

Panasonic

ideas for life

2006
Network Camera Line-up Catalog



BL-C20



BB-HCM331



BB-HCE481



See There

When You Can't Be There™



Panasonic®

<http://panasonic.co.jp/pcc/products/en/netwcam/>

00MSP1205NC-BC.US
Design and specifications are subject to
change without notice.

See There

When You Can't Be There™



Let the network camera expand your business!

With people paying ever more attention to security needs today, the network camera represents a very attractive new market. In addition to the conventional market for surveillance cameras, the network camera opens the door to home security and other new and expanding fields. Unlike conventional cameras, the network camera lets you monitor anywhere you want, including stores, offices, and factories, over the Internet. It can also be used in closed environments through intranets or home LAN systems. By "being here and watching there," you can greatly expand the scope of your business management.



Over the Internet

View

View images on a PC or cell phone. You can also view them in a multi-window display or use a wireless camera monitoring system to view them right on your TV.

Control

Control basic camera operations from the browser of a PC or cell phone.



Internet

Connect

The network camera uses a built-in web server to send images over the Internet or other network.

Capture

Capture crisp, clear images with the lens and CCD.

Store

Store images temporarily in the camera's internal memory, store them onto an SD Memory Card, or use recording software to store them onto a PC.

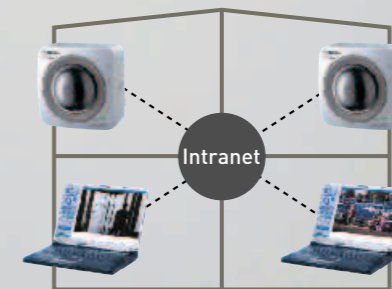
Built-in Web server

Unlike a USB camera, which must be located near a PC, the network camera has its own built-in web server that lets you connect it directly to a network. That means you can send images and control the camera from a distance, without having to connect the camera to a PC.

→→→ Comparison of network camera and USB camera on page 6

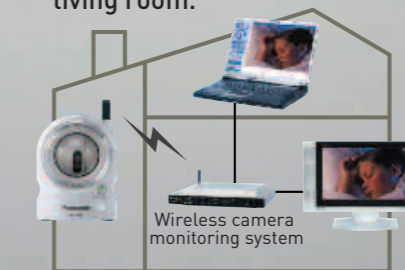
Over an Intranet

You can monitor conditions at your company's reception desk or in the parking lot, right from your office.



Home network

Keep an eye on your child's room from your PC in the den, or use the wireless camera monitoring system and watch from the TV in your living room.

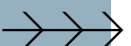


Sample applications

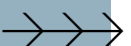


Business use P. 4

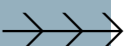
Shop management



Factory management



Parking lot surveillance

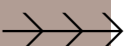


Posting nightclub images

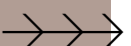


Home use P. 7

Home monitoring



Home pets



Easy to set up! Handy for work or home.

Do you think network cameras are as costly and difficult to set up as a conventional camera systems? Well, they're not. Panasonic network cameras are reasonably priced, with a wide line-up to meet your needs, and they're extremely easy to install. Then, you simply follow the instructions on the enclosed CD-ROM to connect to the network. It's easy enough for anybody to do.



Sample applications ←For business use→

Zero Distance Management boosts efficiency

You can monitor locations at any time, from any place, over the network. In addition to cutting down on travel time and expense, and reducing labor costs, you enjoy a huge boost in work efficiency by being able to monitor without any time lag.

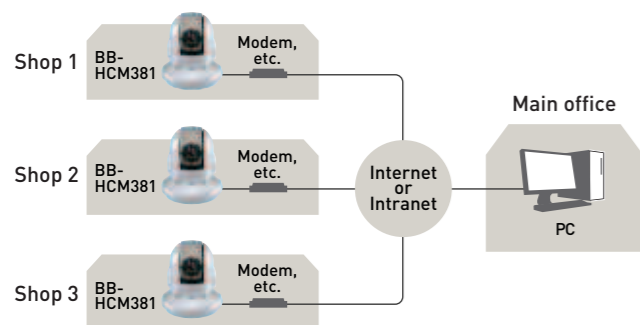
Improve communication too! Shop management



The multi-camera function lets you monitor multiple shops at a glance, eliminating the need for routine visits. Since the voice communication function allows you to talk with your staff while viewing the camera image, you can exchange information smoothly.

- Recommended functions**
- For smooth communication → **Audio 2-way communication** P. 10
 - For integrated control of multiple shops → **Multi-camera capability** P. 9
 - For recorded confirmation → **SD Memory Card recording** P. 9
 - For wide-ranging control with a single camera → **42x zoom and pan/tilt** P. 10

Recommended model



Sample applications For business use

Reducing costs Factory management

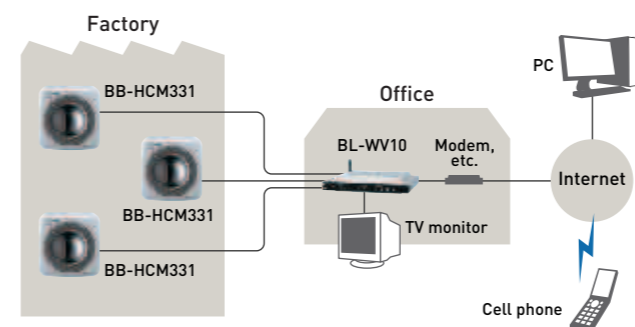


Because the cameras can automatically switch, they can each be monitored periodically from the office. Office staff can also be alerted by an alarm when motion is detected, so there is no need to physically look around the factory. This reduces labor expenses and increases efficiency.

Recommended functions

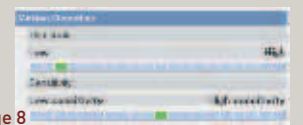
- For checking multiple cameras periodically → **Sequential display function** P. 12
- For alerting yourself when motion occurs → **Automatic alert settings** P. 12
- For carefully checking details → **16x digital zoom function** P. 12

Recommended models



About the motion detection function

There are two settings for the motion detection function: Threshold and Sensitivity. The threshold is the minimum value for the camera to detect motion in the image during motion detection buffering. Setting the threshold lower allows subtler changes to be detected. The sensitivity is the level of brightness detected as motion by the camera. A high sensitivity setting enables the camera to detect slight brightness changes. These settings can easily be made on a PC. →→ A description is also given on page 8



Increasing safety Parking lot surveillance

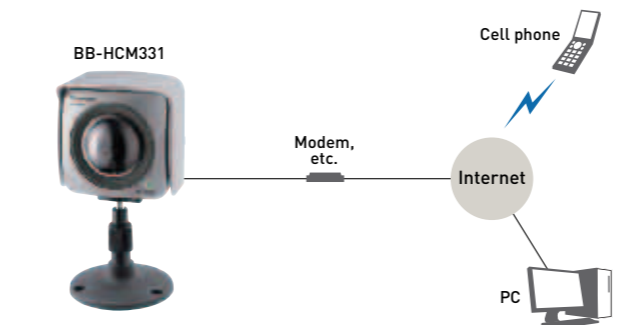


Installing a camera can deter crime and reduce the number of car break-ins. The IPsec protocol also ensures that images will not be picked up by electronic eavesdropping during data communications, thus providing both convenience and safety.

Recommended functions

- For protecting against electronic eavesdropping → **IPsec compatibility** P. 9
- For thorough monitoring, even in the dark → **Color Night View mode** P. 8
- For saving a large amount of images → **SD Memory Card recording** P. 9

Recommended model





Posting images on the web **Posting nightclub images**

Thanks to the CCD sensor, you can post sharp, clear images of a dance floor on your Web site to show the inside of the club. This will be well received by customers. Showing club images on a Web site also keeps the employees on their toes, which helps to improve the quality of their service.

Recommended functions

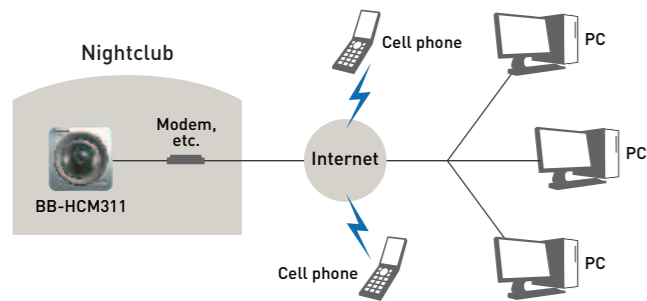
For setting your URL
Viewnetcam.com service supported → P. 8

For easy access
Cell phone monitoring → P. 9

For moving the camera in desired directions
Remote pan and tilt control → P. 10

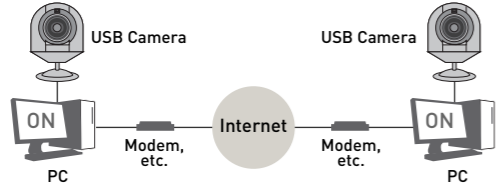
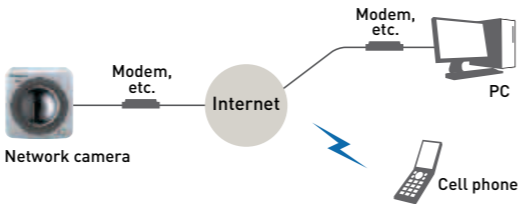
Recommended model

- BB-HCM311 



The differences between network cameras and USB cameras

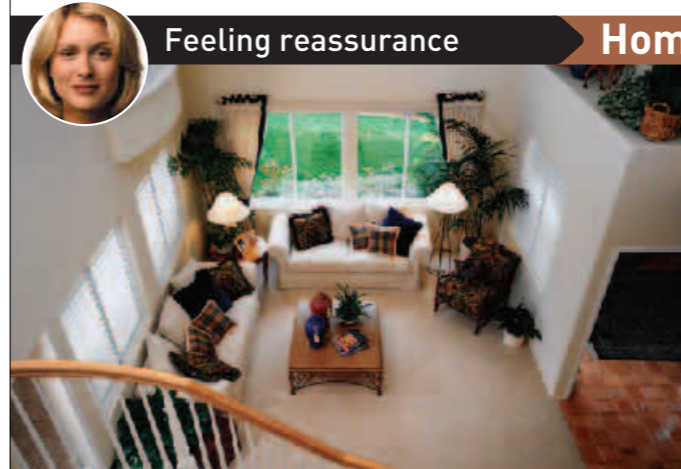
With a network camera you don't need a PC near the camera to send images. Using a network camera with a built-in Web server, you can check images anywhere, control the camera, and store and save images, without having to use a PC. You can use it in so many more ways than a USB camera.

	USB camera	Network camera
Features	A PC peripheral. Captures images near the PC. Often used with software like NetMeeting.	A built-in Web server sends and stores captured images without a PC. Can be remotely operated. Specially designed for monitoring.
System		
Installation	Only near the PC (no wireless capability) Difficult to install multiple units.	Installs on the ceiling, a wall, or outdoors (has wireless capability)*1 No limit to the number of units installed.*2
Transmission	The PC must be constantly running.	Captures and sends without a PC.
Remote operation	Not possible	Pan, tilt, and zoom can be operated from a PC or cell phone.*3
Monitoring	Only from a PC.	Can also be checked from a cell phone*3 or TV.*4

*1: A wireless camera monitoring system must be separately purchased.
*2: See Multi-camera capability on page 9 for screen display methods.
*3: The cell phone must be able to connect to the Internet.
Only still images in JPEG format can be displayed.
*4: For details, refer to wireless camera monitoring system on page 12.

Enjoy peace of mind while you are away

The network camera lets you keep an eye on your children, pets, and home from virtually anywhere. Imagine the reassurance you will feel by being able to check on things at home while enjoying yourself somewhere else.



Feeling reassurance **Home monitoring**

The system detects any changes in your empty house and sends an image to your office PC or cell phone, so you only need to check the camera image when there is an abnormal change in your house. Using the wireless camera monitoring system, you can also check the entire house on a TV screen.

Recommended functions

For alerting yourself when motion occurs
Image transfer function → P. 9

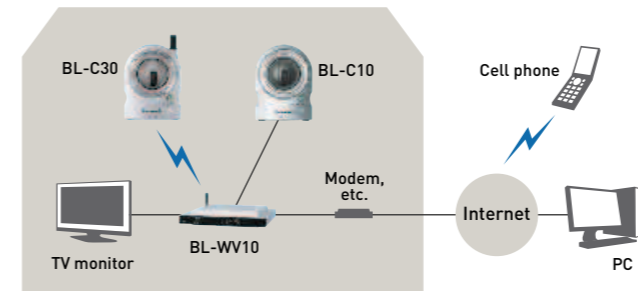
For checking a large area
Remote pan and tilt control → P. 10

For covering the lens when it is not needed
Privacy mode → P. 10

For checking on a TV screen
Wireless camera monitoring system → P. 12

Recommended models

- BL-C30 
- BL-WV10 (Wireless camera monitoring system) 



Monitoring and checking **Home pets**



You can watch your pets while on vacation, so you feel close to your animals always. Because images can be temporarily recorded during specified time zones in the camera's built-in memory, you can view them at your leisure after returning home.

Recommended functions

For checking pets while you are away
Viewnetcam.com service supported → P. 8

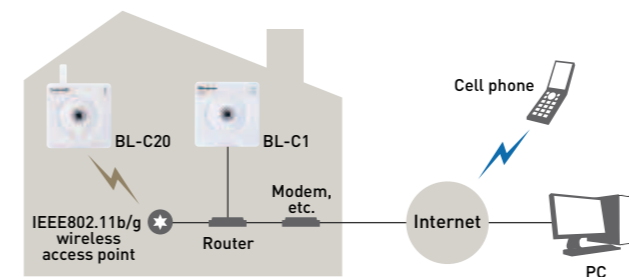
For a close-up of your pet's expression
10x digital zoom function → P. 10

For viewing many images at a later time
Buffered images → P. 9

For recording moving images
Recording program → P. 9

Recommended model

- BL-C20 



Meeting your needs with versatile functions and a wide line-up

There is a wide range of Panasonic network cameras to suit your particular usage conditions and needs. You're sure to find exactly the one you want.

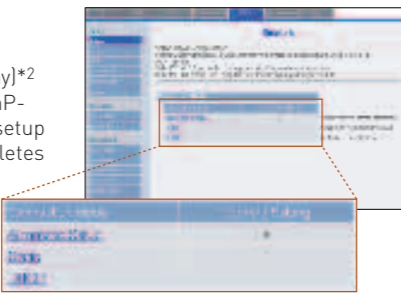
Easy setup

Panasonic network cameras are easy to set up, even for people who have no special computer knowledge. Panasonic also offers a free service that lets you choose an easy-to-remember URL*1 for accessing the camera over the Internet.

Simple UPnP setting

The cameras support UPnP (Universal Plug and Play)*2 for easy network setting when combined with a UPnP-compatible router. With the included software, the setup wizard guides you through the procedure and completes the network setup automatically.*3 It eliminates complicated procedures and prevents possible setting errors.

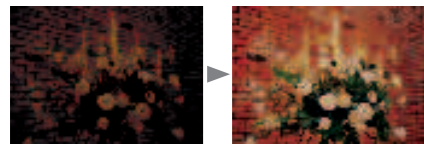
Applicable models all models



Capture

Seeing even in the dark Color Night View mode*7

When the subject darkens, the camera automatically adjusts the brightness to show you the image. A CCD image sensor and smooth motion capture at 30 frames/sec*8 combine to let you see down to a minimum of 0.09 lux*9. You see clear, easy-to-view images even in the dark.

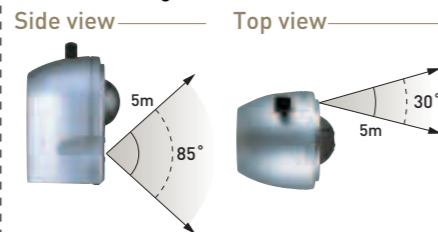


Model no.	Sensor type	Minimum brightness
BB-HCM381, BB-HCE481	CCD	0.09 lux
BB-HCM311, BB-HCM331	CCD	0.20 lux
BL-C10, BL-C30	CMOS	1.00 lux
BL-C1, BL-C20	CMOS	4.00 lux

Alerting yourself when changes occur Built-in human detection sensor

The sensor*10 detects people, animals, etc., due to temperature changes. When detected, the image or a series of images is sent to you by e-mail for easy checking.

■ Detection range



Applicable models BL-C10, BL-C30

Viewnetcam.com service supported

The viewnetcam.com service*4 eliminates the need to obtain a static IP address*5 for the camera. Just choose an easy-to-remember camera name,*6 and access it directly by inputting <http://CAMERANAME.viewnetcam.com>

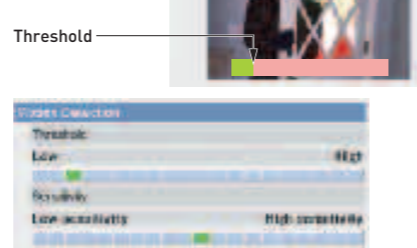


Access www.viewnetcam.com for registration information.

Applicable models all models

Motion detection function

In this mode, the camera captures an image only when motion is detected based on the preset threshold or sensitivity of the camera. The image can be stored temporarily in the camera*11, or sent to you by e-mail or FTP data transfer.*12



Applicable BB-HCM311, BB-HCM331, BB-HCM381, BB-HCE481, BB-HCS301, BL-C1, BL-C20, BL-C30

Store

Timer lap recording SD Memory Card*13 recording

A large quantity of images can be saved without even using a network. Cards can also be carried about easily, so data can be shared with other equipment. For example, a 2GB card can hold about 80 days*14 worth of images when shooting at 1-minute intervals.



*The cover is removed in the photo to show the function.

■ Number of recording files per SD Memory Card (Image quality: Standard)

SD Memory Card	Resolution		
	640 x 480	320 x 240	160 x 120
	Approx. 33KB/file	Approx. 16KB/file	Approx. 5KB/file
2GB	Approx. 55,000 images	Approx. 115,000 images	Approx. 370,000 images
1GB	Approx. 28,000 images	Approx. 58,000 images	Approx. 180,000 images
512MB	Approx. 14,000 images	Approx. 29,000 images	Approx. 94,000 images
256MB	Approx. 7,000 images	Approx. 14,000 images	Approx. 47,000 images
128MB	Approx. 3,000 images	Approx. 7,000 images	Approx. 23,000 images
64MB	Approx. 1,000 images	Approx. 3,000 images	Approx. 11,000 images

Applicable BB-HCM311, BB-HCM331, BB-HCM381, BB-HCE481, BB-HCS301

Saving incidental images Buffered images*15

Images can be temporarily saved in the camera's internal memory. This can be combined with the human detection sensor, timer, and other functions to save only desired scenes and check them in the order of occurrence.

■ Maximum number of storable images*

Model no.	320 x 240, Standard
BB-HCM311, BB-HCM331 BB-HCM381, BB-HCE481, BB-HCS301	Approx.125
BL-C10, BL-C30 BL-C1, BL-C20	Approx.250

* The maximum number of storable images varies depending on the subject.

Applicable models all models

Connect

Connecting to next-generation networks IPv6*16 compatibility

These are the world's first*17 network cameras with standard IPv6 support. Thanks to the dual-stack IPv4/IPv6 structure, they can be installed both on an IPv4 network today, and on an IPv6 network in the future.



Applicable BB-HCM311, BB-HCM331, BB-HCM381, BB-HCE481, BB-HCS301

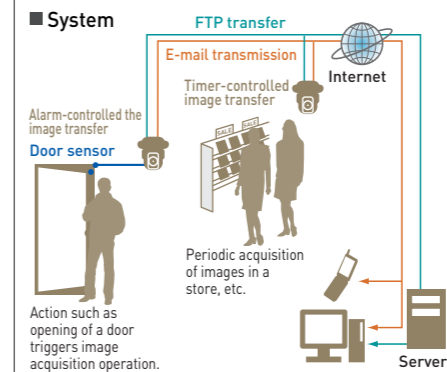
Powerful data security IPsec*19 compatibility

During data communications, packets of data are encrypted. Even if someone were to intercept the data by electronic eavesdropping, it would be extremely difficult to decipher. This function is added to the conventional user name and password authentication to further boost security.

Applicable BB-HCM311, BB-HCM331, BB-HCM381, BB-HCE481, BB-HCS301

Alerting yourself when motion occurs Image transfer function

In accordance with settings for the sensor alert, motion detection, human detection sensor, timer, and other functions, the camera will transfer images and a data log by e-mail*20 to an e-mail address or by FTP to a server. This allows you to check images only when necessary, and also prevents you from forgetting to check them.



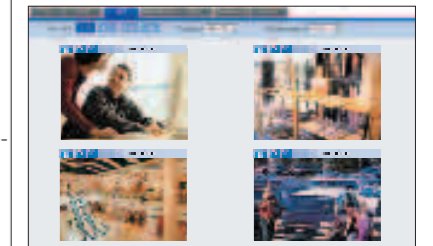
Applicable models all models

View

Monitor several areas simultaneously Multi-camera capability*21

Check the images from four cameras at once, and converse with one camera site*22. Monitor 12 cameras in all, and display them all at once (with no audio). Use a recording program*23 to save images and audio to a PC hard disk.

■ Browser image



Applicable models all models

Checking at any time Cell phone monitoring*24

Still images from the camera can be checked by any cell phone that is capable of Internet access. The pan, tilt, and zoom functions can also be operated by using the cell phone.



Applicable models all models

Easy viewing of camera-saved images Buffered image viewer

The viewer makes it easy to check up to 250 images*25 saved in the camera's buffer memory. You can skip through the images in units of 10 or 100, display their recording time, and download them to a PC if desired.*26

■ Buffered image viewer



Applicable models all models

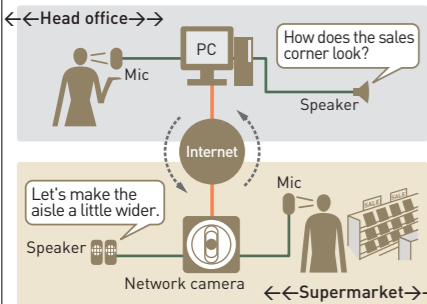
Recording moving images Recording program*27 (included)

Applicable models all models

Control

Smooth communication Audio 2-way communication*28

Use the built-in mic*29 and a commercially available speaker with amp to speak back and forth. This lets you exchange information with walkie-talkie type communication.

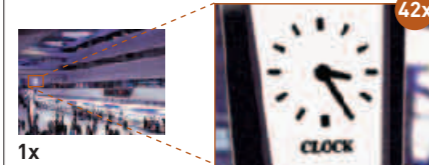


Applicable models BB-HCM311, BB-HCM331, BB-HCM381, BB-HCE481, BB-HCS301

Checking conditions faraway Zoom function

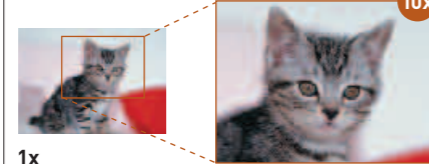
You can use the zoom function to get a close, detailed look at certain parts of the image while you are monitoring. The 42x zoom is especially convenient for monitoring areas that have considerable depth.

42x zoom (21x optical, 2x digital)



Applicable models BB-HCM381, BB-HCE481

10x digital zoom



Applicable models BB-HCM311, BB-HCM331, BB-HCS301, BL-C1, BL-C10, BL-C20, BL-C30

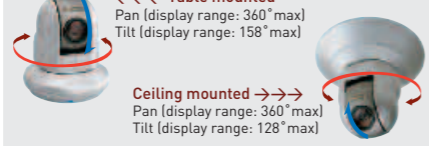
Moving the camera as desired Remote pan and tilt control

You can use a PC or cell phone directly to change the direction that the camera is facing while monitoring the image. This lets you monitor a large area with a single camera.

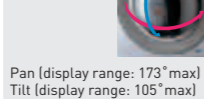
Applicable models BB-HCM311, BB-HCM331, BB-HCM381, BB-HCE481, BL-C10, BL-C30

Operating range

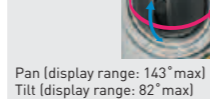
BB-HCM381, BB-HCE481



BB-HCM311, BB-HCM331



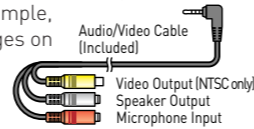
BL-C10, BL-C30



Others

Using directly — without the Internet Analog video output*30

The analog output terminal lets you combine the network camera with existing equipment. For example, you can check images on a TV screen, and record them with a video recorder.



Applicable models BB-HCM381, BB-HCE481

Install just about anywhere Easy PoE power supply

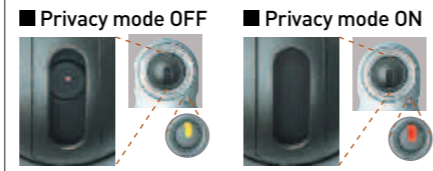
The power is supplied through the Ethernet cable, so the network camera can be used in places that would ordinarily be difficult to install it in, like on the ceiling where there is no power outlet.

→→→ An image showing the interface port is provided on page 16.

Applicable models BB-HCE481

Blocking monitoring when not needed Privacy mode

When you return home, just press a button to cover the lens and protect your privacy. System administrators can also do this over the network.



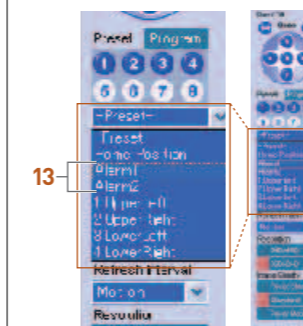
Applicable models BL-C10, BL-C30

Remote control

BB-HCM381, BB-HCE481 Web browser



BB-HCM311, BB-HCM331, Web control bar



BL-C10, BL-C30 Web control bar



BL-C1, BL-C20 Web control bar



1 Pan scan (Horizontal movement)
The pan scan function moves the camera continuously right and left.

2 Tilt scan (Vertical movement)
The tilt scan function moves the camera continuously up and down.

3 Remote pan and tilt
This function lets you change the direction of the camera by remote control, using a Web browser.

4 Home position
This function returns the camera shooting position to a pre-registered home position.

5 Zoom function
Using the Web browser, you can operate the camera lens to increase or decrease the magnification.

6 Focus control
Using the Web browser, you can automatically or manually adjust the camera's focus.

7 Preset positions
You can register up to 20* shooting positions in advance, to aim the camera exactly where you want it.

8 Click centering
Using a Web browser, you can simply click on the part of the image you want to see, and automatically bring that part to the center of the screen.

9 Snapshot button
Captures a still image and saves it on the PC.

10 Talk button
By using the microphone of the PC, voice can be transmitted to the speaker connected to the network camera. Clicking on this button pauses voice transmission.

11 Listen button
Produces the sound captured by the microphone connected to the network camera. Clicking on this button resumes the sound.

12 Sound level adjustment bar
Put the cursor on the slider and move it to adjust the sound level. The sound level increases when it is moved to the right, and decreases when it is moved to the left.

13 Alarm positions
Used to register up to two directions to which the camera moves when an alarm (separately purchased) is detected.

14 External output
Used to control the I/O connector output signal.

*Functions 10, 11 and 12 are not included on BL-C1, BL-C10, BL-C20 and BL-C30.

Network camera line-up

BB-HCE481 42x zoom PoE

- PoE power supply
- 42x zoom (21x optical & 2x digital)
- Audio 2-way communication
- SD Memory Card recording
- IPV6 network camera
- Pan/tilt
- Color Night View mode
- New CCD image sensor
- Multi-camera capability
- Analog video output (NTSC only)

BB-HCM381 42x zoom

- 42x zoom (21x optical & 2x digital)
- Audio 2-way communication
- SD Memory Card recording
- IPV6 network camera
- Pan/tilt
- Color Night View mode
- New CCD image sensor
- Multi-camera capability
- Analog video output (NTSC only)

BB-HCM331 10x digital

- Audio 2-way communication
- SD Memory Card recording
- IPV6 network camera
- Pan/tilt
- 10x digital zoom
- Color Night View mode
- New CCD image sensor
- Multi-camera capability
- Splash-resistant body

BB-HCM311 10x digital

- Audio 2-way communication
- SD Memory Card recording
- IPV6 network camera
- Pan/tilt
- 10x digital zoom
- Color Night View mode
- New CCD image sensor
- Multi-camera capability

BL-C30 10x digital Wireless

- Wireless LAN (802.11b/802.11g)
- Human detection sensor
- Privacy mode
- Pan/tilt
- 10x digital zoom
- Color Night View mode
- CMOS image sensor
- Multi-camera capability

BL-C10 10x digital

- Human detection sensor
- Privacy mode
- Pan/tilt
- 10x digital zoom
- Color Night View mode
- CMOS image sensor
- Multi-camera capability

BL-C20 10x digital Wireless

- Wireless LAN (802.11b/802.11g)
- Motion detection function
- 10x digital zoom
- Color Night View mode
- CMOS image sensor
- Multi-camera capability

BL-C1 10x digital

- Motion detection function
- 10x digital zoom
- Color Night View mode
- CMOS image sensor
- Multi-camera capability



Optional system equipment

Easy Monitoring with a TV

Wireless camera monitoring system package **BL-MS102** | Wireless camera monitoring system **BL-WV10**

You can now check the images of the network camera on a TV screen. This will be especially attractive to users who want to monitor something, but don't want to invest in a large surveillance system.



*The BL-MS102 is a set consisting of one BL-WV10 unit and two BL-C30 units.

Sample application

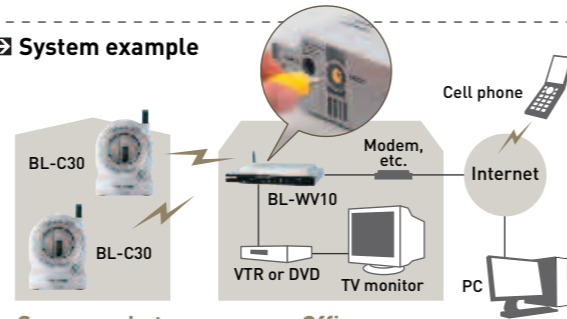
Medium-scale business monitoring



Locations can be easily monitored over a TV in the office. Remote monitoring is also possible from anywhere you go over the Internet, using a PC or cell phone. A variety of advanced functions also make monitoring easier by allowing extended-time recording, recording only when there is movement detected, etc.

Other applications: Monitoring homes, Monitoring entrances

System example



*The transmission range when using a wireless LAN varies depending on the surroundings. The BL-WV10 can also be hard wired.

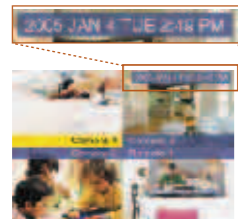
Periodically switching cameras
Sequential display function

When monitoring with multiple cameras, the camera displaying the image can be automatically switched at preset intervals. This is also handy when recording the images for later viewing, as it lets you check all of the locations regularly and completely.



Check several areas at once, complete with time recording
Multi-camera capability with time stamp

You can check multiple cameras at the same time. The present time is displayed, which can also help to increase work efficiency by telling you the time periods when work is the busiest.



Convenient for saving and carrying about
SD Memory Card recording*31

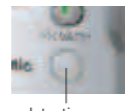
You can save a large quantity of camera images onto an SD Memory Card in the TV adaptor. By connecting to a DVD recorder or VTR, you can record even longer.

SD capacity	Movie recording time		Picture storage Number of pictures HIGH
	Timer recording	LONG*	
8MB	1hr.	140	
16MB	2hr. 30min.	300	
32MB	5hr. 10min.	630	
64MB	10hr. 40min.	1290	
128MB	21hr. 40min.	2600	
256MB	43hr. 20min.	5190	
512MB	87hr. 10min.	10460	
1GB	167hr. 50min.	20120	
2GB	341hr. 20min.	40920	

*Resolution : 320 x 240, Image quality : favor motion, Image refresh interval : 5 sec.

Alerting yourself when motion occurs
Automatic alert settings

The human detection sensor*32 (detects heat), motion detection function*33 (detects light), and external sensor*34 alert you in a variety of ways when there has been a change in the monitoring site. You can have the TV screen switch to show the camera image, alert yourself with a buzzer, or, with the external sensor, have the image sent to you as an e-mail attachment. These functions enable much greater flexibility in monitoring.



Carefully checking details
16x digital zoom function

By using the 16x digital zoom function*35, you can easily check the number of products in stock or see how machinery is running without having to go all the way to the warehouse.



Easy pan and tilt operation
Remote control

Use the included remote controller to operate the pan and tilt camera functions while watching the TV screen, or to make settings. Operation is easy to understand, and you don't need a lot of extra equipment, so it is economical.



In addition to the functions listed above, the BL-MS102 can also use the BL-C30 functions. See pages 8 to 10 for details.

Next-generation network adaptor

Use your home's power outlets as Internet ports

HD-PLC Ethernet adaptor **BL-PA100 / BL-PA100KT*** *Set of two BL-PA100s

This adaptor eliminates the need for all of the messy cables when connecting to the Internet at home. It also protects against electronic eavesdropping when using a wireless connection. With a simple 3-step setup procedure, the HD-PLC adaptor can turn all of your home's power outlets into Internet connection ports.



BL-PA100

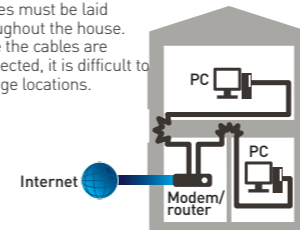


Connect through any AC outlet in your home

The HD-PLC adaptor makes it possible for your home electrical wiring to serve as a link between your PC and modem. Getting online access is as easy as plugging into a power outlet. You can move your PC and connect to the Internet anywhere there is a power outlet.

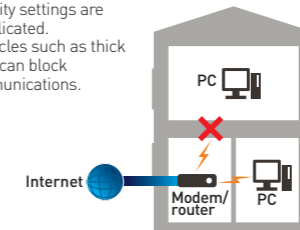
LAN (Ethernet)

- Cables must be laid throughout the house.
- Once the cables are connected, it is difficult to change locations.



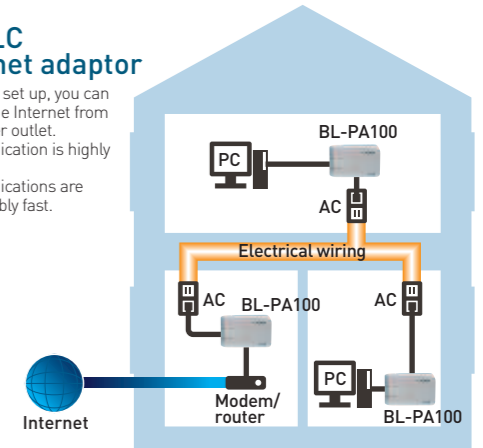
Wireless LAN

- Security settings are complicated.
- Obstacles such as thick walls can block communications.



HD-PLC Ethernet adaptor

- Once it is set up, you can access the Internet from any power outlet.
- Communication is highly safe.
- Communications are comfortably fast.



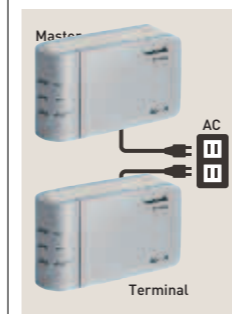
Easy setup - No PC required

There's no tricky installation or complicated settings. Just take the BL-PA100KT out of the box and plug it into the power outlet. Set up the other equipment on the network, such as routers and PCs, as described in their respective instructions. Adding more HD-PLC adaptors*36 is easy too, using the following quick 3-step procedure.

* One HD-PLC adaptor can be set as the master unit, and individual terminal units can be registered. One of the BL-PA100KT units is set as a master unit and the other is set as a terminal unit when they are shipped from the factory.

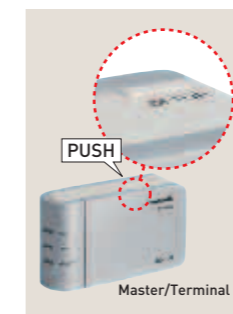
Step 1
Plug it in

Plug the Master and Terminal units into the same power outlet.



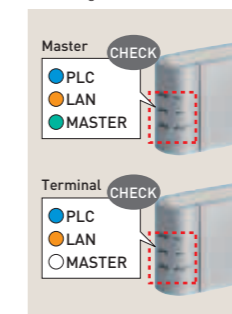
Step 2
Push two buttons

Push the Setup button on each unit.



Step 3
Watch it light up

An LED lights up to show that setup is complete. You can move the units anywhere you want to go online at home.



Fast, reliable, and secure

With speeds of up to 190 Mbps*37, advanced error correction, and AES 128-bit encryption, the BL-PA100 provides peace of mind at the speed of light.

* Connecting this product to a power strip which has a noise filter or surge protector may interfere with the performance of this product. For best results, please connect this product directly to a wall outlet.

** Certain electrical devices such as hair dryers or vacuum cleaners emit electrical noise, and may interfere with the performance of this product.

*** This product may interfere with short wave radios, lights or lamps which have a dimmer switch or a touch-sensitive on/off feature, or other PLC adaptors which do not use the HD-PLC standard.

Simple network speed testing

You can confirm the speed of each adaptor's HD-PLC connection by simply pressing a button.

Refer to the chart below to determine the network speed.

PLC	LAN	MASTER	Network speed
○	○	○	No link
○	○	●	Good
○	●	●	Better
●	●	●	Best

* The speed testing function provides a simple indication of the communications speed between the Master and Terminal units. It does not indicate the communications speed between Terminals. Also, the indicated speed is only valid for the moment at which it was measured. It does not imply that the indicated speed will be maintained.

●●● Part names and dimensions

Unit:mm

BB-HCM331	BB-HCM381 / BB-HCE481
<p>Shown with hood attached</p> <p>148, 108, 100, 94, 105, 113</p>	<p>96.6, Ø86, 139.5, Ø122.6</p> <p>BB-HCM381, BB-HCE481</p>

BL-C10	BL-C20
<p>98, 74, 73</p>	<p>85, 85, 35.5</p>

BL-WV10	BL-PA100
<p>Mode selector: Change modes to use the desired functions. After changing modes, turn the power off and then on again to make the mode change effective.</p> <p>Normal: For ordinary uses such as monitoring and recording camera images. Setup: For simple settings. SEQ. Display: For successively displaying the images of connected cameras.</p>	

Recording sounds simultaneously

Network camera recorder BB-HNP11*38

Because sounds can be recorded together with images, the ambience of a store can be captured more accurately to help you plan effective marketing strategies. Images from up to 10 cameras can be recorded. Images can also be searched quickly using a keyword or recording date/time.

Motion detection recording and timer-recording functions*39

The program is equipped with a motion detection recording function that activates recording only when people or other moving objects are detected, and a timer-recording function that starts and stops recording at specified times.

Recorded image searches

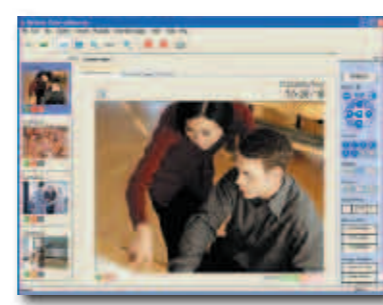
Recorded images can be searched using conditions such as a preset keyword or recording type (timer recording, motion detection recording).

Recording capacity limit

The maximum amount of data to be recorded on the hard disk of the PC can be set for each camera. When the set maximum amount is reached, previously recorded data is overwritten by new data, thus allowing the hard disk space to be used more effectively.

Automatic backup*40

Recorded images can be saved in another memory location at a preset time.



BB-HNP11

●●● Glossary


<input type="checkbox"/> DDNS (Dynamic DNS)	<input type="checkbox"/> ISP (Internet Service Provider)
Enables clients with dynamically assigned addresses to register directly with a server running the DNS service and update the DNS table dynamically. DDNS eliminates the need for other Internet naming services, such as Windows Internet Name Service (WINS), in a homogeneous environment.	This is a company that has the servers, routers, communication lines and other equipment necessary to establish a presence on the Internet.
<input type="checkbox"/> Domain	<input type="checkbox"/> LAN (Local Area Network)
This is the name for the overall configuration of a server-based network for the Internet or an intranet.	This is a computer network for use in comparatively small spaces, such as in floors and buildings, university campuses, etc.
<input type="checkbox"/> FTP (File Transfer Protocol)	<input type="checkbox"/> POP (Post Office Protocol)
This protocol is used when transferring files over a TCP/IP network, such as the Internet or an intranet. It is presently used as frequently as HTTP and SMTP/POP3 for the Internet.	This protocol is used to receive e-mail over the Internet or a LAN network. Used by clients when receiving e-mail from a mail server, it includes an authentication function. Servers also use this authentication function when sending e-mail by SMTP. (POP before SMTP)
<input type="checkbox"/> IEEE802.11b/IEEE802.11g	<input type="checkbox"/> Port forwarding
These are IEEE (Institute of Electrical and Electronics Engineers, based in the U.S.) wireless LAN standards. They are designed for general wireless networks, including 802.11 infrared networks. 802.11b defines the network standards for a maximum communication speed of 11 Mbps using the 2.4-GHz band. 802.11g is compatible with 802.11b and allows data communication at a maximum of 54 Mbps using the same 2.4-GHz band.	This refers to forwarding communications that are sent to a particular port to a different and specified port. Port forwarding makes it possible to seamlessly access a home network from the Internet, thereby enabling a Web server, mail server, etc., to be built into a home network.
<input type="checkbox"/> Intranet	<input type="checkbox"/> SMTP (Simple Mail Transfer Protocol)
This is a network built within a company by using standard Internet technologies such as TCP/IP communications protocol.	This protocol is used to send e-mail over the Internet or a LAN network. It is used when e-mail is exchanged between servers, and when a client sends e-mail to a server.
<input type="checkbox"/> IP address (Internet Protocol Address)	<input type="checkbox"/> SPI (Stateful Packet Inspection)
Address information necessary for using IP protocol. An IP address must be allocated to all network equipment that communicates with Internet protocol. In particular, each network device (terminal) that is connected to the Internet must have an IP address that is unique to that device worldwide.	This is a function that prevents unauthorized access by reading packet data that passes through a firewall, judging its contents, and dynamically opening or closing a computer port.
<input type="checkbox"/> IPsec	<input type="checkbox"/> UPnP (Universal Plug and Play)
A technology standard (the IP Security Protocol) for ensuring the security and integrity of networks that use Internet Protocol. IPsec includes encryption and authentication technologies. It's a common element of VPNs (Virtual Private Networks) running over the Internet.	UPnP technology works on a TCP/IP base to automatically detect network devices, exchange information, etc. MSN Messenger 5.0 or later, and Windows Messenger 4.7 or later are among the applications that support UPnP. UPnP use is defined by the UPnP Forum.
<input type="checkbox"/> IPv4 (Internet Protocol version 4)	<input type="checkbox"/> VPN (Virtual Private Network)
This is the standard protocol used on the Internet today. The address space is 32 bits (capable of supporting 4,294,967,296 terminals).	Because data communications over the Internet does not usually involve data encryption or user authentication, there is a risk that the contents will be subject to eavesdropping or alteration by a third party. Encrypting the data before sending it over the Internet makes it secure. By making this encryption transparent to the user, and employing user authentication to allow access to only specific users, the same level of security can be achieved on a public telephone network as on a leased line. This is referred to as a VPN.
<input type="checkbox"/> IPv6 (Internet Protocol version 6)	
This protocol is being prepared by the IPNG working group of the IETF (Internet Engineering Task Force) as a replacement for the present IPv4 to cope with the growing number of Internet users. IPv6 has a 128-bit IP address (compared to the 32-bit address of IPv4), a simplified packet header, and additional security functions.	

Specifications


Network camera				
Product type	Business use			
	Outdoor/Indoor type		Indoor type	
	Voice function		Zoom, voice function	
Model No.	BB-HCM331	BB-HCM311	BB-HCE481	BB-HCM381
Image data compression system	JPEG (Motion JPEG for moving image display)			
Video resolution	640 x 480, 320 x 240, 160 x 120			
Image quality	3 modes (favor clarity, standard, favor motion)			
Frame rate*1	Max. 12 frames/sec (640 x 480)*2 Max. 30 frames/sec (320 x 240) Max. 30 frames/sec (160 x 120)			
Security	User ID/Password/IPsec			
Encryption algorithm	DES-CBC, 3DES-CBC, AES-CBC			
IPsec function*3	ESP encryption, ESP authentication, transport mode (main mode only)/tunnel mode IKE (Internet Key Exchange)			
Supported protocols	IPv4/IPv6 dual stack IPv4: TCP, UDP, IP, HTTP, FTP, SMTP, DHCP, DNS, ARP, ICMP, POP3, NTP, IPsec, UPnP IPv6: TCP, UDP, IP, HTTP, FTP, SMTP, DNS, ICMPv6, POP3, NDP, NTP, IPsec			
User access limit	Max. 30 simultaneous accesses (max. 10 accesses with voice reception)			
Buffered images*4	Approx. 125 images (320 x 240) • Approx. 16 KB per image • Without using SD Memory Card			
Zoom	10 x digital zoom		Maximum 42x (21x optical, 2x digital)	
Viewing angle	53° horizontal (total 173°) 40° vertical (total 105°)		Tele: 2.6°, Wide: 51° [horizontal] Tele: 1.9°, Wide: 38° [Vertical]	
Pan (horizontal direction)	-60° up to +60°		-175° up to +175°	
Tilt (vertical direction)	-45° up to +20°		-120° up to 0° (On a table), 0° up to +90° (On a ceiling)	
Revolving speed	Pan: Max. 80°/sec Tilt: Max. 80°/sec		Pan: Max. 300°/sec Tilt: Max. 200°/sec	
Number of pixels	1/4 inch, approx. 320,000 pixels, CCD sensor		1/4 inch, approx. 380,000 pixels, CCD sensor	
Lens focal point	Fixed (focal range: 0.5 m to ∞)		Auto/Manual (40 steps)	
Lens brightness	F3.5		F1.6 (Wide) - 3.6 (Tele)	
Required light intensity	3 to 100,000 lux (in color night view mode: 0.2 to 100,000 lux)		3 to 100,000 lux (in color night view mode: 0.09 to 100,000 lux)	
Voice direction	Half-duplex two-way communication (transceiver system)			
Voice data compression system	ADPCM 32 kbps			
Voice band	300 Hz ~ 3.4 kHz			
Audio input	Built-in microphone or external microphone (sold separately), external microphone input terminal (3.5-mm dia. mini-jack)			
Audio output*5	Audio line output terminal for external speaker (3.5-mm dia. stereo mini-jack, monaural output)			
Standards	—			
Antenna	—			
Number of channel	—			
Transmission speed	—			
Security	—			
Network interface	Ethernet (10Base-T/100Base-TX)			
I/O connector for sensor	G GND 1 External sensor input G GND 2 External sensor input 3 External device control output 4 DC power output terminal (10.5~13.5 VDC)			
Analog video output	—		NTSC	
SD Memory Card slot	Full size (operation guaranteed for 2GB, 1GB, 512MB, 256MB, 128MB and 64MB SD Memory Cards)			
Operating temperature	-4°F to 122°F (-20°C to +50°C)		32°F to 104°F (0°C to +40°C)	
Operating humidity	20% to 90% [No condensation]		20% to 80% [No condensation]	
Dimensions (H x W x D)	3 15/16 x 3 15/16 x 2 7/8 inches (100 x 100 x 73.5 mm)		5 1/2 x 4 13/16 x 4 13/16 inches (140 x 123 x 123 mm)	
Weight (Only the unit)	0.68 lb [310 g]	0.66 lb [300 g]	1.43 lb [650 g]	1.41 lb [640 g]
Power supply	AC adaptor: Input 100-240 V AC, Output 12 V DC		PoE	AC adaptor: Input 100-240 V AC, Output 12 V DC
Consumption	6 W		11 W	12 W


*1 This varies depending on the subject, image quality, network environment, PC performance, etc.
 *2 The image update speed may decrease when favor motion is set, when images are recorded onto an SD Memory Card, and when IPsec is used, as well as due to the network environment and PC performance.
 *3 Transport mode [mode for IPsec communication between terminals, for IPv4 only] operating environment: Microsoft® Windows® XP Service Pack 1 only, tunnel mode [mode for IPsec between VPN routers, IPv4/IPv6]
 *4 The number of images that can be stored varies depending on the subject. *5 Install an amp or use a speaker with a built-in amp.

Network camera				
Product type	Home use			
	Indoor type			
	Wireless type	—	Wireless type	—
Model No.	BL-C30	BL-C10	BL-C20	BL-C1
Image data compression system	JPEG (Motion JPEG for moving image display)			
Video resolution	640 x 480, 320 x 240, 160 x 120			
Image quality	3 modes (favor clarity, standard, favor motion)			
Frame rate*1	Max. 7.5 frames/sec (640 x 480)*2 Max. 15 frames/sec (320 x 240) Max. 15 frames/sec (160 x 120)			
Security	User ID/Password			
Encryption algorithm	—			
IPsec function*3	—			
Supported protocols	TCP, UDP, IP, HTTP, FTP, SMTP, DHCP, DNS, ARP, ICMP, POP3, NTP, DDNS		TCP, UDP, IP, HTTP, FTP, SMTP, DHCP, DNS, ARP, ICMP, POP3, NTP, UPnP	
User access limit	Max. 20 simultaneous accesses			
Buffered images*4	Approx. 250 images: (320 x 240), • standard image quality			
Zoom	10 x digital zoom			
Viewing angle	43° horizontal (total 143°) 32° vertical (total 82°)		53° horizontal 41° vertical	
Pan (horizontal direction)	-50° up to +50°		—	
Tilt (vertical direction)	-40° up to +10°		—	
Revolving speed	Pan: Max. 50°/sec Tilt: Max. 50°/sec		—	
Number of pixels	1/4-inch, approx. 320,000 pixels, CMOS sensor			
Lens focal point	Fixed (focal range: 0.5 m to ∞)		Fixed (focal range: 0.3 m to ∞)	
Lens brightness	F2.8			
Required light intensity	1 to 10,000 lux		10 to 10,000 lux (in color night view mode : 4 to 10,000 lux)	
Voice direction	—			
Voice data compression system	—			
Voice band	—			
Audio input	—			
Audio output*5	—			
Standards	802.11 b/g	—	802.11 b/g	—
Antenna	Diversity	—	Diversity	—
Number of channel	13 ch.	—	13 ch.	—
Transmission speed	up to 54 Mbps.	—	up to 54 Mbps.	—
Security	WEP 64/128/152 bit	—	WEP 64/128/152 bit	—
Network interface	Ethernet (10Base-T/100Base-TX)			
I/O connector for sensor	—			
Analog video output	—			
SD Memory Card slot	—			
Operating temperature	41°F to 104°F (+5°C to +40°C)			
Operating humidity	20% to 80% [No condensation]			
Dimensions (H x W x D)	3 7/8 x 2 15/16 x 2 7/8 inches (98 x 74 x 73 mm)	3 7/8 x 2 7/8 x 2 3/8 inches (98 x 74 x 61 mm)	3 3/8 x 3 3/8 x 1 3/8 inches (85 x 85 x 35.5 mm)	3 3/8 x 3 3/8 x 1 inches (85 x 85 x 25 mm)
Weight (Only the unit)	0.44 lb [200 g]	0.37 lb [170 g]	0.36 lb [165 g]	0.22 lb [100 g]
Power supply	AC adaptor: Input 100-240 V AC, Output 12 V DC			
Consumption	6.4 W	3.5 W	4.6 W	1.7 W

Specifications	
Wireless camera monitoring system	
Model No.	BL-WV10 
Image data compression system	JPEG (Motion JPEG for moving image display)
Video resolution	640 x 480, 320 x 240
Image quality	3 modes (favor clarity, standard, favor motion)
Frame rate	Max. 30 frames/sec (320 x 240)
Security	User ID/password
Supported protocols	IPv4: TCP, UDP, HTTP, FTP, DHCP
Camera image display	Displays a maximum of 8 camera images 1 Screen per 8 pages, 2 screens per 4pages, 4 screens per 2 pages Camera pan/tilt operations Sequential display 16 x digital zoom 21 x optical zoom for BB-HCM381/HCE481 Image size switching Resolution switching
Camera motion sensor support	Automatic switch to camera image Automated camera image recording Buzzer/LED notification
LAN interface	
Number of ports	4
Connector type	8-pin modular jack (RJ-45)
Physical interface	IEEE802.3 (10BASE-T) IEEE802.3u (100BASE-TX) MDI/MDI-X with auto-detect
Wireless LAN interface	
Transmission speed*1	11/5.5/2/1 Mbps (IEEE802.11b standard): automatic fallback
Number of channels	13
Security	WEP (64 bit/128 bit/152 bit), wireless stealth functionality (SSID suppression, connection denial/permissions through ANY key), MAC address filtering
Transmission speed*1	54/48/36/24/18/12/9/6 Mbps (IEEE802.11g standard): automatic fallback
Number of channels	13
Security	WEP (64 bit/128 bit/152 bit), wireless stealth functionality (SSID suppression, connection denial/permissions through ANY key), MAC address filtering
Terminal	
Analog video output	1 port
SD Memory card slot	Full size (operation guaranteed for 2GB, 1GB, 512MB, 256MB, 128MB and 64MB SD Memory Cards)
General	
Operating temperature	32°F to 104°F (0°C to 40°C)
Operating humidity	20% to 85% (No condensation)
Dimensions (H x W x D)	1 5/8 x 8 11/16 x 6 3/4 inches (42 x 220 x 171 mm) (excluding antenna and protrusions)
Weight (Main unit only)	1.1 lb (500 g)
Power supply	AC adaptor: Input 100 - 240 V AC, Output 12 V DC
Consumption	7.5 W
*1 The values listed here are the theoretical maximum transmission speeds for wireless networks, and do not represent the actual speed of transmission.	

Network camera recorder

Model No.	BB-HNP11 
No. of registerable camera units	No limitation. Note that the actual number of registerable camera units varies depends on the performance of the PC user.
Camera image view	Images captured by registered cameras are shown in small images on a single screen.
Image display size	6 sizes from 320 x 240 to 60 x 45
Camera setup	Each camera can be set up individually (camera name, resolution, image quality setting, recording format, timer setting, etc.)
Selected camera image display	The image of the selected camera can be enlarged (640 x 240, 320 x 240)
Image zoom in/out	Increase/decrease of image size in 25% steps (25% to 700%), image display size adjusted according to window size
Camera control	Control of basic camera functions (pan/tilt/zoom, brightness, resolution, image quality, sound level).
Preset	Preset functions set in cameras can be used
Recording file format	Original file format: Images and voices are recorded continuously in a moving image file.
Recording media	Hard disk
Recording resolution	640 x 480, 320 x 240, 160 x 120
Image quality	Image-quality priority, standard, motion-priority
Recording interval	Not specified (based on camera's image update interval), specified: 2 images/second to 1 image/hour
No. of camera units for simultaneous recording	Dependent on camera type and performance of PC. See the hardware specifications below.
Recording capacity limit function	Maximum recording capacity value can be set for individual camera units (whether to save new data by overwriting or stop recording when the set capacity is reached can be selected).
Motion detection recording	The unit can be set to activate recording when motion is detected (sensitivity and threshold value can be adjusted) or to record for a certain time length before and after motion detection.
Timer recording	Programming of start and stop schedules based on day of week and time. Key word can also be set for recording. (10 schedules can be registered per camera).
Disk capacity limit function	Monitors the free space on the specified recording disk, and stops recording when the free space becomes smaller than the set value.
Image operation	
Continuous play back	Playback of images with voices, playback of image files. Playback speed can be varied.
Recorded image view	Displays recorded image files in a list format.
Operation of recorded images	Recorded images can be copied or deleted.
Automatic backup of recorded images	Automatically copies recorded images in a specified folder at a set time.
Format conversion	Converts all or part of recorded images to JPEG format file.
Image search	
Recorded image search function	Search using recording time or key word set before recording.
System Requirements	
Item	Description
OS	Microsoft® Windows®XP Professional Edition, Windows® 2000 (Service Pack2 or later)
Web browser	Internet Explorer 6.0 or later
File system	NTFS (NT File System) recommended
Hardware specifications	
Recording condition	<ul style="list-style-type: none"> When 10 network camera units are connected CPU: Intel® Pentium® 4 3GHz or greater, or equivalent compatible processor, RAM: 512 MB or more When 4 network camera units are connected CPU: Intel® Pentium® 4 1.8GHz or greater, or equivalent compatible processor, RAM: 256 MB or more
Voice	Audio output function (including speaker or headphone)

Specifications	
HD-PLC Ethernet adaptor	
Model No.	BL-PA100 
PLC interface	
Standard	HD-PLC
Actual rate	Maximum 70 Mbps (UDP) Maximum 42 Mbps (TCP:When using FTP)
Maximum no. of adaptors per network	16 (including the master)
LAN interface	
Maximum no. of devices connected to each adaptor	8
Interface	10Base-T/100Base-TX Auto MDI/MDI-X
Protocol	IPv4 / IPv6 / TCP / UDP
Operating temperature	32 °F to 104 °F [0 °C to 40 °C]
Operating humidity	20 % to 85 %
General	
Dimensions (H x W x D)	2 3/4 x 4 3/4 x 1 9/16 inches (70 x 121 x 40 mm) (Except protrusion)
Weight	0.53 lb [240 g]
Power supply	Input 120 V AC
Consumption	4 W
HD-PLC standard specification	
Frequency band	4 – 28MHz
Modulation	Wavelet OFDM (16 PAM to 2 PAM)
Transmission PHY rate	Maximum 190 Mbps*1
Access method	CSMA / CA TDMA
Error collection	Reed-Solomon encoder/decoder and Convolutional encoder/Viterbi decoder
Encryption	AES 128-bit encryption
Communication distance	About 490 ft (150 m) (Varies depending on the electrical environment)
*1 This is the theoretical maximum data transmission speed.	
Explanatory notes	
[P.8]	<p>*1 For details, refer to viewnetcam.com service on page 8.</p> <p>*2 A feature designed to simplify the setup of computers and devices connected to the same network.</p> <p>*3 Some UPnP-compatible broadband routers do not support automatic network configuration.</p> <p>*4 A free service provided by Panasonic.</p> <p>*5 A unique IP address that is used by only one device connected to the Internet.</p> <p>*6 If another user has selected the name you would like, the name will be unavailable.</p> <p>*7-1 The image tends to blur more than that in standard mode when viewing a moving subject in low light or when using the pan, tilt, or zoom function.</p> <p>*7-2 Some subjects may require additional time for focusing with the auto focus function.</p> <p>*7-3 When viewing a dark subject in Color Night View mode, spots of white or colored light may appear in the image. This is a natural characteristic of the CCD image sensor, and does not indicate a malfunction.</p> <p>*8 At 320 x 240 or 160 x 120 resolution.</p> <p>*9 BB-HCM381 and BB-HCE481 only</p> <p>*10-1 The sensor detects heat by picking up the infrared light naturally emitted from people and animals. Certain thermal environments, sunlight, air conditioners, heaters, etc., may cause detection errors or decrease the range of the sensor.</p> <p>*10-2 The time needed to send images by e-mail from the camera will vary depending on the condition of the network. When setting the camera to send e-mail images to a cell phone, we recommend setting a longer interval time. If the interval is set too short, more images will be e-mailed to your cell phone and therefore your cell phone charges may be higher.</p> <p>*11 For details, see the buffered images function on page 9.</p> <p>*12-1 The sensor's detection history can also be e-mailed to you once each day at a preset time.</p> <p>*12-2 POP before SMTP authentication and SMTP authentication (PLAIN and LOGIN) are supported. SMTP authentication (CRAM-MD5) is not supported.</p> <p>[P.9] *13-1 The SD Memory Card is sold separately. The camera supports 64MB, 128MB, 256MB, 512MB and 1GB, 2GB SD Memory Cards.</p> <p>*13-2 The BB-HCS301 must be upgraded to give it a 2-GB capacity.</p> <p>*14 320 x 240 resolution and standard quality.</p> <p>*15 Note that buffered images are deleted when the power to the camera is turned off.</p> <p>*16 To connect using IPv6, it is necessary to subscribe to the ISP's "IPv4/IPv6 Dual-Stack" or "IPv6 over IPv4 Tunneling" service. The camera will not work in an IPv6-only network. For more information on IPv6, visit http://www.ipv6.org/.</p> <p>*17 The world's first network cameras of their kind (as of August 2004), featuring an originally developed IPv6-ready protocol stack.</p> <p>*18 This logo mark is issued by the IPv6 Ready Logo Program Committee, an IPv6 promotion group established mainly by the IPv6 Forum.</p> <p>*19 IPsec is an IP security protocol for data encryption standardized by IETF, an international community for standardizing Internet specifications.</p> <p>*20 POP before SMTP authentication and SMTP authentication (PLAIN and LOGIN) are supported. SMTP authentication (CRAM-MD5) is not supported.</p> <p>*21-1 To use this function, one of the cameras must be registered with the addresses of all other cameras in advance. The 640 x 480 resolution cannot be used with the multi-screen display.</p> <p>*21-2 Switching from the moving image mode to the still image mode reduces the load on the network. The still image mode is recommended when the Internet connection speed is 100 kbps or lower (guideline speed).</p>
[P.9]	<p>*21-3 This function can be used only with a PC. It cannot be used with a cell phone.</p> <p>*22 Models with audio capability: BB-HCM311, BB-HCM331, BB-HCM381, BB-HCE481, BB-HCS301</p> <p>*23 For details, refer to BB-HNP11 on page 14.</p> <p>*24 Models that support JPEG only.</p> <p>*25 At 320 x 240 resolution and standard quality.</p> <p>*26 Download viewer software from the Panasonic Network Camera support website at http://panasonic.co.jp/pcc/products/en/netkcam/ and install it on your PC. Recording is possible for only one camera. To record images from multiple cameras, use the BB-HNP11 (described on page 14).</p> <p>*27 The audio feature does not work on cell phones. The talk button and listen button cannot be used simultaneously. Depending on data traffic and the network environment, the audio may be delayed or may break up.</p> <p>*29 A separately purchased mic must be connected to the BB-HCM381, BB-HCE481 and BB-HCS301.</p> <p>*30-1 A mini video cable (with 3.5-mm mini plug) is required.</p> <p>*30-2 The camera cannot be controlled with analog video output.</p> <p>*30-3 The video image displays poorly in color night view mode.</p> <p>[P.10] *31 Recording onto an SD Memory Card is not possible in Sequential Display mode.</p> <p>*32 Applicable models: BL-C10/C30</p> <p>*33 Applicable models: BB-HCM311/HCM331/HCM381/HCE481, BL-C1/C20/C30</p> <p>*34 Applicable models: BB-HCM311/HCM331/HCM381/HCE481</p> <p>*35 The BB-HCM381 and BB-HCE481 allow the use of a 21x optical zoom.</p> <p>[P.11] *36 BL-PA100</p> <p>*37 This is the theoretical maximum data transmission speed of the HD-PLC standard. The actual maximum data transmission speed is about 70 Mbps. Results may vary depending on electrical conditions, network environment, and other factors. See the specifications for more information.</p> <p>[P.14] *38-1 This product can be used only when IPv4 connection is used.</p> <p>*38-2 To use the voice and image recording program, it is necessary to complete the user registration over the Internet and obtain a password. Without the user registration, this function is restricted.</p> <p>*38-3 Program installation requires 20 MB of hard disk space.</p> <p>*38-4 The number of camera units allowed for simultaneous recording varies depending on the PC performance.</p> <p>*38-5 Use of the program may cause voice transmission to be interrupted or moving images to stop in some cases, depending on the PC's performance and the network environment.</p> <p>*39 The detection sensitivity level of the motion detection recording function varies depending on the camera resolution, image quality setting, subject condition, network conditions and other factors.</p> <p>*40-1 Another PC or drive device on the network cannot be specified as the destination location. This function is not equipped with automatic overwriting.</p> <p>*40-2 If the free space on the hard disk runs short, the system may become unstable. Be sure to allow sufficient free space (100 MB or more).</p>
Notes	
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