

BC820 Series

HD box camera with Day/Night, H.264

Installation Manual



Note: To ensure proper operation, please read this manual thoroughly before using the product and retain the information for future reference.

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BC820

Installation Manual v3 (120811-3)

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How to contact us

If you have any comments or queries concerning any aspect related to the product, do not hesitate to contact:

Siquira B.V.

Zuidelijk Halfroond 4

2801 DD Gouda

The Netherlands

General : +31 182 592 333

Fax : +31 182 592 123

E-mail : sales.nl@tkhsecurity.com

WWW : www.siquira.com

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1 Introduction

Document scope

This manual applies to the BC820 series, Siqura's high-definition IP box cameras. It describes how to install BC820 cameras. For instructions on how to operate and configure a BC820, see the user manual of the specific model.

Intended audience

This manual is intended for technicians and operators involved in the installation of BC820 cameras.

Assumed skills and know-how

To work with the BC820 camera, an installer or technician must have adequate knowledge and skills in the following fields.

- Ethernet network technologies and Internet Protocol (IP)
- Windows environments
- Web browsers
- Video, audio, data, and contact closure transmissions
- Video compression methods

Specifications

The information given in this manual was current when published. Siqura reserves the right to revise and improve its products. All specifications are subject to change without notice.

Important information

Before proceeding, please read and observe all instructions and warnings in this manual. Retain this manual with the original bill of sale for future reference and, if necessary, warranty service. When unpacking your product, check for missing or damaged items. If any item is missing, or if damage is evident, *do not install or operate this product*. Contact your supplier for assistance.

We like to hear from you!

At Siqura, customer satisfaction is our first priority. We welcome and value your opinion about our products and services. Should you detect errors or inaccuracies in this manual, we would be grateful if you would inform us. We invite you to offer your suggestions and comments by email via t.writing@tkhsecurity.com. Your feedback will help us to further improve our documentation.

2 Safety and compliance

This chapter provides cautions on what to do and what not to do when working with or handling your BC820 unit. It also offers information on product compliance with environmental regulations and explains how to dispose of the product at the end of its service life.

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2.1 Safety

The safety information contained in this section, and on other pages of this manual, must be observed whenever this unit is operated, serviced, or repaired. Failure to comply with any precaution, warning, or instruction noted in the manual is in violation of the standards of design, manufacture, and intended use of the module. Siqura assumes no liability for the customer's failure to comply with any of these safety requirements.

Make sure that camera installation is performed by a specialist

Only qualified service personnel or system installers should install and connect this product.

Handle the camera carefully

Do not abuse the camera. Avoid bumping and shaking. The camera can be damaged by improper handling or storage.

Do not disassemble the camera

To prevent electric shock, do not remove screws or covers. There are no user serviceable parts inside. Consult technical support if a camera is suspected of malfunctioning.

Do not exceed the ratings given in the Technical Specifications

Verify that the power source is appropriate before you plug in and operate the unit. Use the camera under conditions where the temperature remains within the range given in the Technical Specifications of this product.

Prevent exposure to optical radiation (units with SFP interface)

Warning: Optical equipment presents potential hazards to testing and servicing personnel, owing to high levels of optical radiation.

When using magnifying optical instruments, avoid looking directly into the output of an operating transmitter or into the end of a fiber connected to an operating transmitter, or there will be a risk of permanent eye damage. Precautions should be taken to prevent exposure to optical radiation when the unit is removed from its enclosure or when the fiber is disconnected from the unit. The optical radiation is invisible to the eye.

Use of controls or adjustments or procedures other than those specified herein may result in hazardous radiation exposure.

Never face the camera towards the sun

Do not aim the camera at bright objects. Whether the camera is in use or not, never aim it at the sun or other extremely bright objects, as this can damage the camera.




Do not expose indoor models to moisture

The indoor dome camera is designed for indoor use or use in locations where it is protected from rain and moisture. Turn the power off immediately if the camera is wet and ask a qualified technician for servicing. Moisture can damage the camera and also create the danger of electric shock.

Do not use strong or abrasive detergents to clean the camera

Use a dry cloth to clean the camera when it is dirty. If the dirt is hard to remove, use a mild detergent and wipe gently. To clean the lens, use lens tissue or a cotton tipped applicator and ethanol. Do *not* clean the lens with strong detergents.

2.2 Compliance

	<p>This device complies with Part 15 of the FCC Rules.</p> <p>Operation is subject to the following conditions.</p> <ul style="list-style-type: none"> • This device may not cause harmful interference. • This device must accept any interference received, including interference that may cause undesired operation.
	<p>This symbol on the product or on its packaging indicates that this product shall not be treated as household waste in accordance with Directive 2002/96/EC. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By proper waste handling of this product you ensure that it has no negative consequences for the environment and human health, which could otherwise be caused if this product is thrown into the garbage bin. The recycling of materials will help to conserve natural resources.</p> <p>For more information on how to recycle this product, please contact your local city office, your household waste disposal service or the seller of the product.</p>
	<p>Compliance is evidenced by written declaration from our suppliers, assuring that any potential trace contamination levels of restricted substances are below the maximum level set by EU Directive 2002/95/EC, or are exempted due to their application.</p>

3 Product overview

The Siqura BC820 is a full-featured IP camera providing high-quality high-definition images. This chapter introduces the models and their features.

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3.1 Common features

The BC820 camera offers a solution for both indoor and outdoor applications. Via its built-in webpages, users can configure the camera's live video stream and an extensive range of parameters specific to the camera. As a part of the Siqura collection, the BC820 cameras can be easily integrated with nearly all Siqura software and hardware solutions, including video codecs/servers, IP and analog cameras, video management and configuration software, and network storage devices.

BC820 series cameras share the following features.

- Quad stream H.264 (1080p/D1)
- Frame rate setting from 1-30 fps NTSC mode / 1-25 fps PAL mode
- Bit rate settings from 1-8192
- Siqura Programming Interface (HTTP API) support
- HTTPS
- 802.1x
- IPv6
- QOS (DiffServ)
- IP address filter
- SNMP v1/v2
- ONVIF Profile S conformant
- Micro SD support
- Tampering alarm
- Analogue output (always available)
- Browser support upgrade -IE, Chrome, Firefox, Safari
- Wide dynamic range
- Backlight compensation
- Video motion detection
- Privacy masks

3.2 Models

BC820 & BC820-SFP



Network box camera with Day/Night

- 1/2.7 Progressive scan CMOS imager
- Quad stream of H.264 and MJPEG video (1080p/D1)
- Two-way audio
- Day/Night (IR cut filter)
- Alarm I/O (1 output, 1 input)
- ROHS compliant
- 24 Vac / 12 Vdc / 802.3af PoE (BC820 only)
- RS-485 PTZ support
- SFP Interface (BC820-SFP)

BC820MP5 & BC820MP5-SFP



5 Megapixel indoor network box camera with Day/Night

- 1/2.5 Progressive scan CMOS imager
- Up to 5 megapixel resolution (2592 x 1944)
- Quad stream of H.264 and MJPEG video (1080p/D1)
- Two-way audio
- Day/Night (IR cut filter)
- Alarm I/O (1 output, 1 input)
- ROHS compliant
- 24 Vac / 12 Vdc / 802.3af PoE (BC820MP5 only)
- RS-485 PTZ support
- SFP Interface (BC820MP5-SFP)

BC820H1 & BC820H1-SFP



Network box camera with integrated optics

- Integrated 18x optical zoom, 8x digital zoom - autofocus module
- 1/2.7 Progressive scan CMOS imager
- Full HD 1080p resolution
- Quad stream of H.264 and MJPEG video
- Two-way audio
- Day/Night (IR cut filter)
- Alarm I/O (1 output, 1 input)
- ROHS compliant
- 24 Vac / 12 Vdc / 802.3af PoE (BC820H1 only)
- SFP Interface (BC820H1-SFP)

3.3 Description

General

The Siquira BC820 is a full-featured fixed IP camera providing high-quality high-definition images.

Multistream high definition

The BC820 series cameras have quad-stream capability for simultaneous streaming of H.264/H.264 or H.264/MJPEG. Full HD 1080p streaming with a D1 second stream or dual 720p streams are possible. Multiple combinations of resolution and frame rate can be configured to satisfy different live viewing and recording scenarios.

Open standards

Multiple options are available to easily integrate the BC820 into a video management system. In support of open standards, these cameras are compliant with the ONVIF Profile S specification in addition to Siquira's Open Streaming Architecture's (OSA) HTTP API.

Day/Night

The BC820 provides automatic day/night functionality, for use in low light situations. Under poor lighting conditions, the camera automatically becomes infrared-sensitive by removing the IR cut filter. This Day/Night feature ensures that even in minimal light the camera still produces clear images.

Backlight compensation

Backlight compensation enhances image visibility in difficult lighting conditions. In situations where the observed object is unclear due to being underlit or overlit (such as in a hallway entrance with many windows), backlight compensation improves image exposure by using the light near the object as a reference.

Wide dynamic range

Wide dynamic range solves the problem of overlit images by combining the best of two pictures with different light references.

Power source choices

The BC820 can be powered over the network with 802.3af compliant Power-over-Ethernet (PoE) sources (SFP models excepted). The cameras can also be powered by 12 Vdc or 24 Vac (terminal block).

SFP interface

The SFP models are equipped with an SFP interface. It supports the Siquira XSNet™ SFP range for Ethernet over fiber and the Siquira ECO-plug™ for Ethernet over coax.

Privacy masks

Privacy masks cover sections of the image. This feature is often requested for situations such as city centre surveillance and point of sale keypads.

3.4 Package contents

BC820/BC820-SFP & BC820MP5/BC820MP5-SFP



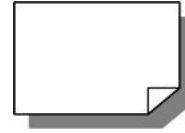
*BC820/BC820-SFP
(lens not included)*



*C mount lens
adapter*



Back focus adjuster



Quick Start Guide



*CD containing
manuals and
DeviceSearch
application*



Terminal block



Wire clip



1.5 A Power adapter

BC820H1 & BC820H1-SFP



BC820/BC820-SFP



Terminal block



*CD containing
manuals and
DeviceSearch
application*



Quick Start Guide

4 Back panel

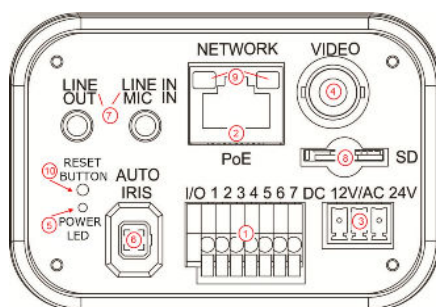
This chapter provides information about the dimensions, switch location and definition, and cable connections of the BC820.

In This Chapter

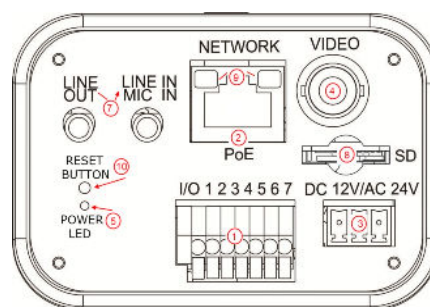
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4.1 Switches, connectors, and buttons

BC820 series cameras have the following connectors:



BC820/BC820MP5 back panel



BC820H1 back panel

	Feature	Description
1	CC/Data In/Out	Connectors for data and contact closures <ul style="list-style-type: none"> 1. Output+ 2. Output- 3. Input+ 4. Input- 5. GND 6. D- 7. D+
2	Network	RJ-45 with PoE (SFP connector on -SFP models)
3	Power connector	AC 24 V / DC 12 V power connection <ul style="list-style-type: none"> + AC 24 V: Power-1 DC 12 V: Power DC 12 V: Reserved /// AC 24 V: Earth GND - AC 24 V: Power-2 DC 12 V: GND
4	Video (BNC connector)	For analog video output
5	Power LED	Power connection indication (green light)
6	Auto Iris connector	Auto iris lens connector (standard only)
7	Audio Out/Audio In	Two-way audio transmission

	Feature	Description
8	Micro SD card slot	For video and snapshots storage
9	Network LEDs	Network connection and activity indicator
10	Reset button	Reset to factory default

Switch definition

» **To reset the camera to its factory default settings**

- With the camera powered up, push and hold the reset button for 30 seconds.
All settings, including the camera's IP address, are reset to the original factory settings.

4.2 System requirements

The BC820 camera can be accessed and configured from a standard web browser supporting ActiveX controls. The browsing PC must meet the system requirements described in the table below.

Item	System requirement
Microprocessor	Intel Pentium M, 2.16 GHz or higher or Intel CoreTM2 Duo, 2.0 GHz or higher
Memory	At least 2GB RAM
Operating system	Windows Vista / Windows XP / Windows 7
Web browser	Internet Explorer 6.0 or later, Firefox, Chrome, Safari
Network card	10Base-T (10 Mbps) or 100Base-TX (100 Mbps) operation
Viewer	ActiveX control plug-in for Microsoft IE

Minimum requirements

4.3 System compatibility

To ensure system compatibility, download the latest firmware from **Support > Software** on the Siqua website at <http://www.siqua.com/>.

5 Cable connection

This chapter explains how to power the camera and gives information about connecting alarm and audio cabling.

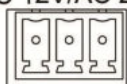
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5.1 Power options

All BC820 series cameras support 12 Vdc and 24 Vac via terminal block. The BC820/BC820MP5 and BC820H1 models also support Power over Ethernet (PoE).

DC 12V/AC 24V



3-pin power connector

5.2 Power the camera

» To power the BC820 camera

- 1 Connect the leads from the 12 Vdc power supply (included) or 24 Vac power supply (not included) to the terminal block in accordance with the connection assignments on the rear panel of the camera.
- 2 If used, connect the GND wire to the third pin of the terminal block.
- 3 Plug the power supply into a power outlet.

Warning: To avoid electric shock, connect the power jack to the IP camera before plugging the power jack into the socket.

Connection	24 Vac Assignment	12 Vdc Assignment
+	Power-1	Power
⏏	Earth GND	Reserved
—	Power-2	GND

24 Vac / 12 Vdc connection assignments

Power over Ethernet (PoE)

The BC820/BC820MP5 and the BC820H1 can also use Power over Ethernet (PoE), which requires that IEEE 802.3AF Power Sourcing Equipment (PSE) is available on the network. The use of Cat 5 Ethernet cable is recommended for network connection. For the best transmission quality, limit the cable length to no more than 100 metres.

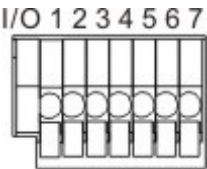
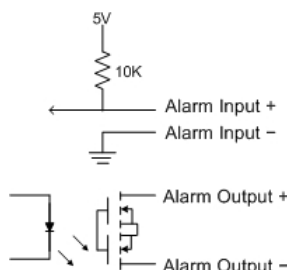
Connect one end of the Ethernet cable to the camera's RJ-45 connector and the other end of the cable to the IEEE 802.3AF network switch or PC. The BC820 consumes 3.8 W of power.

Note: In some cases, you may need to use an Ethernet crossover cable when directly connecting the BC820 cameras to a PC.

5.3 Alarm application

The camera equips one relay input and one relay output for alarm application. Refer to the alarm pin definitions below to connect alarm devices to the IP camera as necessary.

The RS-485 connector is the interface for connecting with the camera's PTZ positioning system.

Pin definitions	Equivalent Circuits	Output specification
 <p>7. D+ 6. D- 5. GND 4. Input- 3. Input+ 2. Output- 1. Output+</p>	 <p>5V 10K Alarm Input + Alarm Input - Alarm Output + Alarm Output -</p>	<ul style="list-style-type: none"> • Solid state relay MOSFET output • Absolute MAX Voltage: 300 V AC/DC • ON-Resistance: MAX 30 Ω • MAX Load Current: 100 mA • OFF Leakage Current: 1 μA

Alarm/RS-485 definitions

5.4 Audio

The BC820 cameras support two-way audio transmission in full duplex, half duplex, and simplex modes in a variety of audio qualities.

5.5 Micro SD storage

The BC820 cameras support a Micro SD card for storing motion detect and scheduled recordings. Users can also format the SD card and implement automatic recording cleanup through the setting page on the browser interface of the camera.

6 Mount the camera and the lens

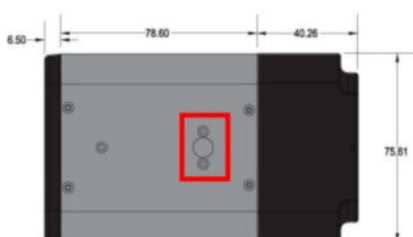
The BC820 series camera requires a lens and a mount, usually a wall bracket.

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6.1 Mount the camera

The BC820 can be installed directly on a wall or ceiling, provided the surface has sufficient strength to support the camera. The mounting bracket screws directly into the screw hole shown in the figure below. No tools are required. There are screw holes on both the top and bottom of the camera.



BC820 with screw hole

6.2 Mount the lens

The BC820 and BC820MP5 models support C- and CS-lens mounting, detailed in this section.

Note: The BC820H1 camera has an integrated lens and therefore these instructions do not apply.

» To mount a CS-Mount lens

- 1 Remove the box camera's CCD cover.
- 2 Attach the lens to the camera (see figure below).

» To mount a C-Mount lens

- 1 Remove the box camera's CCD cover
- 2 Attach the supplied C/CS mount adapter to the camera as shown below.
- 3 Screw the lens onto the C/CS mount adapter.
- 4 Check for proper back-focus and adjust as necessary using supplied wrench.



C/CS mount adapter



Attached lens

Appendix: Technical specifications

This appendix provides the technical specifications of the BC820 series cameras.

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BC820 and BC820-SFP

Camera	
Image sensor	1/2.7" Progressive scan CMOS
Video standards	PAL/NTSC
Output resolutions	1080p (1920x1080); 720p (1280x720); 1024x768; 800x600; D1 (720x576); CIF (352x288)
Effective pixels	1920(H) x 1080(V)
Digital slow shutter	1 - 1/15 s
Shutter speed	1 - 1/10000 s
Signal-to-noise ratio	>40 dB
Analogue output	BNC (1 Vpp)
Lens type	C/CS-mount
Minimum scene illumination	0.2 Lux colour; 0.02 lux (b/w)

Image control	
Backlight compensation	On/off
Wide dynamic range	On/off
WDR value	69 dB
Contrast	Manual
Brightness	Manual
Saturation	Manual
Hue	Manual
Sharpness	Manual
White balance	Auto/manual
3D Noise reduction	On/off
Iris control	DC iris
Exposure	Auto/manual
Day/night (IR-cut filter)	Auto/on/off/smart
Digital zoom	Yes

Functions	
Privacy masks	5
Privacy mask type	Colour
Video motion detection	10 user-defined; rectangular masking; adjustable detection level, sensitivity, time interval
Language support	English, French, German, Italian, Korean, Simplified Chinese, Traditional Chinese, Russian
Event notification	HTTP, FTP, SMTP
Tampering alarm	On/off

Video				
Number of video streams	4x H.264 or 3x H.264 + 1x MJPEG			
Number of output streams	Up to 20 (RTSP)			
Compression algorithm(s)	H.264 MP (ISO/IEC 14496-10), MJPEG			
Encoder bit rate control	Constant bit rate (CBR), Variable bit rate (VBR)			
Output bit rate (per H.264 stream)	Up to 8192 kbit/s			
Total output data rate	Up to 32 Mbit/s			
Maximum streaming capabilities	1	2	3	4
	H.264 1080p30	H.264 D1@30	-	-
	H.264 1080p30	H.264 CIF@30	H.264 CIF@30	H.264 CIF@30
	H.264 1080p15	H.264 1080p15	-	-
	H.264 1080p15	MJPEG 1080p15	-	-
	H.264 1080p15	H.264 720p30	H.264 D1@30	-
	H.264 1080p15	H.264 720p15	H.264 720p15	H.264 D1@30
	H.264 1080p15	H.264 D1@30	H.264 D1@30	H.264 D1@30
	H.264 720p30	H.264 720p30	H.264 D1@30	-
	MJPEG 1080p30	-	-	-

Audio	
Two-way audio	G.711, 8 kHz, A-law, μ -law, 64 kbit/s; G.726, 8 kHz, 40 kbit/s

Data

Serial port	RS-485 2-wire
Protocols	Pelco D, Pelco D

Contact closures

Input	5 V 10 k Ω pull-up
Output	Photo relay output 300 Vdc/ac
Reactions	4-pin terminal block, 4-pin terminal block

Storage

Storage options	Micro SD card, 64 GB
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Network

Interface(s)	10/100 Ethernet RJ-45)
Protocols	IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, IEEE 802.1x, QoS, ONVIF
Password levels	User and administrator
Supported browsers	Internet Explorer (6.0+), Chrome, Firefox, Safari
User accounts	20

Powering

Power consumption	4 W
Power	
BC820	12 Vdc / 24 Vac / Power over Ethernet (PoE)
BC820-SFP	12 Vdc / 24 Vac
Power connector	Terminal block

Environmental

Operating temperature	-10 °C to +50 °C (+14 °F to +122 °F)
Relative humidity	10% to 90%, no condensation

Mechanical

Dimensions (h x w x d)	126 x 76 x 53 mm (without lens)
Weight	330 g (0.73 lbs)
Colour	Black/Grey

Note: Weight and dimensions are approximate. All specifications are subject to change without notice.

BC820MP5 and BC820MP5-SFP

Camera	
Image sensor	1/2.5" CMOS 5.0 Megapixel
Video standards	PAL/NTSC
Output resolutions	5MP (2592 x 1944); 3.1MP (2048 x 1536); 1080p (1920 x 1080); 720p (1280 x 720); SVGA (800 x 600); D1 (720 x 480); VGA (640 x 480); CIF (352 x 240)
Effective pixels	2592 (H) x 1944 (V)
Shutter speed	1 - 1/10000 s
Analogue output	BNC (1 1 Vpp)
Lens type	C/CS-mount
Minimum scene illumination (30 IRE)	0.2 Lux colour; 0.02 lux (b/w)
Image control	
Backlight compensation	On/off
Wide dynamic range	On/off
WDR value	69 dB
Contrast	Manual
Brightness	Manual
Saturation	Manual
Hue	Manual
Sharpness	Manual
White balance	AWB, ATW, Manual, One push
3D Noise reduction	On/off, 2D/3D Noise filter
Iris control	DC iris
Exposure	Auto/manual
Day/night (IR-cut filter)	Auto/on/off, IR-cut filter removable (ICR)
Digital zoom	Yes
Functions	
Privacy masks	5
Privacy mask type	Colour
Language support	English, French, German, Italian, Korean, Simplified Chinese, Traditional Chinese, Russian, Spanish, Portuguese, Japanese
Event notification	HTTP, FTP, SMTP
Tampering alarm	On/off

Video				
Number of video streams	Max. 4x H.264 or 3x H.264 + 1x MJPEG			
Number of output streams	Up to 20 (RTSP)			
Compression algorithm(s)	H.264 (MPEG-4 Part 10 / AVC) / MJPEG			
Encoder bit rate control	Constant bit rate (CBR), Variable bit rate (VBR)			
Maximum streaming capabilities	1	2	3	4
	H.264 5MP@12	H.264/MJPEG D1@12	-	-
	H.264 5MP@12	H.264 D1@12	H.264 D1@12	H.264 CIF@12
	H.264 3.1MP@15	H.264 D1@15	H.264 D1@15	H.264/MJPEG VGA@15
	H.264 1080p30	H.264 CIF@30	H.264 CIF@30	H.264 CIF@30
	H.264 1080p15	H.264 720p30	H.264 D1@30	H.264 CIF@30
	H.264 720p30	H.264 720p30	H.264 SVGA@30	H.264 CIF@30
	MJPEG 1080p30	-	-	-
Audio				
Two-way audio	G.711, G.726			
Data				
Serial port	RS-485 2--wire			
Contact closures				
Input	5 V 10 kΩ pull-up			
Output	Photo relay output 300 Vdc/ac			
Reactions	4-pin terminal block, 4-pin terminal block			
Storage				
Storage options	Micro SD card, 64 GB			

Network

Interface(s)	10/100 Ethernet RJ-45
Protocols	IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, IEEE 802.1x, QoS, ONVIF
Password levels	User and administrator
Supported browsers	Internet Explorer (6.0+), Chrome, Firefox, Safari
User accounts	20

Powering

Power consumption	4 W
Power	
BC820MP5	12 Vdc / 24 Vac / Power over Ethernet (PoE)
BC820MP5-SFP	12 Vdc / 24 Vac
Power connector	Terminal block

Environmental

Operating temperature	-10 °C to +50 °C (+14 °F to +122 °F)
Relative humidity	10% to 90%, no condensation

Mechanical

Dimensions (h x w x d)	126 x 76 x 53 mm (without lens)
Weight	330 g (0.73 lbs)
Colour	Black/Grey

BC820H1 and BC820H1-SFP

Camera	
Image sensor	1/2.7" Progressive scan CMOS
Video standards	PAL/NTSC
Output resolutions	1080p (1920x1080); 720p (1280x720); XGA (1024x768), SVGA (800x600); D1 (720x576); CIF (352x288)
Effective pixels	1920(H) x 1080(V)
Shutter speed	1 - 1/10000 s
Signal-to-noise ratio	>40 dB (AGC off)
Minimum scene illumination	0.2 Lux colour, 0.02 lux (b/w)
Horizontal field of view	61.5° wide to 3.3° tele
Focal length	4.7 – 84.6 mm (F1.6 wide, F2.8 tele)
Analogue output	BNC 1 1 Vpp / 75 Ω impedance
Image control	
Backlight compensation	On/off
Wide dynamic range	On/off
WDR value	75 dB
Contrast	Manual
Brightness	Manual
Saturation	Manual
Hue	Manual
Sharpness	Manual
White balance	Auto/manual
3D Noise reduction	On/off
Exposure	Auto/manual
Day/night (IR-cut filter)	Auto/on/off
Optical zoom	18x
Digital zoom	8x
Functions	
Privacy masks	5 solid colour
Image rotation	Normal, flip, mirror, 90° (clockwise, counterclockwise), and 180° rotate

Video				
Number of video streams	4x H.264 or 3x H.264 + 1x MJPEG			
Number of output streams	Up to 20 (RTSP)			
Compression algorithm(s)	H.264 MP (ISO/IEC 14496-10), MJPEG			
Encoder bit rate control	Constant bit rate (CBR), Variable bit rate (VBR)			
Output bit rate (per H.264 stream)	Up to 8192 kbit/s			
Total output data rate	Up to 32 Mbit/s			
Maximum streaming capabilities	1	2	3	4
	H.264 1080p30	H.264 D1@30	-	-
	H.264 1080p30	H.264 CIF@30	H.264 CIF@30	H.264 CIF@30
	H.264 1080p15	H.264 1080p15	-	-
	H.264 1080p15	MJPEG 1080p15	-	-
	H.264 1080p15	H.264 720p30	H.264 D1@30	-
	H.264 1080p15	H.264 720p15	H.264 720p15	H.264 D1@30
	H.264 1080p15	H.264 D1@30	H.264 D1@30	H.264 D1@30
	H.264 720p30	H.264 720p30	H.264 D1@30	-
	MJPEG 1080p30	-	-	-
Audio				
Two-way audio	Line out, line in/mic in (jack Ø3.5 mm)			
Compression	G.711 (µ-law, a-law)/G.726			
Input level	Adjustable gain, mic or line level			
Output level	Adjustable gain			
Data				
Serial port	RS-485 2-wire			
Protocols	Pelco D, Pelco D			

Contact closures

Alarm input	1x 5 V 10 kΩ pull-up input
Operational modes	Normally open / normally closed
Triggered actions	Enable output; email message, email image, FTP message, FTP image, record on SD card, API event
Alarm output	Photo relay output 300 Vdc/Vac

Storage

Storage options	Micro SD card, 64 GB
Local recording	Continuous, scheduled, alarm

Powering

Power consumption	6 W (500 mA)
Power	12 Vdc / 24 Vac; Power over Ethernet (PoE)
Power adapter (included)	110 - 230 Vac to 12 Vdc, 1.5 A 50/60 Hz

Network

Interface(s)	10/100 Ethernet RJ-45)
Protocols	IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, IEEE 802.1x, QoS, ONVIF
Password levels	User and administrator
Supported browsers	Internet Explorer (6.0+), Chrome, Firefox, Safari
User accounts	20

Environmental

Operating temperature	0 °C to +40 °C (+32 °F to +104 °F)
Relative humidity	10% to 90%, no condensation
MTBF (Mean Time Between Failures)	>100,000 hours at 50 °C

Mechanical

Dimensions (h x w x d)	183.2 x 80.2 x 52.40 mm (7.22 x 3.16 x 2.1 in)
Weight	450 g (1.0 lbs)
Housing	Aluminium
Colour	Black/Grey