the installation.

Custom Support and Sample-Based Compatibility Testing

Off-the-shelf optics do not always perfectly align with specialized security requirements, especially when integrating with proprietary camera systems or unique environmental constraints. Effective custom support must resolve deeper compatibility issues involving the camera sensor, protective housing dimensions, mount interfaces, optical filters, iris mechanics, and motor control integration, rather than simply rebranding a focal length label.

[CHANCCTV](#) structures its procurement and engineering support to actively reduce integration risks for B2B buyers. The manufacturer accepts **one-piece sample** orders and maintains a **no MOQ** (Minimum Order Quantity) policy for initial evaluations. A **stock sample** can typically be dispatched in approximately **3 days**. These physical samples are critical for engineers to confirm the actual field of view, focus retention throughout the zoom range, IR correction effectiveness during night operation, and

the responsiveness of remote adjustment mechanisms.

When projects require modifications, custom demands are routed through engineering support for rigorous evaluation. Before moving to volume manufacturing, both the supplier and the integrator must lock in the final datasheet, electrical control requirements, operating temperature tolerances, and acceptance image standards, ensuring the delivered product matches the tested sample exactly.

Service and Supply Planning for Security Integrators

For a security integrator, continuous project delivery relies on far more than the initial component quote or a single successful sample. Long-term success depends on consistent model availability, reliable sample lead times, predictable volume delivery schedules, and responsive technical support.

Fuzhou ChuangAn Optics Co., Ltd. provides transparent supply chain data to assist integrators in project planning. The company states a standard lead time of approximately **15–20 days for 1,000 lenses**, and commits to an **inquiry response within 24 hours**. This transparency establishes a reliable foundation for scheduling project installations, managing inventory, and resolving specification queries promptly.

Since its establishment in **2010**, the company has maintained a continuous development trajectory across CCTV, varifocal, M12, and machine vision lens categories. This extensive product portfolio, combined with structured service workflows, provides the necessary manufacturing backbone to support integrators from the initial prototyping phase through to full-scale, volume procurement.

Develop Sharper Lenses, Create Ideal Solutions

Addressing the complex requirements of modern security monitoring demands precision optics, verified specifications, and reliable manufacturing support. Through a combination of optical engineering history dating back to 2010, a targeted portfolio of adjustable lenses, accessible application data, flexible sample policies, and robust custom support, CHANCCTV provides a complete procurement foundation—from initial specification screening to final field validation.

The company remains committed to its core promise: develop sharper lenses, create ideal solutions, and provide customized services to realize innovation. For integrators and procurement teams looking to secure their optical supply chain and improve their monitoring system adaptability, evaluating the exact technical parameters is the essential first step.

Submit your sensor format, mount type, required focal length/FOV, working distance, filter requirements, environmental conditions, and validation criteria via <https://www.opticslens.com/> to enter the CHANCCTV product matching and customized consultation workflow.



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