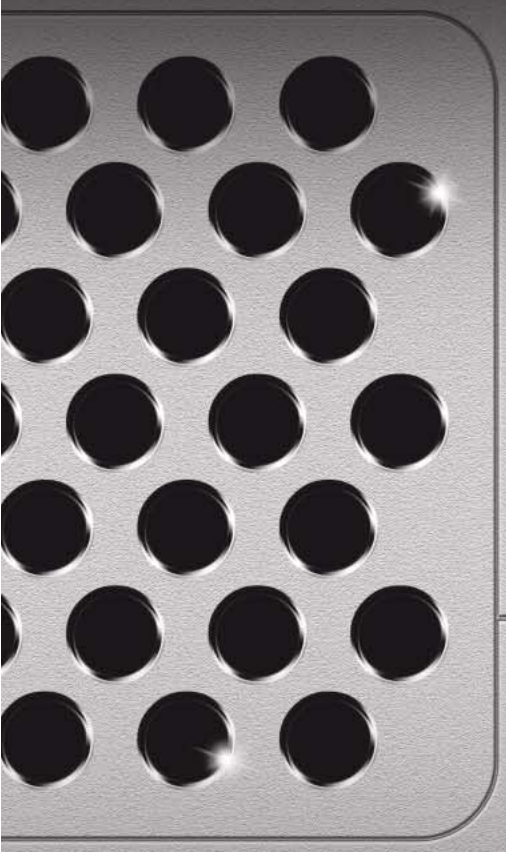
Think GAIA
For Life and the Earth

SANYO

4 Megapixels Full HD Network 10x AF Zoom Camera

VCC-HD4000

1080p FULL HD NETWORK CAMERA



DAY NIGHT

FULL HD
1920×1080

1080p Full HD, 30 IPS with High-Quality Images

4 Megapixels resolution

Compared to conventional VGA cameras having a 640 x 480 pixel resolution, the 4 megapixels (2288 x 1712) CMOS newly employed in the SANYO VCC-HD4000 achieves a resolution approximately 9 times that of a conventional camera. This makes it possible to cover 9 times the monitoring area, the image quality being the same. In addition, image capture of detailed parts are clearer when these images are enlarged, provided shooting angles are the same.

Because of the higher quality of recorded images, areas that conventional cameras with a smaller pixel count cannot cover or confirm can be identified (if stored as local data).

Progressive scan CMOS sensor for image clarity

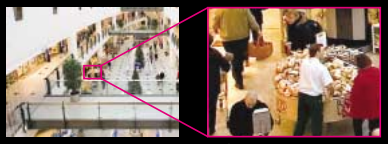
Most sensors utilize the interlace system which tends to make moving images jagged or blurred due to processing time differences. The VCC-HD4000 is equipped with a progressive scan system that ensures clear, smooth images are output.

Interlace image

Progressive image

No focus adjustment required for built-in 10x AF zoom lens

The VCC-HD4000 also incorporates a high-performance, high-resolution optical 10x AF lens that is Full HD compatible. Intensive focusing becomes unnecessary as the camera has been pre-optimized for best performance under actual use conditions, allowing highly detailed, sharp target capture. In addition, a separate digital 16x zoom-in function, along with the optical 10x zoom, can zoom up to 160x (max.).



10x AF zoom lens

Dual Codec for Full HD with H.264 / 2288 x 1712 with JPEG

The VCC-HD4000 achieves 1080p (Full HD) 30 IPS with the H.264 high-performance compression codec optimized for network transmission. It also has a fine JPEG format resolution of 2288 x 1712 pixels. Monitoring can be conducted simultaneously in H.264 and JPEG formats by minimizing network traffic.

- H.264 ActiveX Plug-in required (bundled).

HD image recording on SD memory card or external 2.5" HDD

The VCC-HD4000 is equipped with an SD card slot for saving HD images to an SD memory card. If an external HDD is connected, important data can be stored over a longer period and in more quantity without having to use a PC. The camera is designed to ensure the integrity of stored data.

SD Memory Card (sold separately)

SD Card Slot

- SD memory cards and 2.5" hard disk drives are separately sold. HDD requires a dedicated case (separately sold).
- The HDD can also be installed above the main unit.

More clear, Easier to use

Human face detection

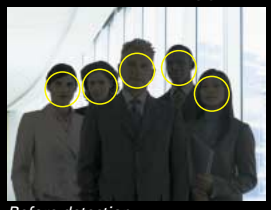
The VCC-HD4000 evaluates portions of human faces in order to automatically detect human faces. The AF function activates when human faces are detected. In addition, for images backlit by the sun, appropriate Backlight Compensation is performed. This unit is capable of detecting up to 32 human faces (max.).

Detects faces and applies optimum focus compensation

Before detection

After detection

Detects faces and applies optimum backlight compensation



Before detection

After detection

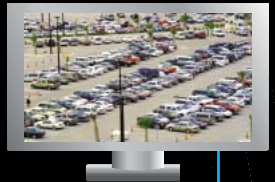
Clipping Function

When image data is output on a conventional SD output (composite) terminal, up to 4 VGA-sized sections (max.) of the displayed image can be selected, clipped and continuously monitored in sequence.

Clipping Function image

Equipped with an HDMI terminal

An HD monitor connects to the VCC-HD4000 with a single HDMI cable, allowing non-compressed digital images to be transferred without any loss of image quality.



HD monitor

HDMI cable

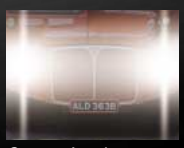
Privacy Masking

Addressing privacy issues, 5 masks (max.) are available for designated areas to prevent unauthorized display of anything that involves privacy on the display screen. Masking patterns are easily set with drag and drop.

Privacy Masking image

Smearless

The detection function offers two different advantages: Conventional CCD units are known to generate vertical noise (smears) associated with bright spots. The new sensor diminishes these smears and offers a clear and bright picture.



Conventional cameras

VCC-HD4000

True Day/Night

DAY NIGHT

A color camera, which captures objects in vivid colors in daylight, becomes a high-sensitivity B/W camera during the night and provides tiny details even in dark corners. A day/night camera is a two-in-one solution.

Alteration Detection

VCC-HD4000 verifies by itself whether or not an electronic alteration was made to original images.

Cable cover

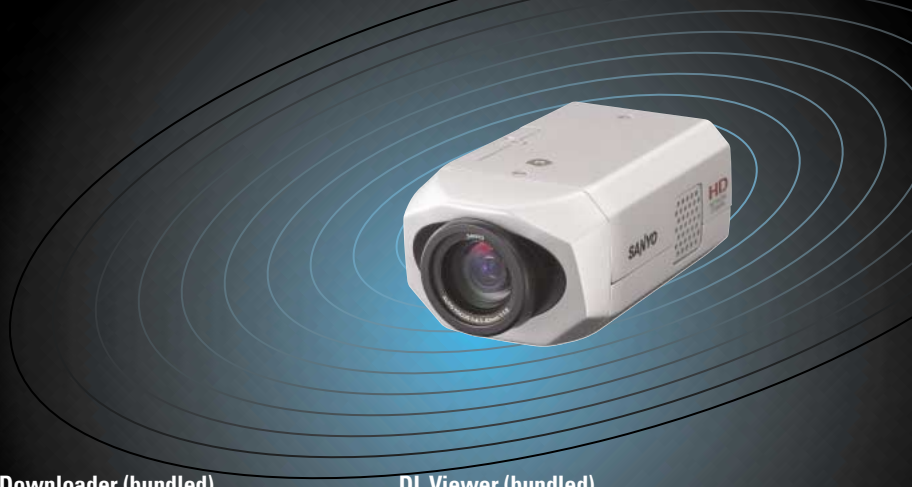
System expandability has been designed into the versatile VCC-HD4000 which incorporates connections for HDTV, LAN, HDD, among others. The rear panel has a cover for neat storage of external connection cables.

Recording time collation table based on the memory capacity and recording conditions

Codec	Resolution	Picture Quality	Recording Rate (max.)	Bit Rate (approx.)	Capacity for 1 hr. rec
H.264	1920 x 1080	SuperFine	30 ips	8.0Mbps	5.6GB
	1280 x 720	SuperFine	30 ips	6.6Mbps	4.7GB
	640 x 360	SuperFine	30 ips	1.8Mbps	1.5GB
	1920 x 1080	Basic	30 ips	4.0Mbps	2.9GB
	1280 x 720	Basic	30 ips	2.5Mbps	2.0GB
	640 x 360	Basic	30 ips	0.55Mbps	0.64GB
JPEG	2288 x 1712	SuperFine	3 ips	13.0Mbps	6.0GB
	1920 x 1080	SuperFine	5 ips	12.4Mbps	5.7GB
	640 x 360	SuperFine	30 ips	13.4Mbps	6.2GB
	2288 x 1712	Basic	3 ips	4.8Mbps	2.4GB
	1920 x 1080	Basic	5 ips	5.4Mbps	2.7GB
	640 x 360	Basic	30 ips	4.8Mbps	2.4GB

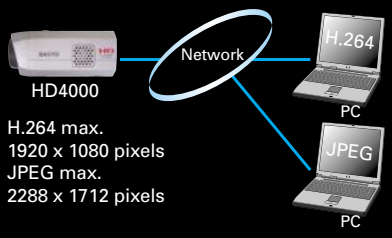
*Bit rate and 1 hr. rec data are approximate.

Advanced Network Solution



Transmission using 2 types of codecs (H.264 and JPEG) is possible.

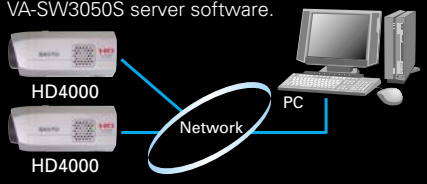
For video compression, H.264, optimized for transmission of moving images over a network with low bit transfer rates, is used to enable real-time high image quality monitoring, and for still images JPEG is used to offer high image quality in a common image format. Monitoring can be performed according to the user's application, so that any important scene is not missed.



H.264 max.
1920 x 1080 pixels
JPEG max.
2288 x 1712 pixels

PC for Monitoring

By simply using Internet Explorer (ver. 6.0 or higher) on a personal computer, the user has access to full color video images from the camera. Saving JPEG images on a PC is also possible by using VA-SW3050S server software.



Not impacted by network problems

Automatically restarts network image data transmission after a network problems is resolved.

Alarm Buffering Function

This function saves the video images recorded during an alarm recording internally or to an SD memory card before streaming them. This prevents the loss of the image data even if image transmission delay occurs due to bandwidth limitations or network traffic conditions.

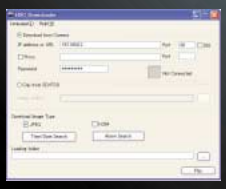
Other Features

- Power-over-Ethernet (PoE) • Multi-cast
- Backup for interruption of network recording
- Internal log files: up to 100 access Logs & up to 200 system information
- E-mail function • SSL-compatible (JPEG only)

HDC Downloader (bundled)

Video data recorded on an SD memory card or HDD can be downloaded to a PC.

- Select JPEG or H.264
- Search for video data to be donloaded by data and time
- Connect SD or HDD to PC directly to copy video data



DL Viewer (bundled)

This is used to play back donloaded video or recorded data on SD or HDD.

- JPEG or H.264 can be play back.
- Images can be saved and printed.

Network recording software VA-SW3050S (for server) / VA-SW3050C (for client)

The VCC-HD4000 is bundled with VA-SW3050LITE viewer software allowing live video streams sent from cameras to be monitored on a PC.
The network recording software VA-SW3050S / VA-SW3050C (sold separately) is an application program that extends the network operation of the camera. By installing this software, it is possible to monitor images from multiple cameras on a split screen and access and operate up to 128 cameras over a network. VA-SW3050S further offers the convenience of recording live images and alarm/timer functions. It is an exclusive software package for the VCC-HD4000.

Live images from a single camera can be viewed on a PC using Internet Explorer* (ver. 6.0 or higher). To view live images from multiple cameras, install the included VA-SW3050LITE viewer software.

** ActiveX installation is required.*

Main window (Internet Expoler)

16-screen display (VA-SW3050LITE / VA-SW3050C)

Feature Comparison

	Internet Explorer*1	Bundled	Sold separately	
		VA-SW3050LITE	VA-SW3050S	VA-SW3050C
Number of cameras supported	1	Max. 128		
Live monitor	✓	✓	—	✓
Camera control	✓	✓	—	✓
Video recording	—	—	✓ (JPEG only)	—
Playback	—	—	—	✓
Video search	—	—	—	✓
Download/Print	—	— / ✓	—	✓ / ✓
Network setting on the camera main unit	✓	—	—	—

System Requirements

	Inernet Explorer*1	VA-SW3050LITE	VA-SW3050S	VA-SW3050C
PC	IBM PC/AT and compatibles			
OS	Windows® XP Professional SP2, Windows® Vista, Windows Server 2003 SP2 (SW3050S only)			
CPU	Core2Duo E6700, 2.66 GHz or higher	Core2Duo E6700, 2.66 GHz or higher*2 Core2Duo E8500, 3.16 GHz or higher*3	Pentium IV, 3.0 GHz or higher	Core2Duo E6700, 2.66 GHz or higher*2 Core2Duo E8500, 3.16 GHz or higher*3
Memory	1 GB (Windows® XP), 2 GB (Windows® Vista)	1GB (Windows® XP), 2GB (Windows® Vista)*2 2 GB or more*3	1 GB or more	1GB (Windows® XP), 2GB (Windows® Vista)*2 2 GB or more*3
Network interface	100Base-TX			
Display card	1920 x 1200 pixels or higher		1024 x 768 pixels or higher, 16 million colors or higher	
Graphics chip	HD (HDMI)	ATI: RADEON HD2600 series or higher nVIDIA: GeForce 8600 series or higher, Quadro FX550 series or higher		
	SD (composite)	ATI: RADEON X1000 series or higher nVIDIA: GeForce 6000 series or higher, Quadro4 series or higher		
Voice	—	Sound card with 100% DirectX compatibility and speakers*4		

*1 Ver. 6.0 or higher *2 When the number of cameras connected is 4 or fewer *3 When the number of cameras connected is between 5 and 16 *4 The camera main unit is not equipped with audio functions.

SANYO Software Development Kits (SDK)
SANYO now offers two types of SDKs to help the user develop applications suitable for particular needs or for more compatibility with network devices and software from different vendors.
*For further information of the SDK, please contact the nearest SANYO representative.

Note:
Depending on your computer's performance or network environment, the system may enter the busy state if the PC is connected to many H.264 video channels. If a warning message appears in the dialog box, decrease the number of the connected H.264 video channels.

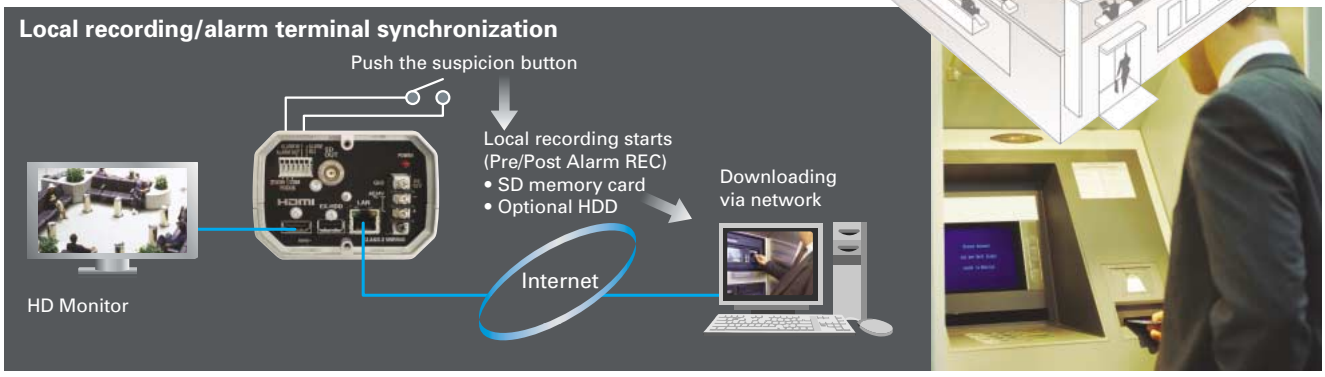
Six reasons for recommending the VCC-HD4000

(1) Since the number of pixels is approximately 9 times that of a conventional camera (VGA), it will cover 9 times the monitoring area, the image quality being the same.
(2) Zooming the display during playback offers higher quality with clearer print output.
(3) Costs less. The number of cameras used can be fewer because a high pixel count camera can cover a more expanded area. In addition, costs for camera main unit, cables, housing and installation can also be reduced.
(4) Also compatible with PoE, which does not require power-supply installations. Simply inserting a LAN/ethernet connector allows extension.
(5) Built-in zoom lens incorporates AF so that additional lens purchases are not required while installation and set-up are simple.
(6) Also equipped with an optical zoom lens.

Application: BANKS

Applications/Advantages:

- Monitoring and assured recording of fraudulent acts on premises
- 24/7 operations for crime prevention systems coordinated by monitoring centers
- Contributes to improved service and enhanced levels of customer confidence
- Applicable to staff training and customer service improvement
- Flexible expandability to cope with future change and expansion



Application: SMALL STORES

Applications/Advantages:

- Low-cost setup of a high-performance, easy-to-operate surveillance system
- Readiness against trouble and incident, deterrent to illicit behavior
- Reduced inventory loss due to product damage and theft
- Verification of customer traffic flows for effective product displays
- Improvement of in-store staff conduct and attitude

Examples of System Introduced


Bank


Parking


Traffic control center


Casino

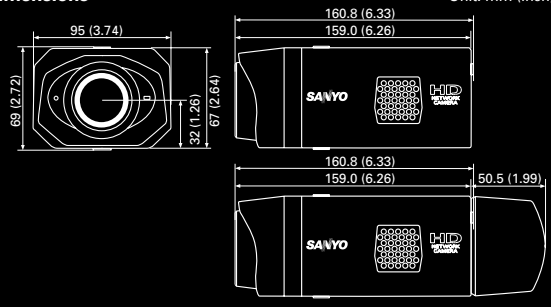

Factory

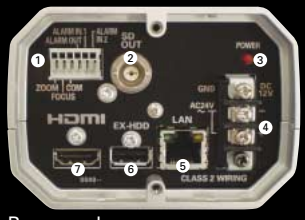
Specifications

Model No.		VCC-HD4000
Lens		
Image sensor		1/2.5" CMOS sensor
Effective picture elements		2320 (H) x 1728 (V) approx. 4 Megapixels
Recording picture elements		2288 (H) x 1712 (V) approx. 3.92 Megapixels
Lens		Focal length: f=6.3 – 63.0mm (Optical 10x)
		F number: F1.8 – 2.5
		Digital zoom: 16x
CAMERA		
Image size	H.264	**16:9 HD** 1920 x 1080p 30ips **HD** 1280 x 720p 30ips, 960 x 540P 30ips, 640 x 360p 30ips, 320 x 180p 30ips **4:3** 1080 x 720p, 720 x 480p 30ips, 360 x 240p 30ips
	JPEG	**16:9 HD** 1920 x 1080, HD 1280 x 720, 1024 x 576, 640 x 360 **4:3 4M** 2288 x 1712, **2M** 1600 x 1200, 1280 x 960, 1024 x 768, 800 x 600, 640 x 480, 320 x 240
Synchronizing system		Internal synchronization
Minimum illumination		2 lx (F1.8, color, gain: High, VGA) 0.1 lx (F1.8, b/w, gain: High, VGA)
Video S/N ratio		50dB (AGC OFF)
Day/Night		Auto/Color/Black and White
Auto focus		AUTO/MANUAL/ONE-PUSH; Selectable focus area
White balance		ATW/AWC/MWB/Outdoor/Indoor/Fluorescent Adjustable R and B signals in MWB mode
Backlight compensation		Multi-spot metering/Center-zone metering/Face/OFF, Mask settings possible
Electronic shutter		1/30, 1/60, 1/100, 1/250, 1/500, 1/1,000, 1/2,000, 1/4,000, 1/10,000 LONG shutter: x1, x2, x4, x8, x16, x32
Iris control		AUTO/MANUAL, Selectable electronic shutter in manual mode
AGC		Normal/Middle/High/Off, Adjustable gain control in Off mode
Gamma		0.45/1, other settings available
Aperture compensation		ON/OFF
Electronic sensitive boost		AUTO/OFF, Max. 32x
Privacy masking		ON/OFF, Max. 5 masks
Motion detector		ON/OFF, Selectable area detection, Selectable sensitivity level, Human face detection, Motion alarm zoom function: Selectable magnified ratio and duration time *Available in preset positions
Menu language		English/Spanish/German/French/Japanese
Camera title		16 characters
Recording and Playback		
Image quality		Selectable
Recording rate		Selectable
Recording mode		Alarm recording (Pre/Post setting, Selectable recording rate)
		Suspicion recording (Selectable recording rate), Timer recording
Input/Output		
SD card slot		1 (SDHC supported)
USB port		Supported HDD
Video output		HD output HDMI port SD output composite (BNC terminal, NTSC)
Network		RJ-45 port (10BASE-T/100BASE-TX/1000BASE-T)
Alarm input		2 (NO/NC setting. This output is also used for day/night control of color, B/W and auto mode)
Alarm output		1 (Selectable NO/NC; open collector)
External lens control		Zoom/Focus/Common (Voltage control: ±6 – ±12V)
Operation button		SET button and Cursor buttons (These are used for MENU and Zoom/Focus)
Network		
Image compression		H.264/JPEG
Picture quality		Selectable
Bandwidth		No limitation and selectable bandwidth limitation
Interface		10BASE-T/100BASE-TX/1000BASE-T (PoE compatible)
Protocols		TCP/IP, UDP, HTTP, HTTPS, SMTP, NTP, DHCP, FTP, UPnP, DDNS
Simultaneous access		Max. 16
Security		BASIC authentication (ID/password) SSL supported (JPEG only)
Others		
Environmental conditions		-10˚C to 50˚C / Less than 90% RH
Power supply		24V AC ± 10%, 60 Hz or 12 V to 15 V DC
Power consumption		12.3 W
Dimensions		95 (W) x 67 (H) x 159 (D) mm
Weight		710g (25.0 oz.)

Dimensions

Unit: mm (inch)





Rear panel

1. Control terminals
2. SD Output (Composite)
3. Power indicator
4. Power connection terminals (24V AC, 12V DC, GND)
5. LAN I/F (RJ45)
6. USB I/F (EX-HDD only)
7. HD Output (HDMI)

Side panel

8. SD Memory Card slot
9. Operation buttons

Optional Accessories (sold separately)

Network Recorder
VA-SW3050S for server PC
VA-SW3050C for client PCs

Hard Disk Case
VA-HDC4000

Wide Conversion Lens
VCP-L07W

SD Memory Card*

2.5" HDD (Hard Disk Drive)* *For more details, visit www.sanyosecurity.com

Notes:
- Frame rates are variable dependent upon network line conditions and PC performance.
- Because products and software described in this brochure are subject to continuous improvement; SANYO reserves the right to modify product specifications, functions and design without notice.
- Screen images are simulated.
- Comparative images are representations only.
- If a 2.5" HDD is used, a dedicated case (sold separately) is required.

Caution: Please consult the instruction manual to ensure safe and proper operation of the product.

Digital System Company of SANYO Electric Co., Ltd. obtained Quality Management System ISO 9001 and Environmental Management System ISO 14001 certifications.

Distributed by:

SANYO Electric Co., Ltd.
Digital System Company
http://www.sanyosecurity.com

SFA193F