



edge
Technology
Excellence | Empower | Enhance

 **MATRIX**[®]
SECURITY SOLUTIONS

Researched, Designed &
Manufactured in
INDIA
50+ Countries | 1M+ Customers



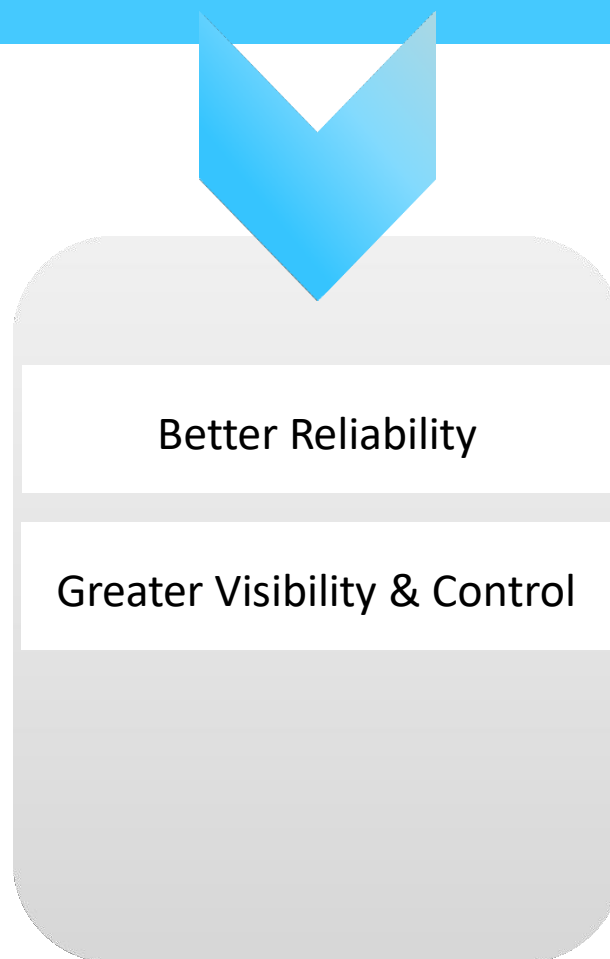
Matrix IP Camera Family

Agenda

- Key Benefits
- Camera Details
- Technical Specifications



3-Dimensional Benefits of Matrix Video Surveillance



Matrix SATATYA Key Benefits

- Better Video Quality
- Bandwidth and Storage Optimization
- Intelligent Video Analytics



Better Video Quality



Exceptional Low Light Images



Consistence Performance



Greater Coverage

Low Light Performance

- Exceptional Performance during Challenging Lighting Conditions
- Color Images even at 0.01Lux
- Reduced Noise in video footage due to sensor design
- New Age ISP pipeline design and tuning



*Sony STARVIS
Series Sensors*



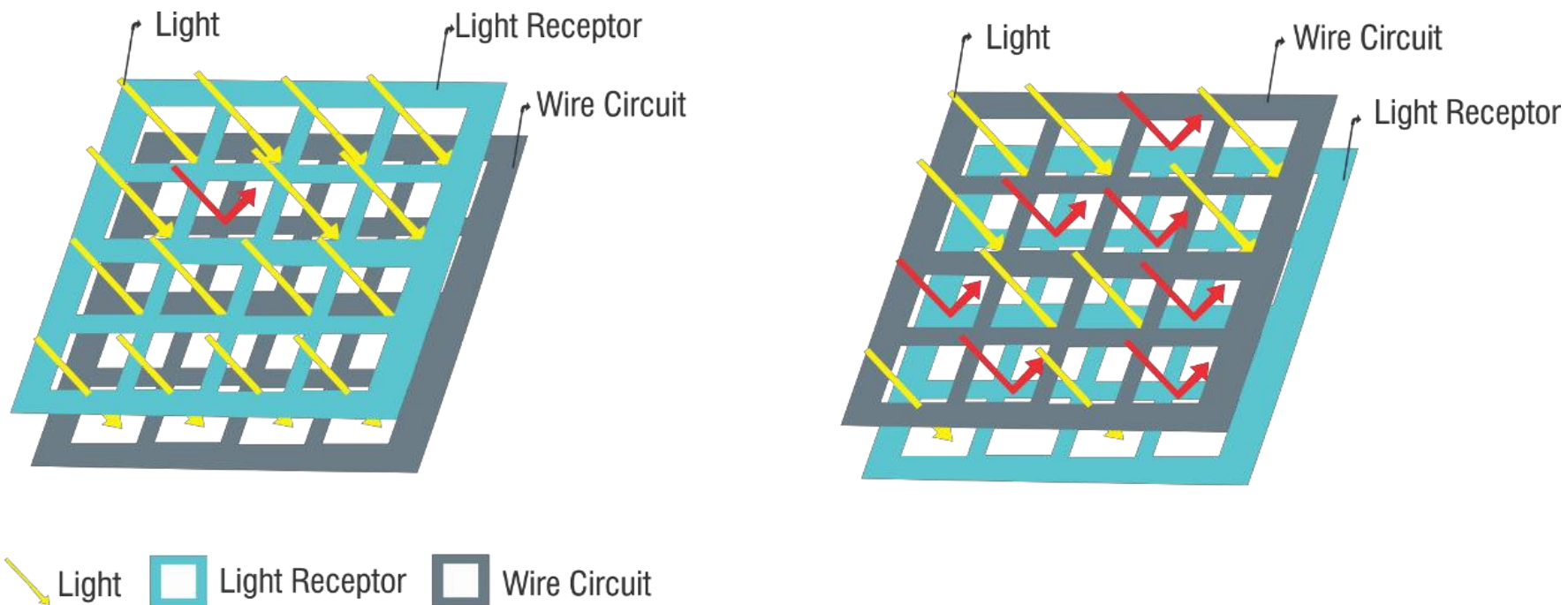
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OTHERS

Technology

- Powered by Sony STARVIS Low-light Sensor
- Back-illuminated Sensor with No Internal Reflection, Hence Reduced Noise
- Higher Photon Absorption Capacity - Exceptional Low Light Performance



Consistent Performance

- Smartly Varies Difference in Light Levels in an Image
- Rectifies Over-exposed and Under-exposed Areas
- Clearer, Detailed Images



True WDR



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TRUE WDR ON
(120dB)

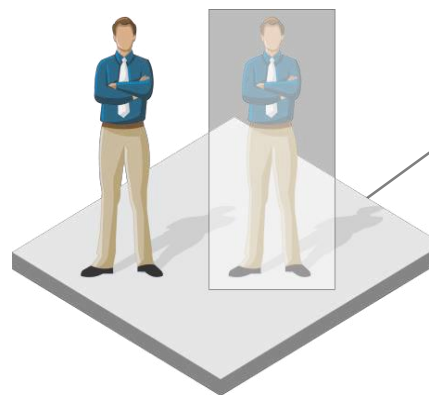
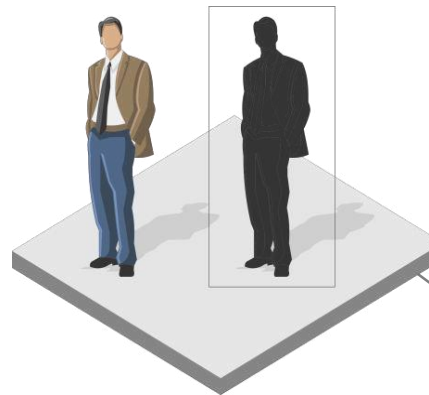


OTHERS
DIGITAL WDR
ON (90dB)

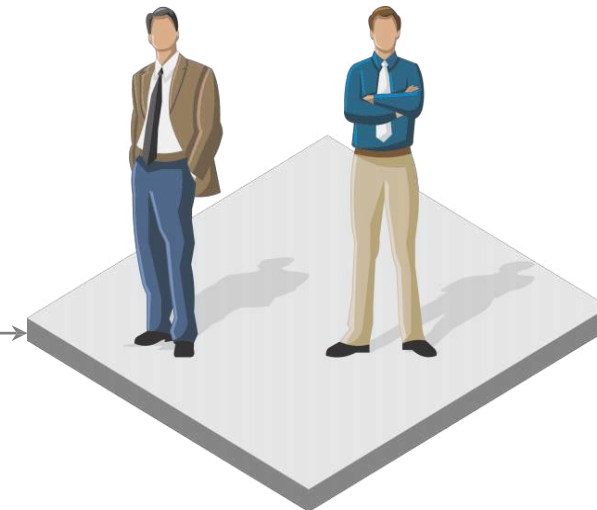
Technology

- Captures Varying Lighting Conditions
- Takes Two Snaps:
 - Slow Shutter Speed - For Dark Areas
 - Fast Shutter Speed - For Bright Areas
- Combines Them into One Image

Slow Shutter Speed Picture



Fast Shutter Speed Picture



Combined Picture

Greater Coverage

- Covers Large Area to Provide a Wider Field of View
- IP Camera 2.8mm Lens: FOV 107°
- IP Camera 3.6mm Lens: FOV 87.5°
- IP Camera 6mm Lens: FOV 57°
- IP Camera 2.8-12mm Lens: FOV 98°-33°



Higher Field Of View

FOV 90°



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FOV 82°



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Technology

- Field of View: Area Covered by Camera
- Depends on Camera and Lens
- Smaller the Focal Length, Wider the Field of View



2.5 mm



3.6 mm



4.3 mm



6 mm



12 mm



25 mm

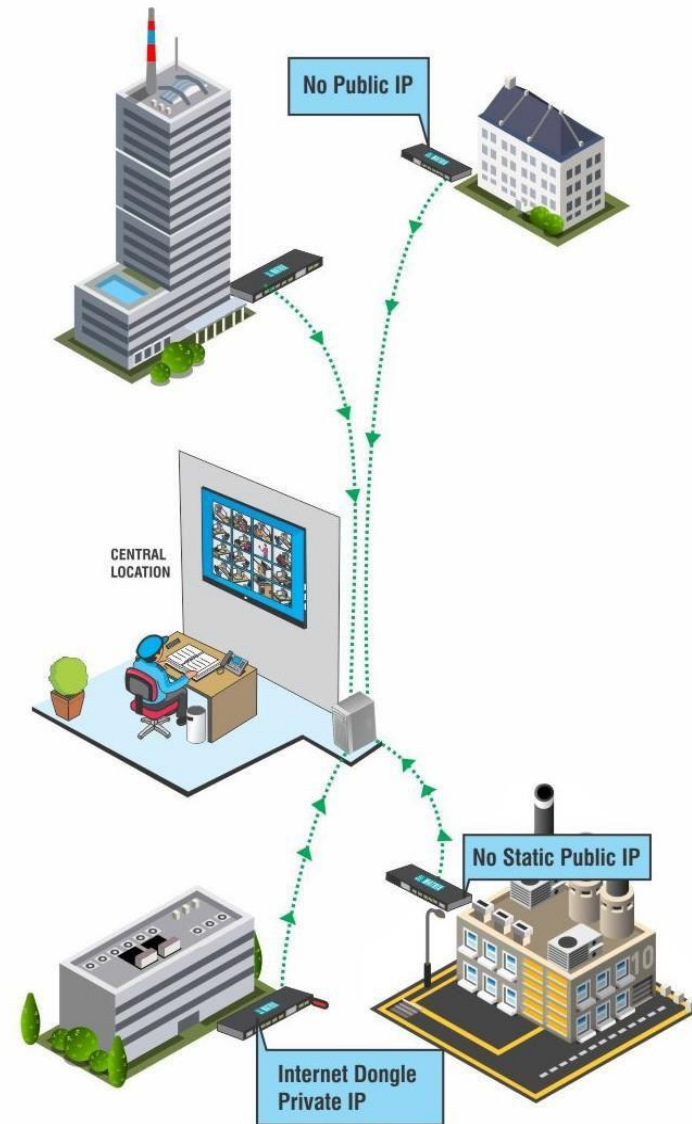
Smart Optimization

- Camera Initiation
- Latest Compression Technique
- Optimized Storage & Bandwidth
- Onboard Storage Support (512GB)



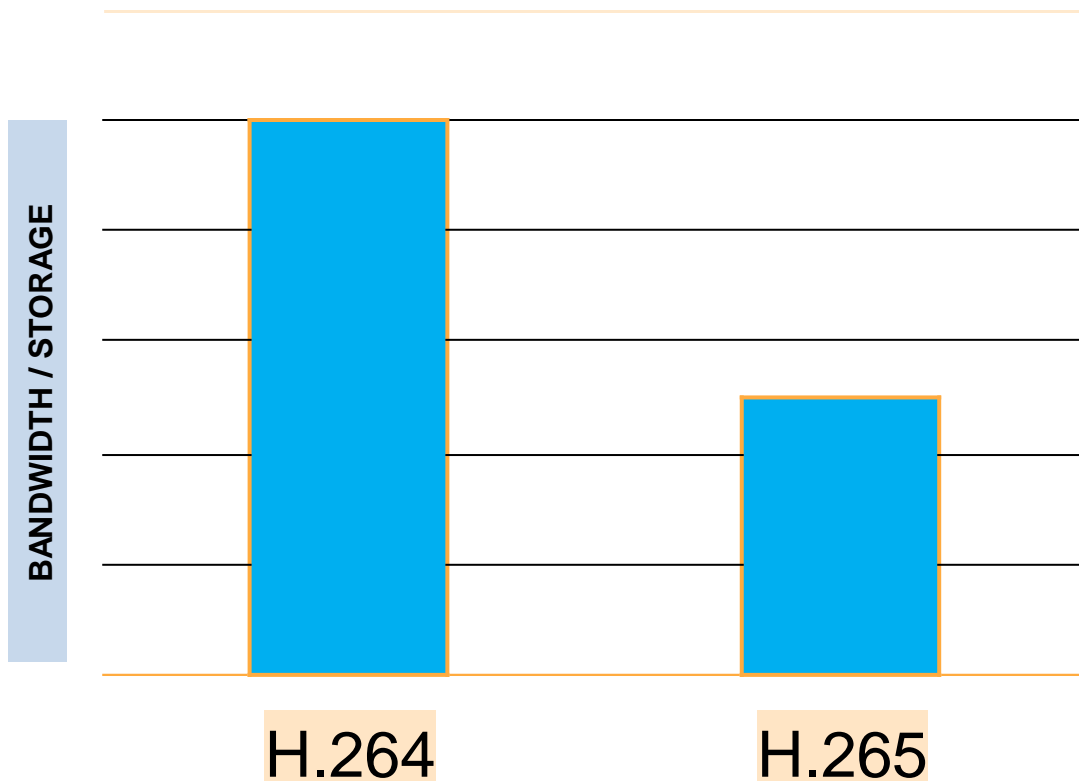
Camera Initiation

- Camera Initiation is a Matrix proprietary feature
- The IP Camera initiates the request to connect to an NVR or VMS
- The server does not require to know the IP address of the camera
- Reduces unnecessary hassle for developing a complicated network architecture
- Simplifies the installation and maintenance procedures



Compression Technique

- Save 50% on bandwidth and storage



Bit-rate:1300Kbps



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Bit-rate:2500Kbps



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Technology

- H.264:
 - The video frame is divided into equal number of pixels
 - It is irrespective of the region information of the adjacent pixels
 - H.264 supports 16 x 16 pixels macro block which is 25% of H.265
- H.265:
 - One pixel compares itself to its adjacent pixels
 - The ones having similar information get bundled up as one pixel
 - The compression technique of H.265 is almost double of H.264
 - In terms of interface prediction, H.265 is more descriptive
 - In terms of direction, the image can be compressed in 33 directions of motion



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Optimized Storage

- Automatic Bit-rate Reduction during No Activity Period



Adaptive Streaming

Bit-rate: 800kbps ; Fps:15fps



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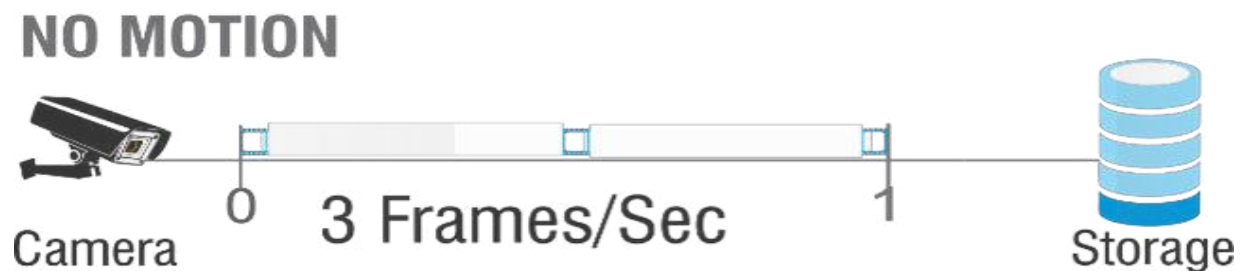
Bit-rate: 2500kbps ; Fps:25fps



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Technology

- Automatically Reduces Frames/Second based on the Activity in the Region.
- Saves Storage Cost, up to 40%



Optimized Storage

- Divides a Single Stream into Multiple Bitrates based on its Importance



Smart Streaming



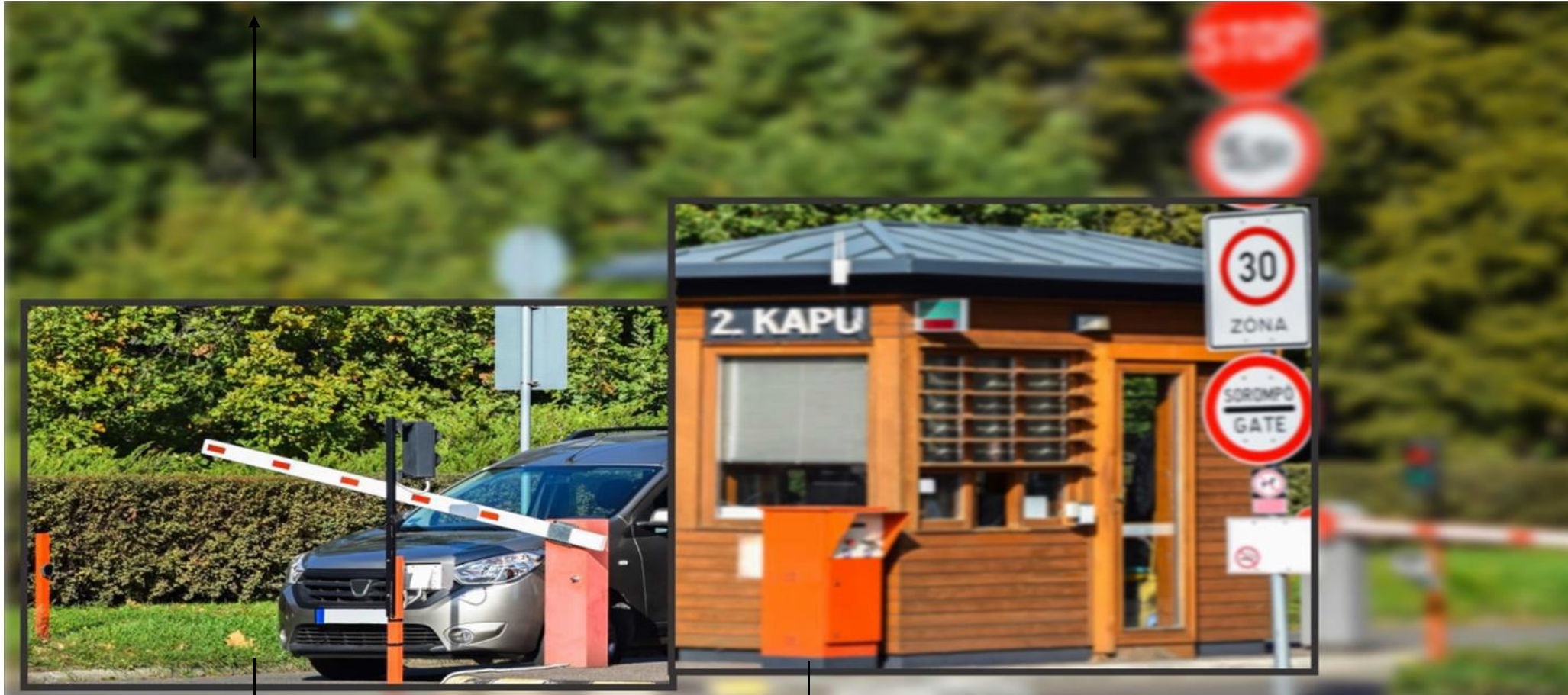
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Technology

Bandwidth: 500kbps



Bandwidth: 1400kbps

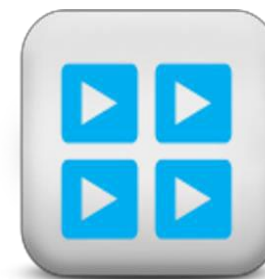
Bandwidth: 900kbps

Optimize Bandwidth

- **Region Of Interest:** Streaming and Recording of only critical areas
- **Four Stream Support:** Different Streams for Viewing, Storing and Recording



Region Of Interest



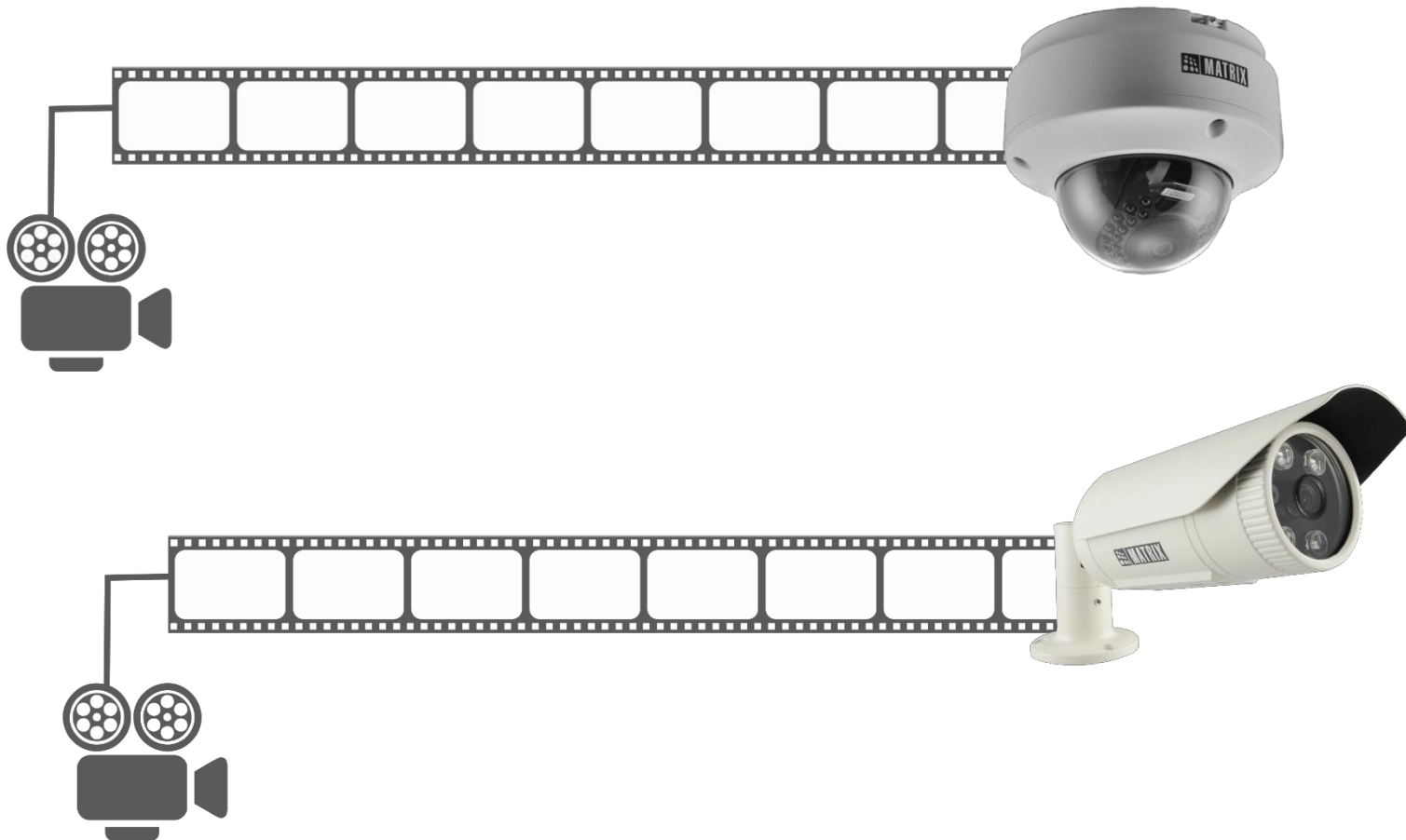
Four Stream Support

Onboard Storage

- Edge Recording-Up to 512GB

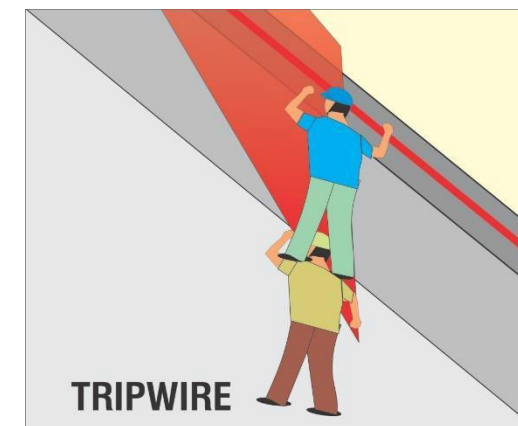
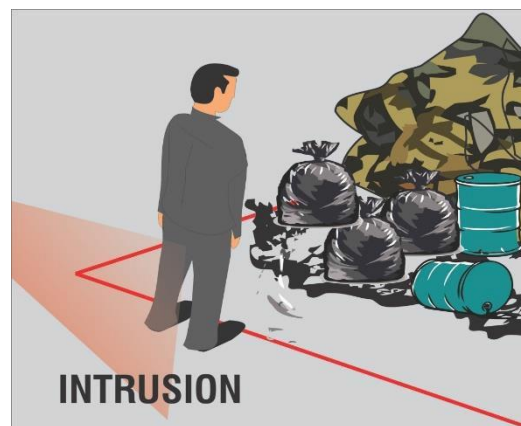
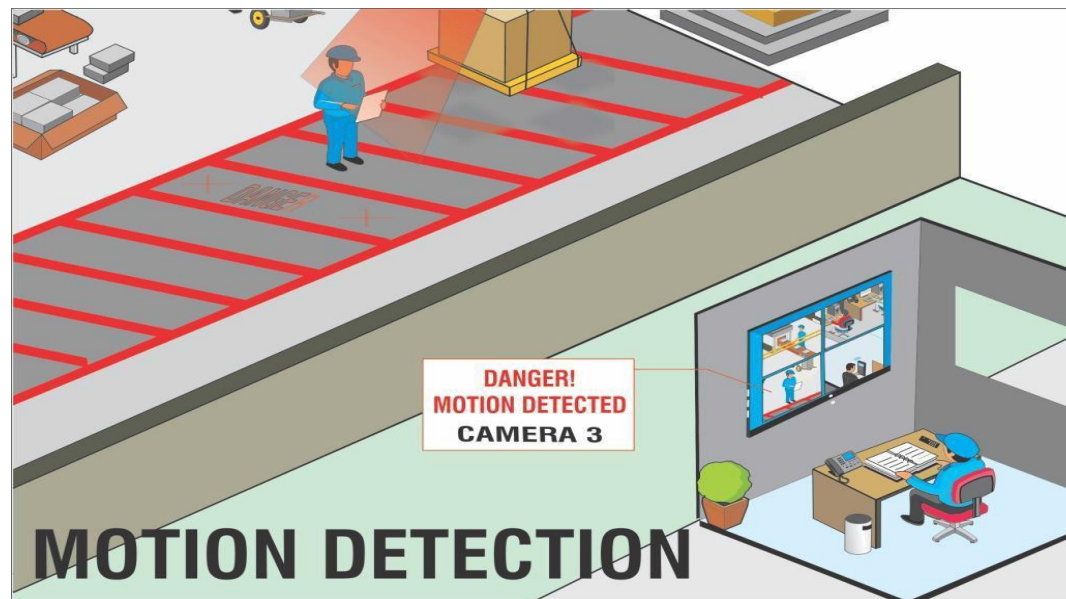


SD Card Support



Intelligent Video Analytics

- Motion Detection
- Intrusion
- Trip Wire



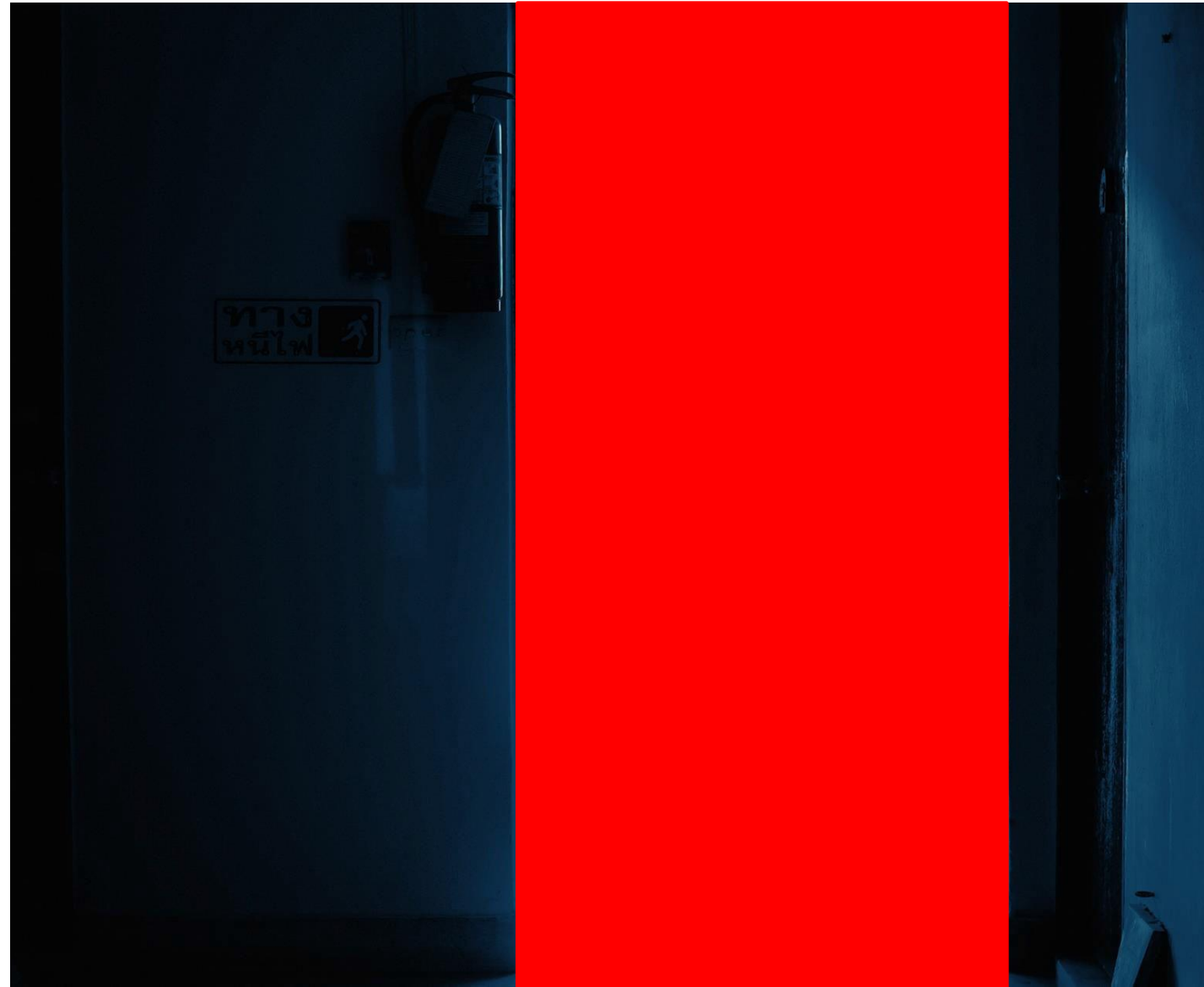
Motion Detection

- Mark Critical Areas where Motion is Prohibited.
- Sends Instant Notification on Motion Detection



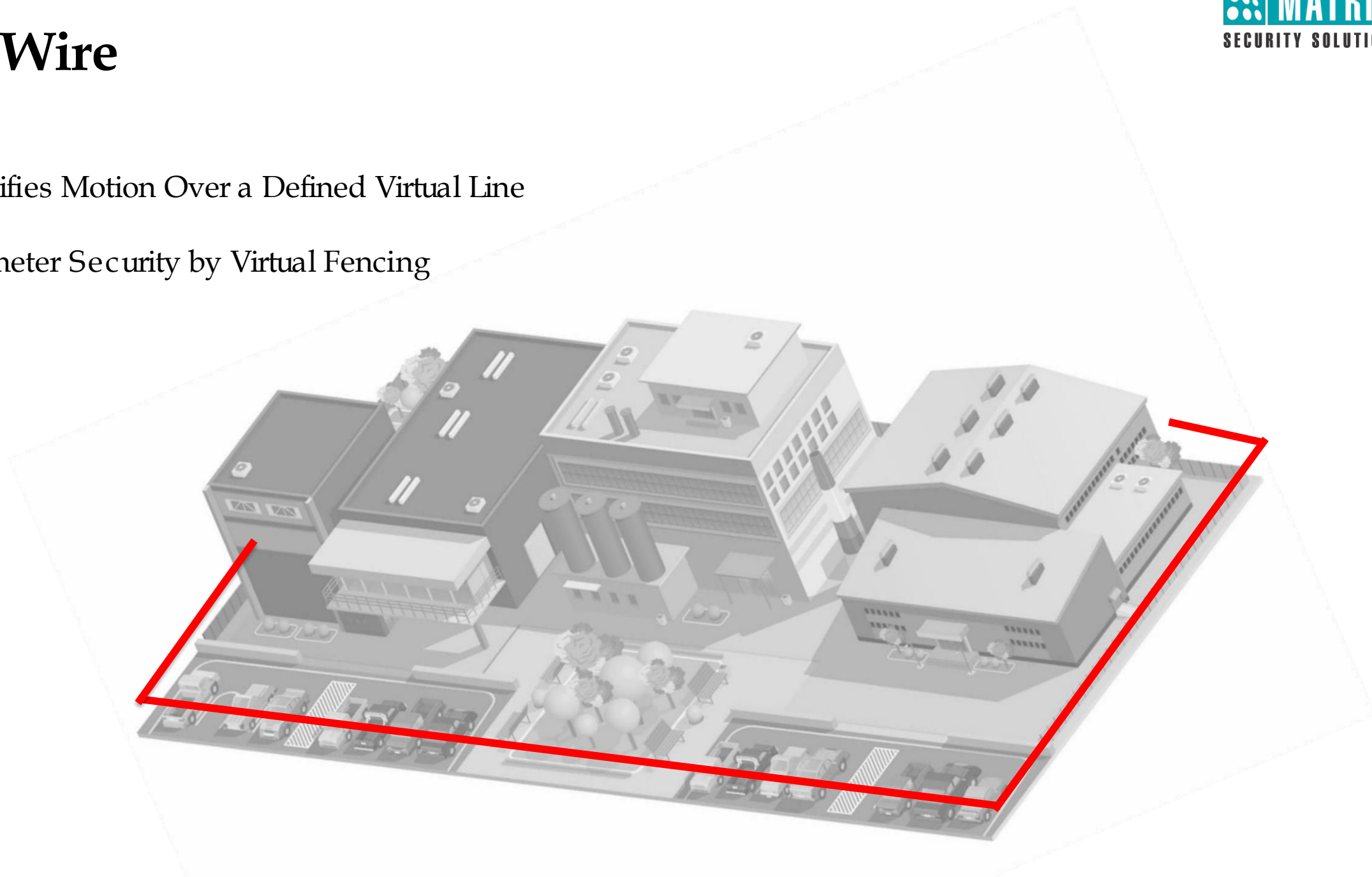
Intrusion Detection

- Mark virtual box where Intrusion is Prohibited
- Sends Instant Notification on Entry or Exit
- Provides Safety
- Retains Secrecy



Trip Wire

- Identifies Motion Over a Defined Virtual Line
- Perimeter Security by Virtual Fencing



Alerts



Snapshot Schedule



Email With Snapshot



Pre/Post Alarm Recording



Upload Image/Clip



SMS

Events



Network Disconnect



IP Conflict



Storage Alert



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Reliability

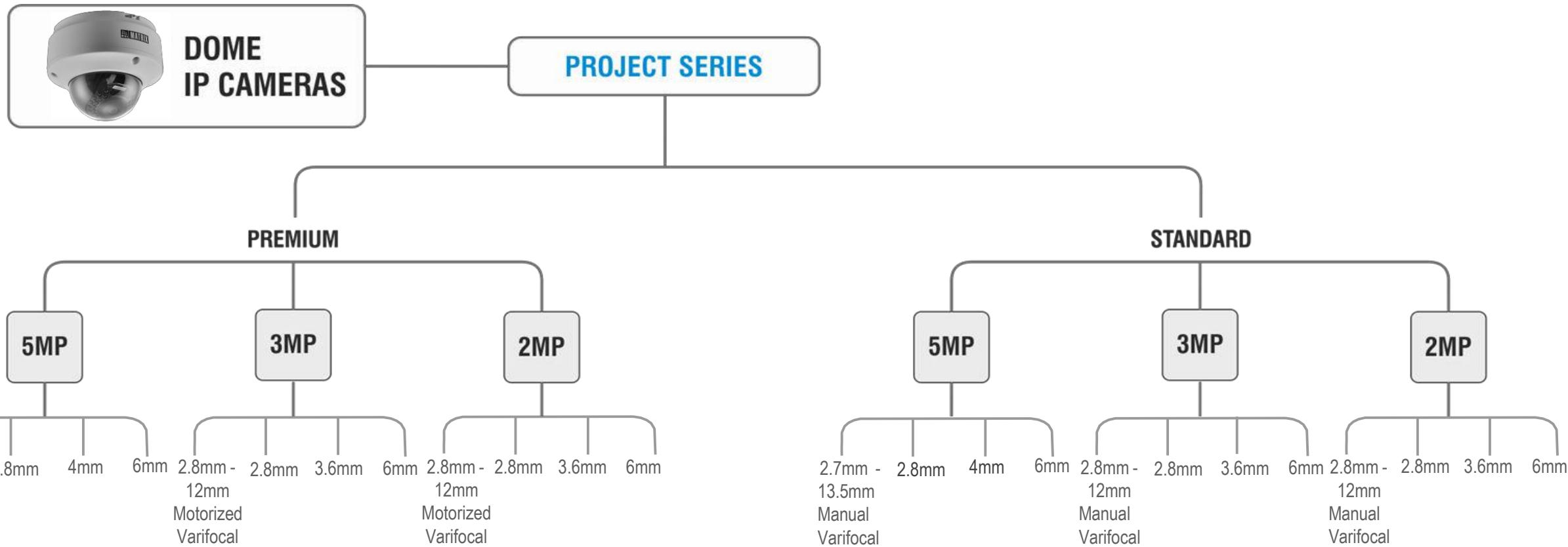
- Industrial grade ADC enclosure for better thermal management and endurance
- Superior optical elements like aspherical lenses from curved or 3 pieces glass designed for enhance image capturing
- Camera initiation – No static IP required



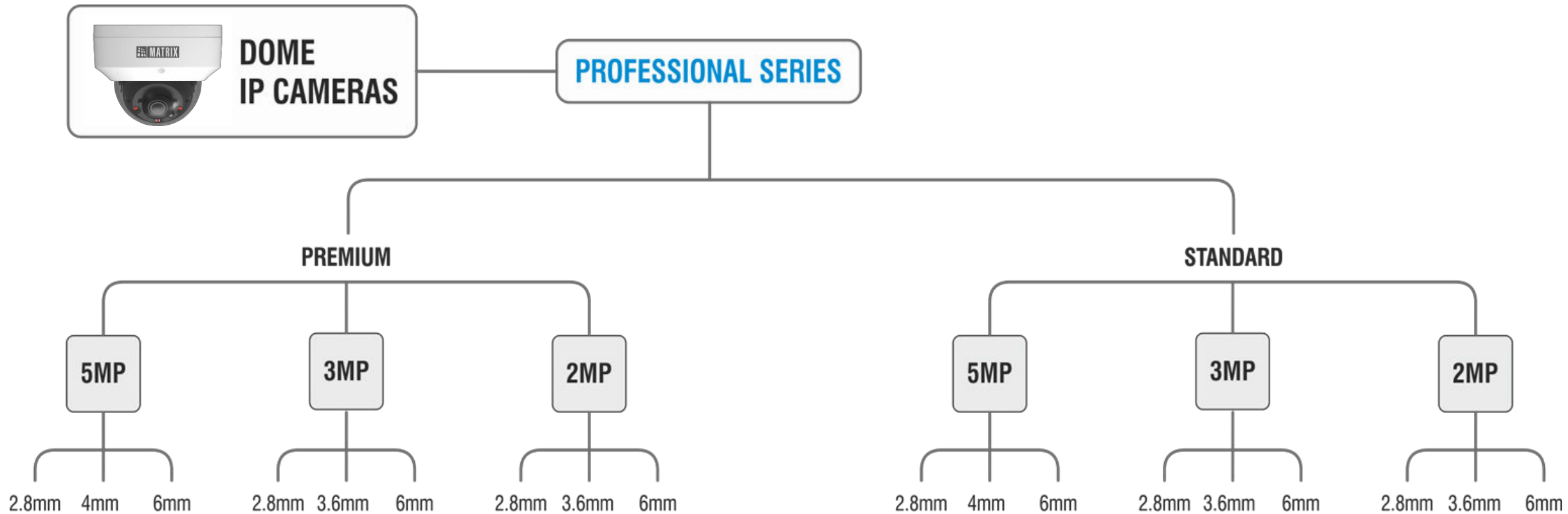
Rugged Construction



PRODUCT RANGE (DOME IP CAMERA)



PRODUCT RANGE (DOME IP CAMERA)



Technical Specifications

Sensor Type and Size	1/2.8" SONY - CMOS 5/3/2MP Active Pixel Progressive Scan, Back Illuminated Image sensor (STARVIS Series)
Minimum Illumination	Color - 0.01 Lux @F1.2 (For Fixed Variants) Color – 0.01 Lux @F1.4 (For VL and MVL variants) Color – 0.001 Lux @F1.5 (For PTZ Variant)
	Monochrome - 0 Lux
Focal Length	2.8mm/3.6mm*/4mm/6mm/2.8-12mm/2.7-13.5mm
Focus Range	0.3m to infinity
Field of View (FOV)	HFOV - 50° to 113°
Lens Mount	M12 for Fixed, D14 for MVL and VL
Focus	Fixed, Varifocal, Motorized Varifocal
Aperture (F#)	F 1.2 -3.2
Iris Type	Fixed, P Iris
IR Range	30m/ 50m
IR Led Wavelength	850nm
IR Switching	Auto/ Manual
Audio in	1 (for premium variants only)
Audio out	1 (for premium variants only)
Two-way Audio	Supported
Alarm in	Yes*
Alarm Out	Yes*

Audio Compression	G.726 and G.711 μ
SD Card	Up to 512GB
Camera Adjustment Angle	Pan: 0° up to 360°
	Tilt: 0° up to 180°
	Rotate: 0° up to 360°
No of Stream Profiles	3/4
Available Resolutions	2592x1944, 2592x1520, 2048x1536, 1920x1080, 720p, D1, 2CIF, VGA, CIF, QCIF*
Max Resolution	2592 x 1944
Bitrate	128kbps- 16Mbps*
Bitrate Type	CBR, VBR
Video Compression	H.265, H.264, MJPEG
Frame Rate	1-30fps
Shutter Speed	1/25s-1/59000s*
Adaptive Streaming	Yes
ONVIF Conformance	Profile S and G
Alarm Recording	Pre and Post
Edge and Motion Recording	Yes

Video Parameters	Snapshot, Region of Interest (ROI), BLC, Day/Night Settings
Privacy Masks	3
WDR	True WDR (120dB)
SNR	Maximum 73db
Image Enhancement	Rotation/Saturation/ Contrast/ Sharpness/Brightness/Hue/ White Balance
DNR	2D &3D
Video Analytics	Motion/No Motion Detection, Tamper Detection, Trip/No Trip Detection, Object Intrusion/Zone Intrusion, Audio Exception*, Missing/ Suspicious Object Detection*, Object Counting*, Loitering Detection*
IP Conflict	Yes
Network Disconnect	Yes
Storage Full	Yes
Upload Image	SD, NAS, FTP
Upload Clip	SD, NAS, FTP
Notifications	E-mail, SMS, TCP
Supported Protocols	TCP/IP, HTTP, ARP, DSCP, QoS, DHCP, DNS, DDNS, RTP, RTCP, RTSP, PPPOE, SMTP, NTP, HTTPS, TLS/SSL, FTP, ICMP,IGMP, 8021x, SNMP
Web Viewer	Supported in IE 8.0 – 11.0, Firefox 15.0 – 47.0, Chrome 20.0 – 54.0

Plugins	IE: Matrix ActiveX
	Chrome: VLC plugin(2.0.4) and Quicktime (7.7.5)
	Mozilla: VLC Plugin(2.0.4) and Quicktime (7.7.5)
Power Supply	12V (DC); 802.3af (PoE)
Power Consumption	<7W
Operating Humidity	Less than 90% RH (non-condensing)
Operating Temperature	-20°C to 60°C
Storage Temperature	-20°C to 60°C
Communication interface	10Base-T/100BaseTX Ethernet (RJ-45)
Colour	Pantone 7527C
Storage	NAS, SD Card
Certifications	BIS, CE, IP66, IP67*, FCC Part-15 Subpart -B, ONVIF S & G, IK10, UL*

Note: Values of parameters may differ from variant to variant

THANK YOU!



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