

## HD Color Camera Module GP-MH310



### 1/2.5type 4Mega-pixel, Full HD 1080/60p Camera Module

#### Key Features

- 1/2.5 type Progressive Scan MOS sensor, Effective 4M pixels.
- 1080/60P, 50P Full HD
- Minimum illumination : 2.0 lx (Color), 0.1 lx (B/W) at F1.8 (50IRE)
- 10x Optical Auto Focus Zoom Lens : f=6.3mm (wide) to 63mm (tele)
- 16x Digital Zoom : Up to 160x with optical zoom
- Video Output : LVDS, Analog Component Y/Pb/Pr, Y/C, Composite (for adjustment)
- The communication interface of the camera can be controlled as UART (CMOS level).
- USB Interface enables transfer of the JPEG (still shot) data by supported USB video class.
- Auto scene function eliminates the need to manually adjust cameras when changing scene.
- Day/Night function automatically switches the camera mode from color to B/W (or vice versa).
- Backlight compensation detects the subject area, the backlight conditions, and automatically corrects the backlight.
- Motion Detection function detects the movement from changes in representative points within 256 areas on the screen.
- Face Detection function detects the position of human face.
- Privacy Mask : Up to 8 mask can be displayed within one view angle.
- Image Stabilizer corrects the blurring images due to the vibration of camera.
- Compact Size (43.7x44.2x75.2mm)
- Operating Temperature -10 °C ~ +50 °C (14 °F ~ 122 °F)

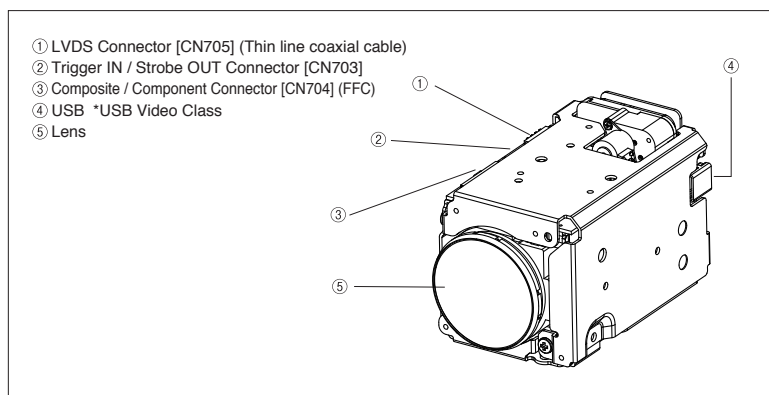
#### Standard Accessories

- |                 |       |
|-----------------|-------|
| • FFC .....     | 1 pc. |
| • Lens Cap..... | 1 pc. |

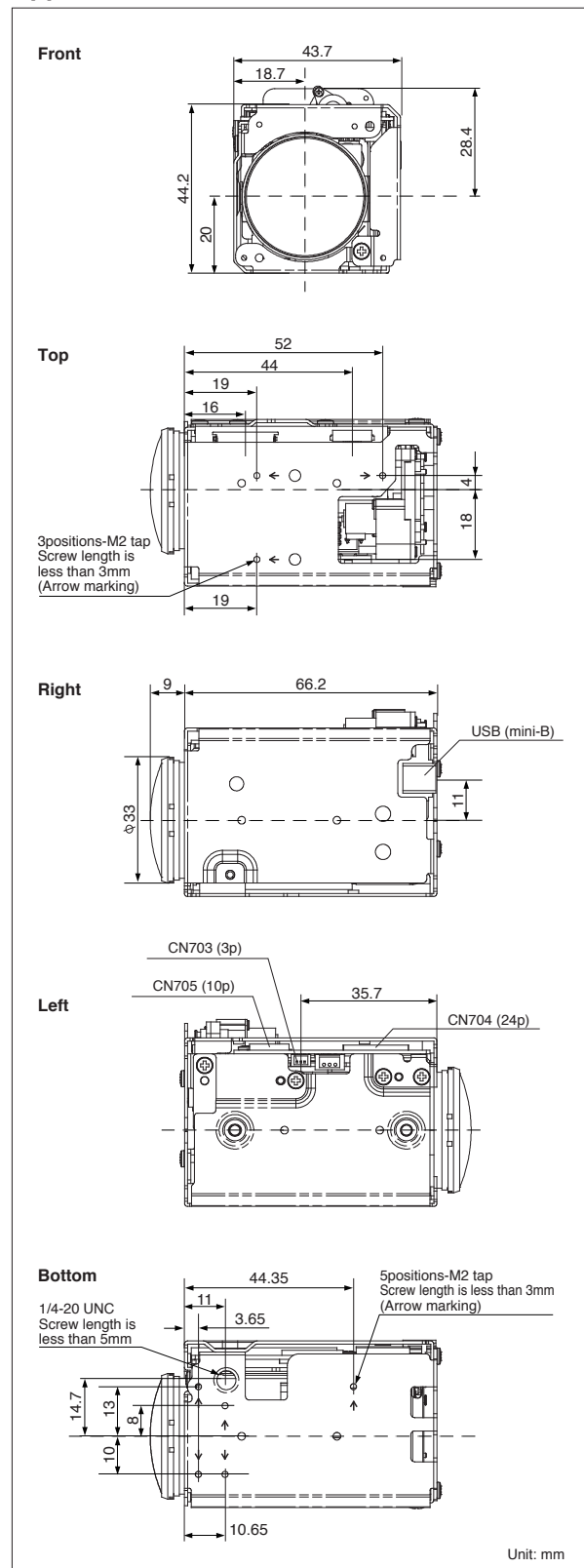
## Specifications

<b>Camera</b>	Image Sensor	1/2.5 type MOS
	Effective Pixels (approx.)	4 Megapixels
	Scanning Mode	Progressive Scan
	Minimum Illumination (approx.)	Color : 2.0lx (1/30sec, 50IRE, F1.8, Gain: High) B/W : 0.1lx (1/30sec, 50IRE, F1.8, Gain: High)
	Video S/N Ratio	More than 50 dB (AGC: OFF)
	Backlight compensation	Multi / Center / Face / OFF (Mask settings possible)
	White Balance	AWC / ATW / MWB (Adjustable R and B signals) / Outdoor / Indoor / Fluorescent
	AGC	Low2 / Low1 / Low / Normal / Middle / High / OFF (Adjustable)
	Electronic Shutter	1/50 (1/60), 1/120 (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, x64
	Electronic Sensitivity UP	Auto / OFF, max 64x
	Electronic iris	ON / OFF
	Day & Night (IR)	Auto / Color / BW
	Digital Noise Reduction	ON / OFF
	Gamma	0.45/1, other settings available
	Auto Scene	ON / OFF
	Video Motion Detection	ON / OFF, adjustable sensitivities, motion zoom function available
	Face Detection	ON / OFF
	Privacy Mask	ON / OFF
	Mirror Image Effect	H/V / HV / OFF
Image Stabilizer	ON / OFF	
Camera Title (OSD)	16 alphanumeric characters	
Auto Focus	Auto / Manual / One-Push	
Aperture compensation	ON / OFF	
Synchronization	Internal Sync	
<b>Lens</b>	Focal Length	6.3 mm ~ 63 mm, F1.8-2.5
	Zoom Ratio	10x Optical Zoom, 16x Digital Zoom
	Angular Field of View	Horizontal : (16:9) 5.5°~ 50.6°, (4:3) 5.2°~ 48.7° Vertical : (16:9) 3.1°~ 29.3°, (4:3) 3.9°~ 37° Diagonal : (16:9) 6.2°~ 57°, (4:3) 6.5°~ 58.8°
<b>Input / Output</b>	Video Output	HD (LVDS): 1080/60i, 1080/30p, 720/60p 1080/50i, 1080/25p, 720/50p Component (Y/Pb/Pr): 1080/60p, 1080/60i, 1080/30p, 720/60p, 480/60p (Crop/Squeeze) 1080/50p, 1080/50i, 1080/25p, 720/50p, 480/50p (Crop/Squeeze) YC output Composite (NTSC/PAL) : for adjustment
	USB (Video class)	JPEG Still Shot (Max.4 Megapixels) (4:3) 2288x1712, 1600x1200, 1280x960, 1024x768, 800x600, 640x480, 320x240 (16:9) 1920x1080, 1280x720, 1024x576, 640x360
	Communication Interface	UART (CMOS Level)
	Still-Shot Trigger input	1 input
	Strobe (Flash) output	1 input
<b>General</b>	Power supply	6-12V DC (Recommendation : DC9V)
	Power Consumption (approx.)	DC6V:3.4W (3.9W, motor active) DC9V:3.6W (4.2W, motor active) DC12V:3.7W (4.3W, motor active)
	Ambient Operating Temperature	-10 °C ~ +50 °C (14 °F ~ 122 °F)
	Ambient Storage Temperature	-20 °C ~ +70 °C (-4 °F ~ 158 °F)
	Ambient Operating Humidity	90 % or less (without condensation)
	Dimensions (approx.)	43.7 mm (W) x 44.2 mm (H) x 75.2 mm (L) 1.7 inch (W) x 1.7 inch (H) x 2.9 inch (L)
	Weight (approx.)	180 g (6.35 oz)

## Part Names and Functions



## Appearance



- All TV pictures are simulated.
- Masses and dimensions are approximate.
- Specifications are subject to change without notice.
- These products may be subject to export control regulations.

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