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AVer Rugged Bullet type Camera

Installation Guide

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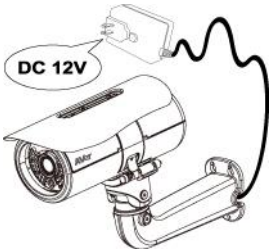
Important Safeguard



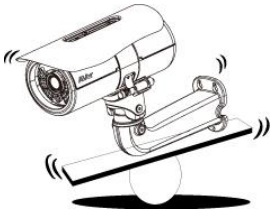
Do not use power supply with different voltage other than DC12V/PoE.

Do not submerge the unit in the water.

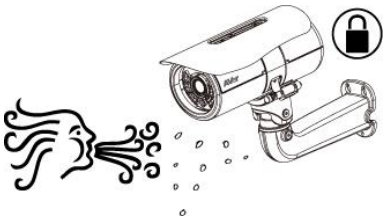
Unplug the power of this unit as soon as smoke or unusual odor is detected.

Unplug the power supply before cleaning. Use only a lens cleaning cloth and never use benzene, thinner, or other solvent for cleaning.

Do not attempt to service this unit by yourself. Always refer all servicing to qualified service personnel.



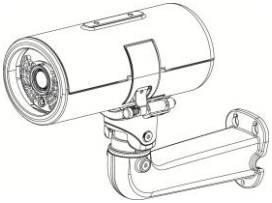
Do not place the unit in unsteady surface and also do not drop the unit.



Keep the IP camera housing close and prevent the dust from getting in the housing.

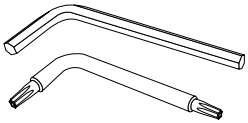
Package Contents

The following items are included in the package.

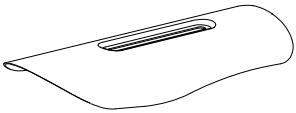


AVer rugged bullet type camera

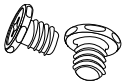
Software & Manual CD



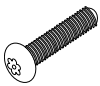
2 L-type Wrenches



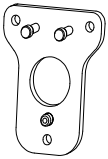
Sun Shield



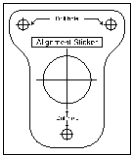
2 Sun Shield Bolts



Torx Pin Head Bolt

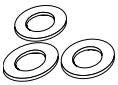


Wall Mount Bracket

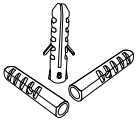


Alignment Sticker

3 Screws



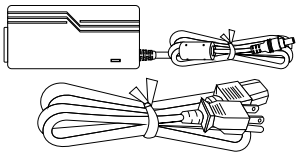
3 Washers



3 Plastic Anchors

Hex Socket Cap Bolt

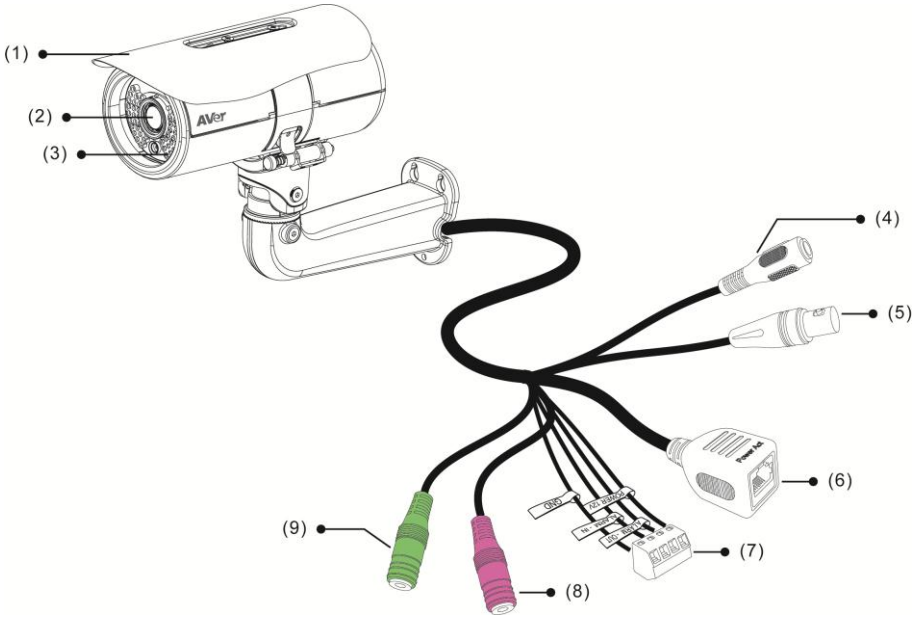
Optional Accessories



Power Adapter (12V, 4A) and Power cord

* The power adapter will vary depending on the standard power outlet of the country where it is sold. Depending on your package the power adapter maybe included.

Rugged Bullet IP Camera Parts



No.	Function	No.	Function
(1)	Sun Shield	(6)	BNC Jack (Video Out)
(2)	Camera Lens	(7)	RJ45 Ethernet Jack
(3)	Light Sensor	(8)	I/O Terminal Block
(4)	Latch	(9)	Phone Jack (Audio In)
(5)	Power Jack	(10)	Phone Jack (Audio Out)

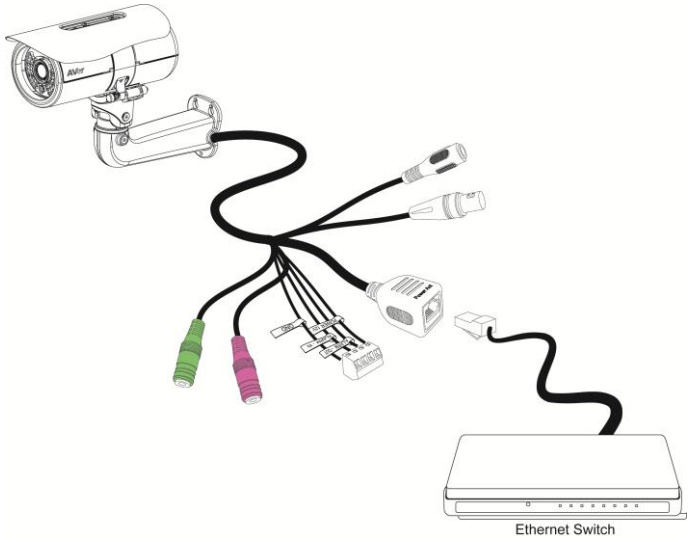
Mounting the IP Camera

This section provides useful tips on how to adjust the IP camera to meet your needs.

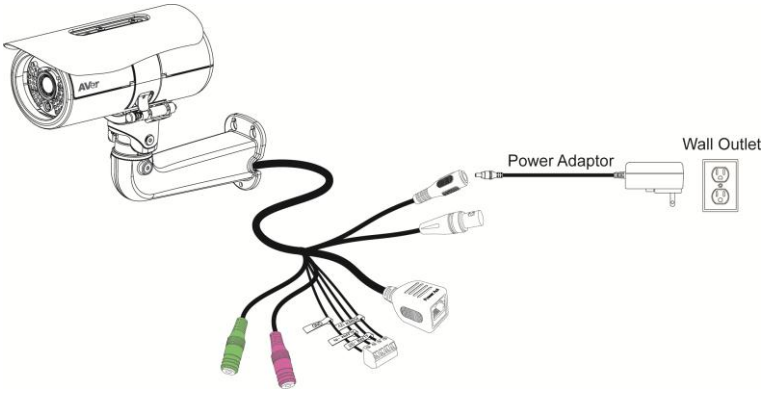
Deploying Network

Network Connection via Ethernet Switch

- **Connect the RJ45 cable from the Ethernet switch to RJ45 Ethernet jack of camera**



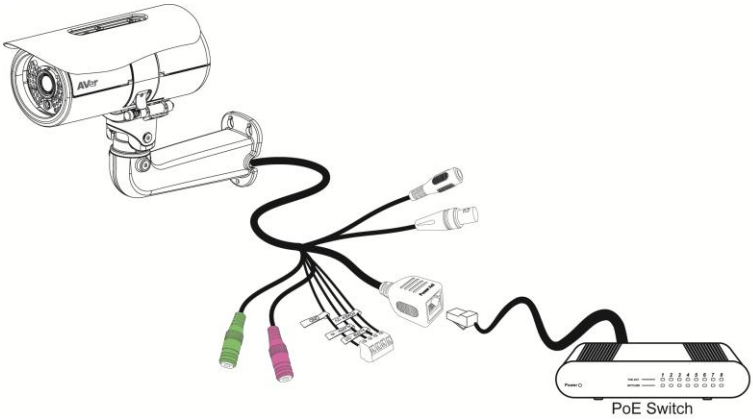
- **Connect the power adapter to power jack of camera.**



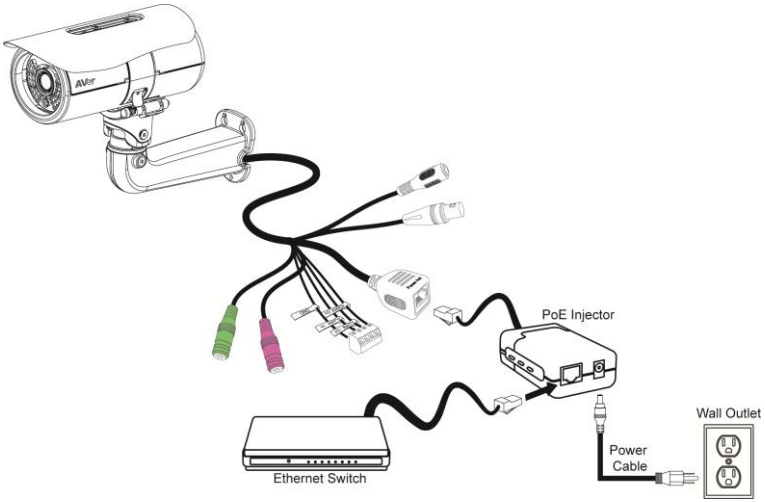
Power over Ethernet Connection

Rugged bullet type camera is fully complies with PoE standard. It allows you to use PoE enabled switch or PoE injector to transmit data and power thru single Ethernet cable.

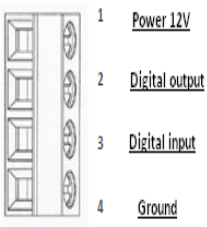
- **PoE Enabled Switch Connection Diagram**



- **PoE Injector Connection Diagram**



Connecting External Devices to I/O Terminal Block



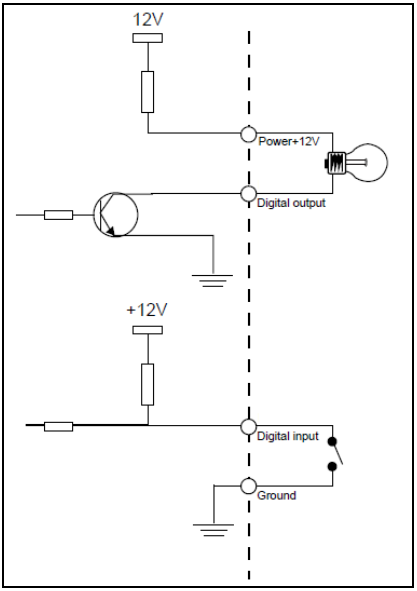
No.	Function
(1)	Power 12V
(2)	Digital Output
(3)	Digital Input
(4)	Ground

[Note] Maximum power output is 12V/100mA

Power LED

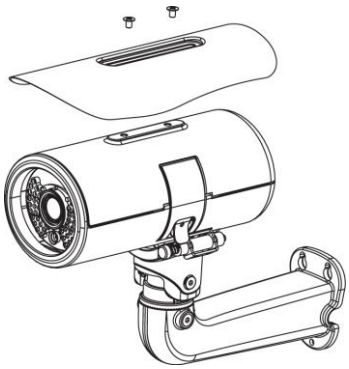
LED	Status
Steady Red	Heating
Blinking Green	System working
Steady Green	Booting
	Firmware updating
No Light	Power off

Internal Connection Diagram of DI/DO

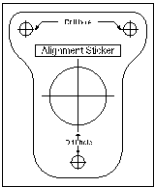


Mounting the IP Camera

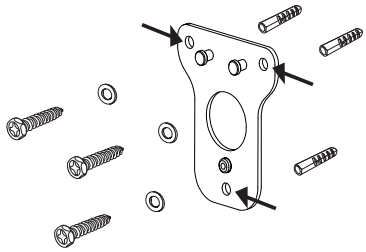
1. Use the supplied 2 sun shield bolts and secure the sun shield on the IP camera.



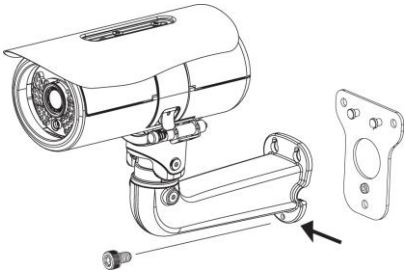
2. Place the sticker on the wall surface. Then spot the mark and drill the 4 holes indicated on the sticker. It's not necessary to drill the biggest hole if you are going to run the wire on the side.



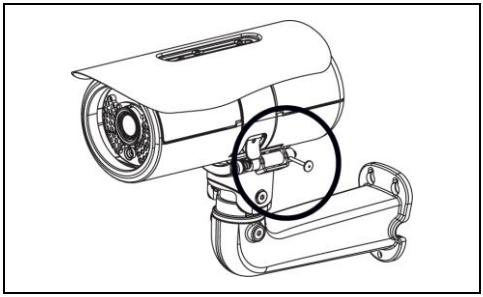
3. Insert the 3 plastic anchors in the wall. Place the washer on the 3 screws and secure the mounting bracket on the wall.



4. Hook the IP Camera and use the hex socket cap bolt to secure the IP camera on the mount bracket.



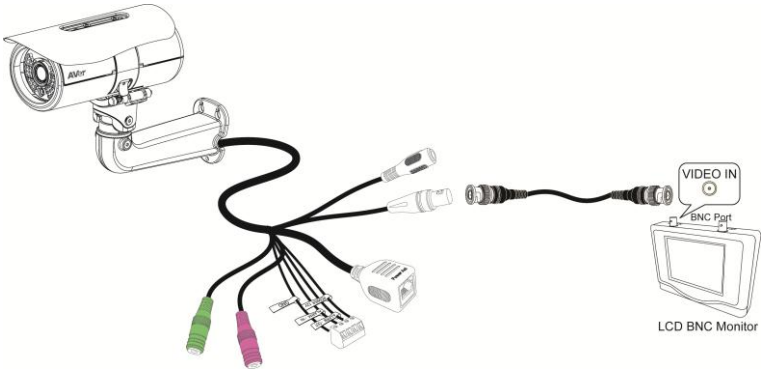
5. After adjusting the focus and zoom control, use the torx pin head bolt to secure the IP camera from being tampered.



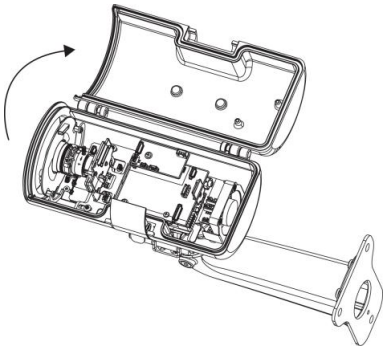
Focusing the IP Camera with BNC Monitor

The IP camera is supported with BNC analog video out jack which allows you to connect an analog display devices such as an LCD BNC monitor for you to adjust the camera focus and zoom.

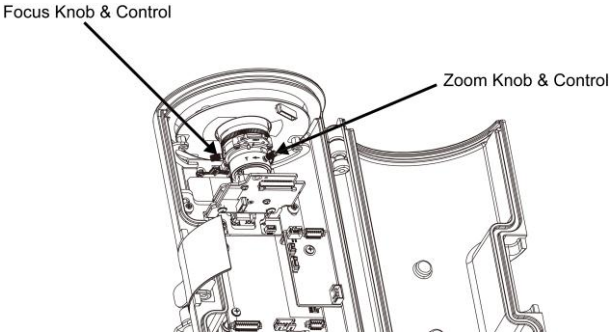
1. Connect the LCD BNC monitor to the BNC jack.



2. Open up the IP camera case.

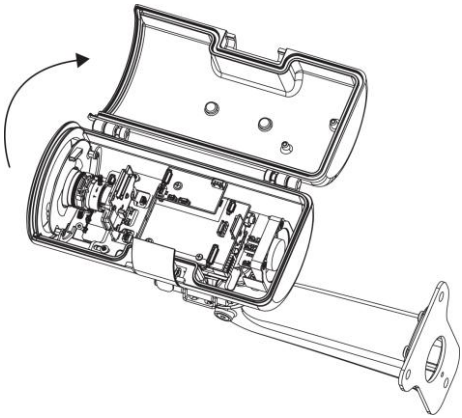


3. Slightly loosen the focus and zoom control knobs and adjust the focus and zoom range. Slightly tighten the focus and zoom knobs once you are done adjusting.

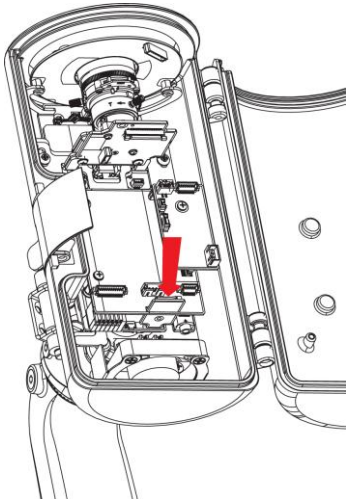


Insert microSD Card to System

1. Open up the IP camera case.



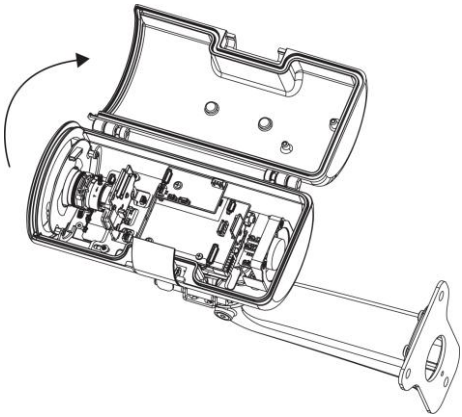
2. Insert microSD card



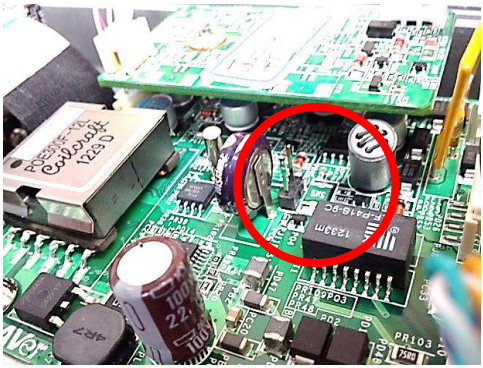
[Note] We recommend to use industrial grade microSD card (support operating temp from -40°C to 85°C) for extreme temperature condition.

Hardware Reset

1. Open the IP camera case.



2. Short PJ1 pins around 10 seconds.



WARNING!!

This will cause all the configuration settings back to factory default.

Technical Specifications

■ FB2028-T1 (E)/FB2028-T2 (E)/FB2028-TM (E)

Model	FB2028-T1 (E)	FB2028-T2 (E)	FB2028-TM (E)
Lens spec.	**CBC AG3Z0312LMRP-N**	**CBC AG2.3Z1016LMRP-N**	**CBC AGP3Z0312LMRP -E111T51**
Lens type	Vari-focal Lens (Board mount, M19)		
F/no	F/1.2	F/1.6	F/1.2
Iris type	DC Iris		
Focal length	f3~9mm	f10~23mm	f3~9mm
View Angle	H 90.6°(W)~41.9°(T) V 51.5°(W)~24.5°(T)	H 27°(W)~14.8°(T) V 15°(W)~8.3°(T)	H 90.6°(W)~41.9°(T) V 51.5°(W)~24.5°(T)
MFZ Support	N/A	N/A	Yes
Camera image			
Min. illumination	0.2 Lux in day mode (IR off) 0.03 Lux in night mode (IR off) 0 Lux in night mode (IR on)	0.3 Lux in day mode (IR off) 0.04 Lux in night mode (IR off) 0 Lux in night mode (IR on)	0.2 Lux in day mode (IR off) 0.03 Lux in night mode (IR off) 0 Lux in night mode (IR on)
Built-in LED	Yes		
IR distance	30m	50m(DC In only)	30m
Built-in mechanical ICR	Yes		
Auto IRIS	Yes		
Video			
Compression	H.264/MPEG-4/MJPEG		
Max. resolution	1920 x 1080		
Frame rate	1920 x 1080 @ 30fps		
H.264/MPEG-4 bit rate mode	VBR, 5 levels CBR, 64/128/512/768Kbps & 1/2/3/4/6/8/10/12Mbps		
MJPEG quality	5 levels		
Regional of Interest	Yes		
Smart Stream	Yes, 5 windows		

Model	FB2028-T1 (E)	FB2028-T2 (E)	FB2028-TM (E)
Video			
Image orientation	mirror, flip		
Motion Detection zones	3		
Privacy mask areas	3		
BLC	Yes		
D-WDR	Yes		
De-noise	2D/3D		
Day & night function	Auto/Manual/Schedule		
ePTZ	Yes		
Corridor Mode	Yes		
Cross Detection	Yes		
Audio			
Encoder	G.711 (μ-law)/G.726 (bit rate 16K~64bps) /AAC audio compression		
Streaming	2-ways audio		
Microphone	External microphone input		
Network			
Protocols	CP/IP (IPv4/IPv6), HTTP, HTTPS, UPnP, SMTP, FTP, DHCP, NTP, DDNS, PPPoE, Samba, QoS, SNMP(V1/V2c/V3), 802.1X		
Ethernet	10/100 Base-T, RJ45 connector		
ONVIF	V2.X (Profile S), conformance test V12.06		
Security	Password protection/IP Filter		
Users	up to 10 users simultaneously		

Model	FB2028-T1 (E)	FB2028-T2 (E)	FB2028-TM (E)
Event			
Profiles	32 sets		
Triggers	Alarm Interval, Motion Detection Region, Digital Input, SD Card, Network		
Actions	Trigger: Digital Output, Alarm Audio Send out video clip: FTP, NAS, SD card Send out snapshot / log: FTP, NAS, SD card, mail		
Interface			
Digital input/output	1/1		
BNC Video output	Yes		
Built-in storage option	Micro SDHC & SDXC card (64GB max.)		
External microphone input	Yes		
External Audio output	Yes		
General			
Power supply	DC 12V(4A)/PoE		
Power consumption	**PoE (TYP.):** 6.7W (LED/Heater off) 10.0W (LED on, Heater off) 22.0W (LED off, Heater on) 23.1W (LED/Heater on)	**PoE (TYP.):** 6.7W (LED/Heater off) 10.0W (LED on, Heater off) 23.9W (LED off, Heater on) 24.3W (LED/Heater on)	**PoE (TYP.):** 6.7W (LED/Heater off) 10.0W (LED on, Heater off) 22.5W (LED off, Heater on) 23.6W (LED/Heater on)
	DC-IN (TYP.) 5.7W (LED/Heater off) 8.5W (LED on, Heater off) 33.8W (LED off, Heter on) 35.8W (LED/Hearer on)	**DC-IN (TYP.):** 5.7W (LED/Heater off) 13.5W (LED on, Heater off) 34.7W (LED off, Heter on) 41.1W (LED/Hearer on)	**DC-IN (TYP.):** 5.7W (LED/Heater off) 8.5W (LED on, Heater off) 34.3W (LED off, Heter on) 36.3W (LED/Hearer on)
PoE	PoE Class 4 (IEEE802.3at)		
Dimensions	265.2mm x 114.5 mm x 111mm(L x H x W) w/o bracket		
Net weight	2180g		

Model	FB2028-T1 (E)	FB2028-T2 (E)	FB2028-TM (E)
General			
Temperature and humidity	**PoE** -25°C~60°C, 20%~90% Cold Start -40°C~60°C, 20%~90% Operating **12V/4A DC-In** -25°C~60°C, 20%~90% Cold Start -60°C~60°C, 20%~90% Operating		
IP Rating	IP68		
Software Requirement			
OS	Windows® XP/7/8		
Browser	IE 8/9/10/11 (Full Function), Chrome Firefox and Safari (Basic Function)		
Firmware remote upgrade	Yes (via HTTP)		
Bundled Software			
ExpressGO	free up to 32CH		
IPCAM Utility	Yes		
SecureCenter	Yes		
Warranty			
Main body	3 years		
Accessories	1 year		

■ FB3028-RT1 (E)/FB3028-RT2 (E)/FB3028-RTM (E)

Model	FB3028-RT1 (E)	FB3028-RT2 (E)	FB3028-RTM (E)
Lens spec.	**CBC AG3Z0312LMRP-N**	**CBC AGP3Z0312LMRP -E111T51**	**CBC AGP3Z0312LMRP**
Lens type	vari-focal Lens (Board mount, M19)		
F/no	F/1.2	F/1.6	F/1.2
Iris type	DC Iris		
Focal length	f3~9mm	f10~23mm	f3~9mm
View Angle	H 73.2°(W)~35°(T) V 51.5°(W)~24.5°(T)	H 22.8°(W)~12.4°(T) V 17°(W)~9.3°(T)	H 73.2°(W)~35°(T) V 51.5°(W)~24.5°(T)
MFZ Support	N/A	N/A	Yes
Camera image			
Min. illumination	0.8 Lux in day mode (IR off) 0.1 Lux in night mode (IR off) 0 Lux in night mode (IR on)	1.2 Lux in day mode (IR off) 0.15 Lux in night mode (IR off) 0 Lux in night mode (IR on)	0.8 Lux in day mode (IR off) 0.1 Lux in night mode (IR off) 0 Lux in night mode (IR on)
Built-in LED	Yes		
IR distance	25m	50m(DC In only)	25m
Built-in mechanical ICR	Yes		
Auto IRIS	Yes		
Video			
Compression	H.264/MPEG-4/MJPEG		
Max. resolution	2048 x 1536		
Frame rate	2048 x 1536 @ 20fps (Wide Angle) 1920 x 1080 @ 30fps (Normal mode)		
H.264/MPEG-4 bit rate mode	VBR, 5 levels CBR, 64/128/512/768Kbps & 1/2/3/4/6/8/10/12Mbps		
MJPEG quality	5 levels		
Regional of Interest	Yes		

Model	FB3028-RT1 (E)	FB3028-RT2 (E)	FB3028-RTM (E)
Video			
Smart Stream	Yes, 5 windows		
Image orientation	mirror, flip		
Motion Detection zones	3		
Privacy mask areas	3		
BLC	Yes		
Sensor-WDR	Yes		
De-noise	2D/3D		
Day & night function	Auto/Manual/Schedule		
ePTZ	Yes		
Corridor Mode	Yes		
Cross Detection	Yes		
Audio			
Encoder	G.711 (μ-law)/G.726 (bit rate 16K~64bps) /AAC audio compression		
Streaming	2-ways audio		
Microphone	External microphone input		
Network			
Protocols	TCP/IP (IPv4/IPv6), HTTP, HTTPS, UPnP, SMTP, FTP, DHCP, NTP, DDNS, PPPoE, Samba, QoS, SNMP(V1/V2c/V3), 802.1X		
Ethernet	10/100 Base-T, RJ45 connector		
ONVIF	V2.X (Profile S), conformance test V12.06		
Security	Password protection/IP Filter		
Users	up to 10 users simultaneously		

Model	FB3028-RT1 (E)	FB3028-RT2 (E)	FB3028-RTM (E)
Event			
Profiles	32 sets		
Triggers	Alarm Interval, Motion Detection Region, Digital Input, SD Card, Network		
Actions	Trigger: Digital Output, Alarm Audio Send out video clip: FTP, NAS, SD card Send out snapshot / log: FTP, NAS, SD card, mail		
Interface			
Digital input/output	1/1		
BNC Video output	Yes		
Built-in storage option	Micro SDHC & SDXC card (64GB max.)		
External microphone input	Yes		
External Audio output	Yes		
General			
Power supply	DC 12V(4A)/PoE		
Power consumption	**PoE (TYP.):** 6.7W (LED/Heater off) 10.0W (LED on, Heater off) 22.0W (LED off, Heater on) 23.1W (LED/Heater on)	**PoE (TYP.):** 6.7W (LED/Heater off) 10.0W (LED on, Heater off) 23.9W (LED off, Heater on) 24.3W (LED/Heater on)	**PoE (TYP.):** 6.7W (LED/Heater off) 10.0W (LED on, Heater off) 22.5W (LED off, Heater on) 23.6W (LED/Heater on)
	DC-IN (TYP.) 5.7W (LED/Heater off) 8.5W (LED on, Heater off) 33.8W (LED off, Heter on) 35.8W (LED/Hearer on)	**DC-IN (TYP.)** 5.7W (LED/Heater off) 13.5W (LED on, Heater off) 34.7W (LED off, Heter on) 41.1W (LED/Hearer on)	**DC-IN (TYP.)** 5.7W (LED/Heater off) 8.5W (LED on, Heater off) 34.3W (LED off, Heter on) 36.3W (LED/Hearer on)
PoE	PoE Class 4 (IEEE802.3at)		
Dimensions	265.2mm x 114.5 mm x 111mm(L x H x W)		

Model	FB3028-RT1 (E)	FB3028-RT2 (E)	FB3028-RTM (E)
General			
Net weight	2180g		
Temperature and humidity	**PoE** -25°C~60°C, 20%~90% Cold Start -40°C~60°C, 20%~90% Operating **12V/4A DC-In** -25°C~60°C, 20%~90% Cold Start -60°C~60°C, 20%~90% Operating		
IP Rating	IP68		
Software Requirement			
OS	Windows® XP/7/8		
Browser	IE 8/9/10/11 (Full Function), Chrome, Firefox and Safari (Basic Function)		
Firmware remote upgrade	Yes (via HTTP)		
Bundled Software			
ExpressGO	free up to 32CH		
IPCAM Utility	Yes		
SecureCenter	Yes		
Warranty			
Main body	3 years		
Accessories	1 year		

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