



FAMILY DATASHEET

MV Cloud-Managed Smart Cameras

Overview

The Cisco Meraki MV smart camera family brings simplicity and data-powered intelligence to the world of physical security. Every MV model comes with a powerful processor—the same kind found in many of today's smartphones—and an innovative architecture that minimizes physical infrastructure as well as software requirements. Cameras, switches, wireless access points, and sensors seamlessly integrate into a unified IT and physical security solution, all managed via the Meraki dashboard. These smart cameras not only help ensure physical safety and security, but can also provide advanced business intelligence. MV smart cameras pack fast processing power, robust security features, and sophisticated analytics into a refreshingly simple package.

MV: Beyond just security

By using on-device storage and MV Cloud Archive, Meraki smart cameras eliminate the need for a separate network video recorder (NVR), reducing cost, complexity, and additional points of failure. With the exception of the ultra-compact MV2 flex camera, all MV smart cameras have high-endurance storage directly on the camera for historical video. Not only does this drastically simplify both installation and scaling, it also eliminates a major network security vulnerability in the IT infrastructure.

Equipped with an industry-leading processor, MV cameras are not only capable of providing high-definition video, they also allow for machine learning-based analytics. Harnessing the power of computer vision, artificial intelligence, and machine learning, MV smart cameras can detect objects within a frame. This seemingly simple insight builds the foundation for more effective and efficient processes, like reducing wait times, journey pathing, and safe working practices. And this is all done on the cameras at the edge.

Product highlights

- **Intelligent analytics:** Precise searching with attribute filters, intelligent object detection, and advanced people and vehicle motion sensing
- **Centralized cloud management:** Simple configuration and monitoring without the need for additional on-premises NVRs, video management systems, or servers
- **Built-in security:** Safeguard camera data and ensure protection against unauthorized access with automatic video encryption, granular access controls, and more
- **Scale to any size:** Quickly deploy and manage anywhere from 1 to 10,000+ cameras
- **Integration with Meraki ecosystem:** Seamless integration with other Meraki products (e.g., sensors, switching, wireless) for a comprehensive solution that's all accessible from the Meraki dashboard

Cutting-edge architecture with streamlined management

Meraki MV architecture

Meraki brings simplicity to physical security deployments with expertise in distributed computing. With cloud-augmented edge storage, MV smart cameras provide groundbreaking ease of installation, configuration, and operation. Eliminating the NVR reduces equipment CapEx and the simplified architecture minimizes lifetime OpEx costs.

Each MV smart camera comes with integrated, ultra-reliable, industrial-grade storage. This cutting-edge technology allows the system to efficiently scale to any size, with storage expanding with the addition of each camera. Plus, as video is stored locally, administrators can rest easy knowing that even if the network connection cuts out, the cameras will continue to record footage.

Integrated wireless for flexible deployments

As the primary storage is on the camera itself, very little bandwidth is used unless video is being watched. This unique architecture makes it possible to wirelessly deploy MV smart cameras with minimal impact to the network. All MVs have wireless functionality built in, meaning they can be deployed without having to run new cabling for connectivity. The option for wireless deployments offers organizations an easy upgrade path for analog cameras without the need for recabling and allows greater flexibility for remote or temporary sites.

Simply cloud managed

The innovative Meraki web-based dashboard has revolutionized networks around the world, and brings the same benefits to networked video surveillance. Zero-touch configuration, remote troubleshooting, and the ability to manage distributed sites through a single dashboard eliminates many of the headaches administrators have dealt with for decades. The Meraki dashboard and Meraki Vision portal—a dedicated user interface for viewing and interacting with video—make the need for video management software a thing of the past.

Easy to access, easy to control

The Meraki dashboard and Meraki Vision portal allow for flexible management and viewing—whether locally or remotely via automatic cloud proxy. This means that users can access video on a variety of devices without installing software or plug-ins or worrying about complicated VPN setup.

To ensure that users are only accessing video appropriate for their role, the Meraki dashboard has granular controls that allow organizations to define what a user can and cannot do. For example, a store manager would not need to change camera settings or access cameras at other stores they do not manage. Camera-only roles allow administrators to prevent security staff from changing network settings, limit views to selected cameras, or restrict the export of video, while access logs allow network administrators to audit video viewing, exports, and more.

With Meraki cloud authentication architecture, the controls scale for any organization and support Security Assertion Markup Language (SAML) integration. For larger and more dynamic organizations, camera permissions can be configured based on camera roles instead of individually assigning them.

Secure and always up to date

Centralized cloud management offers one of the most secure platforms available for camera operation. Built with Cisco Trust Anchor modules, secure boot, firmware image signing, and runtime defenses, MV smart cameras are protected and tamper-proof. Access to the camera is encrypted with a public key infrastructure (PKI) that includes individual camera certificates. Local video is also encrypted by default and adds a final layer of security. All security measures are on by default, require no user configuration, and cannot be turned off.

Software updates are managed automatically for the delivery of new features and to enable rapid security updates. Scheduled maintenance windows ensure the MV family continues to address users' needs with the delivery of new features as part of the cloud service.



MV33

Improving processes and providing business insights

Optimized video retention

MV smart cameras have flexible options for video quality and retention policies to meet a variety of deployment needs. Real-time retention estimates for each camera are provided in the dashboard, showing how different bit-rate and frame-rate settings and features like motion-based retention and scheduled recordings affect video storage.

With motion-based retention, cameras always retain a continuous recording of the most recent 72 hours as a safety net. After that period, the camera intelligently trims footage that contains no motion. Motion-based retention is possible because of the unique way MVs handle motion—analyzing video on the camera itself and indexing it in the cloud. This feature can be turned on with the click of a button and can considerably extend on-camera storage. The latest series of cameras offer smart retention—a feature that provides longer, higher-quality, and predictable video retention for key events such as scenes with motion, people or vehicles in the view of the camera.

Schedules allow users to define when cameras record and when they don't, so you can create templates for groups of cameras and store only what's needed, or turn off recording entirely to only view live footage.

Whatever combination is chosen, the dashboard provides a real-time retention estimate for each camera. This removes the guesswork and makes it easy to define recording policies that work best for every deployment. For organizations with nonnegotiable regulatory requirements surrounding storage, optional Cloud Archive licenses are available in a variety of increments up to 365 days.

Flexible video viewing

Video can be easily accessed from anywhere, on virtually any device. On laptops, desktops, and mobile tablets, video can be viewed on a browser through the Meraki Vision portal or through an installable progressive web app (PWA) for a native software experience. The Meraki Display is another viewing option providing a reliable, performant, and intuitive application for active monitoring, all on Apple TV. On smaller mobile devices, like phones, the Meraki app allows you to view video on the go.

MV smart cameras are also bandwidth-conscious—intelligently streaming video on the LAN or WAN depending on your connection. When the dashboard detects a local connection to the camera from the viewing device, video is streamed directly from the camera, minimizing WAN usage. When viewing video remotely, the dashboard will create a cloud proxy to securely stream video to the device. All of this is done automatically, requiring no special software, plug-ins, or firewall configurations.

Features like the drag-and-drop video wall help streamline video monitoring, whether on-site or remote. Video walls can be configured with up to 16 camera feeds per view wall, and set to rotate at specific intervals to allow users to cycle through multiple views. Additionally, motion alerts can be configured to send notifications of activity, including people, keeping users aware even when video is not being watched.

Isolate events intelligently

Meraki MV smart cameras use Motion Search to quickly find important segments of video among hours of recordings. Optimized to eliminate noise and false positives, this allows users to retrospectively zero in on relevant events with minimal effort. Simply select elements of the scene that are of interest in the Vision portal and the Meraki platform will return the activity that occurred in that area during the specified time. Missing laptop? Drag the mouse over the area it was last seen to quickly find out when it happened and who was responsible.

Motion Recap further minimizes the amount of video that needs to be watched by summarizing activity in a single image. The composite image is built into the camera and displayed as Motion Search results in the dashboard. This powerful, time-saving feature allows a user to understand the events of a 30-second video clip in a fraction of a second with just a glance.

To locate video footage even faster, security teams can filter motion events further using attribute filters. Available on select models, attribute search allows users to find critical events faster by filtering through top/bottom clothing color or color/type of vehicle. And for even greater efficiency, users can also search for similar motion events using the find similar clips function.

Once important footage has been identified, the dashboard makes it easy to share. Video clips can be exported from the camera, shared via a link, and downloaded into an easily viewable MP4 file. No proprietary file formats or special players are required. After video has been exported, the integrity of the file can be verified using the SHA-256 export verification feature built into the dashboard. There are also options for sharing video links as well as a snapshot tool, which is useful for circulating still images.

Analytics built right in

With an industry-leading processor on board every MV smart camera, advanced analytics using computer vision and machine learning are now easy, scalable, and cost-effective to implement. MV smart cameras can natively detect, classify, and track objects such as people and vehicles within a frame. This provides valuable insights into office foot traffic or customer behavior patterns straight from the camera, viewable in the dashboard—no servers, special software, or dedicated hardware required. For bespoke applications, MV Sense allows you to run custom computer vision models directly on the camera, opening up endless opportunities to derive business value from video.

The Motion Heatmaps feature provides an overview of relative motion in a given area hour by hour or day by day. This paints a picture of general motion trends, helping to understand hot spots, bottlenecks, or busy and free times. These functionalities make it possible to start expecting more from cameras than just security.

Teams can also leverage presence analytics—more precise and actionable insights around people and vehicle movement, all conveniently accessible within the Meraki dashboard. Built on top of advanced machine learning and edge processing technologies, teams can monitor foot traffic as individuals enter or exit facilities, while also tracking when vehicles enter or leave a specific area, like a parking garage.

In addition to analyzing the visual world, MV smart cameras can also provide insight into sounds with audio analytics. Using the same machine learning and artificial intelligence used to detect objects, cameras can also detect alarms and sirens and provide overall decibel levels for an area. Audio detection can be useful for tying video into alarm systems for better alerting and faster incident response, whereas the overall noise level can be used for architectural acoustics.

Indoor cameras

	MV2-HW 	MV12WE-HW MV12W-HW MV12N-HW 	MV13-HW MV13M-HW 	MV22-HW MV22X-HW 
Camera type	Wide angle flex	Wide angle mini dome/ MV12N-HW (narrow angle)	Fixed-lens mini dome	Varifocal dome
Sensor and resolution	4 MP (2688×1520) 1080p (1920×1080)	4 MP (2688×1520) 1080p (1920×1080)	8.4 MP (3840×2160) 4K (3840×2160)	4 MP (2688×1520) 1080p (1920×1080)
Field of view	103°	73° (MV12N-HW)/114°	101.3°	36-112°
Storage	NA/Cloud Archive only	128 GB (MV12WE-HW) 256 GB (MV12W-HW) 256 GB (MV12N-HW)	256 GB (MV13-HW) 512 GB (MV13M-HW)	256 GB (MV22-HW) 512 GB (MV22X-HW)
IR illumination	8 m	15 m	15 m	30 m
Best for	Offices, small spaces	General purpose areas including entrances and hallways	General purpose area including entrance and hallways Smart retention and filter- based attribute search to find critical events faster (top/bottom clothing color or color/type of vehicle)	Larger general purpose spaces

Indoor cameras

	MV23M-HW MV23X-HW 	MV32-HW 	MV33-HW MV33M - HW 
Camera type	Varifocal dome	Fisheye	Fisheye
Sensor and resolution	8.4 MP (3840×2160) 4K (3840×2160)	8.4 MP (4.2 MP effective) 4.2 MP (2058×2058)	12.4 MP (4072×3046) 8 MP (2880×2880)
Field of view	36-112°	360°	360°
Storage	512 GB (MV23M-HW) 1 TB (MV23X-HW)	256 GB	256 GB (MV33-HW) 512 GB (MV33M-HW)
IR illumination	30 m	NA	NA
Best for	Larger general purpose spaces Smart retention and filter-based attribute search to find critical events faster (top/bottom clothing color or color/type of vehicle)	Spaces requiring 360° views, great for retail stores	Spaces requiring 360° views, great for retail stores Smart retention, people counting and area occupancy

Outdoor cameras

	MV52-HW 	MV53X 	MV63-HW MV63M-HW MV63X-HW 	MV72-HW MV72X-HW 	MV73M-HW MV73X-HW 	MV84X 	MV93-HW MV93M-HW MV93X-HW 
Camera type	Telephoto bullet	Telephoto bullet	Fixed-lens mini dome	Varifocal dome	Varifocal dome	Multi-imager	Fisheye
Sensor and resolution	8.4 MP (3840×2160) 4K (3840×2160)	8.4MP (3840×2160) 4K (3840×2160)	8.4 MP (3840×2160) 4K (3840×2160)	4 MP (2688×1520) 1080p (1920×1080)	8.4 MP (3840×2160) 4K (3840×2160)	4 × 5MP (2560×1920) 1/2.7"	12.4 MP (4072×3046) 8 MP (2880×2880)
Field of view	12-37°	12-37°	102°	Horizontal 36-112°, vertical 20-57°, diagonal 42-138°	36-112°	43-94°	360°
Storage	1 TB	1TB	256 GB (MV63-HW) 512 GB (MV63M-HW) 1 TB (MV63X-HW)	256 GB (MV72-HW) 512 GB (MV72X-HW)	512 GB (MV73M-HW) 1 TB (MV73X-HW)	4TB	256 GB (MV93-HW) 512 GB (MV93M-HW) 1 TB (MV93X-HW)
Ratings	IK10+/IP67	IK10+/IP67	IK10+/IP67	IK10+/IP67	IK10+/IP67	IK10+/IP67	IK10+/IP67
IR illumination	50 m	50 m	20 m	30 m	30 m	30 m	20 m
Best for	Ideal for parking lots or perimeter monitoring	Ideal for retailers, public school spaces, parking lots, or warehouses/construction sites Smart retention and filter-based attribute search to find critical events faster (top/bottom clothing color or color/type of vehicle)	Ideal for entrances and exits Smart retention and filter-based attribute search to find critical events faster (top/bottom clothing color or color/type of vehicle)	A variety of outdoor and demanding environments	A variety of outdoor and demanding environments Smart retention and filter-based attribute search to find critical events faster (top/bottom clothing color or color/type of vehicle)	Four independent imagers in one camera housing with adjustable field of view (FoV). Ideal for retailers, event spaces, or parking lots.	Ideal for situational awareness and wide coverage of an area Smart retention, people counting, and area occupancy

Raise the bar for smart security

Cameras are only one part of a physical security system, and the information they hold can help provide context into other system events. MV smart cameras have APIs that make it easy to get eyes on what's happening or use video analytics to provide insight into business processes.

APIs make it possible to programmatically retrieve video links or snapshots to correspond with badge access events or PoS transactions. MV Sense enables further use of the MV machine learning based computer vision outputs through both REST and MQTT API endpoints. Organizations can request or subscribe to historical, current, or real-time data generated in-camera to create custom business solutions. This provides organizations and developers with processed, high-value data and insights without additional hardware, software, or infrastructure. Smarter cameras = lower total cost of ownership.



MV53X

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