

## 1. Features

### ■ Full HD Mega Pixel(1080P)

High Definition is at least a million pixels per frame. So it can provide more clear and greater image. Besides resolution ability is over 1,100 TV Lines.

### ■ WDR(Wide Dynamic Range)

This is the ability to expand the dynamic range. This function uses alternative exposure time control method.

### ■ 3D Digital Noise Reduction

This feature removes noise in images (spatial, temporal domain)

Temporal noise is reduced by 3D filter using frame memory and spatial noise is reduced by 2D filter.

Especially, the ghost effect is reduced by motion adaptive filter.

### ■ D-WDR(Digital Wide Dynamic Range)

This function is a local adaptive contrast enhancement. It uses a histogram analysis and tone mapping method in pixel domain.

### ■ Motion Object Detection

This function detects the Motioned object in the image

- . Detection Resolution: 8x8 pixels
- . Detection Object Size: Variable
- . Detection quantity: 16 ea

### ■ Lens Shading Compensation

This function compensates shading effect caused by Lens. It uses 2D shading table for compensation.

### ■ D-Zoom

The control resolution is 256 sub pixel units. Also, the center of zoom can be varied in the image.

### ■ Live Defect Detection & Correction

This function corrects the defect of image at run-time. It supports two modes. Those are "Manual" and "Auto" mode.

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## 2. Precautions

■ Avoid aiming the camera directly towards extremely bright objects such as sun,

as this may damage the CMOS image sensor.

■ Do not use the camera in the extreme environments.

-Extremely hot or cold place such as radiators, heat registers

(Operating condition  $-10^{\circ}\text{C} \sim +50^{\circ}\text{C}$ , under 90% humidity)

-Close to generators of powerful electromagnetic radiation.

- The place which is subject to light reflections, unstable lighting conditions, strong vibration.

■ Remove dust or dirt on the surface of the CMOS with a blower.

■ Do not apply excessive voltage. (Operating Power Input : DC 8V ~24V)

■ The following phenomena that may appear in images are specific to CMOS. They do not indicate malfunctions.

White Flecks : The fleck especially tend to be seen when operation at a high environmental temp. or when you have raised the master gain and use in sense-up function.

Vertical Smear : When an extremely bright object, such as a strong spotlight or flashlight, is being shot, vertical tails may be produced on the screen, or the image may be distorted.

- Alias : When fine patterns, stripes, or lines are shot, they may appear or flicker.

■ Do not drop objects on the product or apply strong blows to it.

■ Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock.

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# HD 1,100TV Lines Camera INNOHD1

DATE :  
Revision No. 1.0

## 3. OSD Menu Structure

EXPOSURE	BRIGHTNESS	0 - 20		
	MODE	INDOOR		
		OUTDOOR		
	LENS	MANUAL		
		DC		
	SHUTTER	AUTO		
		MANUAL	1/25 - 1/60000	
			RETURN	
DSS	OFF			
	X2			
	X3			
	X4			
AGC	0 - 10			
FREQ	50Hz/60Hz			
RETURN				
COLOR	AWB	AUTO		
		AUTO ext		
		PRESET		
		MANUAL	KELVIN	LOW/MIDDLE/HIGH
			R-GAIN	0 - 20
	B-GAIN	0 - 20		
	RETURN			
CHROMA	0 - 20			
RETURN				
IMAGE	SHARPNESS	0 - 10		
	MIRROR	OFF/ON		
	FLIP	OFF/ON		
	DZOOM	0 - 96		
	PRIVACY	OFF		
		ON	ZONE NO	0 - 32
			ZONE OP	OFF/ON
		X-POS	0-60	
		Y-POS	0-40	
		X-SIZ	0-40	
		Y-SIZ	0-40	
		COLOR		
		TRANS	0-4	
		RETURN		
	SHADING	OFF/ON		
	DAY&NIGHT	COLOR		
		B&W		
		AUTO	AGC THRS	0 - 20
			MARGIN	0 - 20
			DELAY	LOW/MIDDLE/HIGH
RETURN				
HLMASK	OFF			
	ON	LEVEL	0-20	
		COLOR		
RETURN				
ACE	OFF/ON			
RETURN				

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## 3. OSD Menu Structure

WDR/BLC	MODE	OFF/BLC/WDR		
	WDR_WGT	0-4		
	BLC OSD	OFF/ON		
	BLC POS-X	0-20		
	BLC POS-Y	0-20		
	BLC SIZ-X	0-20		
	BLC SIZ-Y	0-20		
	RETURN			
MOTION	RESOLUTION	0-20		
	SENSITIVITY	0-20		
	WINDOW USE	OFF/ON		
	X-POS	0-60		
	Y-POS	0-40		
	X-SIZ	0-60		
	Y-SIZ	0-40		
RETURN				
SYSTEM	SHADING DET	OFF/ON		
	DEFECT DET	OFF/ON		
	DOUT SCALE	FULL/COMP		
	DOUT FORMAT	720P/1080P		
	DOUT FPS	25/30		
	CVBS	NTSC/PAL		
	RESET	ON/PUSHING		
RETURN				
EXIT				

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## 4. Specifications

Image Sensor	1/3" Panasonic CMOS(MN34041PL)
Total Pixel	2010(H) x 1108(V) = 2,227,080
Active Pixel	1944(H) x 1092(V)= 2,122,848
Scanning system	Progressive
Resolution	Digital: 1080(30P), 720(60P) Max: 1,100TV lines(1080P)
Min. Illumination	Color : 1.0 lux, BW : 0.5 lux, Color DSS : 0.002 lux, BW DSS : 0.0008 lux
Video Output	Digital : BT.1120, HD-SDI, Analog : NTSC/PAL CVBS(w/o WDR)
S/N Ratio	More than 50dB (AGC off)
<b>Function</b>	
Lens	DC/Manual
AGC	0 – 20 steps
Shutter Speed	AUTO/MANUAL(1/50(60) ~ 1/60,000 sec)
Digital Slow Shutter	Off/On(x4)
Brightness	0 - 20
WDR/BLC	Off/BLC/WDR
ACE	Off/On
Day&Night	Auto/Color/B&W
White Balance	Auto/Autoext/Pushing/Manual
DNR (Digital Noise Reduction)	Off/Low/Middle/High
Mirror	Off/On
Flip	Off/On
Sharpness	0 – 10 steps
Shading	Off/On
Digital Zoom	0 – 96 steps
Privacy Mask	32 Masks
Motion Detection	Off/On
Language	Korean/Chinese/English
<b>Electrical</b>	
Power (Max.) supply	DC12V, Less than 1.5Watts
<b>General</b>	
Power Input	Connector
Video Output	HD-SDI: SMA connector, CVBS: BNC connector