







BOSCH EXTREME CCTV QUICK GUIDE



	EX30 Black Diamond™ Infrared Imager	EX80 Black Diamond™ Infrared Imager	EX82 Black Diamond™ Infrared Imager	EX85 Black Diamond™ IP Infrared Imager (IP) Design	EX36N Black Diamond™ Corner-mount No-grip Camera	EX27N All-Weather Camera
INFRARED IMAGERS						
Options	IP Version available	IP Version available	IP Version available	IP Version	IP Version available	Only analog
DRCI Performance at 850 nm	Detection: 100 m Classification: 90 m Recognition: 60 m Identification: 45 m	Detection: 60 m Classification: 45 m Recognition: 30 m Identification: 15 m	Detection: 75 m Classification: 60 m Recognition: 45 m Identification: 25 m	Detection: 128 m Classification: 98 m Recognition: 76 m Identification: 45 m	Detection: 9 m	Detection: 12 m
IR Illuminators	LEDs: Black Diamond High-Fidelity Infrared, intensity adjustable Wavelength: 850 nm or *940 nm (*40% distance loss from stated distances at 850 nm)	LEDs: Black Diamond High-Fidelity Infrared, intensity adjustable Wavelength: 850 nm or *940 nm (*40% distance loss from stated distances at 850 nm)	LEDs: Black Diamond High-Fidelity Infrared, intensity adjustable Wavelength: 850 nm or *940 nm (*40% distance loss from stated distances at 850 nm)	LEDs: Black Diamond High-Fidelity Infrared, intensity adjustable Wavelength: 850 nm	LEDs: Black Diamond High-Fidelity Infrared, intensity adjustable Wavelength: 850 nm or *940 nm (*40% distance loss from stated distances at 850 nm)	LEDs: High-efficiency IR Wavelength: 850 nm or 940 nm
Camera Color	Daytime Sensor: MX4 Extended, Hi-Res Day/Night CCD Effective Pixels (H x V): NTSC: 768 x 494 PAL: 752 x 582 Resolution: 540 TVL color / 540 TVL monochrome S/N Ratio: Greater than 48 dB (AGC off) Daytime Sensitivity: 0.02 lux at F1.4 Frame Rate Color: -	Daytime Sensor: C5 Hi-Res Color CCD Effective Pixels (H x V): NTSC: 768 x 494 PAL: 752 x 582 Resolution: 480 TVL S/N Ratio: Greater than 48 dB Daytime Sensitivity: 1 lux at F2 Frame Rate Color: -	Daytime Sensor: C7 Hi-resolution Color CCD Effective Pixels (H x V): NTSC: 768 x 494 PAL: 752 x 582 Resolution: 500 TVL S/N Ratio: Greater than 48 dB Daytime Sensitivity: 2.7 lux at F1.4 Frame Rate Color: 1-30 FPS programmable (full motion)	Daytime Sensor: 3.1 Megapixel 1/2 in sensor Effective Pixels (H x V): 2048H x 1536V Resolution: Greater than 1000 TVL S/N Ratio: Greater than 45 dB Daytime Sensitivity: - Frame Rate Color: 20fps 1920x1200	Daytime Sensor: MX4 Extended Hi-Res Day/Night CCD Effective Pixels (H x V): NTSC: 768 x 494 PAL: 752 x 582 Resolution: 540 TVL color / 540 TVL monochrome S/N Ratio: Greater than 48 dB (AGC off) Daytime Sensitivity: 0.02 lux at F1.4 Frame Rate Color: -	Daytime Sensor: MX4 Extended Hi-Res Day/Night CCD Effective Pixels (H x V): NTSC: 768 x 494 PAL: 752 x 582 Resolution: 540 TVL color / 540 TVL monochrome S/N Ratio: Greater than 48 dB (AGC off) Daytime Sensitivity: 0.02 lux at F1.4 Frame Rate Color: -
Camera Monochrome	Nighttime Sensor: - Effective Pixels (H x V): - Effective Pixels (H x V): - Resolution: - S/N Ratio: - Daytime Sensitivity: - Frame Rate monochrom: -	Nighttime Sensor: SX3 Monochrome CCD Effective Pixels (H x V): EIA: 510 x 492 (HxV) CCIR: 500 x 582 (HxV) Resolution: 420 TVL S/N Ratio: Greater than 50 dB Daytime Sensitivity: 0.05 lux at F2 Frame Rate monochrom: -	Nighttime Sensor: SX7 Hi-resolution monochrome CCD Effective Pixels (H x V): NTSC: 542 x 492 PAL: 542 x 582 Resolution: 540 TVL S/N Ratio: Greater than 48 dB Daytime Sensitivity: 0.01 lux at F1.2 (AGC on) Frame Rate monochrom: 1-30 FPS programmable (full motion)	Nighttime Sensor: 1.3 Megapixel 1/2 in sensor Effective Pixels (H x V): 1280H x 1024V Resolution: Greater than 1000 TVL S/N Ratio: Greater than 45 dB Daytime Sensitivity: - Frame Rate monochrom: 30 fps 1280x1024	Nighttime Sensor: C7 Hi-resolution Color CCD Effective Pixels (H x V): NTSC: 768 x 494 PAL: 752 x 582 Resolution: 500 TVL S/N Ratio: Greater than 48 dB Daytime Sensitivity: 2.7 lux at F1.4 Frame Rate monochrom: -	Nighttime Sensor: - Effective Pixels (H x V): - Effective Pixels (H x V): - Resolution: - S/N Ratio: - Daytime Sensitivity: - Frame Rate monochrom: -
General	Lens: IR corrected 5 to 50 mm varifocal auto-iris, DC drive Gamma: 0.45 Day-Night Switching: Photocell-controlled, automatic Photocell: Automatic, sensitivity adjustable Dynamic Range: - Zoom: - Motion Detection: - Serial Port Levels: - Serial Port Operating Mode: -	Lens: 4 to 9 mm varifocal auto-iris Gamma: 0.45 Day-Night Switching: Photocell-controlled, automatic Photocell: Automatic, sensitivity adjustable Dynamic Range: - Zoom: - Motion Detection: - Serial Port Levels: - Serial Port Operating Mode: -	Lens: 4 to 9 mm or 9 to 22 mm varifocal auto-iris Gamma: 0.45 Day-Night Switching: Photocell-controlled, automatic Photocell: Automatic, sensitivity adjustable Dynamic Range: - Zoom: - Motion Detection: - Serial Port Levels: - Serial Port Operating Mode: -	Lens: 8, 12, 25 or 50 mm fixed megapixel lenses Gamma: - Day-Night Switching: Automatic, adjustable via API Photocell: - Dynamic Range: 60db Zoom: Always-on digital zoom Motion Detection: On-camera motion detection or with NVR/VMS integration Serial Port Levels: RS-422/RS-485 Serial Port Operating Mode: Transparent port for any asynchronous serial protocol	Lens: 2.5 or 3.6 mm fixed lens Gamma: 0.45 Day-Night Switching: Photocell-controlled, automatic Photocell: Automatic, sensitivity adjustable Dynamic Range: - Zoom: - Motion Detection: - Serial Port Levels: - Serial Port Operating Mode: -	Lens: 4 to 9 mm varifocal auto-iris Gamma: 0.45 Day-Night Switching: Photocell-controlled, automatic Photocell: - Dynamic Range: - Zoom: - Motion Detection: - Serial Port Levels: - Serial Port Operating Mode: -
Interface	Ethernet: 10/100 Base-T RJ45 Analog: PAL or NTSC BNC	Ethernet: 10/100 Base-T RJ45 Analog: PAL or NTSC BNC	Ethernet: 10/100 Base-T RJ45 Analog: PAL or NTSC BNC	Ethernet: 10/100 Base-T RJ45 Analog: -	Ethernet: 10/100 Base-T RJ45 Analog: PAL or NTSC BNC	Ethernet: - Analog: PAL or NTSC BNC
IP Cameras only	IP Protocols: Telnet, RTP, HTTP(S), ARP, TCP, UDP, IP, ICMP, DHCP, IGMPv2/v3, SNMP, 802.1x IP Compression: MPEG-4 SP and MJPEG, up to 30 frames per second, tristream selectable IP Bandwidth: Configurable from 9.6 Kbps to 6 Mbps	IP Protocols: Telnet, RTP, HTTP(S), ARP, TCP, UDP, IP, ICMP, DHCP, IGMPv2/v3, SNMP, 802.1x IP Compression: MPEG-4 SP and MJPEG, up to 30 frames per second, tristream selectable IP Bandwidth: Configurable from 9.6 Kbps to 6 Mbps	IP Protocols: Telnet, RTP, HTTP(S), ARP, TCP, UDP, IP, ICMP, DHCP, IGMPv2/v3, SNMP, 802.1x IP Compression: MPEG-4 SP and MJPEG, up to 30 frames per second, tristream selectable IP Bandwidth: Configurable from 9.6 Kbps to 6 Mbps	IP Protocols: IP, TFTP / HTTP IP Compression: Motion JPEG with over 20 quality settings IP Bandwidth: -	IP Protocols: Telnet, RTP, HTTP(S), ARP, TCP, UDP, IP, ICMP, DHCP, IGMPv2/v3, SNMP, 802.1x IP Compression: MPEG-4 SP and MJPEG, up to 30 frames per second, tristream selectable IP Bandwidth: Configurable from 9.6 Kbps to 6 Mbps	IP Protocols: - IP Compression: - IP Bandwidth: -
Resolution and Frame Rates	4CIF: 25/30 IPS: PAL 704 x 576 NTSC 704 x 480 2CIF: 25/30 IPS: PAL 704 x 288 NTSC 704 x 240 half D1: 25/30 IPS: PAL 352 x 576 NTSC 352 x 480 CIF: 25/30 IPS: PAL 352 x 288 NTSC 352 x 240 QCIF: 25/30 IPS: PAL 176 x 144 NTSC 176 x 120	4CIF: 25/30 IPS: PAL 704 x 576 NTSC 704 x 480 2CIF: 25/30 IPS: PAL 704 x 288 NTSC 704 x 240 half D1: 25/30 IPS: PAL 352 x 576 NTSC 352 x 480 CIF: 25/30 IPS: PAL 352 x 288 NTSC 352 x 240 QCIF: 25/30 IPS: PAL 176 x 144 NTSC 176 x 120	4CIF: 25/30 IPS: PAL 704 x 576 NTSC 704 x 480 2CIF: 25/30 IPS: PAL 704 x 288 NTSC 704 x 240 half D1: 25/30 IPS: PAL 352 x 576 NTSC 352 x 480 CIF: 25/30 IPS: PAL 352 x 288 NTSC 352 x 240 QCIF: 25/30 IPS: PAL 176 x 144 NTSC 176 x 120	4CIF: 25/30 IPS: - 2CIF: 25/30 IPS: - half D1: 25/30 IPS: - CIF: 25/30 IPS: - QCIF: 25/30 IPS: -	4CIF: 25/30 IPS: PAL 704 x 576 NTSC 704 x 480 2CIF: 25/30 IPS: PAL 704 x 288 NTSC 704 x 240 half D1: 25/30 IPS: PAL 352 x 576 NTSC 352 x 480 CIF: 25/30 IPS: PAL 352 x 288 NTSC 352 x 240 QCIF: 25/30 IPS: PAL 176 x 144 NTSC 176 x 120	4CIF: 25/30 IPS: - 2CIF: 25/30 IPS: - half D1: 25/30 IPS: - CIF: 25/30 IPS: - QCIF: 25/30 IPS: -
Electrical	Voltage Supply: 12 VDC or 24 VAC Power Consumption: 36 W max	Voltage Supply: 12 VDC or 24 VAC Power Consumption: 36 W max	Voltage Supply: 12 VDC or 24 VAC Power Consumption: 36 W max	Voltage Supply: 12 to 24 VAC or VDC Power Consumption: Day: 4.5 W max; Night: 24 W max	Voltage Supply: 12 to 24 VAC or VDC Power Consumption: 10.8 W	Voltage Supply: 12 to 24 VAC or VDC Power Consumption: 4.5 W or less
Mechanical	Construction: Robust aluminum casting Color: Black Dimensions: 131 x 139 x 207 mm Weight: 1.4 kg	Construction: Robust aluminum casting Color: Black Dimensions: 131 x 139 x 207 mm Weight: 1.4 kg	Construction: Robust aluminum casting Color: Black Dimensions: 131 x 139 x 207 mm Weight: 1.4 kg	Construction: Robust aluminum casting Color: Black Dimensions: 160 x 140 x 208 mm Weight: 2.3 kg	Construction: Painted steel and tamper-resistant screws Color: White Dimensions: 224 x 134 x 155 mm Weight: 1.2 kg	Construction: Robust aluminum casting / extrusion Color: Black Dimensions: 89 x 91 x 222 mm Weight: 1.4 kg
Environment	Operation Temperature Range: -50 °C to +50 °C Weather proofing: NEMA4	Operation Temperature Range: -50 °C to +50 °C Weather proofing: NEMA4	Operation Temperature Range: -50 °C to +50 °C Weather proofing: NEMA4	Operation Temperature Range: -40 °C to +50 °C Weather proofing: IP 67 compliant	Operation Temperature Range: -50 °C to +50 °C Weather proofing: -	Operation Temperature Range: -50 °C to +50 °C Weather proofing: IP 66 compliant
Special features	-	-	-	-	Mechanical dual-window (1/4 in thick LEXAN) IR-Pass / IR Cut Optional microphone available	-
Certifications	-	-	-	-	CSA C22.2 No.0-M1991; No.1-M94; No.94-M91 UL Std No 50; No 2044 FCC PART 15 Class A	-