

What is a Wide Dynamic Range (WDR) Camera?

Have you ever taken a photo and the area around the subject turned out too dark or the area was too bright after using flash? Wide Dynamic Range (WDR) cameras were built to solve that very problem.

WDR cameras feature two processors: a light image processor and a dark image processor. Combining the two processors produces a clear, high quality video or image by automatically brightening the dark areas and lightening the dark areas.

- In lighter areas, the camera's shutter speed is faster, so the sensor is exposed to light for less time.
- In darker areas, the shutter speed is slower, which means it takes longer for the sensor to capture more light.

This is not to be confused with High Dynamic Range (HDR), which is a software processing technology; WDR is a hardware processing technology. HDR is mainly used for static images and to brighten or darken images post-processing.

Where Would You Use WDR Cameras?

Many security cameras use WDR technology to account for changes in lighting throughout the day. For instance, a security camera located outside is going to have enough light for a clear image during the day, but when the sun goes down, a camera without WDR technology doesn't have enough light to display a clear picture.

Depending on where the security camera is located, there may be too much or too little sunlight during the day, and shadows from other buildings could cause issues. However, WDR will ensure the optimum amount of brightness is used no matter where it is located.

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Even security cameras located inside can utilize WDR technology to provide a clear picture. A camera located at the entrance of a building, for example, must be able to balance the bright light that comes in every time the door is opened. Otherwise, the area around the entrance will be too bright, making it difficult to see who is entering the building. Another main use for WDR cameras is for low-light environments.

Below is an example of using a forward-facing camera with WDR in low light compared to using a camera without WDR.



As you can see, the WDR camera brightens up the dark areas so the road can be seen clearly. Likewise, if the camera is in an overly bright area, it will automatically darken the area to provide a clear picture. This application would be useful for police officers, who don't always work in the most ideal settings for cameras when responding to late-night traffic stops, domestic disturbance calls or theft calls.

Long-haul trucking companies also could take advantage of this technology. Some deliveries will need to be made overnight, and with a WDR camera, you can see that an erratic brake was caused by a deer jumping onto the highway or a distracted motorist, absolving your driver of any wrongdoing.

About Pro-Vision

Founded in 2003, Pro-Vision is a leading video technology solutions provider trusted by thousands of organizations in 58 countries. Pro-Vision solutions include vehicle video recording systems, body-worn cameras, data management and cloud-based storage solutions. Pro-Vision's transit, law enforcement and commercial partners utilize these solutions to enhance safety, increase productivity and protect critical assets.



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