Panasonic
ideas for life

SD III
Super Dynamic

Super Dynamic III — Exceeding the human eye

Now an even fuller line-up of intelligent, full-featured network cameras

Panasonic introduces the **Super Dynamic III** Series, the first surveillance cameras able to think and act on their own.

They detect both external changes and attempts at interference and take the precise action required to prevent loss of vital scenes.

Superb image quality, the result of unprecedented image-processing performance, delivers a true picture needed for rock-solid identification.

With their extraordinary intelligence and active foresight, **Super Dynamic III** Series cameras bring amazing reality to 24-hour surveillance.

The new network cameras added to our line-up make **Super Dynamic III** Series high image quality and

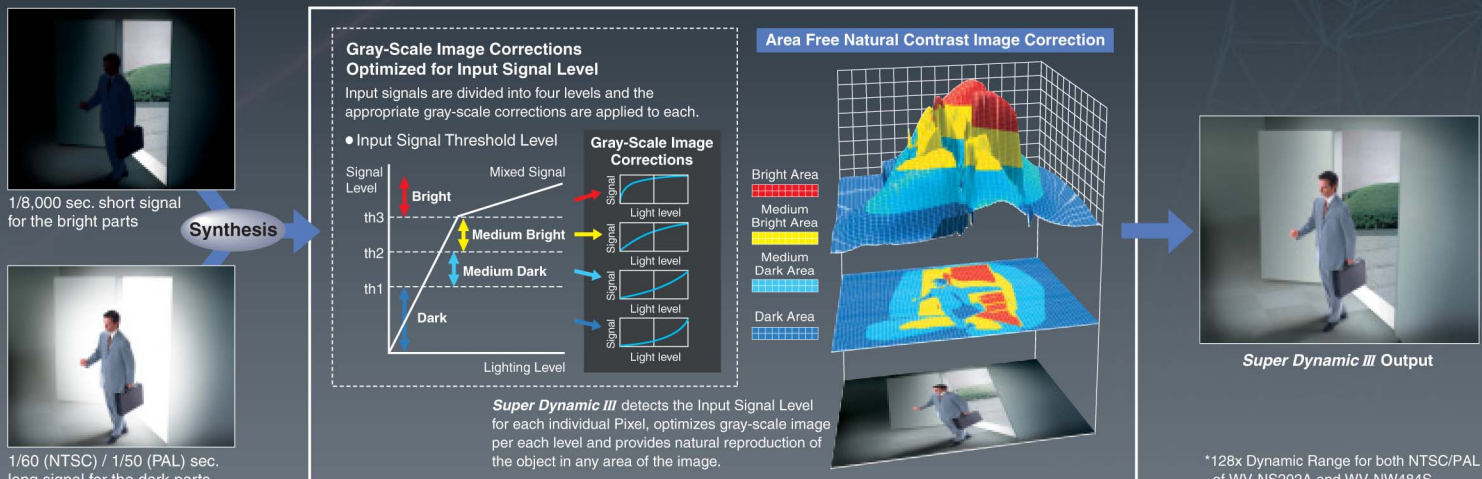multi-function performance accessible via IP networks.

SEES REALITY

Cameras now provide a true picture for all surveillance purposes

The Leading Original Technologies Behind *Super Dynamic III*

Pixel Based 128x (NTSC) / 160x (PAL) Dynamic Range

The double speed CCD outputs a 1/8,000 second short signal to capture the bright area of the image and a 1/60 (NTSC) / 1/50 (PAL) second long signal to capture the shaded area. The enhanced DSP combines these signals to provide a dynamic range 128 (NTSC) / 160 (PAL) times greater than a standard video camera. Also newly developed in the DSP is "Area Free (Pixel Based) Natural Contrast Image Correction", which optimizes the gray-scale image in response to the Input Signal Level of each individual Pixel. The Pixel Based 128x (NTSC) / 160x (PAL) Dynamic Range delivers a smoother natural reproduction of high contrast images, e.g. heavy backlight conditions, regardless of object position, size, shape, or number.

1/8,000 sec. short signal for the bright parts

Synthesis

1/60 (NTSC) / 1/50 (PAL) sec. long signal for the dark parts

Gray-Scale Image Corrections Optimized for Input Signal Level

Input signals are divided into four levels and the appropriate gray-scale corrections are applied to each.

● Input Signal Threshold Level

Gray-Scale Image Corrections

Signal Level

Mixed Signal

Bright

th3

Medium Bright

th2

Medium Dark

th1

Dark

Lighting Level

Signal / Light level

Area Free Natural Contrast Image Correction

Bright Area

Medium Bright Area

Medium Dark Area

Dark Area

Super Dynamic III **Output**

Super Dynamic III detects the Input Signal Level for each individual Pixel, optimizes gray-scale image per each level and provides natural reproduction of the object in any area of the image.

*128x Dynamic Range for both NTSC/PAL of WV-NS202A and WV-NW484S

THINKS ACTIVELY

Cameras now think — and act — preventing loss of vital scenes

SD III
Super Dynamic

Intelligent Processing

Our newly developed DSP extracts Motion Vector, Motion Area, Edge/Frame Difference and Image Sampling data from the image and sends that data to the new Image Analysis Algorithm. The Algorithm is embodied in the proprietary microprocessor that performs the complex processing required by **Super Dynamic III** 's amazing intelligent functions.

● **Video Process in DSP**

Original Image

Motion Vector   Motion Area   Edge/Frame Difference   Image Sampling

● **Software Process**

Motion Vector/Motion Area	Mot. Area/Frame Diff./Img. Samp.	Motion Area/Optical Zoom
Reliability/Dispersion Decision	Stable -> Unstable Detection	Zoom Coefficient Calculation
Integration/Centering of Motion	Unstable -> Stable Detection	Pan/Tilt Movement Calculation
Electronic Zoom Compensation	Compare between Stable Scenes	Command to Pan/Tilt
Auto Image Stabilizer	**Scene Change Detection**	**Auto Tracking***

*WV-CW970/WV-CW960/WV-CS950 Series and WV-NS202A only

SEES REALITY

To show you reality clearly, *Super Dynamic III* cameras take image processing to new peaks, with all the contrast, detail and color of reality itself, even in dimly lit situations. This breakthrough in visual surveillance delivers the definitive picture you need for accurate identification.

Whatever the Object
Pixel Based 128x (NTSC) / 160x (PAL) Dynamic Range

Super Dynamic III uses Area Free (Pixel Based) Natural Contrast Image Correction to optimize contrast and faithfully reproduce objects in every area and position. Combining 1/8,000 sec. and 1/60 (NTSC) / 1/50 (PAL) sec. shutter speed signals gives this amazing system a 128x (NTSC) / 160x (PAL) Dynamic Range that makes it the perfect surveillance solution for ATMs, building entrances, and other situations where contrast changes depending on time, weather and season.

Conventional
Depending on object position, the image may be marred by black spots or halo effects.

Super Dynamic III
Pixel Based 128x (NTSC) / 160x (PAL) Dynamic Range faithfully reproduces every object.

*128x Dynamic Range for both NTSC/PAL of WV-NS202A and WV-NW484S

Real in the Smallest Detail
540-line Horizontal Resolution

The combination of optimized filtering with wide bandwidth digital signal processing developed for the *Super Dynamic III* DSP delivers color images with 540 lines (typical) and B/W images with 570 lines of horizontal resolution, revealing the picture's smallest detail.

Realistic Natural Color
Color Processing Enhancements

To ensure that what you see is the full range of natural color, the digital color circuitry in our newly developed DSP processes color at a finer level of detail, enabling reproduction of even poorly illuminated or pale colors.

Better in Low Light
As Low as 0.5 lux

WV-CW970/WV-CW960/WV-CS950 Series can be used in lighting as low as 0.5 lux (color) or 0.04 lux (B/W). When equipped with the optional F1.2 lens, the WV-CP480 Series deliver clear, sharp images in lighting as low as 0.5 lux (color) or 0.06 lux (B/W).

Conventional

Super Dynamic III

With No Streaking
Adaptive Digital Noise Reduction

The combination of 2D DNR processing for the moving object with 3D DNR for the background corrects movement-generated streaking. Now even the headlights of moving cars can been seen clearly, unmarred by the streaks of light produced by previous 3D DNR object-image processing.

Conventional

Super Dynamic III

Zoom in to Catch Distant Objects (WV-CW970/WV-CW960/WV-CS950 Series only)
30x Optical Zoom (Up to 300x with Digital Zoom)

WV-CW970/WV-CW960/WV-CS950 Series come equipped with a 30x optical zoom lens. The addition of 10x digital zoom means zoom capability up to 300x, allowing you to zoom in on distant objects in high position, wide area surveillance applications. Combined with high image quality, the result is a new advance in identification capability.

0.065°/sec. Super Fine Pan Control

Our proprietary control chip, DC brushless motor and the optimized speed profile built into the microprocessor give you 0.065°/sec. Super Fine Pan Control. Combined with high-performance zoom, this feature enables you to smoothly track and capture moving objects.

Panasonic
WV-NS202A

Super Dynamic III
Dome Network Camera
WV-NS202A

Panasonic

Super Dynamic III
Vandal Resistant Fixed Dome Camera
WV-CW480 Series

Auto Back Focus (ABF)

When the camera switches a picture to monochrome from color mode and/or to color from monochrome mode, WV-CP480 Series, WV-CW480 Series and WV-NW484S automatically adjust the CCD position to achieve the perfect focus. Blurring caused by removing IR cut filter in previous cameras is eliminated, and the perfect focus is ensured for 24 hours in night and day. Auto Back Focus feature also contribute to save the time and labor required to adjust focus after the installation of cameras. Focus can be roughly set when a camera is installed, then Auto Back Focus to be adjusted by optional controller. WV-CW480 Series and WV-NW484S enable Auto Back Focus features with Vandal Resistant mechanism specially designed.

4

THINKS ACTIVELY

Confronted with changing environments or attempts at interference, these cameras think — and then act — to deliver the best possible image. Super smart, *Super Dynamic III* offers the active reliability to ensure the results you need under a wide variety of conditions for a host of applications.

Super Dynamic III
Weather Resistant Dome Camera
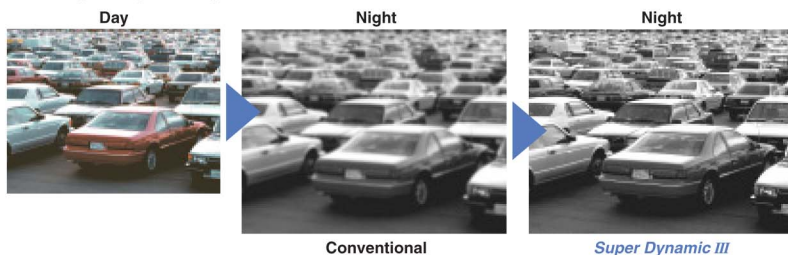## WV-CW960 Series
WV-CW970 Series
(Advanced Auto Track)

Panasonic WV-CW974

Super Dynamic III
Surveillance Camera
WV-CP480 Series

SDIII
Super Dynamic

Camera Head

Lens

Day/Night
Mechanism

Whole CCD Printed Circuit
Board moves to focus point

Sharply Focused Day and Night
Auto Back Focus (ABF) (WV-CP480/WV-CW480 Series and WV-NW484S only)

The ABF feature automatically adjusts the CCD position when changing from color to B/W mode, optimizing the back focus required for clear, sharp images. In addition, the one-push Auto Back Focus feature sharply reduces the time required to focus cameras during installation, allowing focus to be set using the optional system controller.

Auto Back Focus

Day	Night	Night
	Conventional	*Super Dynamic III*

Auto Focus (WV-CW970/WV-CW960/WV-CS950 Series and WV-NS202A only)

WV-CW970/WV-CW960/WV-CS950 Series and WV-NS202A cameras are all equipped with Auto Focus, ensuring that what you see is always sharply in focus.

Removing Blur
Auto Image Stabilizer (Except WV-NS202A)

Cameras attached to poles may be affected by high winds. Cameras may also be affected by vibration from aircraft, trains or large trucks. Automatic image stabilization prevents blurring under these conditions.

Conventional

Super Dynamic III

Detecting Interference
## Scene Change Detection (Except WV-NS202A)

This feature detects interference and sends an alarm signal when the camera's operation has been hampered with, such as a manual change in the camera's angle, removal of the camera lens, defocus, blockage of the camera lens with cloth or paint.

Alarm

Alarm

Automatically follows moving objects
Auto Tracking (WV-CW970/WV-CW960/WV-CS950 Series and WV-NS202A only)

This feature automatically follows the largest movement in the image, causing the camera to pan and tilt to keep the object in the center of the image.
The WV-CW970 Series adds a new Template Matching algorithm that compares the recorded image with template color, shape and contrast settings. Use of templates to compare moving objects with other characteristics of the scene enables more accurate tracking. Plus, the operator can lock the camera onto a particular object by pressing a single button on the optional system controller.
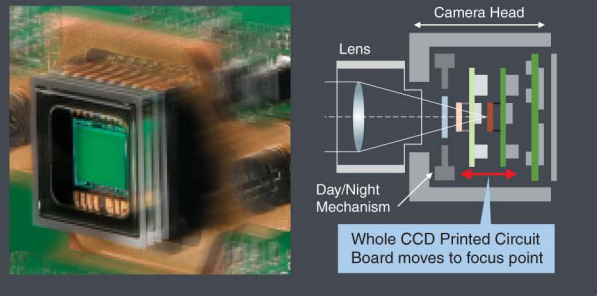
Super Dynamic III Analog Cameras

**Super Dynamic III
Surveillance Camera**

WV-CP480 Series

NTSC:
WV-CP480 (120V AC)
WV-CP484 (24V AC or 12V DC)
PAL:
WV-CP480 (220V - 240V AC)
WV-CP484 (24V AC or 12V DC)
WV-CPR480 (220V - 240V AC, with RS-485 terminal)
WV-CPR484 (24V DC or 12V DC, with RS-485 terminal)

Lens: optional

• Auto Back Focus, Sharper Images with Day-Night switching
  for 24 hours a day.

**Super Dynamic III
Vandal Resistant Fixed Dome Camera**

WV-CW480 Series

NTSC:
WV-CW484S (24V AC or 12V DC)
WV-CW484F (24V AC or 12V DC)
PAL:
WV-CW480S (220V - 240V AC)
WV-CW484F (24V AC or 12V DC)

(Flush Mount Type)

(Surface Mount Type)

• Vandal resistant, IP66 rated and Auto Back Focus adjustment
  for heavy duty and installation friendly.

**Super Dynamic III
Dome Camera**

WV-CS950 Series

NTSC:
WV-CS954 (24V AC)
PAL:
WV-CS950 (220V - 240V AC)
WV-CS954 (24V AC)

• 30x optical zoom, 256 presets and
  innovative all-in-one intelligent features.

**Super Dynamic III
Weather Resistant Dome Camera**

WV-CW960 Series
WV-CW970 Series
(Advanced Auto Track)

NTSC:
WV-CW964 (24V AC)
WV-CW974 (24V AC)
PAL:
WV-CW960 (220V - 240V AC)
WV-CW964 (24V AC)
WV-CW970 (220V - 240V AC)
WV-CW974 (24V AC)

• IP66 rated weather resistant
  with all-in-one intelligence.

Super Dynamic III Network Cameras

**Super Dynamic III
Dome Network Camera**

WV-NS202A

NTSC:
WV-NS202A (12V DC or PoE)
PAL:
WV-NS202A (12V DC or PoE)

• 22x optical zoom, 64 presets and innovative intelligent features all-in-one.
• MPEG-4/JPEG dual stream output and Progressive output with
  motion adaptive interlace/progressive conversion.
• PoE (Power over Ethernet) IEEE802.3af and 2-way audio
  feature (G.726) built-in.

**Super Dynamic III
Vandal Resistant Fixed Dome Network Camera**

WV-NW484S

NTSC:
WV-NW484S (24V AC, 12V DC or PoE)
PAL:
WV-NW484S (24V AC, 12V DC or PoE)

• Vandal resistant, IP66 rated and Auto Back Focus adjustment
  for heavy duty and installation friendly in network application.
• MPEG-4/JPEG dual stream output and PoE (Power over Ethernet)
  IEEE802.3af.
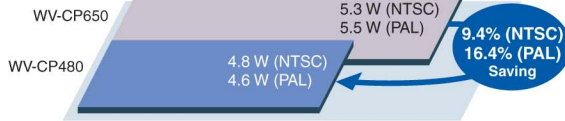
🌱 Panasonic Preserving the Environment

Energy Saving

Panasonic has used proprietary technology to develop the low-energy DSP's that have, for example, reduced energy consumption in our cameras by 9.4% (NTSC) / 16.4% (PAL) since 1997, from 5.3 (NTSC) / 5.5 (PAL) watts (WV-CP650) to 4.8 (NTSC) / 4.6 (PAL) watts (WV-CP480).

Surveillance Camera
WV-CP480

Image processing DSP

Energy-saving Trend

WV-CP650 — 5.3 W (NTSC) / 5.5 W (PAL)

WV-CP480 — 4.8 W (NTSC) / 4.6 W (PAL)

9.4% (NTSC) 16.4% (PAL) Saving

Package Recycling

To reduce waste and pollution, we have eliminated Styrofoam and minimized use of polyurethane film in our packaging.

Carton box for WV-CP480 Series

Lead-free Solder

The hazardous effects of lead solder have been recognized since the 1980s. Panasonic has been a leader in addressing this issue and in 1998 introduced the world's first portable MD player with lead-free solder in its circuit board. The Security Systems Division is now phasing out use of lead solder in all of its products.

ISO14001 Certification

Besides our R&D Division, Panasonic has achieved the environmental ISO14001 certification for plants in Yokohama, Japan, and in Suzhou, China.

ISO ISO9001 ISO14001

Industry Design Awards

Panasonic CCTV products have won several remarkable Industry Design Awards in the world. Those awards evaluated and qualified excellence of Panasonic CCTV products not only its innovative design but also the contribution to users' benefit through the operation.

iF Design Award

The superior exterior shell design of Panasonic surveillance cameras is highly regarded in Europe, where the WV-NS202 won a 2007 iF Design Award. This was the second consecutive year that a Panasonic *Super Dynamic III* camera won this award following the WV-CS950 won in 2006.

iF product design award 2007

iF product design award 2006

IDEA Award in U.S.A.

Panasonic wins 2006 Industrial Design Excellence Award. WV-CS954 dome camera received a Silver IDEA Award, one of major U.S. business magazine wrote that the WV-CS954 "turns protection into a design element, and lends dignity to an icon that is usually visually invasive."

'06 INDUSTRIAL DESIGN EXCELLENCE AWARDS

IDEA SILVER

SD III
Super Dynamic

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