![Verkada logo] **VERKADA**

Product Overview: D-Series Camera

Enterprise Connected Video Security

OVERVIEW

Verkada offers simplicity and added protection to organizations looking to modernize their approach to physical security. The D-series camera—available in indoor (D30) and outdoor (D50) models—eliminates the need for local servers, firewall equipment and network video recorders (NVRs), reducing complexity and lowering operating costs.

In place of the NVR, each Verkada camera stores video footage on industrial-grade, solid-state storage. This fully encrypted and distributed design offers a number of unique benefits. It improves security by doing away with single points of failure and unencrypted NVRs. It minimizes bandwidth consumption by avoiding continuous video upload. And it greatly reduces the cost and complexity of extending the system—simply install new cameras, with no additional hardware equipment required.

Paired with Verkada's intuitive, web-based software, the D-series cameras come alive with powerful new capabilities. It's easy to grant, edit and revoke access permissions for any user—by camera, site or organization. Activity-based indexing and intelligent search features automatically identify incidents, reducing hassle and speeding response times. Verkada even makes it possible to share real-time camera feeds via SMS. And because our cameras are web managed, software updates and upgrades occur automatically. Result: Verkada cameras are always up to date and always secure.

PRODUCT HIGHLIGHTS:

✓ Built with wall-to-wall encryption

✓ 30+ days of retained video

✓ Live-stream sharing

✓ Works even on LTE

✓ Activity-based indexing and search

✓ Automatic software updates

✓ Easy access controls

✓ No extra plugins or additional hardware required

MODERN, SECURE ARCHITECTURE

Verkada eliminates local servers and NVRs, resulting in a system architecture that is simpler, more secure, and easier to operate and manage. Open ports—which introduce security vulnerabilities in traditional camera systems—are also omitted from our system design.

Out of the box, Verkada cameras are automatically self-firewalled. This safety layer prevents unauthenticated computers on the network from sending malware packets to the camera—even in the event that an attacker or virus is present on the same physical network.

Each camera communicates only via encrypted, outbound connections, underpinning an efficient and secure architecture. Video footage that's stored on each camera is encrypted with public key infrastructure (PKI), which prevents unauthorized access—even in the unlikely event that the camera itself falls into the wrong hands.

Verkada software is developed by U.S.-based engineers. As part of our rigorous software development lifecycle, all firmware is cryptographically signed by Verkada to ensure that only authentic firmware can be loaded onto each camera.

Verkada works exclusively with datacenter operators that meet the highest industry standards for security and privacy, including ISO 27001, SSAE16/ISAE 3402 Type II: SOC 2, and SSAE16/ISAE 3402 Type II: SOC 3 certifications.

IN FOCUS
No NVR
No insecure ports
Full HTTPS/SSL encryption

Footage fully encrypted and stored in a distributed fashion in on-camera, solid-storage.

Select video metadata and activity-triggered footage made available in Command via encrypted connection.

Video available for secure management and playback by users authorized via two-factor authentication.
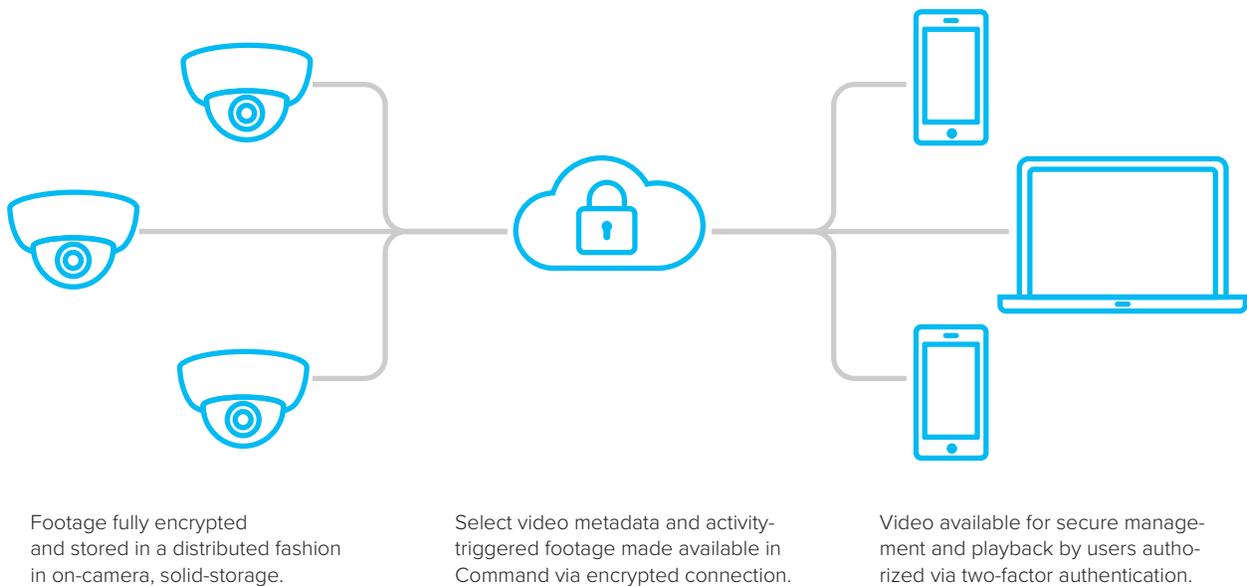
OPTIMAL VIDEO RETENTION—30 DAYS & COUNTING...

Verkada applies a tiered, differentiated approach to meet your organization's video retention needs without hindering your local area network. Select data is securely uploaded and made readily accessible to authorized users within Command, Verkada's secure web application. Full HD video footage is stored on the camera, which has enough storage for 30 days of continuous recording.

To maximize recording time, footage is automatically degraded to regular HD if meaningful activity is not detected. For customers with longer retention requirements, Verkada offers a number of options. Contact us at sales@verkada.com to learn more.

IN FOCUS
Storage for 30 days of continuous recording
Data at rest encrypted with 128-bit AES encryption
Available options to support longer retention needs

NO ACTIVITY DETECTED
Records at degraded
HD resolution

ACTIVITY DETECTED
Records at full 3MP
ultra-HD resolution

NO ACTIVITY DETECTED
Records at degraded
HD resolution

20sec

HD
2min

Thumbnail uploaded to cloud,
every 20 seconds

Ultra-HD thumbnail uploaded to
cloud, every 2 minutes
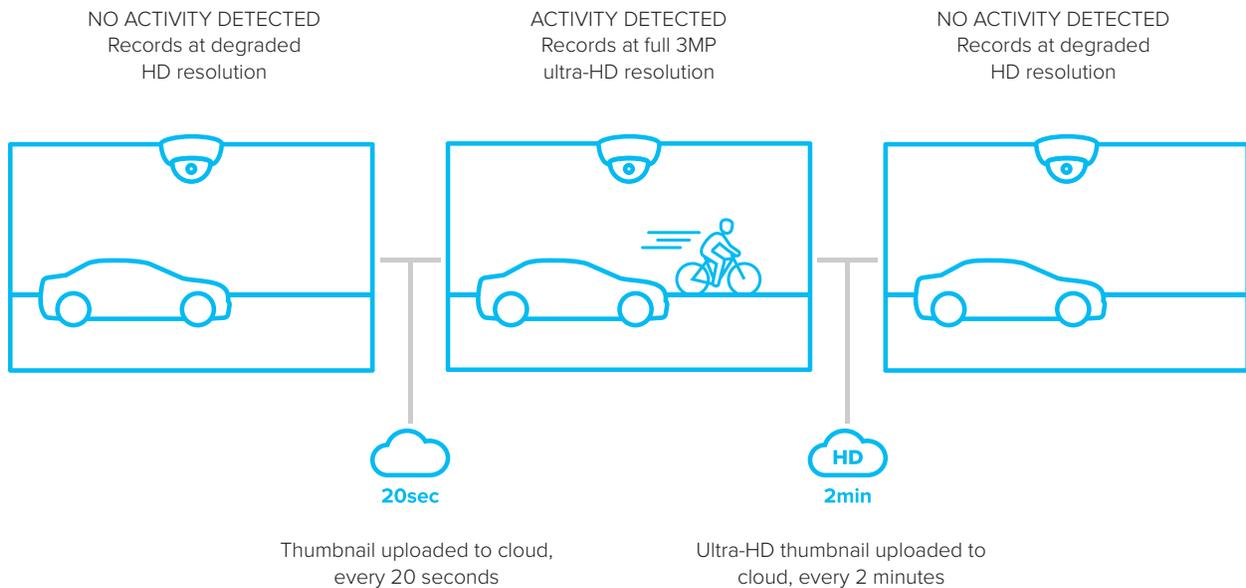
UNMATCHED PICTURE QUALITY—EVEN AT NIGHT

Verkada cameras record at 3 megapixels, providing 50% more detail than 1080p full HD. We also utilize a broad color gamut and wide dynamic range (WDR) to maximize clarity throughout the entire image.

Once connected, our cameras automatically tune image parameters: exposure, iris, shutter speed, brightness, contrast, saturation, sharpening, tint and temperature. These parameters are continually adjusted by Verkada's algorithms, ensuring optimal image clarity. Each camera comes equipped with 8 infrared illuminators and a 1/2.8'' Progressive CMOS sensor, a combination that enables unparalleled low-light camera performance—even in the dark of night.

IN FOCUS
3-megapixel resolution
Wide Dynamic Range (WDR)
8 infrared illuminators for night vision

POWERFUL ACCESS CONTROLS & SECURE REMOTE ACCESS

Command—Verkada's secure web-based application—empowers administrators to easily and effectively manage access rights for their entire organization. Effortlessly restrict user access to an individual camera or location, and apply user roles to establish an access rights regime that fits your organization's needs. Need to grant a new regional manager access to 5 office locations? Verkada makes it straightforward and painless.

Our software also makes it easy to securely share video footage with approved third parties, such as law enforcement and legal professionals. You can export footage or easily grant expiration-dated access by inviting these partners to your secure account. With Verkada, you can even remotely share a camera's live feed in real time via SMS—a potentially life-saving feature during instances of active threats and prolonged security breaches.

IN FOCUS
Granular controls for user, site and organization
Time-restricted access
Detailed access logs

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WON'T KILL YOUR BANDWIDTH

Compared to typical IP security cameras, which upload video footage continuously to the cloud, Verkada cameras have a reduced impact on the local area network. Result: Verkada cameras work even in areas where limited internet connectivity prevents cameras from other manufacturers from operating.

IN FOCUS
Works even on LTE connections
Doesn't require its own high-speed network
Consumes as little as 20 kbit/s per camera in low-bandwidth mode

COMPARISON OF HIGH-DEFINITION IP NETWORK CAMERAS[1]
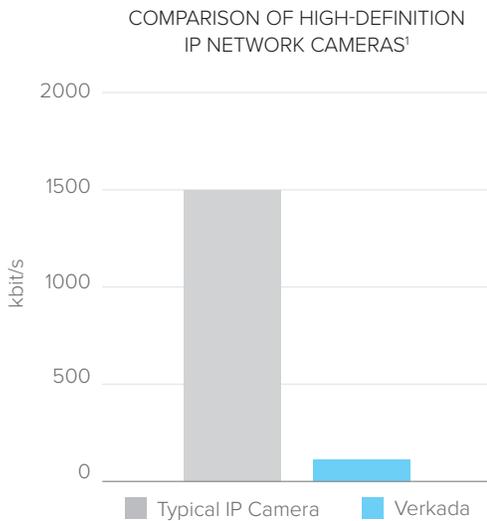
VERKADA BANDWIDTH USE

OPERATING MODE	UPLINK USAGE	NOTES
Steady state camera upload	50 kbit/s (regular) 20 kbit/s (low bandwidth mode)	Camera uploads only thumbnails and select metadata
View video stream from internet	300 kbit/s (low-res stream) 1000 kbit/s (high-res stream)	User can select low- or high-res stream within Command
View video stream from the LAN[2]	0 kbit/s	Coming soon

1 Actual performance may vary; comparison is between network cameras streaming 100% of footage to the cloud to Verkada cameras with split-path hybrid approach between on-camera solid-state storage and cloud. Read Report »

2 Contact Verkada Sales to learn more.

* Multiple simultaneous viewers do not increase local area network (LAN) bandwidth use from the camera — viewers securely access the video after it is proxied through Verkada Command's cloud service.

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BUILT TOUGH, WITH BACKUP FOR THE BACKUP

Engineered with cutting-edge technology and industrial-grade materials, Verkada cameras are built to perform everywhere—and built to last. The D30 and D50 meet certification requirements for vandal resistance (IK08 and IK10, respectively); the D50 has an IP67 weatherproof rating. Uptime and reliability are ensured thanks to quality assurance (QA) alerts and tamper detection notifications, which are generated automatically by Verkada's software.

To ensure the most secure and reliable deployments, Verkada includes redundant systems throughout each camera's design. In the unlikely case that a scheduled automatic firmware update fails, for instance, two redundant firmware partitions ensure that the camera remains secure and operational. To enable optimal retention and an excellent user experience for administrators, Verkada cameras capture video at two different bitrates—high-definition for retention, and a bitrate optimized for speedier applications within Verkada Command. On-camera footage may optionally be fully backed up to encrypted cloud storage.

Finally, thanks to its on-camera storage, the Verkada camera will continue to record even in the event of a network outage. Paired with a continuous power solution, Verkada cameras will continue to reliably record even in the event of grid-power loss.

IN FOCUS
2 redundant, failsafe firmware partitions
Camera records even in the event of network outage
Tamper detection & QA alerts
Optional cloud-backup storage available for added redundancy

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VIDEO ANALYTICS & ACTIVITY-BASED INDEXING

Thanks to cleverly designed activity-based indexing, Verkada's soft-
ware automatically scans footage and logs periods when activity
occurred. Using the web interface, it's easy to search a camera's
historical footage by selecting areas of interest within its frame. Verkada
then automatically surfaces all footage where motion occurred in these
areas of the grid. Find the clip you're looking for and easily export and
share. You can also use Verkada's map- and text-based search features
to quickly navigate multi-site deployments comprising many cameras.

IN FOCUS
Intelligent activity-based indexing & search
Activity-based video analyitcs
Map view for easy management

ALWAYS UP TO DATE, ALWAYS AHEAD

Say goodbye to legacy systems beset by outdated firmware and security vulnerabilities. Verkada cameras automatically receive software updates and upgrades. These updates—which include the latest security enhancements as well as new features and functionality—are made available to all Verkada software license holders via periodic scheduled maintenance windows.

Our secure, automated approach ensures seamless delivery of updates without interrupting camera operability. Result: it's easy for administrators to stay ahead of emerging security threats while gaining access to all the latest features and industry-leading security camera capabilities.

IN FOCUS
Automated firmware and software updates
Access to all new features and functionality
No more delayed security patch updates
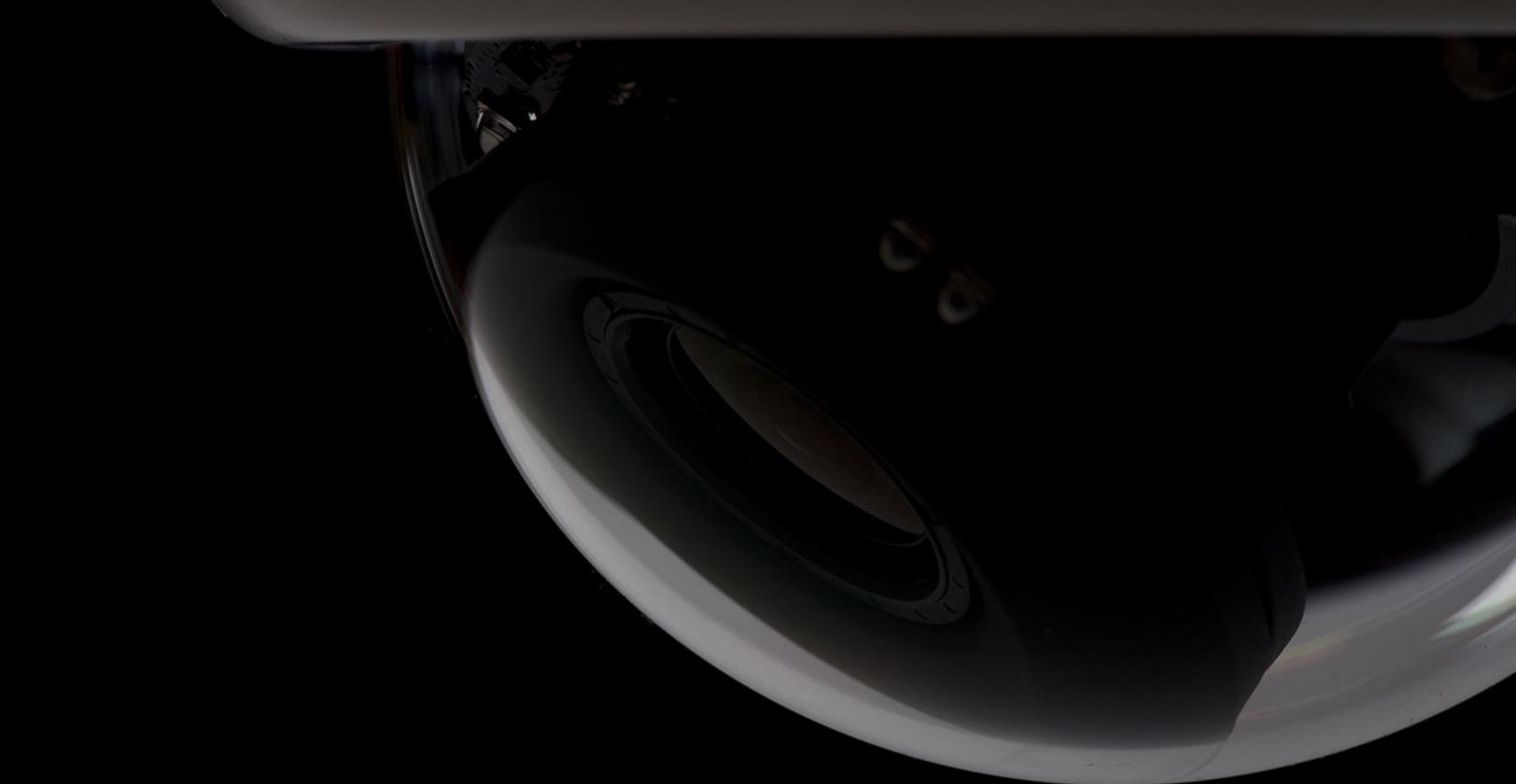
About Verkada

Verkada builds enterprise security cameras that combine cutting-edge camera technology with intelligent, cloud-based software—all in a secure, user-friendly solution. Unlike legacy systems, Verkada's technology offers the protection of full encryption and is easy to install, configure, upgrade and expand.

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