

# Basler IP Cameras

## Network Cameras Overview



- Premium Image Quality
- CCD and CMOS Sensors
- VGA to 5 Megapixels
- Multi-Streaming and Multi-Encoding
- MJPEG, MPEG-4, H.264

### Basler IP Fixed Box Cameras

#### Small and versatile

Basler IP Fixed Box Cameras for security applications come in a wide range of resolutions from VGA to 5 megapixels. They are equipped with a CS-mount with DC iris drive as a standard feature, so you can choose from a wide range of camera lenses and integrate the most suitable one for your security needs.



An ultra-compact, all-metal housing with a 109.7 mm x 29 mm x 44 mm size and a weight of only 210 grams makes these the smallest IP cameras in their class. These characteristics contribute to their flexibility and ease of installation.



All components used in Basler IP Cameras are specifically selected to form a high quality, "made in Germany" product.

Please contact us for information about accessories available for Basler IP Fixed Box Cameras. We offer a wide variety of lenses and outdoor housings.

### Basler IP Fixed Dome Cameras

#### Tough and flexible

Basler IP Fixed Dome Cameras are equipped either with a lightweight indoor housing or with a vandal-resistant aluminum housing, allowing video surveillance applications outdoors and under tough indoor conditions. With their built-in heater and fan, Basler Dome Cameras work at extreme operating temperatures from -40 °C to +50 °C (-40 °F to +122 °F).



Basler IP Fixed Dome Cameras are especially energy efficient. All camera functions, including the fan and heater, can be powered using standard PoE (Power over Ethernet IEEE 802.3af Class 0). Basler IP Fixed Dome Cameras are equipped with an audio function and a built-in microSDHC card slot that can be used for local file storage.

Basler Dome Cameras can be easily mounted to a wall or a ceiling, and an internal three-axis camera bracket allows complete flexibility when aiming the camera. For optimal mounting, our accessories portfolio includes a suspended ceiling kit and a wall bracket kit.



## Specifications

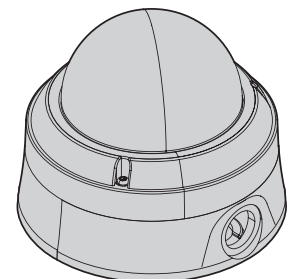
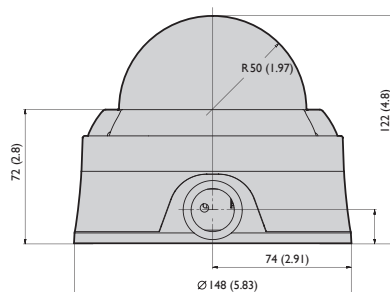
### CMOS Sensor Cameras



	BIP2-D1920c-dn (Indoor) / BIP2-D1920c-dn (Indoor,AF)	BIP2-D1920c-dn (Outdoor) / BIP2-D1920c-dn (Outdoor,AF)
Image Sensor	Progressive Scan CMOS	
Effective Pixels	1920 (H) x 1440 (V)	
Frame Rate (max.)	MJPEG	MPEG-4
Full Resolution:	20 fps	20 fps
Full HD (1920 x 1080):	30 fps	30 fps
Pixel Size	2.2 μm x 2.2 μm	
Minimum Illumination	Color: 0.88 lux (F1.3/33ms), Day/Night: 0.15 lux (F1.3/33ms)	
Lens	Varifocal 2.8-10 mm, F1.3, DC iris, horizontal angle of view 25°-88°, removable IR-cut filter for day/night function	
Camera Angle Adjustment	Pan: 360°, tilt: 120°, rotation: ±180°	
Image Settings	Automatic gain, exposure area, backlight compensation, white balance, 180° image rotation, mirroring of images, anti-flicker; electronic PTZ via AOI (API), text overlay, privacy masks, motion detection, optional: auto focus	
Resolution	From 160 x 120 to 1920 x 1440 (free scaling), 4:3, 16:9, multiple Areas of Interest (AOIs)	
Video Compression	Motion JPEG: Multiple compression levels MPEG-4: SP (Level 3) H.264 (MPEG-4 AVC): Baseline and high profile (levels up to 5.0)	
Video Streaming	Dual streaming for MJPEG, H.264, or MPEG-4, VBR and CBR for MJPEG and MPEG-4 VBR, CBR, and CVBR for H.264, multicast and unicast	
Audio	Bidirectional half-duplex audio streaming; mic-in/line-in, line-out; G.711	
Alarm Management	Ring buffer for pre and post alarm images, microSDHC card slot for local storage Events triggered by motion detection or external input, image upload over FTP, e-mail, or HTTP	
Protocols	TCP/IP, HTTP, UDP, FTP, ICMP, ARP, DHCP, NTP, RTP, RTSP, RTCP, SMTP, IGMP, ZEROCONF, QoS Layer 3	
Processor/Memory	Multimedia Video Processor; FPGA, 256 MB RAM, 64 MB Flash	
Power	PoE (Power over Ethernet IEEE 802.3af Class 2) Power consumption typ. 5.5 W at 12 VDC	PoE (Power over Ethernet IEEE 802.3af Class 0) or 12 to 24VDC Power consumption typ. 5.5 W at 12 VDC (excl. heater)
Connectors	RJ-45 connector for 10/100 BASE-T Ethernet, full or half duplex Push-in terminal for digital I/O and RS-485/422	RJ-45 connector for 10/100 BASE-T Ethernet, full or half duplex Push-in terminal for DC power, digital I/O, and RS-485/422
Operating Conditions	-10 °C to 50 °C (14 °F to 122 °F) <90% relative humidity (non-condensing)	-40 °C to 50 °C (-40 °F to 122 °F) <90% relative humidity (non-condensing)
Standards	DIN EN 50130-4, FCC Class A, CE, RoHS	
Housing	Ø 148 mm x 122 mm (Ø 5.83" x 4.8") plastic chassis with polycarbonate dome bubble	Ø 148 mm x 122 mm (Ø 5.83" x 4.8") vandal-proof aluminum chassis with polycarbonate dome bubble, IP66
Weight	~0.6 kg	~1.0 kg

Specifications are subject to change without prior notice.

## Dimensions in mm (inch)



Outdoor housing (Indoor housing differs slightly)

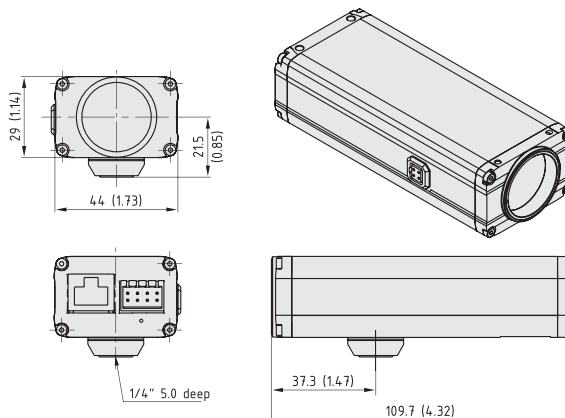
## Specifications CCD Sensor Cameras



	BIP2-640c/BIP2-640c-dn	BIP2-1000c/BIP2-1000c-dn
Image Sensor	Progressive Scan CCD	Progressive Scan CCD
Effective Pixels	640 (H) × 480 (V)	1024 (H) × 768 (V)
Eff. Optical Format	1/4"	1/3"
Frame Rate (max.)	MJPEG                  MPEG-4                  H.264	MJPEG                  MPEG-4                  H.264
Full Resolution:	60 fps                      60 fps                      100 fps	30 fps                      30 fps                      30 fps
Pixel Size	5.6 μm × 5.6 μm	4.65 μm × 4.65 μm
Day/Night	Removable IR-Cut Filter (BIP2-640c-dn)	Removable IR-Cut Filter (BIP2-1000c-dn)
Minimum Illumination	Color: 0.1 lux (F1.0/33ms), Day/Night: 0.03 lux (F1.0/33ms)	Color: 0.38 lux (F1.4/33ms), Day/Night: 0.10 lux (F1.0/33ms)
Lens	CS-mount, DC iris drive (lens not included)	
Image Settings	Automatic gain, exposure area, backlight compensation, white balance, 180° image rotation, mirroring of images, anti-flicker, electronic PTZ via AOI (API), text overlay, privacy masks, motion detection	
Resolution	From 160 × 120 to 640 × 480 (free scaling), 4:3, 16:9, multiple Areas of Interest (AOIs)	From 160 × 120 to 1024 × 768 (free scaling), 4:3, 16:9, multiple Areas of Interest (AOIs)
Video Compression	Motion JPEG: Multiple compression levels MPEG-4: SP (Level 3) H.264 (MPEG-4 AVC): Baseline and high profile (levels up to 5.0)	
Video Streaming	Multi-encoding and multi-streaming for MJPEG, H.264, and MPEG-4 VBR and CBR for MJPEG and MPEG-4, VBR, CBR, and CVBR for H.264, multicast and unicast	
Alarm Management	Ring buffer for pre and post alarm images Events triggered by motion detection or external input (real-time trigger) Image upload over FTP, e-mail, or HTTP	
Protocols	TCP/IP, HTTP, UDP, FTP, ICMP, ARP, DHCP, NTP, RTP, RTSP, RTCP, SMTP, IGMP, ZEROCONF, QoS Layer 3	
Processor/Memory	Multimedia Video Processor, FPGA, 256 MB RAM, 64 MB Flash	
Power	PoE (Power over Ethernet IEEE 802.3af Class 2) or 12 to 24VDC, power consumption typ. 3.3 W at 12VDC	PoE (Power over Ethernet IEEE 802.3af Class 2) or 12 to 24VDC, power consumption typ. 3 W at 12VDC
Connectors	RJ-45 connector for 10/100 BASE-T Ethernet, full or half duplex 8-pin terminal for DC power, digital I/O, and RS-485	
Operating Conditions	0 °C to 50 °C (32 °F to 122 °F), <90% relative humidity (non-condensing)	
Standards	DIN EN 50130-4, FCC Class A, CE, RoHS	DIN EN 50130-4, FCC Class B, CE, RoHS
Housing	109.7 mm × 29 mm × 44 mm (full metal casing)	
Weight	~210 g	

Specifications are subject to change without prior notice.

## Dimensions in mm (inch)



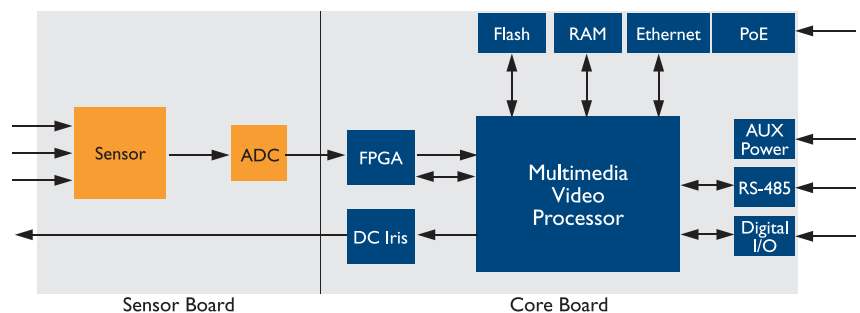
## Specifications CCD Sensor Cameras



	BIP2-1300c/BIP2-1300c-dn	BIP2-1600c/BIP2-1600c-dn
Image Sensor	Progressive Scan CCD	Progressive Scan CCD
Effective Pixels	1280 (H) x 960 (V)	1600 (H) x 1200 (V)
Eff. Optical Format	1/3"	1/1.8"
Frame Rate (max.)	MJPEG          MPEG-4          H.264	MJPEG          MPEG-4          H.264
Full Resolution:	30 fps          30 fps          30 fps	12.5 fps      12.5 fps      12.5 fps 25 fps      25 fps      25 fps (BIP2-1600-25c/-dn)
Pixel Size	3.75 μm x 3.75 μm	4.4 μm x 4.4 μm
Day/Night	Removable IR-Cut Filter (BIP2-1300c-dn)	Removable IR-Cut Filter (BIP2-1600c-dn)
Minimum Illumination	Color: 0.34 lux (F1.2/33ms), Day/Night: 0.09 lux (F1.2/33ms)	Color: 0.4 lux (F1.4/33ms), Day/Night: 0.11 lux (F1.4/33ms)
Lens	CS-mount, DC iris drive (lens not included)	
Image Settings	Automatic gain, exposure area, backlight compensation, white balance, 180° image rotation, mirroring of images, anti-flicker; electronic PTZ via AOI (API), text overlay, privacy masks, motion detection	
Resolution	From 160 x 120 to 1280 x 960 (free scaling), 4:3, 16:9, multiple Areas of Interest (AOIs)	From 160 x 120 to 1600 x 1200 (free scaling), 4:3, 16:9, multiple Areas of Interest (AOIs)
Video Compression	Motion JPEG: Multiple compression levels MPEG-4: SP (Level 3) H.264 (MPEG-4 AVC): Baseline and high profile (levels up to 5.0)	
Video Streaming	Multi-encoding and multi-streaming for MJPEG, H.264, and MPEG-4 VBR and CBR for MJPEG and MPEG-4, VBR, CBR, and CVBR for H.264, multicast and unicast	
Alarm Management	Ring buffer for pre and post alarm images Events triggered by motion detection or external input (real-time trigger) Image upload over FTP, e-mail, or HTTP	
Protocols	TCP/IP, HTTP, UDP, FTP, ICMP, ARP, DHCP, NTP, RTP, RTSP, RTCP, SMTP, IGMP, ZEROCONF, QoS Layer 3	
Processor/Memory	Multimedia Video Processor, FPGA, 256 MB RAM, 64 MB Flash	
Power	PoE (Power over Ethernet IEEE 802.3af Class 2) or 12 to 24VDC, power consumption typ. 3.5 W max. at 12VDC	PoE (Power over Ethernet IEEE 802.3af Class 2) or 12 to 24 VDC, power consumption typ. 3.4W/4.6W (BIP2-1600-25c/-dn) at 12VDC
Connectors	RJ-45 connector for 10/100 BASE-T Ethernet, full or half duplex 8-pin terminal for DC power; digital I/O, and RS-485	
Operating Conditions	BIP2-1300c/-dn, BIP2-1600c/-dn: 0 °C to 50 °C (32 °F to 122 °F), <90% relative humidity (non-condensing) BIP2-1600-25c/-dn: 0 °C to 45 °C (32 °F to 113 °F), <90% relative humidity (non-condensing)	
Standards	DIN EN 50130-4, FCC Class A (BIP2-1600-25c/-dn), FCC Class B (BIP2-1300c/-dn, BIP2-1600c/-dn), CE, RoHS	
Housing	109.7 mm x 29 mm x 44 mm (full metal casing)	
Weight	~210 g	

Specifications are subject to change without prior notice.

## Architecture



## Specifications

### CMOS Sensor Cameras



	BIP2-1280c / BIP2-1280c-dn	BIP2-1920c / BIP2-1920c-dn	BIP2-2500c / BIP2-2500c-dn
Image Sensor	Progressive Scan CMOS		
Effective Pixels	1280 (H) x 720 (V)	1920 (H) x 1080 (V)	2560 (H) x 1920 (V)
Eff. Optical Format	1/3"		
Frame Rate (max.)	MJPEG    MPEG-4    H.264	MJPEG    MPEG-4    H.264	MJPEG    MPEG-4    H.264
Full Resolution:	30 fps    30 fps    30 fps	30 fps    30 fps    30 fps	9 fps    9 fps    9 fps 15 fps    15 fps    15 fps (3MP)
Pixel Size	3.3 μm x 3.3 μm		
Day/Night	Removable IR-Cut Filter (BIP2-1280c-dn)		
Minimum Illumination	Color: 0.55 lux (F1.2/33ms), Day/Night: 0.13 lux (F1.2/33ms)	Color: 0.65 lux (F1.2/33ms), Day/Night: 0.15 lux (F1.2/33ms)	Color: 0.65 lux (F1.2/33ms), Day/Night: 0.15 lux (F1.2/33ms)
Lens	CS-mount, DC iris drive (lens not included)		
Image Settings	Automatic gain, exposure area, backlight compensation, white balance, 180° image rotation, mirroring of images, anti-flicker, electronic PTZ via AOI (API), text overlay, privacy masks, motion detection		
Resolution	From 160 x 120 to 1280 x 720 (free scaling), 4:3, 16:9, multiple Areas of Interest (AOIs)	From 160 x 120 to 1920 x 1080 (free scaling), 4:3, 16:9, multiple Areas of Interest (AOIs)	From 160 x 120 to 2560 x 1920 (free scaling), 4:3, 16:9, multiple Areas of Interest (AOIs)
Video Compression	Motion JPEG: Multiple compression levels MPEG-4: SP (Level 3) H.264 (MPEG-4 AVC): Baseline and high profile (levels up to 5.0)		
Video Streaming	Multi-encoding and multi-streaming for MJPEG, H.264, and MPEG-4;VBR and CBR for MJPEG and MPEG-4;VBR, CBR, and CVBR for H.264, multicast and unicast	Dual streaming for MJPEG, H.264, or MPEG-4;VBR and CBR for MJPEG and MPEG-4;VBR, CBR, and CVBR for H.264, multicast and unicast	
Alarm Management	Ring buffer for pre and post alarm images Events triggered by motion detection or external input Image upload over FTP, e-mail, or HTTP		
Protocols	TCP/IP, HTTP, UDP, FTP, ICMP, ARP, DHCP, NTP, RTP, RTSP, RTCP, SMTP, IGMP, ZEROCONF, QoS Layer 3		
Processor/Memory	Multimedia Video Processor; FPGA, 256 MB RAM, 64 MB Flash		
Power	PoE (Power over Ethernet IEEE 802.3af Class 2) or 12 to 24VDC, power consumption typ. 3.2 W at 12VDC		
Connectors	RJ-45 connector for 10/100 BASE-T Ethernet, full or half duplex 8-pin terminal for DC power, digital I/O, and RS-485		
Operating Conditions	0 °C to 50 °C (32 °F to 122 °F), <90% relative humidity (non-condensing)		
Standards	DIN EN 50130-4, FCC Class B, CE, RoHS		
Housing	109.7 mm x 29 mm x 44 mm (full metal casing)		
Weight	~210 g		

Specifications are subject to change without prior notice.

## Specifications

### CCD Sensor Cameras



	BIP2-D 1000c-dn	BIP2-D 1300c-dn
Image Sensor	Progressive Scan CCD	Progressive Scan CCD
Effective Pixels	1024 (H) x 768 (V)	1280 (H) x 960 (V)
Frame Rate (max.)	MJPEG      MPEG-4      H.264	MJPEG      MPEG-4      H.264
Full Resolution:	30 fps      30 fps      30 fps	30 fps      30 fps      30 fps
Pixel Size	4.65 μm x 4.65 μm	3.75 μm x 3.75 μm
Minimum Illumination	Color: 0.53 lux (F1.3/33ms), Day/Night: 0.14 lux (F1.3/33ms)	Color: 0.42 lux (F1.3/33ms), Day/Night: 0.10 lux (F1.3/33ms)
Lens	Varifocal 2.8-10 mm, F1.3, DC iris, horizontal angle of view 28°-100°, removable IR-cut filter for day/night function	
Camera Angle Adjustment	Pan: 360°, tilt: 120°, rotation: ±180°	
Image Settings	Automatic gain, exposure area, backlight compensation, white balance, 180° image rotation, mirroring of images, anti-flicker; electronic PTZ via AOI (API), text overlay, privacy masks, motion detection	
Resolution	From 160 x 120 to 1024 x 768 (free scaling), 4:3, 16:9, multiple Areas of Interest (AOIs)	From 160 x 120 to 1280 x 960 (free scaling), 4:3, 16:9, multiple Areas of Interest (AOIs)
Video Compression	Motion JPEG: Multiple compression levels MPEG-4: SP (Level 3) H.264 (MPEG-4 AVC): Baseline and high profile (levels up to 5.0)	
Video Streaming	Multi-encoding and multi-streaming for MJPEG, H.264, and MPEG-4 VBR and CBR for MJPEG and MPEG-4, VBR, CBR, and CVBR for H.264, multicast and unicast	
Audio	Bidirectional half-duplex audio streaming: mic-in/line-in, line-out; G.711	
Alarm Management	Ring buffer for pre and post alarm images, microSDHC card slot for local storage Events triggered by motion detection or external input (real-time trigger) Image upload over FTP, e-mail, or HTTP	
Protocols	TCP/IP, HTTP, UDP, FTP, ICMP, ARP, DHCP, NTP, RTP, RTSP, RTCP, SMTP, IGMP, ZEROCONF, QoS Layer 3	
Processor/Memory	Multimedia Video Processor, FPGA, 256 MB RAM, 64 MB Flash	
Power	PoE (Power over Ethernet IEEE 802.3af Class 0) or 12 to 24VDC, power consumption typ. 5.5 W at 12VDC (excl. heater)	
Connectors	RJ-45 connector for 10/100 BASE-T Ethernet, full or half duplex Push-in terminal for DC power, digital I/O and RS-485/422	
Operating Conditions	-40 °C to 50 °C (-40 °F to 122 °F), <90% relative humidity (non-condensing)	
Standards	DIN EN 50130-4, FCC Class A, CE, RoHS	DIN EN 50130-4, FCC Class B, CE, RoHS
Housing	Ø148 mm x 122 mm (Ø5.83" x 4.8") vandal-proof aluminum chassis with polycarbonate dome bubble, IP66	
Weight	~1.0 kg	

Specifications are subject to change without prior notice.

### Multi-Streaming & Multi-Encoding



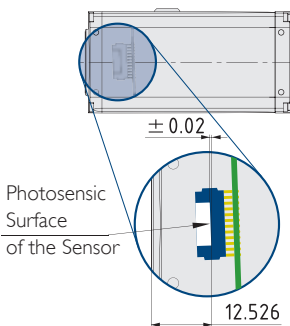


## What Makes Basler Camera Quality So Special?

To ensure consistently high product quality, we employ several inspection procedures during manufacturing. The following list indicates three of the most important quality assurance tools we use to meet your highest requirements.

### Camera Sensor Alignment Tool (CSAT):

Due to higher resolutions and smaller pixels, depth of focus and the exact positioning of the imaging sensor in the camera are becoming more and more critical. An area scan sensor must be aligned in six degrees of freedom.



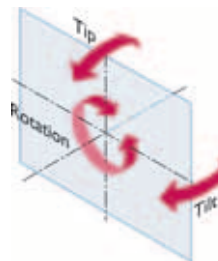
The back focal length on the camera is carefully measured and adjusted by our unique "CSAT" procedure. This guarantees an optimum distance between the lens flange and the sensor and ensures outstanding image quality based on compliance with optics standards.

### Temperature Test

As a final check, each camera passes a stress test. Cameras are tested over the entire temperature range specified in our documentation. By doing this, we can identify and remove temperature sensitive weak spots in the camera. This guarantees consistent image quality in conditions with quickly changing temperatures.

### Camera Test Tool (CTT+)

Our advanced Camera Test Tool (CTT+), the first fully automated inspection system for digital cameras, checks all of the significant quality aspects of each camera we produce. The CTT+ is a unique combination of optics, hardware, and software that can be quickly and efficiently used to calibrate a camera and to measure its performance against a set of standards. For defined sets of conditions, an automated software program examines the camera's output, makes any calibration adjustments necessary, and compares the output to a strictly defined set of performance criteria.



Basler customers get a 100% tested camera, all of the benefits that go along with 100% testing, and a much higher level of satisfaction. This is a definite win-win situation.

### RoHS Compliance

The Basler IP Camera series is RoHS compliant. This is especially important in applications where the end user requires strict RoHS compliance in all system components.



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