Video Systems Fact Sheet

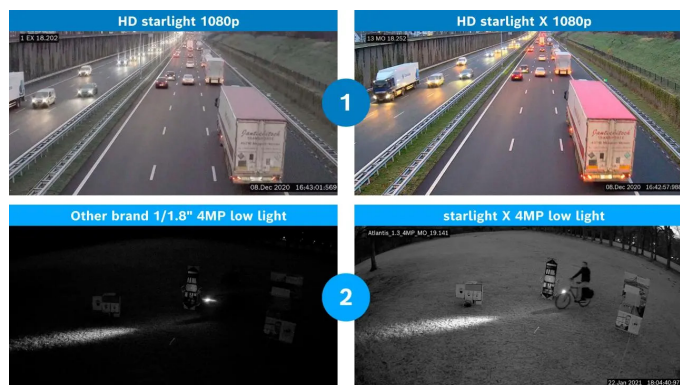# X-factor technology explained with starlight X and HDR X

Image quality is vital when you need to see the details from fast-moving objects in challenging lighting conditions. At the same time, an increasing percentage of noise and blur may occur, leading to a loss of detail that may obscure the desired information.

You get more out of your video security system when your cameras catch the details. Next-level starlight X and HDR X technologies take image quality and resolution further, enabling cameras to deliver improved security and situational awareness around the clock.
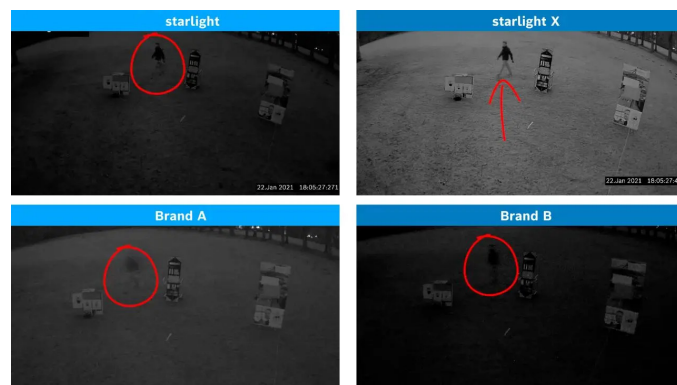
Excellent imaging with starlight X

Long considered the gold standard in low-light video performance, Bosch starlight technology enables its cameras to capture color detail even when light levels drop. The new starlight X technology with next-level light sensitivity technology delivers clear and relevant images regardless of lighting conditions, time of day, or object movement. What's more, starlight X technology:

- Combines large pixel high performance sensors, and custom optics with advanced image processing and noise suppression algorithms to enhance sensitivity significantly over regular starlight cameras

- Provides more detail due to lower noise and reduced motion blur due to faster shutter speeds.

- Enhanced color reproduction at low light and next level monochrome sensitivity offer improved performance in extreme low-light scenes
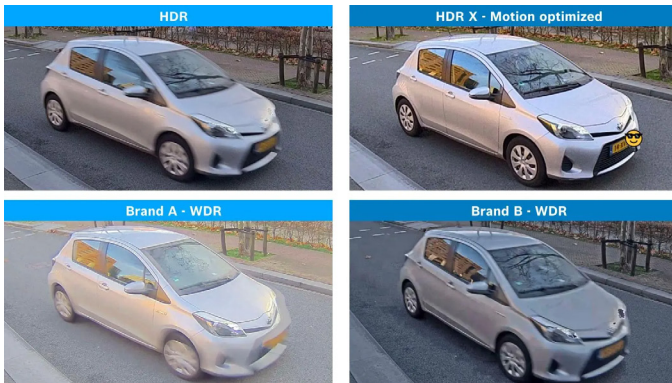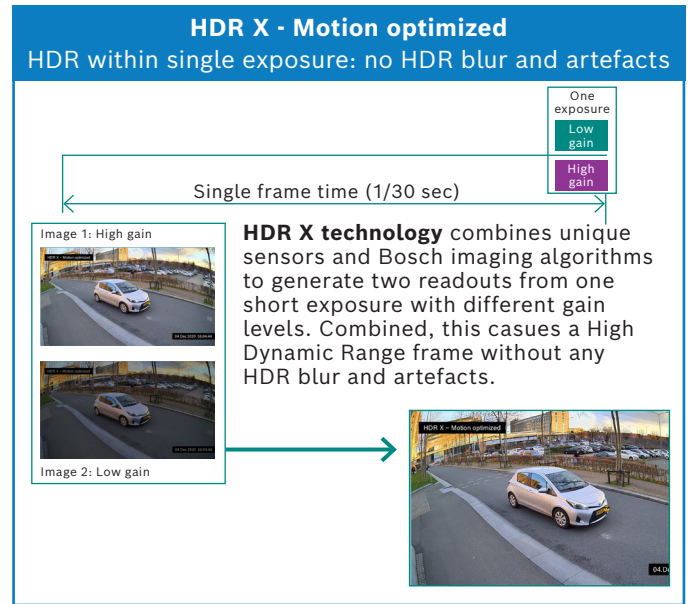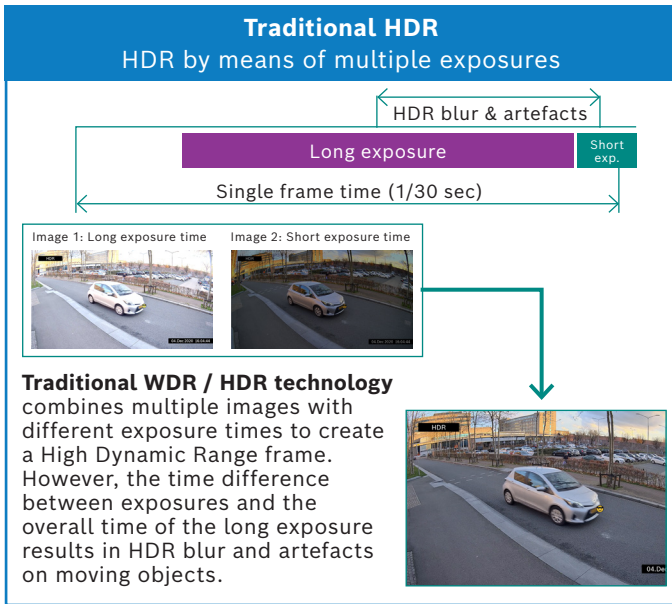

[1] Low light comparison of starlight to starlight X in 1080p resolution

[2] Low light comparison of another brand to starlight X in 4-megapixel (4MP) resolution

Sensitivity comparisons of starlight to starlight X, brand A and brand B in 4MP resolution

Motion-optimized HDR X for improved detail

Traditional HDR
HDR by means of multiple exposures

HDR blur & artefacts

Long exposure | Short exp.

Single frame time (1/30 sec)

Image 1: Long exposure time | Image 2: Short exposure time

Traditional WDR / HDR technology combines multiple images with different exposure times to create a High Dynamic Range frame. However, the time difference between exposures and the overall time of the long exposure results in HDR blur and artefacts on moving objects.

HDR X - Motion optimized
HDR within single exposure: no HDR blur and artefacts

One exposure
Low gain
High gain

Single frame time (1/30 sec)

Image 1: High gain

Image 2: Low gain

HDR X technology combines unique sensors and Bosch imaging algorithms to generate two readouts from one short exposure with different gain levels. Combined, this casues a High Dynamic Range frame without any HDR blur and artefacts.

HDR | HDR X - Motion optimized

Brand A - WDR | Brand B - WDR

HDR X eliminates motion blur and artefacts in scenes with challenging lighting and fast-moving objects

- Motion optimized images without HDR blur and motion artefacts

- Provides HDR imaging at lower light levels where traditional HDR technologies are non-functional

- A high Dynamic Range of up to 144dB in HDR X Extreme DR mode

Our X series portfolio

FLEXIDOME IP starlight 8000i X series: Highest level of detail for mission-critical applications

The award-winning, FLEXIDOME IP starlight 8000i X series cameras offer exceptional image quality, robust housing, and built-in AI to deliver the highest level of detail required for mission critical applications such as perimeter security of airports, parking lots, critical infrastructures, government buildings, border patrol, ship tracking, and monitoring traffic.

FLEXIDOME IP indoor 8000i X series: The right fit for indoor high-security applications

The FLEXIDOME IP 8000i portfolio is already known for its remote commissioning and reducing set-up time by up to 75 percent. The new indoor line-up further simplifies installation with a unique timesaving, two-step concept that any installer can do. These cameras are ideal for indoor use in warehouses, shopping malls, casinos, airports, and train stations.