BC - 9 SERIES

4K Pan Tilt Zoom camera with 1.0-type Exmor R CMOS sensor

KEY FEATURES

- BC-9-4K12S-S6MN
- 1 Inch CMOS sensor, Total Effective pixel: 20 Megapixels
- Zeiss Vario-Sonnar T lens with 12X optical zoom, with SRZ feature, 18X zoom at 4K, or 24X zoom at FHD.
- Video Resolution: Up to 4K 2160p29.97, 1080i59.94, 1080p60
- IP Video Resolution: Up to 2160p30, 1080p60
- Video Output: Simultaneous 6G-SDI, 4K HDMI, 4K IP
- HDBaseT, Optical video output via optional video card.
- 4K SDI with 6G-SDI×2 and Dual Link 3G-SDI×2 output
- Black Level, Color Matrix, Image Stabilizer
- HTML5 Cross Browser compatibility
- RTMP, SRT supported
- Power: DC 12V, PoE++, HDBaseT POH

OVERVIEW

Ideal for Broadcast TV, Videoconferencing, House of worship, Live sports and events, Educational environment, Corporate training, Large auditoriums. Distance learning, Courtrooms, sports stadiums and Telemedicine applications.

9 Series is Bolin’s first 4K PTZ camera equipped with a full 1-inch CMOS sensor offering brilliant broadcast-quality Super-High-Resolution color image in 4K30 with excellent low-light sensitivity and full HD footage can also be captured at up to 1080p60, which is optimal for capturing fast, spontaneous action.

SRZ - Super-Resolution-Zoom expands zoom range to 18X zoom at 4K, or 24X zoom at FHD without sacrificing detail.

TRUE Dual Output PTZ camera provides simultaneous 6G/3G-SDI and remote 4K IP video streaming and control. It is a TRUE Dual Output PTZ where SDI and IP formats can be set independently.

Comprehensive image parameter settings (Black Level, Color Matrix and Trace Memory) and Tally lights for Broadcast-friendly use and Pro AV applications.

Extremely quiet and smooth operation for Pan/Tilt movements combined with enhanced adaptive variable and super slow speed control provides accurate and effective operation experiences.
FEATURES

Uncompromising 4K images
Equipped with Sony large, back-illuminated 1.0-type Exmor R CMOS sensor which delivers an uncompromised broadcast quality color pictures in detail-packed 4K/30p. The footage can also be captured in Full HD 60p for fast-moving action applications. Excellent low light sensitivity brings low noise color video images in low light levels as low as 0.5lx, making it an ideal choice for low light environment like live hall and theater.

Image Stabilizer
Bolin camera’s built-in image stabilizer function eliminates the effect of blurred, shaky images caused by low-frequency vibration.

Versatile Video Outputs
Flexibility in professional broadcast and AV environments with multiple choices of video outputs:
* Main 4k HDMI and Dual Link 3G-SDI (x2) or 6G-SDIx2
* Optional HDBaseT and Optical video outputs.
* 4K IP streaming and RTMP live streaming, HTML5 Cross Browser compatibility

Video Format
The camera video format meets the requirements for any Pro Av application and broadcast use by supporting:
* HDMI/SDI format up to 4K 2160p29.97, 1080i59.94, 1080p60
* IP video format up to 2160p30, 1080p60.
* Supports cinematic 23.98/24p pictures

SRT Ready
Delivery of high-quality and secure, low-latency video across the public Internet. SRT optimizes streaming performance across unpredictable networks with secure streams and easy firewall traversal, bringing the best quality live video over unstable networks.

Control Capability
The camera provides multiple methods of controlling, which gives you capabilities of local control and remote control without distance limitations.
* RS232, RS422/485, IP, HDBaseT, IR remote controller.
* Protocol supported: VISCA, VISCA-Over-IP, PELCO D, IP Onvif, HDBaseT one cable control + video.

Flexible Installation
Installation is simplified in a wide range of environments via:
* RJ45 RS232/422 control port provides the convience of wiring.
* PoE+ and POH (Power over HDBaseT) to reduce cabling requirements.
* Standard and ceiling mount and tripod with E-Flip function.

Always Up to Date
Always up to date, Download the latest Firmware upgrade via USB and IP interface which constantly improves the camera features and performance, even for customized function upgrades.

Optional Video Output Module
* HDBaseT video output module: supported to carry 4K video, audio, control, and power via a single CAT6 cable up to 80-100 meters for easy installation and management.
* Fiber Optical video output module: 6G-SDI

Other Features
* Picture Profile Preset- Image parameter setting restore with presets and quick access operation.
* Genlock simplifies integration with other systems.
# Product Specification

## Model No.

**Model No.** | **BC-9-4K12S-S6MN**
---|---

## Camera

### Image Sensor
- **Image Sensor**: 1.0-type back-illuminated Exmor R CMOS sensor
- **Number of effective pixels**: 14.2 Megapixels
- **Picture elements**: 3840 x 2160, 8.29 Megapixels
- **Lens**: Zeiss Vario-Sonnar T lens, Optical Zoom 12X
- **Tele Convert Mode**: When turned on, gain 2X-40X zoom range with 1080p resolution, up to 80X with SRZ
- **Digital Zoom**: Digital Zoom 12X, with SRZ feature, 18X zoom at 4K, or 24X zoom at FHD.
- **Horizontal Angle of View**: 64.6° (Wide) - 6.1° (Tele)
- **Focal Length**: f=9.3 to 111.6mm, F2.8(Wide), F4.5(Tele)
- **Min. object distance**: 80mm (Wide), 1000mm (Tele)
- **Aperture**: F2.8 Constant (W) - T, 16 Steps
- **Min. Illumination**: 0.5 lx (1/30 sec, 50%, High Sensitivity mode On)
- **Shutter Speed**: 1/10000s to 1/8 (59.94/29.97)
- **Focus**: Auto Focus(Trigger/Interval), Manual Focus(Variable Speed), One Push Trigger, Near Limit
- **White Balance**: AUTO, ATW, Indoor, Outdoor, One Push WB, Manual WB, Outdoor Auto, Sodium Vapor Lamp (Fix/Auto/Outdoor Auto)
- **Exposure**: Full Auto, Gain, Shutter Priority, Iris Priority, Manual, Bright
- **WDR**: YES(130dB), Shown as VISIBILITY ENHANCER in OSD
- **ND Filter**: YES
- **Image Stabilizer**: YES
- **Color Gain**: Yes (15 step)
- **Color Hue**: Yes (15 step)
- **Gamma**: Standard/Straight/Pattern
- **Gamma Level**: Yes (15 step)
- **Black Level**: Yes (97 step)
- **Black Gamma**: Yes (15 step)
- **Color Matrix**: Off/Standard/High Saturation/FL light
- **Noise Reduction**: On/Off (level 5 to 1 / Off, 6 steps), 2D/3D
- **S/N Ratio**: ≥50db

## Mechanical

### Pan Movement
- Horizontal: ±175 degrees continuous pan (Zoom Adaptive Speed Range: 0.05° ~ 100°/S)

### Tilt Movement
- Vertical: ±90 degrees to -30 degrees (Zoom Adaptive Speed Range: 0.05° ~ 50°/S)

### Preset Position
- 128 (Speed adjustable: Up to 150°/S, 6 presets on remote controller.)

### Preset Memory
- YES, (Picture Profile Preset-Preset Memory for image parameters, like: Backlight Compensation, White Balance, R-Gain/B-Gain, Auto Exposure, Bright, Iris, Shutter, Gain, Aperture, Effect, Noise Reduction, Mirror, Gamma, Ex-COMP, Color Hue, Contrast etc.)

### PTZ Trace Memory
- 12 (Supported via IP interface)

### PTZ Motion Sync
- YES

### Quietness
- 49db

### Home Position
- Support

### Environmental
- Indoor

## Interface

### Video Output
- 6G/3G-SDIx2, HDMI(1.4)X2, IP, HDBaseT(Module Optional), Optical(Module Optional)
- **4K Video Output**: Main 4K HDMI 1.4a Type-A X1
- **HD Video Output**: 6G-SDIx2 or Dual Link 3G-SDI(2SI only) x2
- **IP Video Stream**: 4K IP H.265/264
- **Camera Control Interface**: RJ45X2-2S/4S, RJ45X1-IP Control, RJ45X1-HDBaseT, IR Remote Control
- **Control Protocol**: VISCA, VISCA Over IP, Pelco D, ONVIF, IP Control Client Software, ND(Network Device Specific)
- **LAN**: RJ45X1(1000Mb), 4K IP video streaming, System upgrade, POE(IEEE802.3bt)
- **Synchronization**: Internal synchronization
- **External Sync. Input**: BNCX1, 75Q, BBS (Black Burst Sync), tri-level sync supported
- **Audio I/O**: Audio input x1, Audio output x1, 3.5mm audio jack
- **Audio Output**: Embedded with main HDMI, 24bit Stereo, Embedded with SDI, 24bit Stereo
- **Edge Storage (Beta)**: Micro SD, Class 10, FAT32 format, Up to 128GB
- **Tally Light**: Two sets of lamps, Red Color, Front and Back
- **Dip Switch**: Back Panel: 8 PIN x 1; Video Resolution Dip X1

---

All models and specifications are subject to change without notice.

[www.bolintechnology.com](http://www.bolintechnology.com)
## System Firmware Upgrade
Upgradable for camera system and FPGA
- Via USB2.0 (for FW upgrade only), via IP (for encoder and FPGA)

## Power Connector Type
IEC60130-10 (JEITA standard RC-5320A) TYPE4
- RJ45: PoE+ (IEEE802.3bt)
- RJ45: POH (Power Over HDBaseT), HDBaseT Card Optional

## Optional Card Slots

## Video signal System

<table>
<thead>
<tr>
<th>Video Format</th>
<th>3840 x 2160/29.97p (HDMI, 6G-SDI x 2 / Dual Link 3G-SDI (2SI))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3840 x 2160/25p (HDMI, 6G-SDI x 2 / Dual Link 3G-SDI (2SI))</td>
</tr>
<tr>
<td></td>
<td>3840 x 2160/23.98p (HDMI, 6G-SDI x 2 / Dual Link 3G-SDI (2SI))</td>
</tr>
<tr>
<td></td>
<td>3840 x 2160/24p (HDMI, 6G-SDI x 2 / Dual Link 3G-SDI (2SI))</td>
</tr>
</tbody>
</table>

### Standard
- SMPTE 292(1.5Gb/s), SMPTE 424, SMPTE 425-A/3Gb/s), SMPTE 2081 With SMPTE352 SDI Metadata Supported

## Network

<table>
<thead>
<tr>
<th>Video Compression</th>
<th>MJPEG, H.264/H.265</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP Video Format</td>
<td>True Dual Output : IP format can be set independently of SDI video format</td>
</tr>
<tr>
<td>3840x2160p30/25/24</td>
<td>1920x1080p60/50/30/25/24</td>
</tr>
<tr>
<td>3840x2160p30/25/24</td>
<td>1280x720p50/50/30/25/24</td>
</tr>
</tbody>
</table>

### Protocols
- TCP/IP, ICMP, ARP, RTP, SIP, UDP, HTTP, DNS, DHCP, FTP, RTP, RTSP, SRT

### Audio Compression
- AAC-LC Broadband Audio Encoding (Duplex Communicate Supported, Audio/Video synchronization)
- Customized OSD

### Compatible Integration
- ONVIF2.4 (Profile S), VISCA Over IP

### Browser Support
- Cross Browser Compatibility - HTML5 support for Microsoft Edge, Google Chrome, Firefox, and Safari browsers without plugin
- Optional (Sold Separately)

## Video Module Card

### HDBaseT Module
- Detachable slot, 1XRJ45-HDBaseT(4K), With HDBaseT video output transmission distance up to 80-100 meters
- Detachable slot, Connector: Duplex LC
- Laser Unit: Single-mode 1,310nm DBF-LD transmitter and PIN receiver

### Fiber Optic SDI Module
- Laser compliant with MSA SFP+ Specification SFF-8432.

## General

| Body Color | Black, White |
| Mount | Ceiling mount, Wall mount, Tripod |
| Size of Screw Hole for Tripod | 1/4-20UNC x2 |
| Operating Temperature | -10 to +40 (°C), 32 to 104 (°F) |
| Operating Humidity | ≤80% Suitable for Use |
| Power Input | 12VDC, POE++(IEEE 802.3bt, Type 4, class 9 required), POH(Power Over HDBaseT, IEEE 802.3bt) |
| Power Consumption | Min: 25W(Static state with no movement); Max: 45Watts (Fully loaded operation) |
| Dimension | 165x196x247mm |
| Weight | 3.3kg (Net weight) |

### HDBaseT Receiver

| Model No. | BL-BR4K-1 |
| Input | 1XRJ45-HDBaseT |
| Output | 1XHDMI Type A - HDMI 1.4b, 1XRJ45- IP Pass-Thru (100Mbps, extend connection only, not IP encoder) |
| Power Input | DC54V, 2.77A |
| Power Output | POH(Power Over HDBaseT), Power over one CAT6 network cable |
| Power Consumption | Up to 97W |
| Control Interface | 2XRJ45-RS232/ RJ45-RS422/RS485, IR Control Sensor |
| IR IN Control Interface | 3.5mm 3.5-5v TTL |
| Audio Output | 3.5mm Jack |
| Dimension | 164x118x33mm |
| Weight | 0.52KG |

## ORDER INFORMATION

- **BC-9-4K12S-S6MN/B** (Black)
- **BC-9-4K12S-S6MN/W** (White)
- **BL-BR4K-1** (HDBaseT Receiver, Not included with the camera)
- **BL-PP97** (Bolin 97W High Power POE Injector)
- **VCC-WM** (Wall Mount)
- **VCC-CM** (Ceiling Mount)
- **BC-9-VC-B** (HDBaseT Card)
- **BC-9-VC-OS6** (6G-SDI Optical Card)
- **BC-9-VC-SFPM** (Laser Module)

All models and specifications are subject to change without notice.