

The proof is in the pixels

960H Analog Video Solutions



Bosch provides everything you need for end-to-end 960H video systems—including cameras, lenses, digital video recorders and monitors. 960H sensors capture more pixels per target object to provide a resolution of 720TVL—the highest available for the analog PAL and NTSC standard.

Crisp images in every environment



From good quality, affordable, standard cameras to advanced models with superior processing power, Bosch cameras fit a wide range of surveillance requirements and budgets.

Bosch 960H cameras capture clear images regardless of the environment—from well-lit interiors to areas with harsh light, low light or no light. Select models feature built-in infrared illumination to provide full and accurate video information even in complete darkness.

Choose from fixed, minidome, bullet and pan-tilt-zoom models for indoor or outdoor applications.

Professional video recording and management



Bosch 960H digital recorders support 720TVL sensor resolutions as well as CIF, 2CIF and 4CIF. They record at rates up to 30 frames per second simultaneously on each channel for all resolutions and are available in four-, eight- and 16-channel models.

The recorders are reliable systems that are simple to set up with plug-and-play operation and configuration wizards. Minimal training and maintenance requirements also make them easy to use and reduce costs.

Images can be viewed from any location with the recorders' included client software, a web browser or apps compatible with a range of mobile devices.

High-performance LED monitors



Bosch monitors are designed specifically for security cameras and provide crisp images without smearing, as well as high color saturation and precise color reproduction. They support 720TVL and automatically adapt to the input resolution of the incoming video signal.

The monitors deliver excellent image quality from both horizontal and vertical angles for comfortable, clear viewing whether mounted to a wall or ceiling.

Thin and light in form and weight, they are ecologically friendly. The monitors are halogen-free and have low power consumption.

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What is 960H?



New sensors, more pixels

960H refers to a new class of advanced imaging sensors that capture more pixels per target object to provide a maximum of 720TVL – the highest available image quality for the PAL and NTSC standards.

This new technology serves as a bridge between standard resolution and high definition solutions, making 960H the best option for ultra-high resolution video without switching to IP.

Understand the difference

For video source applications such as CCTV, resolution is measured in television lines (TVL). This is the number of alternating black and white vertical lines that can be resolved per picture height – that is, the number of lines distinguishable across three-fourths of the width of a television screen.

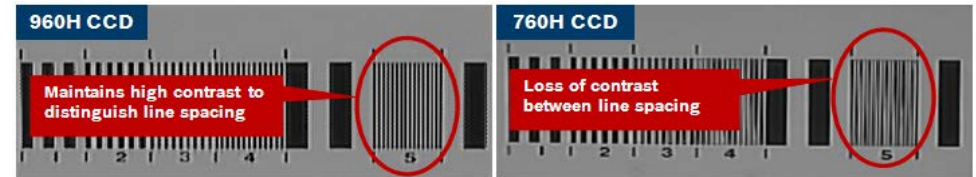
To obtain the TVL value for a given sensor, simply divide the number of horizontal pixels by the aspect ratio. Using this formula we see that a 960H CCD sensor has resolution of 720TVL, while a 760H CCD sensor can provide 570TVL.

This is the absolute maximum resolution a monochrome camera can potentially achieve. In reality, various factors in the image pipeline reduce the resolution that is actually achievable on a monitor by approximately thirty percent.

As such, a 960H camera can achieve an effective screen resolution of 650TVL at best. Similarly, a 760H camera with 570TVL of horizontal resolution in monochrome mode, can deliver a screen resolution of only 540TVL.

See the difference

Ideal for capturing fine scene details, 960H sensors are able to deliver images with 30 percent higher resolution than previous generation analog 760H sensors. The examples below demonstrate the superior image quality obtained when using 960H.



960H sensor maintains high image contrast to clearly distinguish closely-spaced vertical lines, while 760H sensor is unable to provide the same level of clarity.



The 960H image is smoother with more vibrancy, clarity, and detail compared to 760H (e.g. high image contrast provides sufficient detail to count the buttons on the register).

Specification	960H CCD	760H CCD
Effective pixels	976 (H) x 494 (V) Approx. 480,000 pixels	768 (H) x 494 (V) Approx. 380,000 pixels
Horizontal Resolution (sensor)	720TVL	570TVL
Horizontal resolution (monitor)	650TVL*	540TVL*

* Actual values may vary based on individual camera characteristics

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Fixed Cameras



DINION 4000

COMING SOON



VBC-4075

COMING SOON



VBN-4075

DINION 5000

COMING SOON



VBN-5085

	VBC-4075	VBN-4075	VBN-5085
Camera Type	Electronic D/N	True D/N	True D/N
Max. Sensor Resolution	720TVL	720TVL	720TVL
Image Sensor Type	960H, 1/3" CCD	960H, 1/3" CCD	960H, 1/3" CCD
Day/Night	Electronic D/N	True D/N	True D/N
Wide Dynamic Range [WDR]	DWDR	DWDR	True WDR
IR Sensitive	■	■	■
Video Motion Detection	4 zones	4 zones	4 Zones
Privacy Masking	8 zones	8 zones	15 Zones
Auto Black	—	—	—
Lens	c / CS Mount*	C / CS Mount*	C / CS Mount**
Zoom	—	—	16x Digital
Min. Illumination [day mode]	0.1 lux	0.1 lux	0.04 lux
Min. Illumination [night mode]	—	0.02 lux	0.02 lux
LED's	—	—	—
Night Vision Max. Range	—	—	—
Operating Temp.	-4° to 131° F (-20° to 55° C)	-4° to 131° F (-20° to 55° C)	-4° to 131° F (-20° to 55° C)
All-weather Rating	—	—	—
Vandal Resistant	—	—	—
Alarm Input / Output	■	■	■
Audio / Audio Alarm	—	—	—
Max. Power Consumption	2.4W	3.6W	4.3W
Power Supply	24 VAC / 12 VDC	24 VAC / 12 VDC	24 VAC / 12 VDC

* Available 960H-optimized lenses: 2.8-12 mm (LVF-4000C-D2812) or 5-50 mm (LVF-4000C-D0550)

** Available 960H-optimized lenses: 3-8 mm (LTC 3364/31), 2.8-11 mm (LVF-5000C-D2811), or 5-50 mm (LVF-5000C-D0550)

Legend

- Yes
- No

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Indoor Dome Cameras



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FLEXIDOME micro 1000

FLEXIDOME indoor 4000

NEW!



Advantage Line



Advantage Line



Advantage Line

VUC-1055

VDN-276

VDN-295

Camera Type	D/N Microdome	True D/N Dome	True D/N WDR Dome
Max. Sensor Resolution	720TVL	720TVL	720TVL
Image Sensor Type	960H, 1/4" CCD	960H, 1/3" CCD	960H, 1/3" CCD
Day/Night	Electronic D/N	True D/N	True D/N
Wide Dynamic Range [WDR]	DWDR	DWDR	True WDR
IR Sensitive	—	■	■
Video Motion Detection	4 zones	4 Zones	4 Zones
Privacy Masking	8 zones	4 Zones	15 Zones
Auto Black	—	—	—
Lens	2.5 mm Fixed	2.8 – 10.5 mm DC Iris	2.8 – 10.5 mm DC Iris
Zoom	—	—	—
Min. Illumination [day mode]	0.43 luz	0.12 lux	0.15 lux
Min. Illumination [night mode]	—	0.07 lux	0.05 lux
LED's	—	—	—
Night Vision Max. Range	—	—	—
Operating Temp.	-4° to 113° F (-20° to 45° C)	14° to 122° F (-10° to 50° C)	14° to 122° F (-10° to 50° C)
All-weather Rating	—	—	—
Vandal Resistant	—	—	—
Alarm Input / Output	—	—	—
Audio / Audio Alarm	—	—	—
Max. Power Consumption	1.2W	3.6W	4.8W
Power Supply	12 VDC	24 VAC, 12 VDC	24 VAC, 12 VDC

Legend

- Yes
- No

960H Analog Video Solutions

Outdoor Dome cameras



BOSCH

Invented for life

FLEXIDOME outdoor 4000

FLEXIDOME 5000



Advantage Line



Advantage Line



Advantage Line



COMING SOON



COMING SOON



COMING SOON

VDC-242

VDN-244

VDI-244

VDN-5085-V3

VDN-5085-V9

VDN-5085-VA

Camera Type	D/N Dome	True D/N WDR Dome	True D/N IR WDR Dome	True D/N WDR Dome	True D/N WDR Dome	True D/N WDR Dome
Max. Sensor Resolution	720TVL	720TVL	720TVL	720TVL	720TVL	720TVL
Image Sensor Type	960H, 1/3" CCD	960H, 1/3" CCD	960H, 1/3" CCD	960H, 1/3" CCD	960H, 1/3" CCD	960H, 1/3" CCD
Day/Night	Electronic D/N	True D/N	True D/N	True D/N	True D/N	True D/N
Wide Dynamic Range [WDR]	DWDR	True WDR	True WDR	True WDR	True WDR	True WDR
IR Sensitive	■ [IR Corrected]	■ [IR Corrected]	■ [IR Corrected]	■	■	■
Video Motion Detection	4 Zones	4 Zones	4 Zones	4 Zones	4 Zones	4 Zones
Privacy Masking	4 Zones	15 Zones	15 Zones	15 Zones	15 Zones	15 Zones
Auto Black	—	—	—	—	—	—
Lens	2.8 – 10.5 mm DC Iris	2.8 – 10.5 mm DC Iris	2.8 – 10 mm DC Iris	2.8 – 10.5 mm DC Iris	9 – 22 mm DC Iris	18 – 50 mm DC Iris
Zoom	—	—	—	16x Digital	16x Digital	16x Digital
Min. Illumination [day mode]	0.12 lux	0.15 lux	0.15 lux	0.06 lux	0.08 lux	0.09 lux
Min. Illumination [night mode]	—	0.05 lux	0 lux [IR on]	0.03 lux	0.04 lux	0.05 lux
LED's	—	—	18 @ 850 nm	—	—	—
Night Vision Max. Range	—	—	65 ft (20 m)	—	—	—
Operating Temp.	14° to 122° F (-10° to 50° C)	-22° to 122° F *** (-30° to 50° C)	-22° to 122° F *** (-30° to 50° C)	-58° to 131° F *** (-50° to 55° C)	-58° to 131° F *** (-50° to 55° C)	-58° to 131° F *** (-50° to 55° C)
All-weather Rating	IP66	IP66	IP66	IP66, NEMA 4X	IP66, NEMA 4X	IP66, NEMA 4X
Vandal Resistant	IK08	IK08	IK08	IK10	IK10	IK10
Alarm Input / Output	—	—	—	■	■	■
Audio / Audio Alarm	—	—	—	—	—	—
Max. Power Consumption	3.6W	6W / 15.6W***	6W / 15.6W***	4.3W / 8.4W***	4.3W / 8.4W***	4.3W / 8.4W***
Power Supply	24 VAC, 12 VDC	24 VAC, 12 VDC	24 VAC, 12 VDC	24 VAC / 12 VDC	24 VAC / 12 VDC	24 VAC / 12 VDC

*** With heater




Legend

- Yes
- No

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PTZ and Specialty Cameras



	AUTODOME 4000	AUTODOME 5000	FLEXIDOME corner 5000	AN traffic 4000 IR
		COMING SOON 	COMING SOON 	COMING SOON 
	VEZ-4x3	VEZ-5x3	VCN-9095	VLR-4075
Camera Type	30x WDR Mini PTZ Dome	36x WDR PTZ Dome	No-grip Corner Mount	IR License Plate Bullet
Max. Sensor Resolution	720TVL	720TVL	720 TVL	720TVL
Image Sensor Type	960H, 1/4" CCD	960H, 1/4" CCD	960H, 1/3" CCD	960H, 1/3" CCD
Day/Night	True D/N	True D/N	True D/N	True D/N [black and white]
Wide Dynamic Range [WDR]	True WDR	True WDR	True WDR	—
IR Sensitive	■	■	■	■
Video Motion Detection	■	■	4 Zones	—
Privacy Masking	15 Zones	20 Zones	■	—
Auto Black	—	—	—	—
Max. Capture Speed	—	—	—	75 mph (120 k/mh)
Lens	3.5 – 104 mm	3.4 – 120 mm	2 mm	5 – 50 mm DC Iris
Zoom	26x optical, 10x digital	36x optical, 12x digital	—	—
Min. Illumination [day mode]	0.2 lux	0.1 lux	0.04 lux	—
Min. Illumination [night mode]	0.001 lux	0.01 lux	0 lux [IR on]	0 lux
LED's	—	—	940 nm	10 @ 850 nm
Night Vision Max. Range	—	—	30 ft (9 m)	92 ft (28 m)
Operating Temp.	-40° to 122° F (-40° to 50° C)	-40° to 122° F (-40° to 50° C)	-14° to 122° F (-10° to 50° C)	-22° to 122° F (-30° to 50° C)
All-weather Rating	IP66	IP66	IP65	IP66
Vandal Resistant	IK10	IK10	IK10	IK08
Alarm Input / Output	■	■	■ [1/1]	—
Audio / Audio Alarm	—	—	—	—
Max. Power Consumption	20W, 45W ***	20W, 50W ***	6.48W	7.7W
Power Supply	24 VAC	24 VAC	24 VAC, 12 VDC	24 VAC, 12 VDC

*** With heater

Legend

- Yes
- No

960H Analog Video Solutions

Outdoor Bullet Cameras



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AN bullet 2000



Advantage Line

VTC-206

AN bullet 2000 IR



Advantage Line

VTI-2075-F3

AN bullet 4000



VTN-4075-V3

AN bullet 4000 IR



VTI-4075-V3



VTI-4075-V9



VTI-4085-V5

	VTC-206	VTI-2075-F3	VTN-4075-V3	VTI-4075-V3	VTI-4075-V9	VTI-4085-V5
Camera Type	Color Mini Bullet	True D/N IR Bullet	True D/N Bullet	True D/N IR Bullet	True D/N IR Bullet	True D/N WDR IR Bullet
Max. Sensor Resolution	720TVL	720TVL	720TVL	720TVL	720TVL	720TVL
Image Sensor Type	960H, 1/3" CCD	960H, 1/3"	960H, 1/3"	960H, 1/3"	960H, 1/3"	960H, 1/3"
Day/Night	—	True D/N	True D/N	True D/N	True D/N	True D/N
Wide Dynamic Range [WDR]	—	—	—	DWDR	DWDR	True WDR
IR Sensitive	—	■	■	■	■	■
Video Motion Detection	—	4 zones	4 zones	4 zones	4 zones	4 zones
Privacy Masking	—	4 zones	4 zones	15 zones	15 zones	15 zones
Digital Noise Reduction (DNR)	—	■	■	■	■	■
Auto Black	—	—	—	—	—	—
Lens	3.6 mm Fixed	3.6 mm Fixed	2.8 – 12 mm DC Iris	2.8 – 12 mm DC Iris	9 – 22 mm DC Iris	5 – 50 mm DC Iris
Zoom	—	—	—	—	—	—
Min. Illumination [day mode]	0.1 lux	0.5 lux	0.5 lux	0.15 lux	0.15 lux	0.15 lux
Min. Illumination [night mode]	—	0 lux	0.02 lux	0 lux	0 lux	0 lux
LED's	—	20 @ 850 nm	—	20 @ 850 nm	5 @ 850 nm	10 @ 850 nm
Night Vision Max. Range	—	50 ft (15 m)	—	100 ft (30 m)	200 ft (60 m)	330 ft (100 m)
Operating Temp.	14° to 122° F (-10° to 50° C)	-22° to 122° F (-30° to 50° C)	-22° to 122° F (-30° to 50° C)	-22° to 122° F (-30° to 50° C)	-22° to 122° F (-30° to 50° C)	-22° to 122° F (-30° to 50° C)
All-weather Rating	IP67	IP66	IP66	IP66	IP66	IP66
Vandal Resistant	—	IK08	IK08	IK08	IK08	IK08
Alarm Input / Output	—	—	—	—	—	—
Audio / Audio Alarm	—	—	—	—	—	—
Max. Power Consumption	3.6W	5.7W	2.9W	5.7W	5.9W	9.1W
Power Supply	12 VDC	12 VDC	24 VAC, 12 VDC	24 VAC, 12 VDC	24 VAC, 12 VDC	24 VAC, 12 VDC

Legend

- Yes
- No

960H Analog Video Solutions

Digital Video Recorders



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COMING SOON



Advantage Line

COMING SOON



DIVAR 3000

DIVAR 5000

System		Operating System	Embedded LINUX	Embedded LINUX
		Rack Mountable	–	■
		SDK Available	■ (VSDK v5.x)	■ (VSDK v5.x)
Video	Input	Channels	4, 8 or 16	4, 8 or 16
	Output	Looping Video	–	■
		Connectors	Composite [2], VGA [1], HDMI [1]	Composite [2], VGA [1], HDMI [1]
		Spot Monitor	1	1
Audio	Input / Output Channels		4 [+1 MIC input] / 1	4 [+1 MIC input] / 1
	Synchronous Audio		■	■
	Bi-directional Audio		■ [via web client]	■ [via web client]
	Associate Multiple Cameras to 1 Audio		–	–
Alarms	Inputs / Relay Outputs		16 / 3	16 / 5
	Call up Pre-position on Dome Cameras		■	■
	Increase Frame Rate on Alarm		■	■
	Multiple Camera Linking on Alarm Event		■	■
	Notification via Email		■	■
	Pre-alarm		■ up to 30 Seconds	■ up to 30 Seconds
	Motion Detection		■	■
Recording	Video Compression		H.264	H.264
	Frame Rate (IPS)		120 [4ch], 240 [8ch], 480 [16ch] @ 960H	120 [4ch], 240 [8ch], 480 [16ch] @ 960H
	IPS per Camera		30 IPS @ 960H	30 IPS @ 960H
	Recording Resolution		QCIF / CIF / 2CIF / 4CIF / 960H	QCIF / CIF / 2CIF / 4CIF / 960H
	Individual Camera Adjustment (IPS & Quality)		■	■
	Schedule Recording Modes		Day / Week / >32 Exception days	Day / Week / >32 Exception days
Storage	Internal	HDD	2 [1 when configured with optional DVD writer]	4 [2 when configured with optional DVD writer]
		Expandable	500 - 1000 - 2000 - 3000 GB	500 - 1000 - 2000 - 3000 GB
		On-board RAID	–	–
	Export	External Storage	–	■ [eSATA]
		Supported Devices	Internal DVD writer, USB, BVC, Web Client	Internal DVD writer, USB, BVC, Web Client
		Data Format	Native, AVI	Native, AVI
		Back-up Mode	Manual	Manual
Search	Timeline Search Bar (Color-coded)		■	■
	Search Mode		Date/Time, Channel, Event Type, Motion	Date/Time, Channel, Event Type, Motion
	Smart Motion Search		■	■
Display	Live Resolution		960H Camera: 960x480 [using HDMI monitor] 720H Camera: 704x480	960H Camera: 960x480 [using HDMI monitor] 720H Camera: 704x480
	Screen Division [Multiscreen]		4 Ch.: 1/4; 8 Ch. 1/4/8/9; 16 Ch. 1/4/8/9/16	4 Ch.: 1/4; 8 Ch. 1/4/8/9; 16 Ch. 1/4/8/9/16
Security	User Control	User Levels	3	3
		Camera Lockouts by User	■	■
		Set Viewing Permissions	■	■
		Data Integrity Check (Watermarking, etc.)	■ [in archive player]	■ [in archive player]
Remote Access	Network		10 / 100 / 1000 Ethernet	10 / 100 / 1000 Ethernet
	Web Browser Access		■	■
	Simultaneous Accessible Users		4	4
	Mobile Client Access		■ [iOS, Android]	■ [iOS, Android]
	Admin control		■	■
	PTZ Control		■	■
Other	Export Options		Native, AVI	Native, AVI
	Instant Playback		■	■
	Digital Zoom (Live / Playback)		■ / ■	■ / ■
	PTZ Joystick Control		–	–
	ATM/POS Interface		–	–

Legend
 ■ Yes
 – No

960H Analog Video Solutions

Flat Panel Monitors



BOSCH

Invented for life

High Definition



Advantage Line



Advantage Line



		UML-193-90	UML-223-90	UML-273-90	UML-323-90	UML-423-90	UML-553-90
Display	Type	19" LED	22" LED	27" LED	32" LED	42" LED	55" LED
	Max Pixel Resolution	1366 x 768	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080	1920 x 1080
	Horizontal Resolution	650 TVL	650 TVL	650 TVL	650 TVL	650 TVL	650 TVL
	Aspect Ratio	16:9	16:9	16:9	16:9	16:9	16:9
	Brightness (cd/m²)	250	250	300	350	500	450
	Contrast Ratio	1000:1	1000:1	3000:1	3000:1	4000:1	4000:1
	Backlight	30,000 hours	30,000 hours	30,000 hours	50,000 hours	50,000 hours	50,000 hours
	Viewing Angle (HxV)	170° x 160°	170° x 160°	178° x 178°	178° x 178°	178° x 178°	178° x 178°
Composite Video / Audio Loop-through		Passive	Passive	Passive	Passive	Passive	Passive
PC Compatible		■	■	■	■	■	■
Connectors	Composite Video (BNC)	–	–	2 [looping video]	1 [looping video]	2 [looping video]	2 [looping video]
	VGA	■	■	■	■	■	■
	DVI-D	■	■	■	■	■	■
	HDMI	■	■	■	■	■	■
Audio	Input	■	■	■	■	■	■
	Speaker	■	■	■	■	■	■
Mechanical	Width	17.62" (448 mm)	20.26" (515 mm)	25.26" (642 mm)	29.34" (745 mm)	38.96" (977 mm)	49.45" (1256 mm)
	Height	13.07" (332 mm)*	14.57" (370 mm)*	14.97" (380 mm)	17.31" (440 mm)	22.44" (570 mm)	28.61" (727 mm)
	Depth	7.16" (182 mm)*	7.16" (182 mm)*	2.98" (76 mm)	3.02" (77 mm)	3.26" (83 mm)	3.26" (83 mm)
	Weight	6.6 lb (3.0 kg)	7.9 lb (3.6 kg)	19.95 lb (9.1 kg)	27.6 lb (12.5 kg)	44.1 lb (20 kg)	70.5 lb (32 kg)
Power	Power Supply	Integrated	Integrated	Included	Integrated	Integrated	Integrated
	Power Consumption	42W	42W	75W	75W	150W	170W
Misc.	Picture-in-picture	–	–	–	–	–	–
	Front Panel Lockout	■	■	■	■	■	■
	IR Remote	–	–	■	■	■	■
Cables Included	VGA-to-VGA	■	■	■	■	■	■
	DVI-to-DVI	■	■	■	■	■	■
Mounting	VESA Compliant	■	■	■	■	■	■
	Rack-mountable	–	–	–	–	–	–
	Table Stand	Included	Included	Included	UMM-LED32-SD	UMM-LED42-SD	UMM-LED42-SD
	Fixed Wall Mount	–	–	–	–	ST660	ST660
	Swivel/Tilt Wall Mount	–	–	UMM-WMT-32	UMM-WMT-32	–	–

* Includes base

960H Analog Video Solutions

Video Management



Bosch Video Client (BVC)



Bosch Video Client is included free of charge with all Bosch DIVAR 3000 and 5000 Series Digital Recorders and can be downloaded from the web.

The intuitive, simple-to-use graphical user interface allows you to display up to 20 cameras per attached monitor, and provides simultaneous live and playback viewing of cameras from multiple recorders

- ▶ Pan, tilt, zoom camera control
- ▶ Lens control and digital zoom
- ▶ Full search, playback and export of recorded video
- ▶ Instant replay and trick mode playback
- ▶ Alarm notification
- ▶ Supports dual-monitor configuration
- ▶ Support for IntuiKey Series keyboards

Mobile App

**COMING
SOON**



See what your security cameras see, directly on your iOS or Android mobile device, with the free Bosch DVR Viewer.

With a mobile client you can watch video or still images from cameras connected to Bosch video recorders in your home, office or business, from anywhere in the world.

Combined with our state-of-the-art DVR and camera solutions, our apps help you secure people and premises regardless of your location. Get peace of mind, wherever you go.

A Tradition of Quality and Innovation

For 125 years, the Bosch name stands for quality and reliability. Bosch is the global supplier of choice for innovative technology, backed by the highest standards for service and support.

Bosch Security Systems proudly offers a wide range of security, safety, communications and sound solutions that are relied upon every day in applications around the world, from government facilities and public venues to businesses, schools and homes.

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