Verkada

"What camera should I use where?" It depends.

Verkada Camera Selector Guide

Series overviews

Verkada's broad range of cameras offer our customers the ability to capture a wide variety of scenes from near to far and small to large. Verkada's dome, mini, bullet, fisheye, multisensor, pan-tilt-zoom (PTZ), and remote cameras are available in a variety of image resolutions and lens types.





Dome	CD22 / CD22-E	CD32 / CD32-E	CD43 / CD43-E	CD53 / CD53-E	CD63 / CD63-E
	3MP	3MP	5MP	5MP	4K
	Fixed Lens	Fixed Lens	Fixed Lens	Zoom Lens	Zoom Lens




Mini	CM22	CM42	CM41-E	CM42-S
	3MP	5MP	5MP	5MP
	Fixed Lens	Fixed Lens	Fixed Lens	Fixed Lens, Split




Bullet	CB52-E	CB52-TE	CB62-E	CB62-TE
	5MP	5MP	4K	4K
	Zoom Lens	Telephoto Zoom Lens	Zoom Lens	Telephoto Zoom Lens





Multisensor	CY53-E	CY63-E	CH52-E	CH53-E	CH63-E
	2 x 5MP	2 x 4K	4 x 5MP	4 x 5MP	4 x 4K
	Zoom Lens	Zoom Lens	Zoom Lens	Zoom Lens	Zoom Lens


PTZ	CP52-E	CP63-E
	5MP	4K
	28x Zoom Lens	32x Zoom Lens

Fisheye	CF83-E
	12.5MP
	Fixed Lens

Remote	CR63-E
	4K
	Zoom Lens

Field of view

Verkada's fisheye camera is designed to provide broad coverage of an area, either horizontally or vertically. When mounted on a ceiling, it can capture an entire space or hallway intersection in a single view or in a quadrant view. When mounted on a wall, it provides a panoramic left-to-right view, making it suitable for use on poles in parking lots, the sides of buildings, or in hallways.

For more expansive coverage with a higher level of detail, Verkada's multisensor cameras are a good choice. Each sensor can be independently repositioned and optically zoomed, giving you the flexibility to tailor the coverage to your needs.

Verkada's PTZ cameras offer the best of both - a broad field of view and precise zoom capabilities. The PTZ cameras allow security operators to dynamically monitor large areas with 360-degree pan and 220-degree tilt functionalities. Large image sensors ensure clear footage, enabling operators to investigate moving subjects and record comprehensive events in expansive spaces. Additionally, the up to 32x optical zoom allows for capturing finer scene details in specific areas.

Mobile deployments

Security cameras are most often mounted in fixed positions: to walls, ceilings, poles and other fixed-position mounting devices. While all Verkada cameras are surface-mountable out of the box, we also offer a variety of mounts to meet your needs.

The CM41-E, CM22, and CM42 are built specifically for mobile deployments. These cameras have additional certifications beyond our standard cameras, making them suitable for installation on vehicles such as cars, trains, buses, boats and ferries.

Read more about mobile deployment options here.

Deployment location

Verkada offers a variety of cameras suited for a mix of indoor and outdoor deployments. What makes a camera outdoor-rated? Verkada's outdoor dome cameras, bullet cameras, risheye cameras, multisensor cameras, PTZ cameras, remote cameras, and the CM41-E mini camera offer industry-standard protection against dust and moisture (IP66 / IP67) as well as against impact (IK10). Read more about IP and IK ratings here.

	Indoor	Outdoor
Dome	CD22, CD32, CD43, CD53, CD63	CD22-E, CD32-E, CD43-E, CD53-E, CD63-E
Mini	CM22, CM42, CM42-S	CM41-E
Bullet	CB52-E, CB52-TE, CB62-E, CB62-TE	CB52-E, CB52-TE, CB62-E, CB62-TE
Fisheye	CF83-E	CF83-E
Multisensor	CY53-E, CY63-E, CH52-E, CH53-E, CH63-E	CY53-E, CY63-E, CH52-E, CH53-E, CH63-E
PTZ	CP52-E, CP63-E	CP52-E, CP63-E
Remote	CR63-E	CR63-E

Outdoor cameras are also great options for indoor environments where there may be fine dust particles in the air such as industrial or manufacturing environments or other indoor environments that might otherwise experience outdoor conditions (moisture and temperature).

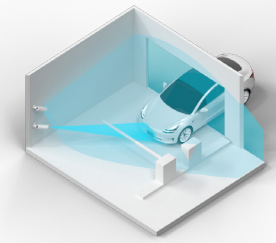
Form factor

Deciding between camera form factors is a part of every camera deployment. Verkada's recommended indoor camera options include dome, mini, fisheye and multisensor form factors. Outdoor options include dome, mini, bullet, fisheye, multisensor, PTZ, and remote form factors. When would you use which form factor? Here are some things to consider:

Consideration	Recommendation
Should the camera be more noticeable?	Verkada's bullet, multisensor, and PTZ cameras offer pronounced form factors.
Or less noticeable?	Use Verkada's mini cameras when you prefer that the cameras are as inconspicuous as possible. Dome cameras can also be fairly inconspicuous, especially when mounted under a soffit or even directly on the wall.
Is the camera fully exposed to weather elements?	While all of Verkada's camera lines (dome, mini, fisheye, bullet, multisensor PTZ, and remote) offer models designed and tested to withstand inclement weather, there can be certain situations where the bullet cameras are better suited to ward off the elements due to a smaller lens c overing and a lip over the top end of the camera's face.
An outdoor camera requires a wide fieldof view.	If you require a very broad field of view, consider deploying a fisheye camera. On the other hand, if you need broad coverage with high image detail, the multisensor series may be a better option. For those in need of 360-degree pan with full control over the camera's field of view and precise zoom capabilities at a distance, the PTZ series is the best option.
Does the camera need to fit in a small space and/or need to be concealed?	The CM42-S offers an image sensor separate from the main body unit and was designed specifically to fit into tight spaces. Banking customers, for example, can install the CM42-S inside ATM machines.

LPR mode

Verkada's license plate recognition solution uses a single or dual-camera system to provide users with the most comprehensive LPR coverage. Operating in LPR mode, the LPR camera uses a telephoto lens for capturing high-resolution images of license plates. The context camera uses a wide-angle lens to capture the entire vehicle and provide additional visual evidence for each event.



Verkada Telephoto Bullet Cameras	CB52-TE (5MP) or CB62-TE (4K)
Verkada Wide-Angle Bullet Cameras	CB52-E (5MP) or CB62-E (4K)

The LPR feed brings both cameras together, enabling teams to monitor vehicle events in real-time while also being able to filter and search by plate number.

For an overview and demonstration of Verkada LPR, click here.

For a more in-depth overview and for steps on configuring LPR, see our knowledge base.

Optical zoom

Optical zoom is different from digital zoom and involves moving parts within the camera lens to change the field of view (FoV) from wide to narrow. As the focal length of the lens increases, it's like moving the camera closer to the area being covered, narrowing and magnifying the field of view without reducing the resolution of the image. Verkada's dome cameras offer both fixed and optical zoom options, the multisensor series has optical zoom and the bullet series has both optical zoom and telephoto zoom.

While each deployment is unique, there are times when optical zoom might be useful or necessary to achieve the desired result:

- The object/area you need to cover is a great distance from where the camera must be mounted.
  Examples – Large parking lots, parking lot/property entrances, distant buildings/objects, etc.
- You simply want a closer, more cropped view of the scene where analytic features may be in use.
  Examples – Facility entrances, lobbies, elevator vestibules, security checkpoints.

	Wide-Angle	Telephoto
Focal Length	2.8mm–8mm	8mm–20mm

Image at No Zoom

CB62-E at 2.8mm

CB62-TE at 8mm

Image at Full Zoom

CB62-E at 8mm

CB62-TE at 20mm

The CP63-E has the best optics in the Verkada portfolio

Lens: The CP63-E camera is equipped with a varifocal lens with motorized zoom functionality, providing the convenience to remotely adjust the focal length and zoom level. This allows operators to precisely move the camera and focus on specific areas or subjects.

Image sensor: The CP63-E boasts a 1/1.8" Progressive CMOS image sensor.

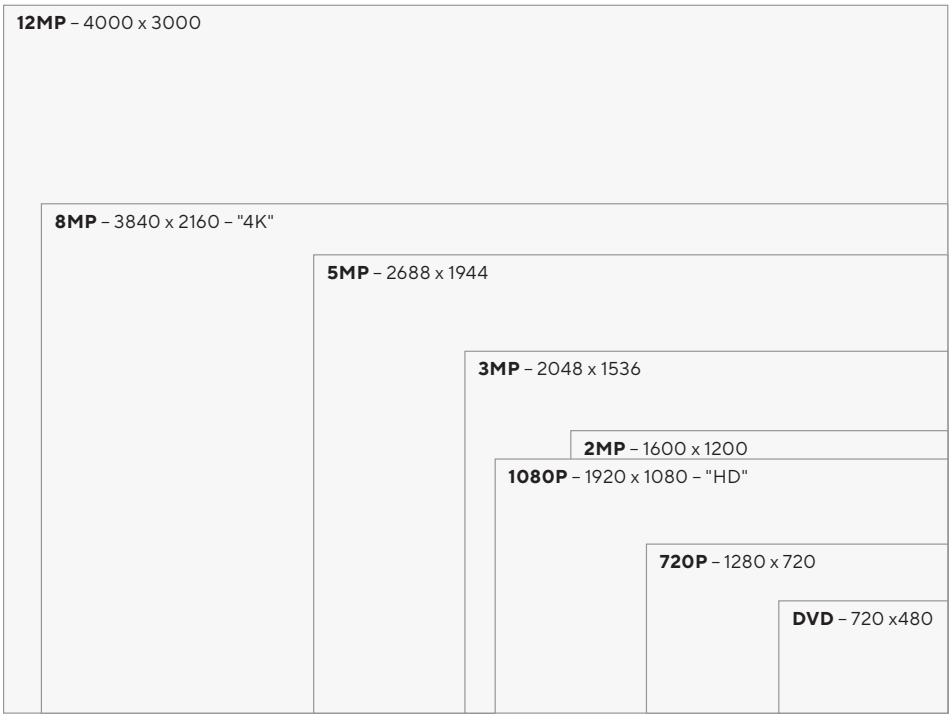
Focal length: The CP63-E offers a focal length range of 6.5mm (F1.4) to 212mm (F4.9), allowing it to capture scenes with a wide range of magnification levels. At the shorter end of 6.5mm (F1.4), the camera delivers a broader field of view, ideal for comprehensive monitoring. When zoomed in to 212mm (F4.9), the camera provides magnification capabilities, enabling the capture of fine details even at a distance.

Shutter speed: The CP63-E shutter speed spans from 1/30 second to 1/10,000 second, offering a wide range of options for different scenarios. This versatility enables the camera to excel in various conditions, from low-light environments where capturing details is critical to situations involving fast-moving action that require crisp snapshots.

1. Distances were approximated using the measurement tool on Google Earth. Images are real screenshots from Command.

Level of detail

Across the camera product lines, Verkada offers 3 megapixel (MP), 5MP, 8MP, 12MP and 20MP (4 X 5MP) options. Below is a relative comparison of the image size of a variety of different video resolutions starting with the standard "DVD" resolution of 720 x 480 (or .3 MP), to 1080P / 2MP, all the way up to 12 MP. As you can see, an 8MP camera ("4K" resolution) is substantially larger / more detailed than 1080P / 2MP.



When is it important to have a higher level of detail?

- Generally speaking - when the maximum amount of video detail is preferred.
- When face searching/matching is a critically important function of the camera.
  - For more information about deploying cameras for people analytics, refer to the User Guide for People Analytics.
  - For more information about deploying cameras for license plate recognition (LPR), refer to the User Guide for LPR.
- To comprehensively cover large areas.
- To achieve the widest field of view possible without using a fisheye lens.
- To provide the best ability to read text/numbers on objects within the camera's field of view.

When might it be more appropriate to use a 5MP camera instead of an 8MP camera?

- Generally speaking — when great coverage is needed but the maximum amount of detail is not critical.
- Where simply knowing if there is motion/activity is all that is required and not detailed depictions of thereof.
- Video coverage is required but the specific area covered by the camera can be considered "low priority".
- Where analytic features aren't in use.
- The customer is overly concerned with the price.
- When there are significant constraints to uplink bandwidth.

Video retention

Verkada simplifies the process of setting the retention period for its cameras. Instead of the complicated and imprecise process of sizing storage in legacy systems, Verkada allows customers to choose a camera with standard onboard retention of 30, 60, 90, 120, 180 or 365 days.

Our cameras record both standard and high quality video streams simultaneously. The standard quality video is recorded up to the specified retention period (30 days for most devices) and high quality video is saved to onboard media when motion is detected in the scene. The remaining onboard storage is allocated to high quality video, audio (if enabled) and analytics (if enabled). This method of video retention, called adaptive quality, allows customers to meet their retention policies without having to calculate storage needs and eliminates the need for complex on-prem storage solutions.

Each camera model offers different retention options:

		Max Retention in Days					
Camera Series	**Camera Model**	**30**	**60**	**90**	**120**	**180**	**365**
Dome	CD22 / CD22-E	✓	✓	✓			
	CD32 / CD32-E	✓	✓	✓			
	CD43 / CD43-E	✓	✓	✓	✓		✓
	CD53 / CD53-E	✓	✓	✓	✓		✓
	CD63 / CD63-E	✓	✓	✓	✓		
Mini	CM22	✓	✓	✓			
	CM42	✓	✓	✓	✓		✓
	CM41-E	✓	✓	✓			✓
	CM42-S	✓		✓			
Bullet	CB52-E	✓	✓	✓			✓
	CB52-TE	✓	✓	✓			✓
	CB62-E	✓	✓	✓			
	CB62-TE	✓	✓	✓			
Fisheye	CF83-E	✓	✓	✓	✓		
Multisensor	CY53-E	✓	✓	✓	✓		✓
	CY63-E	✓	✓	✓	✓		
	CH52-E	✓	✓		✓		✓
	CH53-E	✓	✓	✓	✓		✓
	CH63-E	✓	✓	✓	✓		
PTZ	CP52-E	✓	✓	✓		✓	
	CP63-E	✓	✓	✓			
Remote	CR63-E	✓	✓	✓	✓		