# m_PAC

# Signature Series





■ The BUMA            ■ The BUMA Heavy Duty            ■ The BUMA Modular

The BUMA, BUMA Heavy Duty, and BUMA Modular make up our Signature Series cameras, our most advanced outdoor surveillance cameras. Each of these camera systems features highly durable, protective aluminum housing, built to withstand the toughest environments. Inside, several advanced surveillance options are available, including standard, high definition, and all new ultra high definition camera cores with up to 40x SD zoom, 30x HD zoom, 4K resolution, EMCCD, thermal imaging, speakers, spotlights, Infrared Illumination, and a laser illuminator.

Each of our Signature Series cameras comes standard with the camera head module inside our unique and protective housing, a combined pan and communication module, and a ground surface base. For a complete solution when more advanced capabilities are required, the Signature Series cameras are designed for seamless integration into our revolutionary REKKS Smart Perimeter System (SPS). When included as part of the SPS, the BUMA, BUMA Heavy Duty or BUMA Modular camera head is selected to top the pole system. The system's superior design and durability make the Signature Series cameras the perfect solution for remote, off-grid applications and suitable for even the most extreme environments.

# The BUMA

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Maritime Mount

External Vehicle Mount

Smart Perimeter System Mount

Portable

Outdoor

## Available Models:

■ Standard Definition Models
BUMA-SD18
BUMA-SD26
BUMA-SD40

■ High Definition Models
BUMA-HD12
BUMA-HD20
BUMA-HD30

■ Ultra High Definition Models
BUMA-UHD

■ Low Light Models
BUMA-LL
BUMA-EMCCD

**Head Module**

**Pan and Communication Module**

**Base Module**

mm

Dimensions are in millimeters

ø140
267.7
324.5
30
500
65

267.7
324.5
30
500
65

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# The BUMA

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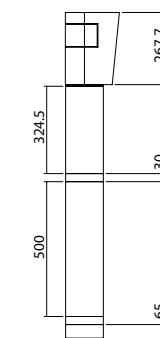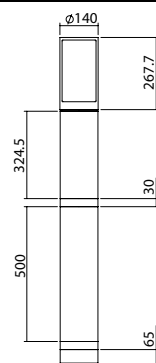
## Highlighted Features

| SD/HD Standard & High Definition | ULTRA HD Ultra High Definition | EMCCD | Image Stabilization | PTZ Capability |
|---|---|---|---|---|

| Integrated Optical Fiber | Renewable Energy Compatible | Ruggedized | Customizable Height |
|---|---|---|---|
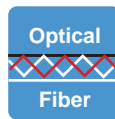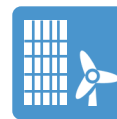
## Description

The patent pending BUMA is a uniquely designed stand-alone camera, now featuring our all new Ultra High Definition camera core capable of delivering full 4k resolution of 3840 x 2160 pixels. Internal components are protected by vandal and weatherproof anodized aluminum housing and can easily be paired with our REKKS Smart Perimeter System for advanced capabilities and off-grid power solutions. An H.264 compression stream and advanced DSP technology secure 24 hour monitoring in remote areas and provide crystal clear images in nearly all lighting conditions. An optional DIS feature makes this camera ideal for tactical and heavy duty vehicle mounting.

## Suggested Applications

- Bases, Outposts and Checkpoints
- Border and Port Facilities
- Construction Sites and Pipelines
- Educational and Research Facilities
- Energy Infrastructures and Drill Sites
- Governmental Facilities
- Nighttime Surveillance
- Parks and Recreational Facilities
- Remote and Undeveloped Areas
- Traffic and Transportation Infrastructures

## Housing and Mounts

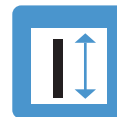| Outdoor | Portable | Smart Perimeter System Mount | External Vehicle Mount | Maritime Mount |
|---|---|---|---|---|

| Wall Mount | Pole Height Extension |
|---|---|

## Materials and Finish

| Aluminum | Camouflage | Housing Color | Glass Color |
|---|---|---|---|

## Certifications

| ONVIF Comformant — ONVIF | CE Certified | FCC Certified | IP 67+ IP Rating | IK 10 IK Rating |
|---|---|---|---|---|

# BUMA-SD

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|  | BUMA-SD18 | BUMA-SD26 | BUMA-SD40 |
|---|---|---|---|
| **Lens** | | | |
| *Image sensor* | 1/4˝ Ex-view HAD CCD progressive scan | 1/4-type Ex-view HAD CCD | 1/4-type super HAD CCD II |
| *Angle view* | 48º wide to 2.8º tele | 54.2º wide to 2.2º tele | 60.0º wide to 1.6º tele |
| *Lens* | 18x optical zoom<br>f=4.1mm wide to 73.8mm tele, f1.4 to f3.0 | 26x optical zoom<br>f = 3.5 to 91mm (F1.6 to F3.8) | 40x optical zoom<br>f=3.06mm wide to 122.4mm tele, F1.6 to F4.6 |
| *Minimum illumination* | 0.7 lux at 1/50 s (f1.4, 50 IRE)<br>0.01 lux at 1/4 s ICR - on | 0.7 lux (typical) | 0.6 lux at 1/60 s<br>0.1 lux at 1/4 s ICR - on |
| *Digital zoom* | 12x (216x with optical zoom) | 12x (312x with optical zoom) | 12x (480x with optical zoom) |
| *Shutter* | 1/1 s ~ 1/10,000 s, 22 steps | 1/1 s ~ 1/10,000 s, 22 steps | 1/1 s ~ 1/10,000 s, 22 steps |
| *TV lines* | 550 TVL | 530 TVL | 670 TVL |
| **Video** | | | |
| *Compression* | H.264 dual stream | H.264 dual stream | H.264 dual stream |
| *Bit rate* | 16k to 1Mbps controllable | 16k to 1Mbps controllable | 16k to 1Mbps controllable |
| *Video resolution* | NTSC CIF (352x240), QCIF (176x120), full D1 (720x480)<br>PAL CIF (352x288), QCIF (176x144), full D1 (720x576) | NTSC CIF (352x240), QCIF (176x120), full D1 (720x480)<br>PAL CIF (352x288), QCIF (176x144), full D1 (720x576) | NTSC CIF (352x240), QCIF (176x120), full D1 (720x480)<br>PAL CIF (352x288), QCIF (176x144), full D1 (720x576) |
| *Frame rate* | 25 fps at full D1 (PAL) , 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL) , 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL) , 30 fps at full D1 (NTSC) |
| *Image enhancement* | auto white balance, AGC, backlight compensation, auto exposure | auto white balance, AGC, backlight compensation, auto exposure, 2D/3D noise reduction, auto WDR | auto white balance, AGC, backlight compensation, auto exposure, 2D/3D noise reduction, auto WDR, digital image stabilizer |
| *Preset points* | 128 | 128 | 128 |
| **Audio** | | | |
| *Audio input* | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p |
| *Audio output* | one channel, RCA interface, linear output | one channel, RCA interface, linear output | one channel, RCA interface, linear output |
| *Audio compression* | G.726, G.711, ADPCM | G.726, G.711, ADPCM | G.726, G.711, ADPCM |
| **Alarm System Integration** | | | |
| *Alarm input* | one channel on/off input NO/NC | one channel on/off input NO/NC | one channel on/off input NO/NC |
| *Alarm output* | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| *Serial port* | RS485 transparent protocol | RS485 transparent protocol | RS485 transparent protocol |
| *Recording* | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule |
| **Network and Storage** | | | |
| *Ethernet port* | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port |
| *Protocol* | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| *Web browser* | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above |
| *Wireless protocols* | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) |
| *SD storage* | up to 32GB | up to 32GB | up to 32GB |
| **Operating Conditions** | | | |
| *Operating temp.* | -10° C ~ +60° C | -10° C ~ +60° C | -10° C ~ +60° C |
| *Storage temp.* | -20° C ~ +80° C | -20° C ~ +80° C | -20° C ~ +80° C |
| *Operating humidity* | 10% ~ 85% | 10% ~ 85% | 10% ~ 85% |
| **Weight and Dimensions** | | | |
| *Input voltage* | 12 VDC | 12 VDC | 12 VDC |
| *Power consumption* | 15W | 15W | 15W |
| *Dimensions (cm)* | 20 x 14.1 x 26.7 (W x L x H) | 20 x 14.1 x 26.7 (W x L x H) | 20 x 14.1 x 26.7 (W x L x H) |
| *Weight* | 11.5 Kg | 11.5 Kg | 11.5 Kg |
| *Colors* | white, black, camouflage wrape | white, black, camouflage wrape | white, black, camouflage wrape |

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# BUMA-HD

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| | BUMA-HD12 | BUMA-HD20 | BUMA-HD30 |
|---|---|---|---|
| **Lens** | | | |
| **Image sensor** | 1/4-Type CMOS | 1/2.8" Exmor CMOS | 1/2.8" Exmor CMOS |
| **Angle view** | 53.4° (wide end) to 2.9° (tele end) | 55.4° (wide end) to 2.9° (tele end) | 54.1° (wide end) to 2.9° (tele end) |
| **Lens** | 12x optical zoom f=3.7mm wide to 44.4mm tele, f1.6 to f2.5 | 20x optical zoom f=4.7mm wide to 94.0mm tele, f1.6 to f3.5 | 30x optical zoom f=4.6 mm wide to 138.0mm tele, f1.8 to f4.7 |
| **Minimum illumination** | 0.3 lux (f1.6, ICR off) / 0.06 lux (f1.6, ICR on) | 0.5 lux (f1.6, ICR off) / 0.095 lux (f1.6 ICR on) | 0.5 lux (f1.6, ICR off) / 0.095 lux (f1.6, ICR – on) |
| **Digital zoom** | 12x (144x with optical zoom) | 12x (240x with optical zoom) | 12x (360x with optical zoom) |
| **Shutter** | 1/1 s ~ 1/10,000 s, 22 steps | 1/1 s ~ 1/10,000 s, 22 steps | 1/2 s ~ 1/10,000 s, 21 steps |
| **Effective pixels** | 1.43 megapixels | 3 megapixels | 3 megapixels |
| **Video** | | | |
| **Compression** | H.264 / M-JPEG support dual stream/ MPEG4/ ASP/ MxPEG | H.264 / M-JPEG support dual stream/ MPEG4/ ASP/ MxPEG | H.264 / M-JPEG support dual stream/ MPEG4/ ASP/ MxPEG |
| **Bit rate** | 32Kbps to 8Mbps | 32Kbps to 8Mbps | 32Kbps to 8Mbps |
| **Video resolution** | 1920 (H) x 1080 (V) / 1280 (H) x 720 (V) / 720 (H) x 576 (V) / 352 (H) x 288 (V) | 1920 (H) x 1080 (V) / 1280 (H) x 720 (V) / 720 (H) x 480 (V) / 720 (H) x 576 (V) | 1920 (H) x 1080 (V) / 1280 (H) x 720 (V) / 720 (H) x 576 (V) / 352 (H) x 288 (V) |
| **Signal system** | 1080p/29.97, 1080p/25, 1080i/59.94, 1080i/50, 720p/50, 720p/29.97, 720p/25 | 1080p/29.97, 1080p/25, 1080i/59.94, 1080i/50, 720p/50, 720p/29.97, 720p/25 | 1080p/29.97, 1080p/25, 1080i/59.94, 1080i/50, 720p/50, 720p/29.97, 720p/25 |
| **Frame rate** | 25 fps at full D1 (PAL), 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL), 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL), 30 fps at full D1 (NTSC) |
| **Image enhancement** | auto white balance, AGC, backlight compensation, auto exposure, WDR, tour recording, guard tour, auto track, iris control, on-screen display | auto white balance, AGC, backlight compensation, auto exposure, WDR, tour recording, guard tour, auto track, iris control, on-screen display | auto white balance, AGC, backlight compensation, auto exposure, WDR, tour recording, guard tour, auto track, iris control, on-screen display |
| **Preset points** | 128 | 128 | 128 |
| **Audio** | | | |
| **Audio input** | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p |
| **Audio output** | one channel, RCA interface, linear output | one channel, RCA interface, linear output | one channel, RCA interface, linear output |
| **Audio compression** | G.726, G.711, ADPCM | G.726, G.711, ADPCM | G.726, G.711, ADPCM |
| **Alarm System Integration** | | | |
| **Alarm input** | one channel on/off input NO/NC | one channel on/off input NO/NC | one channel on/off input NO/NC |
| **Alarm output** | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| **Serial port** | RS485 transparent protocol | RS485 transparent protocol | RS485 transparent protocol |
| **Recording** | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule |
| **Network and Storage** | | | |
| **Ethernet port** | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port |
| **Protocol** | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| **Web browser** | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above |
| **Wireless protocols** | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) |
| **SD storage** | up to 32GB | up to 32GB | up to 32GB |
| **Operating Conditions** | | | |
| **Operating temp.** | -10° C ~ +60° C | -10° C ~ +60° C | -10° C ~ +60° C |
| **Storage temp.** | -20° C ~ +80° C | -20° C ~ +80° C | -20° C ~ +80° C |
| **Operating humidity** | 10% ~ 85% | 10% ~ 85% | 10% ~ 85% |
| **Weight and Dimensions** | | | |
| **Input voltage** | 12 VDC / 6W, PoE (optional) | 12 VDC / 6W, PoE (optional) | 12 VDC / 6W, PoE (optional) |
| **Power consumption** | 15W | 15W | 15W |
| **Dimensions (cm)** | 20 x 14.1 x 26.7 (W x L x H) | 20 x 14.1 x 26.7 (W x L x H) | 20 x 14.1 x 26.7 (W x L x H) |
| **Weight** | 11.5 Kg | 11.5 Kg | 11.5 Kg |
| **Colors** | white, black, camouflage wrape | white, black, camouflage wrape | white, black, camouflage wrape |

# BUMA-UHD

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## Lens

| | |
|---|---|
| *Image sensor* | Global Shutter CMOS |
| *Sensor Size* | Super 35 (22.53 x 11.88mm) |
| *Resolution* | 4096x2160 or 3840x2160 (4x full HD) |
| *Dynamic Range* | 12 stops |
| *Minimum illumination* | 0.3 lux |

## Video

| | |
|---|---|
| *Compression* | H.264 / M_JPEG support dual stream/ MPEG4/ ASP/ MxPEG |
| *Bit rate* | 32Kbps to 8Mbps |
| *Video output* | 4x 3G/HD-SDI (4x BNC) |
| *Quad Link Output Formats* | 10-bit 4:4:4 quad link (UHD and 4K:23.98, 24, 25, 29.97, 30)<br>10-bit 4:2:2 or RAW quad link (UHD: 23.98, 24, 25, 29.97, 30, 50, 59.94, 60), (4K: UHD and 4K:23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60) progressive scan |
| *Frame rate* | NTSC / PAL |
| *Image enhancement* | manual and auto white balance, 1-Shot auto, matrix adjustment and saturation correction, backlight compensation, auto exposure, WDR, integrated IR-cut filter and OLPF, iris control, on-screen display |
| *Preset points* | 128 |
| *Sensitivity Adjustment* | ISO control; up to 4x digital gain |

## Audio

| | |
|---|---|
| *Audio input* | one channel MIC in or line input unbalanced 1.4 Vp-p |
| *Audio output* | one channel, RCA interface, linear output |
| *Audio compression* | G.726, G.711, ADPCM |

## Alarm System Integration

| | |
|---|---|
| *Alarm input* | one channel on/off input NO/NC |
| *Alarm output* | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| *Serial port* | RS485 transparent protocol |
| *Recording* | motion trigger, alarm trigger, manual or schedule |

## Network and Storage

| | |
|---|---|
| *Ethernet port* | 10/100M Base-t self-adapting Ethernet port |
| *Protocol* | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UNPN |
| *Web browser* | Internet Explorer 9.0 or above |
| *Wireless protocols* | 802.11b/g  supports WEP, WPA, WPA2 (optional) |
| *SD storage* | up to 32GB |

## Operating Conditions

| | |
|---|---|
| *Operating temp.* | -10° C ~ +60° C |
| *Storage temp.* | -20° C ~ +80° C |
| *Operating humidity* | 10% ~ 85% |

## Weight and Dimensions

| | |
|---|---|
| *Input voltage* | 12 VDC |
| *Power consumption* | 15W |
| *Dimensions (cm)* | 20 x 14.1 x 26.7 (W x L x H) |
| *Weight* | 5 Kg |
| *Colors* | white, black, camouflage wrape |

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# BUMA-Low Light

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|  | BUMA-LL | BUMA-EMCCD |
|---|---|---|
| **Core** | | |
| Sensor type | 1/2" Exview HAD CCD II | 1/2" Frame Interline Transfer (FIT) impactron |
| Active pixel | 752 x 582 | 658 x 496 |
| Pixel size | 8.6µm x 8.3µm | 10µm x 10µm |
| Active area | 6.47mm x 6.83mm | 6.58mm x 4.96mm |
| Dynamic range | >60dB | 55dB |
| Spectral response | 350-1100nm | 350-1100nm |
| Minimum illumination | < 1µlux | < 200µlux |
| Resolution | 480 TV lines | 450 TV lines |
| Cooling | active, no fan | active, no fan |
| Antiblooming protection | - | yes (>500:1) |
| Exposure time | - | 500µs to 1/50s (CCIR) or 1/60 (EIA) |
| Frame rate | 25Hz (CCIR), 30Hz (EIA/NTSC) | 25Hz (CCIR), 30Hz (EIA) |
| Readout mode | progressive scan | progressive scan |
| **Alarm System Integration** | | |
| Alarm input | one channel on/off input NO/NC | one channel on/off input NO/NC |
| Alarm output | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| Serial port | RS485 transparent protocol | RS485 transparent protocol |
| Recording | manual or schedule | manual or schedule |
| **Network and Storage** | | |
| Ethernet port | 10/100M Base-t self- adapting Ethernet port | 10/100M Base-t self- adapting Ethernet port |
| Protocol | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| Web browser | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above |
| Wireless protocols | 802.11b/g  supports WEP, WPA, WPA2 (optional) | 802.11b/g  supports WEP, WPA, WPA2 (optional) |
| **Operating Conditions** | | |
| Operating temp. | -10° C ~ +60° C | -10° C ~ +60° C |
| Storage temp. | -20° C ~ +80° C | -20° C ~ +80° C |
| Operating humidity | 10% ~ 85% | 10% ~ 85% |
| **Weight and Dimensions** | | |
| Input voltage | 12 VDC | 12 VDC |
| Power consumption | 14W | 15W |
| Dimensions (cm) | 20 x 14.1 x 26.7 (W x L x H) | 20 x 14.1 x 26.7 (W x L x H) |
| Weight | 11.5 Kg | 11.5 Kg |
| Colors | white, black, camouflage wrape | white, black, camouflage wrape |

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# The BUMA Heavy Duty

Maritime Mount

External Vehicle Mount

Smart Perimeter System Mount

Smart Technology

Outdoor

## Available Models:

- **Standard Definition Models**
  BH-SD18
  BH-SD26
  BH-SD40

- **High Definition Models**
  BH-HD12
  BH-HD20
  BH-HD30

- **Ultra High Definition Models**
  BH-UHD - Coming Soon

- **Low Light Models**
  BH-LL
  BH-EMCCD

**Head Module**

**Pan and Communication Module**

**Base Module**

**mm**

Dimensions are in millimeters

Ø171

660.7

30

500

65

660.7

421

30

500

65

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# The BUMA Heavy Duty

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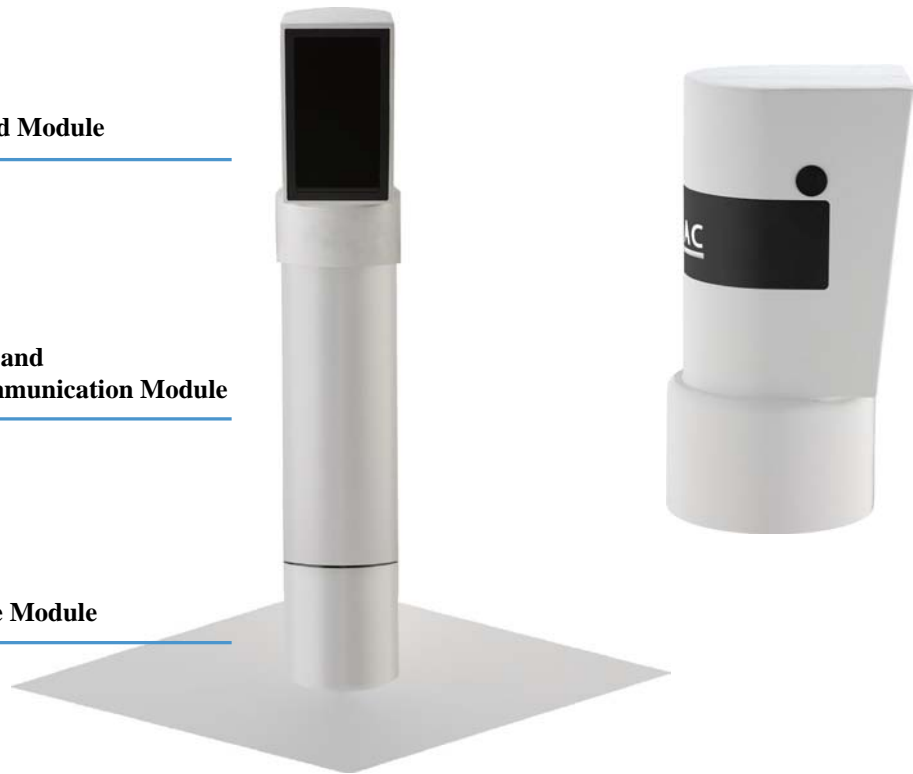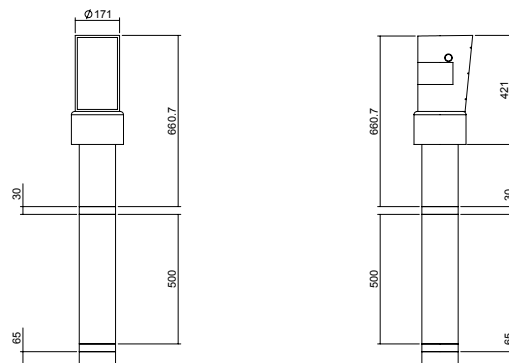
## Description

We are proud to offer the BUMA Heavy Duty to further enhance the capabilities of our original BUMA. The BUMA Heavy Duty offers all of the BUMA's core features, including SD, HD and our all new UHD camera cores, H.264 compression stream, advanced DSP technology, WDR, and its distinct tube shaped design.

What truly set the BUMA Heavy Duty apart are its uniquely rugged capabilities. The heavy-duty aluminum housing is approximately twice the size of the standard BUMA, which allows for additional protection and enhanced features to be incorporated directly into the camera head. The heavy-duty head has a built-in rechargeable battery for up to 12 hours of local power independent from additional power system options, a minimum of 512GB internal solid state storage, WiFi hotspot capabilities, and two separate video streams - one that is stored locally and one that transmits to command center encoders. As an added layer of protection in areas of conflict and/or civil unrest, the heavy duty head features composite inlays and specialized glass for a ballistic resistant and explosion proof system. We make it possible to secure the most sensitive targets and the most remote, inhospitable environments.

## Suggested Applications

- Bases, Outposts and Checkpoints
- Border and Port Facilities
- Conflict Zones
- Construction Sites and Pipelines
- Critical Infrastructures and Sensitive Targets
- Energy Infrastructures and Drill Sites
- Governmental Facilities
- Remote and Undeveloped Areas

## Highlighted Features

| | | | |
|---|---|---|---|
| **SD/HD** Standard & High Definition | **ULTRA HD** Ultra High Definition | EMCCD | WiFi Connectivity |
| WiFi Hotspot | Internal Battery | 512 GB Local Storage | Dual Decoder |

## Housing and Mounts
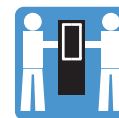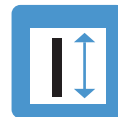
| | | | |
|---|---|---|---|
| Outdoor | Portable | Smart Perimeter System Mount | External Vehicle Mount |
| Maritime Mount | Wall Mount | Pole Height Extension | Ballistic Resistant |

## Materials and Finish

| | | | |
|---|---|---|---|
| Aluminum | Camouflage | Housing Color | Glass Color |

## Certifications

| | | | |
|---|---|---|---|
| ONVIF Comformant | CE Certified | FCC Certified | WiFi Certified |
| IP 67+ IP Rating | IK 10 IK Rating | | |

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# BH-SD

m_PAC

|  | BH-SD18 | BH-SD26 | BH-SD40 |
|---|---|---|---|
| **Lens** | | | |
| *Image sensor* | 1/4" Ex-view HAD CCD progressive scan | 1/4-type Ex-view HAD CCD | 1/4-type super HAD CCD II |
| *Angle view* | 48º wide to 2.8º tele | 54.2º wide to 2.2º tele | 60.0º wide to 1.6º tele |
| *Lens* | 18x optical zoom<br>f=4.1mm wide to 73.8mm tele, f1.4 to f3.0 | 26x optical zoom<br>f = 3.5 to 91mm (F1.6 to F3.8) | 40x optical zoom<br>f=3.06mm wide to 122.4mm tele, F1.6 to F4.6 |
| *Minimum illumination* | 0.7 lux at 1/50 s (f1.4, 50 IRE)<br>0.01 lux at 1/4 s ICR - on | 0.7 lux (typical) | 0.6 lux at 1/60 s<br>0.1 lux at 1/4 s ICR - on |
| *Digital zoom* | 12x (216x with optical zoom) | 12x (312x with optical zoom) | 12x (480x with optical zoom) |
| *Shutter* | 1/1 s ~ 1/10,000 s, 22 steps | 1/1 s ~ 1/10,000 s, 22 steps | 1/1 s ~ 1/10,000 s, 22 steps |
| *TV lines* | 550 TVL | 530 TVL | 670 TVL |
| **Video** | | | |
| *Compression* | H.264 dual stream | H.264 dual stream | H.264 dual stream |
| *Bit rate* | 16k to 1Mbps controllable | 16k to 1Mbps controllable | 16k to 1Mbps controllable |
| *Video resolution* | NTSC CIF (352x240), QCIF (176x120), full D1 (720x480)<br>PAL CIF (352x288), QCIF (176x144), full D1 (720x576) | NTSC CIF (352x240), QCIF (176x120), full D1 (720x480)<br>PAL CIF (352x288), QCIF (176x144), full D1 (720x576) | NTSC CIF (352x240), QCIF (176x120), full D1 (720x480)<br>PAL CIF (352x288), QCIF (176x144), full D1 (720x576) |
| *Frame rate* | 25 fps at full D1 (PAL) , 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL) , 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL) , 30 fps at full D1 (NTSC) |
| *Image enhancement* | auto white balance, AGC, backlight compensation, auto exposure | auto white balance, AGC, backlight compensation, auto exposure, 2D/3D noise reduction, auto WDR | auto white balance, AGC, backlight compensation, auto exposure, 2D/3D noise reduction, auto WDR, digital image stabilizer |
| *Preset points* | 128 | 128 | 128 |
| **Audio** | | | |
| *Audio input* | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p |
| *Audio output* | one channel, RCA interface, linear output | one channel, RCA interface, linear output | one channel, RCA interface, linear output |
| *Audio compression* | G.726, G.711, ADPCM | G.726, G.711, ADPCM | G.726, G.711, ADPCM |
| **Alarm System Integration** | | | |
| *Alarm input* | one channel on/off input NO/NC | one channel on/off input NO/NC | one channel on/off input NO/NC |
| *Alarm output* | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| *Serial port* | RS485 transparent protocol | RS485 transparent protocol | RS485 transparent protocol |
| *Recording* | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule |
| **Network and Storage** | | | |
| *Ethernet port* | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port |
| *Protocol* | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| *Web browser* | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above |
| *Wireless protocols* | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) |
| *HD storage* | Min. 512 GB | Min. 512 GB | Min. 512 GB |
| *Battery* | Rechargeable, Independant, 12 hours minimum | Rechargeable, Independant, 12 hours minimum | Rechargeable, Independant, 12 hours minimum |
| **Operating Conditions** | | | |
| *Operating temp.* | -10° C ~ +60° C | -10° C ~ +60° C | -10° C ~ +60° C |
| *Storage temp.* | -20° C ~ +80° C | -20° C ~ +80° C | -20° C ~ +80° C |
| *Operating humidity* | 10% ~ 85% | 10% ~ 85% | 10% ~ 85% |
| **Weight and Dimensions** | | | |
| *Input voltage* | 12 VDC | 12 VDC | 12 VDC |
| *Power consumption* | 15W | 15W | 15W |
| *Dimensions (cm)* | 17.1 x 20 x 42.1 ( W x L x H) | 17.1 x 20 x 42.1 ( W x L x H) | 17.1 x 20 x 42.1 ( W x L x H) |
| *Weight* | 16 Kg | 16 Kg | 16 Kg |

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# BH-HD

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|  | BH-HD12 | BH-HD20 | BH-HD30 |
|---|---|---|---|
| **Lens** | | | |
| Image sensor | 1/4-Type CMOS | 1/2.8" Exmor CMOS | 1/2.8" Exmor CMOS |
| Angle view | 53.4° (wide end) to 2.9° (tele end) | 55.4° (wide end) to 2.9° (tele end) | 54.1° (wide end) to 2.9° (tele end) |
| Lens | 12x optical zoom f=3.7mm wide to 44.4mm tele, f1.6 to f2.5 | 20x optical zoom f=4.7mm wide to 94.0mm tele, f1.6 to f3.5 | 30x optical zoom f=4.6 mm wide to 138.0mm tele, f1.8 to f4.7 |
| Minimum illumination | 0.3 lux (f1.6, ICR off) / 0.06 lux (f1.6, ICR on) | 0.5 lux (f1.6, ICR off) / 0.095 lux (f1.6 ICR on) | 0.5 lux (f1.6, ICR off) / 0.095 lux (f1.6, ICR – on) |
| Digital zoom | 12x (144x with optical zoom) | 12x (240x with optical zoom) | 12x (360x with optical zoom) |
| Shutter | 1/1 s ~ 1/10,000 s, 22 steps | 1/1 s ~ 1/10,000 s, 22 steps | 1/2 s ~ 1/10,000 s, 21 steps |
| Effective pixels | 1.43 megapixels | 3 megapixels | 3 megapixels |
| **Video** | | | |
| Compression | H.264 / M-JPEG support dual stream/ MPEG4/ ASP/ MxPEG | H.264 / M-JPEG support dual stream/ MPEG4/ ASP/ MxPEG | H.264 / M-JPEG support dual stream/ MPEG4/ ASP/ MxPEG |
| Bit rate | 32Kbps to 8Mbps | 32Kbps to 8Mbps | 32Kbps to 8Mbps |
| Video resolution | 1920 (H) x 1080 (V) / 1280 (H) x 720 (V) / 720 (H) x 576 (V) / 352 (H) x 288 (V) | 1920 (H) x 1080 (V) / 1280 (H) x 720 (V) / 720 (H) x 480 (V) / 720 (H) x 576 (V) | 1920 (H) x 1080 (V) / 1280 (H) x 720 (V) / 720 (H) x 576 (V) / 352 (H) x 288 (V) |
| Signal system | 1080p/29.97, 1080p/25, 1080i/59.94, 1080i/50, 720p/50, 720p/29.97, 720p/25 | 1080p/29.97, 1080p/25, 1080i/59.94, 1080i/50, 720p/50, 720p/29.97, 720p/25 | 1080p/29.97, 1080p/25, 1080i/59.94, 1080i/50, 720p/50, 720p/29.97, 720p/25 |
| Frame rate | 25 fps at full D1 (PAL), 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL), 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL), 30 fps at full D1 (NTSC) |
| Image enhancement | auto white balance, AGC, backlight compensation, auto exposure, WDR, tour recording, guard tour, auto track, iris control, on-screen display | auto white balance, AGC, backlight compensation, auto exposure, WDR, tour recording, guard tour, auto track, iris control, on-screen display | auto white balance, AGC, backlight compensation, auto exposure, WDR, tour recording, guard tour, auto track, iris control, on-screen display |
| Preset points | 128 | 128 | 128 |
| **Audio** | | | |
| Audio input | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p |
| Audio output | one channel, RCA interface, linear output | one channel, RCA interface, linear output | one channel, RCA interface, linear output |
| Audio compression | G.726, G.711, ADPCM | G.726, G.711, ADPCM | G.726, G.711, ADPCM |
| **Alarm System Integration** | | | |
| Alarm input | one channel on/off input NO/NC | one channel on/off input NO/NC | one channel on/off input NO/NC |
| Alarm output | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| Serial port | RS485 transparent protocol | RS485 transparent protocol | RS485 transparent protocol |
| Recording | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule |
| **Network and Storage** | | | |
| Ethernet port | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port |
| Protocol | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| Web browser | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above |
| Wireless protocols | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) |
| HD storage | Min. 512 GB | Min. 512 GB | Min. 512 GB |
| Battery | Rechargeable, Independant, 12 hours minimum | Rechargeable, Independant, 12 hours minimum | Rechargeable, Independant, 12 hours minimum |
| **Operating Conditions** | | | |
| Operating temp. | -10° C ~ +60° C | -10° C ~ +60° C | -10° C ~ +60° C |
| Storage temp. | -20° C ~ +80° C | -20° C ~ +80° C | -20° C ~ +80° C |
| Operating humidity | 10% ~ 85% | 10% ~ 85% | 10% ~ 85% |
| **Weight and Dimensions** | | | |
| Input voltage | 12 VDC | 12 VDC | 12 VDC |
| Power consumption | 15W | 15W | 15W |
| Dimensions (cm) | 17.1 x 20 x 42.1 ( W x L x H) | 17.1 x 20 x 42.1 ( W x L x H) | 17.1 x 20 x 42.1 ( W x L x H) |
| Weight | 16 Kg | 16 Kg | 16 Kg |

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# BH-UHD

## Lens

| | |
|---|---|
| Image sensor | Global Shutter CMOS |
| Sensor Size | Super 35 (22.53 x 11.88mm) |
| Resolution | 4096x2160 or 3840x2160 (4x full HD) |
| Dynamic Range | 12 stops |
| Minimum illumination | 0.3 lux |

## Video

| | |
|---|---|
| Compression | H.264 / M_JPEG support dual stream/ MPEG4/ ASP/ MxPEG |
| Bit rate | 32Kbps to 8Mbps |
| Video output | 4x 3G/HD-SDI (4x BNC) |
| Quad Link Output Formats | 10-bit 4:4:4 quad link (UHD and 4K:23.98, 24, 25, 29.97, 30) <br> 10-bit 4:2:2 or RAW quad link (UHD: 23.98, 24, 25, 29.97, 30, 50, 59.94, 60), (4K: UHD and 4K:23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60) progressive scan |
| Frame rate | NTSC / PAL |
| Image enhancement | manual and auto white balance, 1-Shot auto, matrix adjustment and saturation correction, backlight compensation, auto exposure, WDR, integrated IR-cut filter and OLPF, iris control, on-screen display |
| Preset points | 128 |
| Sensitivity Adjustment | ISO control; up to 4x digital gain |

## Audio

| | |
|---|---|
| Audio input | one channel MIC in or line input unbalanced 1.4 Vp-p |
| Audio output | one channel, RCA interface, linear output |
| Audio compression | G.726, G.711, ADPCM |

## Alarm System Integration

| | |
|---|---|
| Alarm input | one channel on/off input NO/NC |
| Alarm output | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| Serial port | RS485 transparent protocol |
| Recording | motion trigger, alarm trigger, manual or schedule |

## Network and Storage

| | |
|---|---|
| Ethernet port | 10/100M Base-t self-adapting Ethernet port |
| Protocol | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| Web browser | Internet Explorer 9.0 or above |
| Wireless protocols | 802.11b/g  supports WEP, WPA, WPA2 (optional) |
| SD storage | up to 32GB |

## Operating Conditions

| | |
|---|---|
| Operating temp. | -10° C ~ +60° C |
| Storage temp. | -20° C ~ +80° C |
| Operating humidity | 10% ~ 85% |

## Weight and Dimensions

| | |
|---|---|
| Input voltage | 12 VDC |
| Power consumption | 15W |
| Dimensions (cm) | 20 x 14.1 x 26.7 (W x L x H) |
| Weight | 5 Kg |
| Colors | white, black, camouflage wrape |

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# BH-Low Light

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|  | BUMA-LL | BUMA-EMCCD |
|---|---|---|
| **Core** | | |
| Sensor type | 1/2" Exview HAD CCD II | 1/2" Frame Interline Transfer (FIT) impactron |
| Active pixel | 752 x 582 | 658 x 496 |
| Pixel size | 8.6µm x 8.3µm | 10µm x 10µm |
| Active area | 6.47mm x 6.83mm | 6.58mm x 4.96mm |
| Dynamic range | >60dB | 55dB |
| Spectral response | 350-1100nm | 350-1100nm |
| Minimum illumination | < 1µlux | < 200µlux |
| Resolution | 480 TV lines | 450 TV lines |
| Cooling | active, no fan | active, no fan |
| Antiblooming protection | - | yes (>500:1) |
| Exposure time | - | 500µs to 1/50s (CCIR) or 1/60 (EIA) |
| Frame rate | 25Hz (CCIR), 30Hz (EIA/NTSC) | 25Hz (CCIR), 30Hz (EIA) |
| Readout mode | progressive scan | progressive scan |
| **Alarm System Integration** | | |
| Alarm input | one channel on/off input NO/NC | one channel on/off input NO/NC |
| Alarm output | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| Serial port | RS485 transparent protocol | RS485 transparent protocol |
| Recording | manual or schedule | manual or schedule |
| **Network and Storage** | | |
| Ethernet port | 10/100M Base-t self- adapting Ethernet port | 10/100M Base-t self- adapting Ethernet port |
| Protocol | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| Web browser | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above |
| Wireless protocols | 802.11b/g  supports WEP, WPA, WPA2 (optional) | 802.11b/g  supports WEP, WPA, WPA2 (optional) |
| **Operating Conditions** | | |
| Operating temp. | -10° C ~ +60° C | -10° C ~ +60° C |
| Storage temp. | -20° C ~ +80° C | -20° C ~ +80° C |
| Operating humidity | 10% ~ 85% | 10% ~ 85% |
| **Weight and Dimensions** | | |
| Input voltage | 12 VDC | 12 VDC |
| Power consumption | 14W | 15W |
| Dimensions (cm) | 17.1 x 20 x 42.1 ( W x L x H) | 17.1 x 20 x 42.1 ( W x L x H) |
| Weight | 16 Kg | 16 Kg |
| Colors | white, black, camouflage wrape | white, black, camouflage wrape |

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# The BUMA Modular

**m_PAC**

## Maritime Mount

## Smart Technology

## External Vehicle Mount

## Insert Compatible

## Smart Perimeter System Mount

## Portable

## Outdoor

## Available Housing Models:

- BM-Single Frame Housing
- BM-Triple Frame Housing

## Available Frame Inserts:

- SD Camera
- HD Camera
- UHD Camera
- Low Light Camera
- EMCCD Camera
- Thermal Imaging
- Audio Broadcast
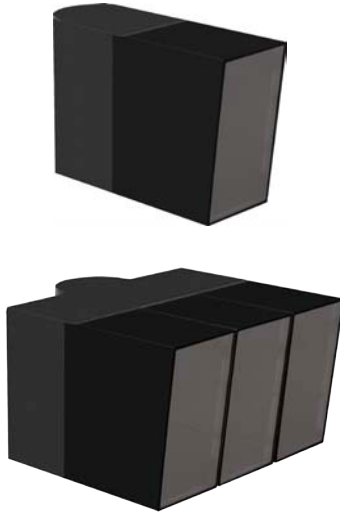- Short Range Night Vision
- Long Range Night Vision
- Area Illuminator

**Head Module**

**Pan and Communication Module**

**Base Module**

### mm

Dimensions are in millimeters

Ø133

238.4

598.9

30

500

65

238.4

324.5

30

500

65

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# The BUMA Modular Housing

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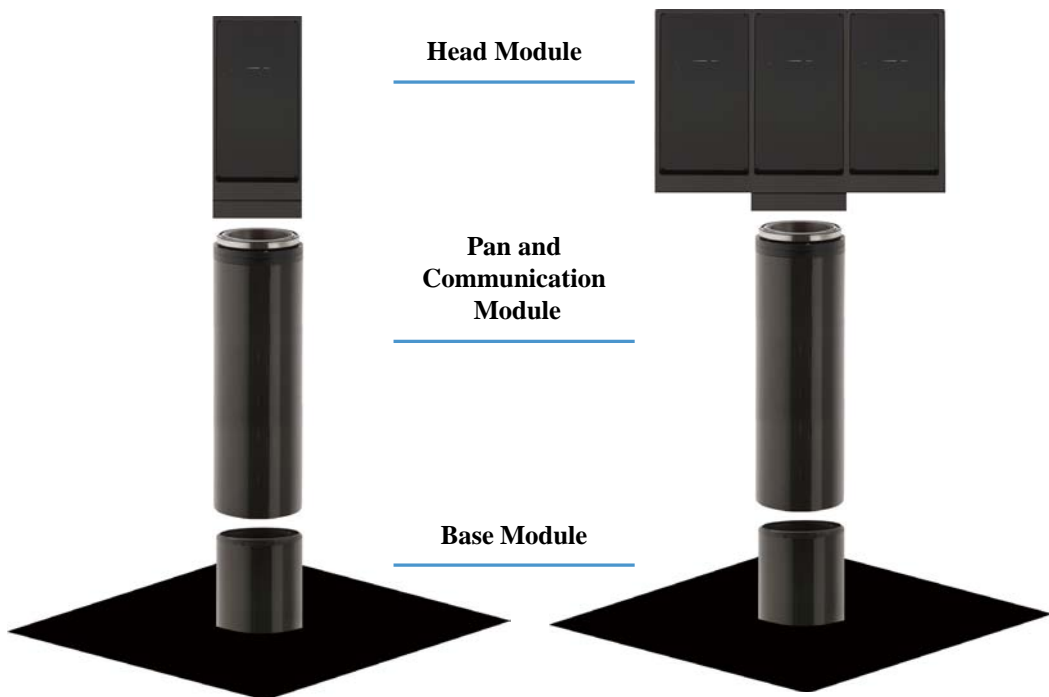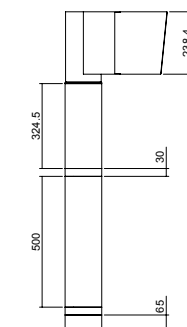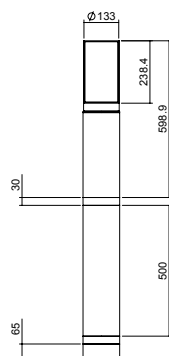
## Description

To offer our customers a truly customized surveillance solution we present the BUMA Modular series. The patent pending, multiple core design features a single (BM-1) or triple (BM-3) frame housing that optimally attaches to our REKKS Smart Perimeter System for a sturdy and independently powered pole mount. Customers are then able to choose insert modules, depending on the capacity of the selected model, to connect to the housing bracket. In the event a customer wishes to modify or add to the system's capabilities, the insert modules can easily be exchanged without having to replace an entire surveillance system.

## Suggested Applications

- Bases, Outposts and Checkpoints
- Border and Port Facilities
- Construction Sites and Pipelines
- Educational and Research Facilities
- Energy Infrastructures and Drill Sites
- Governmental Facilities
- Long Range Surveillance
- Nighttime Surveillance
- Remote and Undeveloped Areas
- Traffic and Transportation Infrastructures

## System Features
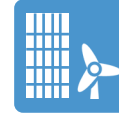
| | | | |
|---|---|---|---|
| Continous 360° Pan | Renewable Energy Compatible | Quick Install | Plug and Play |
| Modular Freedom | Future Proof | | |
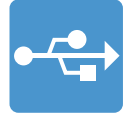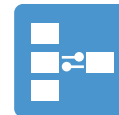
## Compatibile Housing and Mounts

| | | | |
|---|---|---|---|
| Outdoor | Portable | Smart Perimeter System Mount | External Vehicle Mount |
| Maritime Mount | Wall Mount | Pole Height Extension | |

## Materials and Finish

| | | | |
|---|---|---|---|
| Mixed Media | Camouflage | Housing Color | Glass Color |
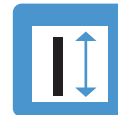
## Certifications

| | | | |
|---|---|---|---|
| ONVIF Comformant — ONVIF | CE — CE Certified | FCC — FCC Certified | IP 67+ — IP Rating |
| IK 10 — IK Rating | | | |

# BM-Camera Inserts

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## Insert Features

| | | | |
|---|---|---|---|
| **SD/HD** Standard & High Definition | **ULTRA HD** Ultra High Definition | **EMCCD** EMCCD | Thermal Imaging Camera |
| Image Stabilization | External Optics | PTZ Capability | **Optical / Fiber** Integrated Optical Fiber |
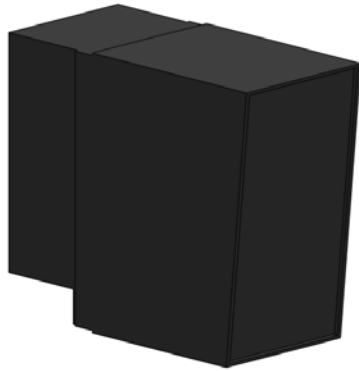
## Description

Several camera inserts are available for both the single and triple frame housing, including all of our BUMA SD and HD cores, our all new UHD core, an EMCCD camera, and a thermal imaging camera.

The BUMA Modular SD offers a cost effective, yet impressively capable outdoor surveillance solution, ideal for large area and long-range surveillance, and is complete with day & night functions for continued operation in most lighting conditions. For projects requiring advanced imaging capabilities, our BUMA HD camera delivers full HD resolution of 1920x1080p at 30 frames per second. Our most advanced camera and latest addition, our UHD camera, provides true 4k surveillance imaging with a resolution of 3840x2160 and is best suited applications requiring precise imaging. Even at high zoom levels the BUMA camera maintains image integrity and delivers crisp images at all light levels The BUMA HD and UHD are best suited for large surveillance fields where a high, level of detail is required and are easily paired with our off-grid power pole system.

For low light or nighttime applications, our Low Light, EMCCD and thermal imaging cameras are valuable tools. EMCCD technology delivers monochrome video with exceptional image quality, including outstanding target recognition and identification capabilities. Thermal imaging cameras offer image penetration through smoke, dust, and water vapor in addition to providing clear images at near or mid-range distances in full darkness. Our thermal camera has a 384 x 288 pixel uncooled detector and uses an image detail enhancement (IDE) algorithm to enhance low contrast targets in high dynamic range scenes. Please refer to the BUMA Modular Housing page for all complete housing and mount options.

## Compatibile Housing and Mounts

| |
|---|
| BM Housing |

## Materials and Finish

| | | | |
|---|---|---|---|
| Mixed Media | Camouflage | Housing Color | Glass Color |

## Certifications

| | | | |
|---|---|---|---|
| **ONVIF Comformant** ONVIF | **CE** CE Certified | **FC** FCC Certified | **IP 67+** IP Rating |
| **IK 10** IK Rating | | | |

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# BM-SD Insert

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|  | BM-SD18 | BM-SD26 | BM-SD40 |
|---|---|---|---|
| **Lens** | | | |
| *Image sensor* | 1/4' Ex-view HAD CCD progressive scan | 1/4-type Ex-view HAD CCD | 1/4-type super HAD CCD II |
| *Angle view* | 48º wide to 2.8º tele | 54.2º wide to 2.2º tele | 60.0º wide to 1.6º tele |
| *Lens* | 18x optical zoom<br>f=4.1mm wide to 73.8mm tele, f1.4 to f3.0 | 26x optical zoom<br>f = 3.5 to 91mm (F1.6 to F3.8) | 40x optical zoom<br>f=3.06mm wide to 122.4mm tele, F1.6 to F4.6 |
| *Minimum illumination* | 0.7 lux at 1/50 s (f1.4, 50 IRE)<br>0.01 lux at 1/4 s ICR - on | 0.7 lux (typical) | 0.6 lux at 1/60 s<br>0.1 lux at 1/4 s ICR - on |
| *Digital zoom* | 12x (216x with optical zoom) | 12x (312x with optical zoom) | 12x (480x with optical zoom) |
| *Shutter* | 1/1 s ~ 1/10,000 s, 22 steps | 1/1 s ~ 1/10,000 s, 22 steps | 1/1 s ~ 1/10,000 s, 22 steps |
| *TV lines* | 550 TVL | 530 TVL | 670 TVL |
| **Video** | | | |
| *Compression* | H.264 dual stream | H.264 dual stream | H.264 dual stream |
| *Bit rate* | 16k to 1Mbps controllable | 16k to 1Mbps controllable | 16k to 1Mbps controllable |
| *Video resolution* | NTSC CIF (352x240), QCIF (176x120), full D1 (720x480)<br>PAL CIF (352x288), QCIF (176x144), full D1 (720x576) | NTSC CIF (352x240), QCIF (176x120), full D1 (720x480)<br>PAL CIF (352x288), QCIF (176x144), full D1 (720x576) | NTSC CIF (352x240), QCIF (176x120), full D1 (720x480)<br>PAL CIF (352x288), QCIF (176x144), full D1 (720x576) |
| *Frame rate* | 25 fps at full D1 (PAL) , 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL) , 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL) , 30 fps at full D1 (NTSC) |
| *Image enhancement* | auto white balance, AGC, backlight compensation, auto exposure | auto white balance, AGC, backlight compensation, auto exposure, 2D/3D noise reduction, auto WDR | auto white balance, AGC, backlight compensation, auto exposure, 2D/3D noise reduction, auto WDR, digital image stabilizer |
| *Preset points* | 128 | 128 | 128 |
| **Audio** | | | |
| *Audio input* | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p |
| *Audio output* | one channel, RCA interface, linear output | one channel, RCA interface, linear output | one channel, RCA interface, linear output |
| *Audio compression* | G.726, G.711, ADPCM | G.726, G.711, ADPCM | G.726, G.711, ADPCM |
| **Alarm System Integration** | | | |
| *Alarm input* | one channel on/off input NO/NC | one channel on/off input NO/NC | one channel on/off input NO/NC |
| *Alarm output* | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| *Serial port* | RS485 transparent protocol | RS485 transparent protocol | RS485 transparent protocol |
| *Recording* | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule |
| **Network and Storage** | | | |
| *Ethernet port* | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port |
| *Protocol* | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| *Web browser* | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above |
| *Wireless protocols* | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) |
| *SD storage* | up to 32GB | up to 32GB | up to 32GB |
| **Operating Conditions** | | | |
| *Operating temp.* | -10° C ~ +60° C | -10° C ~ +60° C | -10° C ~ +60° C |
| *Storage temp.* | -20° C ~ +80° C | -20° C ~ +80° C | -20° C ~ +80° C |
| *Operating humidity* | 10% ~ 85% | 10% ~ 85% | 10% ~ 85% |
| **Weight and Dimensions** | | | |
| *Input voltage* | 12 VDC | 12 VDC | 12 VDC |
| *Power consumption* | 15W | 15W | 15W |
| *Dimensions (cm)* | BM-1: 39 x 39.9 x 26.8 ( W x L x H)<br>BM-3: 39 x 13.3 x 26.8 ( W x L x H) | BM-1: 39 x 39.9 x 26.8 ( W x L x H)<br>BM-3: 39 x 13.3 x 26.8 ( W x L x H) | BM-1: 39 x 39.9 x 26.8 ( W x L x H)<br>BM-3: 39 x 13.3 x 26.8 ( W x L x H) |
| *Weight* | BM-1: 8 Kg<br>BM-3: 17 Kg | BM-1: 8 Kg<br>BM-3: 17 Kg | BM-1: 8 Kg<br>BM-3: 17 Kg |

# BM-HD Insert

**m_PAC**

|  | BM-HD12 | BM-HD20 | BM-HD30 |
|---|---|---|---|
| **Lens** | | | |
| *Image sensor* | 1/4-Type CMOS | 1/2.8" Exmor CMOS | 1/2.8" Exmor CMOS |
| *Angle view* | 53.4° (wide end) to 2.9° (tele end) | 55.4° (wide end) to 2.9° (tele end) | 54.1° (wide end) to 2.9° (tele end) |
| *Lens* | 12x optical zoom<br>f=3.7mm wide to 44.4mm tele, f1.6 to f2.5 | 20x optical zoom<br>f=4.7mm wide to 94.0mm tele, f1.6 to f3.5 | 30x optical zoom<br>f=4.6 mm wide to 138.0mm tele, f1.8 to f4.7 |
| *Minimum illumination* | 0.3 lux (f1.6, ICR off) / 0.06 lux (f1.6, ICR on) | 0.5 lux (f1.6, ICR off) / 0.095 lux (f1.6 ICR on) | 0.5 lux (f1.6, ICR off) / 0.095 lux (f1.6, ICR – on) |
| *Digital zoom* | 12x (144x with optical zoom) | 12x (240x with optical zoom) | 12x (360x with optical zoom) |
| *Shutter* | 1/1 s ~ 1/10,000 s, 22 steps | 1/1 s ~ 1/10,000 s, 22 steps | 1/2 s ~ 1/10,000 s, 21 steps |
| *Effective pixels* | 1.43 megapixels | 3 megapixels | 3 megapixels |
| **Video** | | | |
| *Compression* | H.264 / M-JPEG support dual stream/ MPEG4/ ASP/ MxPEG | H.264 / M-JPEG support dual stream/ MPEG4/ ASP/ MxPEG | H.264 / M-JPEG support dual stream/ MPEG4/ ASP/ MxPEG |
| *Bit rate* | 32Kbps to 8Mbps | 32Kbps to 8Mbps | 32Kbps to 8Mbps |
| *Video resolution* | 1920 (H) x 1080 (V) / 1280 (H) x 720 (V) / 720 (H) x 576 (V) / 352 (H) x 288 (V) | 1920 (H) x 1080 (V) / 1280 (H) x 720 (V) / 720 (H) x 480 (V) / 720 (H) x 576 (V) | 1920 (H) x 1080 (V) / 1280 (H) x 720 (V) / 720 (H) x 576 (V) / 352 (H) x 288 (V) |
| *Signal system* | 1080p/29.97, 1080p/25, 1080i/59.94, 1080i/50, 720p/50, 720p/29.97, 720p/25 | 1080p/29.97, 1080p/25, 1080i/59.94, 1080i/50, 720p/50, 720p/29.97, 720p/25 | 1080p/29.97, 1080p/25, 1080i/59.94, 1080i/50, 720p/50, 720p/29.97, 720p/25 |
| *Frame rate* | 25 fps at full D1 (PAL), 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL), 30 fps at full D1 (NTSC) | 25 fps at full D1 (PAL), 30 fps at full D1 (NTSC) |
| *Image enhancement* | auto white balance, AGC, backlight compensation, auto exposure, WDR, tour recording, guard tour, auto track, iris control, on-screen display | auto white balance, AGC, backlight compensation, auto exposure, WDR, tour recording, guard tour, auto track, iris control, on-screen display | auto white balance, AGC, backlight compensation, auto exposure, WDR, tour recording, guard tour, auto track, iris control, on-screen display |
| *Preset points* | 128 | 128 | 128 |
| **Audio** | | | |
| *Audio input* | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p | one channel MIC in or line input unbalanced 1.4 Vp-p |
| *Audio output* | one channel, RCA interface, linear output | one channel, RCA interface, linear output | one channel, RCA interface, linear output |
| *Audio compression* | G.726, G.711, ADPCM | G.726, G.711, ADPCM | G.726, G.711, ADPCM |
| **Alarm System Integration** | | | |
| *Alarm input* | one channel on/off input NO/NC | one channel on/off input NO/NC | one channel on/off input NO/NC |
| *Alarm output* | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| *Serial port* | RS485 transparent protocol | RS485 transparent protocol | RS485 transparent protocol |
| *Recording* | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule | motion trigger, alarm trigger, manual or schedule |
| **Network and Storage** | | | |
| *Ethernet port* | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port | 10/100M Base-t self-adapting Ethernet port |
| *Protocol* | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| *Web browser* | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above |
| *Wireless protocols* | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) | 802.11b/g supports WEP, WPA, WPA2 (optional) |
| *SD storage* | up to 32GB | up to 32GB | up to 32GB |
| **Operating Conditions** | | | |
| *Operating temp.* | -10° C ~ +60° C | -10° C ~ +60° C | -10° C ~ +60° C |
| *Storage temp.* | -20° C ~ +80° C | -20° C ~ +80° C | -20° C ~ +80° C |
| *Operating humidity* | 10% ~ 85% | 10% ~ 85% | 10% ~ 85% |
| **Weight and Dimensions** | | | |
| *Input voltage* | 12 VDC | 12 VDC | 12 VDC |
| *Power consumption* | 15W | 15W | 15W |
| *Dimensions (cm)* | BM-1: 39 x 39.9 x 26.8 ( W x L x H)<br>BM-3: 39 x 13.3 x 26.8  ( W x L x H) | BM-1: 39 x 39.9 x 26.8 ( W x L x H)<br>BM-3: 39 x 13.3 x 26.8  ( W x L x H) | BM-1: 39 x 39.9 x 26.8 ( W x L x H)<br>BM-3: 39 x 13.3 x 26.8  ( W x L x H) |
| *Weight* | BM-1: 8 Kg<br>BM-3: 17 Kg | BM-1: 8 Kg<br>BM-3: 17 Kg | BM-1: 8 Kg<br>BM-3: 17 Kg |

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# BM-UHD Insert

## Lens

| | |
|---|---|
| **Image sensor** | Global Shutter CMOS |
| **Sensor Size** | Super 35 (22.53 x 11.88mm) |
| **Resolution** | 4096x2160 or 3840x2160 (4x full HD) |
| **Dynamic Range** | 12 stops |
| **Minimum illumination** | 0.3 lux |

## Video

| | |
|---|---|
| **Compression** | H.264 / M_JPEG support dual stream/ MPEG4/ ASP/ MxPEG |
| **Bit rate** | 32Kbps to 8Mbps |
| **Video output** | 4x 3G/HD-SDI (4x BNC) |
| **Quad Link Output Formats** | 10-bit 4:4:4 quad link (UHD and 4K:23.98, 24, 25, 29.97, 30)<br>10-bit 4:2:2 or RAW quad link (UHD: 23.98, 24, 25, 29.97, 30, 50, 59.94, 60), (4K: UHD and 4K:23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60) progressive scan |
| **Frame rate** | NTSC / PAL |
| **Image enhancement** | manual and auto white balance, 1-Shot auto, matrix adjustment and saturation correction, backlight compensation, auto exposure, WDR, integrated IR-cut filter and OLPF, iris control, on-screen display |
| **Preset points** | 128 |
| **Sensitivity Adjustment** | ISO control; up to 4x digital gain |

## Audio

| | |
|---|---|
| **Audio input** | one channel MIC in or line input unbalanced 1.4 Vp-p |
| **Audio output** | one channel, RCA interface, linear output |
| **Audio compression** | G.726, G.711, ADPCM |

## Alarm System Integration

| | |
|---|---|
| **Alarm input** | one channel on/off input NO/NC |
| **Alarm output** | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| **Serial port** | RS485 transparent protocol |
| **Recording** | motion trigger, alarm trigger, manual or schedule |

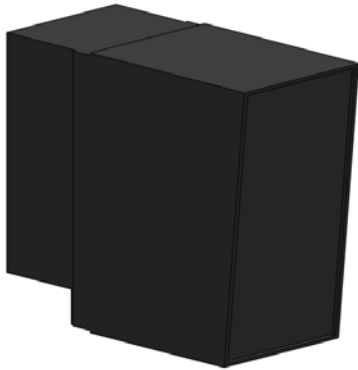## Network and Storage

| | |
|---|---|
| **Ethernet port** | 10/100M Base-t self-adapting Ethernet port |
| **Protocol** | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| **Web browser** | Internet Explorer 9.0 or above |
| **Wireless protocols** | 802.11b/g supports WEP, WPA, WPA2 (optional) |
| **SD storage** | up to 32GB |

## Operating Conditions

| | |
|---|---|
| **Operating temp.** | -10° C ~ +60° C |
| **Storage temp.** | -20° C ~ +80° C |
| **Operating humidity** | 10% ~ 85% |

## Weight and Dimensions

| | |
|---|---|
| **Input voltage** | 12 VDC |
| **Power consumption** | 15W |
| **Dimensions (cm)** | 20 x 14.1 x 26.7 (W x L x H) |
| **Weight** | 5 Kg |
| **Colors** | white, black, camouflage wrape |

# BM-Low Light Insert

**m_PAC**

|  | BUMA-LL | BUMA-EMCCD |
|---|---|---|
| **Core** | | |
| Sensor type | 1/2" Exview HAD CCD II | 1/2" Frame Interline Transfer (FIT) impactron |
| Active pixel | 752 x 582 | 658 x 496 |
| Pixel size | 8.6µm x 8.3µm | 10µm x 10µm |
| Active area | 6.47mm x 6.83mm | 6.58mm x 4.96mm |
| Dynamic range | >60dB | 55dB |
| Spectral response | 350-1100nm | 350-1100nm |
| Minimum illumination | < 1µlux | < 200µlux |
| Resolution | 480 TV lines | 450 TV lines |
| Cooling | active, no fan | active, no fan |
| Antiblooming protection | - | yes (>500:1) |
| Exposure time | - | 500µs to 1/50s (CCIR) or 1/60 (EIA) |
| Frame rate | 25Hz (CCIR), 30Hz (EIA/NTSC) | 25Hz (CCIR), 30Hz (EIA) |
| Readout mode | progressive scan | progressive scan |
| **Alarm System Integration** | | |
| Alarm input | one channel on/off input NO/NC | one channel on/off input NO/NC |
| Alarm output | one channel on/off output 120 VAC 1A / 24 VDC 1A | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| Serial port | RS485 transparent protocol | RS485 transparent protocol |
| Recording | manual or schedule | manual or schedule |
| **Network and Storage** | | |
| Ethernet port | 10/100M Base-t self- adapting Ethernet port | 10/100M Base-t self- adapting Ethernet port |
| Protocol | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| Web browser | Internet Explorer 9.0 or above | Internet Explorer 9.0 or above |
| Wireless protocols | 802.11b/g  supports WEP, WPA, WPA2 (optional) | 802.11b/g  supports WEP, WPA, WPA2 (optional) |
| **Operating Conditions** | | |
| Operating temp. | -10° C ~ +60° C | -10° C ~ +60° C |
| Storage temp. | -20° C ~ +80° C | -20° C ~ +80° C |
| Operating humidity | 10% ~ 85% | 10% ~ 85% |
| **Weight and Dimensions** | | |
| Input voltage | 12 VDC | 12 VDC |
| Power consumption | 14W | 15W |
| Dimensions (cm) | BM-1: 39 x 39.9 x 26.8 ( W x L x H)<br>BM-3: 39 x 13.3 x 26.8  ( W x L x H) | BM-1: 39 x 39.9 x 26.8 ( W x L x H)<br>BM-3: 39 x 13.3 x 26.8  ( W x L x H) |
| Weight | BM-1: 8 Kg<br>BM-3: 17 Kg | BM-1: 8 Kg<br>BM-3: 17 Kg |
| Colors | white, black, camouflage wrape | white, black, camouflage wrape |

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# BM-Thermal Insert

## Core

| | |
|---|---|
| *Sensor Type* | Uncooled |
| *Material* | Polysilicon |
| *Thermal response time* | 7ms |
| *Resolution* | 384×288 |
| *Pixel size* | 35um×35um |
| *Spectral range* | 8~14um |
| *Fill factor* | >80% |
| *Brightness, Gain Control* | Auto / Manual |
| *NETD* | <100mk@30° C |
| *Start-up time* | ≤25s (25° C normal operating) |

## Alarm System Integration

| | |
|---|---|
| *Alarm input* | one channel on/off input NO/NC |
| *Alarm output* | one channel on/off output 120 VAC 1A / 24 VDC 1A |
| *Serial port* | RS485 transparent protocol |
| *Recording* | manual or schedule |

## Network and Storage

| | |
|---|---|
| *Ethernet port* | 10/100M Base-t self-adapting Ethernet port |
| *Protocol* | TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP |
| *Web browser* | Internet Explorer 9.0 or above |
| *Wireless protocols* | 802.11b/g  supports WEP, WPA, WPA2 (optional) |

## Operating Conditions

| | |
|---|---|
| *Operating temperature* | -10° C ~ +60° C |
| *Storage temperature* | -20° C ~ +80° C |
| *Operating humidity* | 10% ~ 85% |

## Weight and Dimensions

| | |
|---|---|
| *Input voltage* | 12 VDC |
| *Power consumption* | 4.5W |
| *Dimensions (cm)* | BM-1: 39 x 39.9 x 26.8 ( W x L x H)<br>BM-3: 39 x 13.3 x 26.8  ( W x L x H) |
| *Weight* | BM-1: 8 Kg<br>BM-3: 17 Kg |

# BM-Additional Inserts



## Insert Features



| Audio / Alarm Broadcast | Short Range Night Vision | Long Range Night Vision | Area Illuminator |

## Compatibile Housing and Mounts



BM Housing

## Description

To be used alone or in conjunction with the BUMA Modular Camera Inserts, we offer several other insert options for both the single and triple frame housings. To further enhance nighttime surveillance capabilities, we offer IR and laser illuminator modules. For low-light applications, power to the IR and illuminator modules is activated by a built-in light sensor. They are optimally paired with our standard camera core modules for a complete visual surveillance solution.

A speaker module provides a way to remotely deliver announcements to the surveillance field. This module can also be used to provide sirens, alerts or signals to notify bystanders of impending threats or dangers. The speaker has an efficient, compact design, yet offers premium sound quality with heat-resistant capabilities. This ensures continued operations and message delivery through volatile, high-heat environments.

Another valuable insert option for the BUMA Modular is a spotlight for ground illumination. We offer a spotlight module that can be activated when ground or area illumination is needed. The compact light features highly efficient LED lights that provide up to 900 lumens at over 90 lumens/watt, with a 120-degree beam pattern.

## Materials and Finish



| Mixed Media | Camouflage | Housing Color | Glass Color |

## Certifications



| ONVIF | CE Certified | FCC Certified | IP Rating |

IK Rating

# BM-Additional Inserts

## Audio Broadcast

*Volume:* 43.9 dBM
*Effective range:* 1 Km minimum
*Power:* 12 VDC
*Power handling:* 25 Watt
*Output:* voice, Siren.

## Short Range Night Vision

*Wavelength:* 850nm
*Horizontal field-of-view:* 45 degrees
*Vertical field-of-view:* 45 degrees
*Distance:* up to 100 m

## Long Range Night Vision

*Rang:* 3.2 Km Min
*Wavelength:* 830 nm
*Output Power (max.):* 600 mW
*Illuminator Divergence:* 4°
*Laser Class:* 1 EyeSafe
*Environmental Rating:* IP-67 (waterproof)
*Working Ranges:* Human detection 1500m,  Vehicle detection 3000m

## Area Illumination

*Power source:* 12 VDC
*Body colour:* black
*Power consumption:* 20w
*Lumens output:* 1200lm
*Beam angle:* 120 degrees
*Light colour:* 4500k

# Camera Series Summary

| Camera Features | Model 1 | Model 3 | Model 5 | Model 7 | Model 9 | BUMA | BH | BM |
|---|---|---|---|---|---|---|---|---|
| SD / HD Camera | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| Ultra High Definition Camera | | | | | | ☑ | ☑ | ☑ |
| EMCCD Camera | | | | | | ☑ | ☑ | |
| Thermal Imaging Camera | | | | | | | | ☑ |
| 2D/3D Noise Reduction | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| Day & Night Function | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| Image Stabilization | | | | | | ☑ | ☑ | ☑ |
| Digital Image Stabilizer | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| Frame Rate | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| Illumination Sensitivity | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| Image Format | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| Wide Dynamic Range | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| External Optics Compatible | | | ☑ | | | | | ☑ |
| Lightweight | | | | | | | | ☑ |
| Panorama | | | | | | | | |
| Continuous 360° Pan | | | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| Pan / Tilt / Zoom Capability | | | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| Integrated Optical Fiber | | | | | | ☑ | ☑ | ☑ |
| Dual Decoder | | | | | | | ☑ | |

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# Camera Series Summary

**m_PAC**

| Camera Features | Model 1 | Model 3 | Model 5 | Model 7 | Model 9 | BUMA | BH | BM |
|---|---|---|---|---|---|---|---|---|
| Dual Output | ■ | ■ | | | | | ■ | |
| WiFi Connectivity | | ■ | | | | | ■ | |
| Wifi Hotspot | | | | | | | ■ | |
| IP Output | | | ■ | ■ | ■ | ■ | ■ | ■ |
| POE Connection | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Internal Battery | | | | | | | ■ | |
| 512 GB Local Storage | | | | | | | ■ | |
| Local Storage | ■ | | ■ | ■ | ■ | ■ | ■ | ■ |
| Server and Networking | | | | | | ■ | ■ | ■ |
| Two-Way Audio | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Audio / Alarm Broadcast | | | | | | | | ■ |
| Short Range Night Vision | | | | | | | | ■ |
| Long Range Night Vision | | | | | | | | ■ |
| Thermal Night Vision | | | | | | | | ■ |
| Area Illuminator | | | | | | | | ■ |
| Future Proof | | | | | | | | ■ |
| Plug and Play | | | | | | | | ■ |
| Customizable Height | | | | | | ■ | ■ | ■ |
| Ruggedized | | | ■ | | ■ | | ■ | |

# Camera Series Summary

| Camera Features | Model 1 | Model 3 | Model 5 | Model 7 | Model 9 | BUMA | BH | BM |
|---|---|---|---|---|---|---|---|---|
| Modular Freedom | | | | | | ■ | ■ | ■ |
| Quick Install | | | | | | | | ■ |
| Off Grid Compatible | | | | | | ■ | ■ | ■ |
| Renewable Energy | | | | | | ■ | ■ | ■ |

| Housing and Mounts | Model 1 | Model 3 | Model 5 | Model 7 | Model 9 | BUMA | BH | BM |
|---|---|---|---|---|---|---|---|---|
| Smart Perimeter System | | | | | | ■ | ■ | ■ |
| External Vehicle Mount | | | | | | ■ | ■ | ■ |
| In-Vehicle Mount | ■ | ■ | | | | | | |
| Maritime | | | ■ | | ■ | ■ | ■ | ■ |
| Indoor Mount | ■ | ■ | ■ | ■ | ■ | | | |
| Outdoor Mount | | | ■ | ■ | ■ | ■ | ■ | ■ |
| Wall Mount | ■ | | ■ | ■ | ■ | ■ | ■ | ■ |
| Ceiling Mount | | ■ | | | ■ | | | |
| In-Ceiling Mount | | | | ■ | | | | |
| BM Housing | | | | | | | | ■ |
| Portable | | | | | | ■ | ■ | ■ |
| IP 67 External Fixed Housing | | | ■ | | | | | |
| IP 67 External PT Housing | | | ■ | | | ■ | ■ | ■ |
| Ballistic Resistant | | | | | | | ■ | |

# Camera Series Summary

| Housing and Mounts | Model 1 | Model 3 | Model 5 | Model 7 | Model 9 | BUMA | BH | BM |
|---|---|---|---|---|---|---|---|---|
| Pole Height Extension | | | | | | ■ | ■ | ■ |
| High Speed PTZ | | | ■ | | ■ | ■ | ■ | ■ |

| Materials and Finish | Model 1 | Model 3 | Model 5 | Model 7 | Model 9 | BUMA | BH | BM |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | ■ | | ■ | ■ | ■ | ■ | |
| Carbon Fiber | | | | | | ■ | ■ | ■ |
| Mixed Media | ■ | | ■ | | | | | ■ |
| Corrosion Resistant Materials | | | ■ | | ■ | ■ | ■ | ■ |
| Camouflage | | | | | | ■ | ■ | ■ |
| Housing Color | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| Glass Color | | ■ | | ■ | ■ | ■ | ■ | ■ |

| Certifications | Model 1 | Model 3 | Model 5 | Model 7 | Model 9 | BUMA | BH | BM |
|---|---|---|---|---|---|---|---|---|
| ONVIF | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| CE | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| FCC | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| UL | | | | | | ■ | ■ | ■ |
| WiFi Certified | | ■ | | | | ■ | ■ | ■ |
| IP Rating | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| IK 10 | | | ■ | | ■ | ■ | ■ | ■ |