

### MS-193FHS 2.1M pixels 3G-SDI high-sensitivity waterproof color camera

#### Key feature



1/2.8-inch	Back-illuminated CMOS sensor	2.13 mega pixels	Near equatorial sensitivity upward
1080p/60p	ACE	Privacy masks	DNR
DEFOG	Long time exposure	OSD	Motion detection
D-ZOOM 16x	Mirror image, Flip	Shading correction	VBS output
Day-night	DIS	Waterproof lens (H=105 degrees)	ANTI-SAT
IP67	Approx. 270g	38×45.2×32mm	DC+12V

- Uses a 1/2.8-inch, 2.13 Mega pixel, back-illuminated CMOS sensor with improved near-infrared sensitivity
  - 1080p/60p, 3G-SDI, wide dynamic range capability
  - The Simple Picture Adjustment function adjusts gamma, sharpness, and color gain
  - The D-ZOOM function magnifies a portion of the screen. Magnification is from 1 to 16 times
  - There are three levels of DNR to choose from
  - The white point correction function corrects for white spots on the screen
  - The DEFOG function is a feature to obtain clear images even in foggy or other scenes
  - The long exposure function accumulates images to increase sensitivity and can accumulate up to 32 frames
  - The ACE function offers three levels of contrast and brightness
  - The Privacy Mask function hides areas on the screen that you do not want displayed
  - The motion detection function outputs motion information when there is more than a certain luminance difference between frames
  - The ANTI-SAT function prevents saturation in bright locations when in NIGHT mode
  - The DIS (Digital Image Stabilizer) function detects image shaking caused by camera shake and performs digital correction processing to stabilize image output
  - The OSD function is a function to set and display specific functions using a predetermined OSD display
- Four languages (English, Japanese, Chinese, and Korean) are supported

#### OSD settings (optional)

OSD standard setting		
	Feature	Summary
1	IRIS	Switching settings between electronic IRIS and mechanical IRIS
2	FOCUS ADJ	Indication of lens focus degree
3	BACKLIGHT	HLC, BLC, and WDR settings
4	DAY&NIGHT	DAY&NIGHT setting
5	COLOR	Auto and manual white balance settings
6	DNR	Digital noise reduction settings
7	IMAGE	Sharpness, gamma, mirror, zoom, ACE, DEFOG, shading, privacy mask settings
8	DIS	Settings to correct images caused by camera shake
9	iMOTION	Motion detection settings
10	SYSTEM	Set camera ID, frame rate, VBS, and camera title

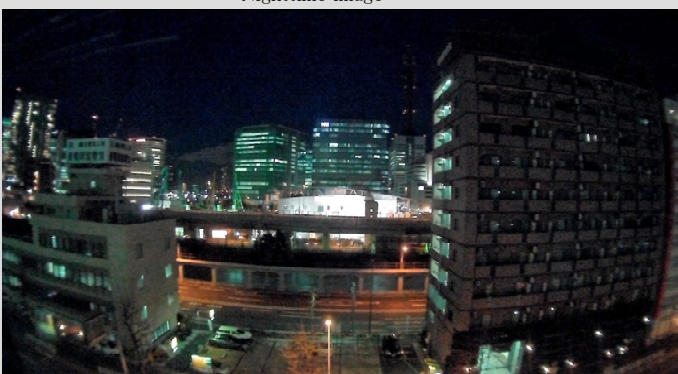
※ See specifications for details

#### photographs

Daytime image



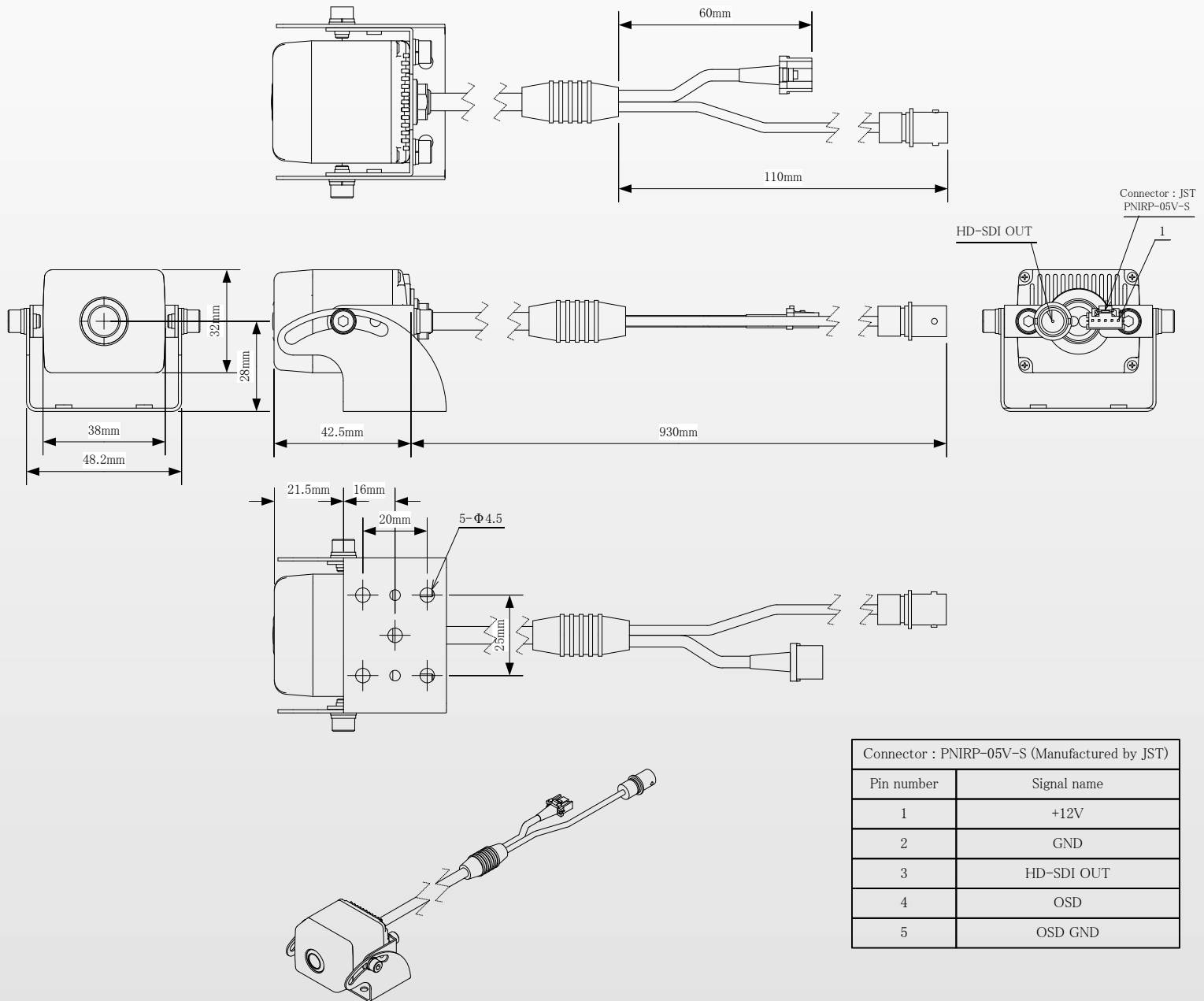
Nighttime image



#### Specifications

Item	Specifications
Model	MS-193FHS
Image size	1/2.8-inch back-illuminated color CMOS sensor (IMX291)
Number of effective pixels	1945(H) × 1097(V)
Number of video output pixels	1920(H) × 1080(V)
Unit cell size	2.9 μm(H) × 2.9 μm(V)
Signal output	3G SDI
Scanning system	Progressive scan method
Video format	720p/25p, 720p/30p, 1080p/30p, 1080p/60p
Synchronizing system	Internal synchronization
S/N	46dB
Minimum illumination	0.1 Lux (1080p/30p, DAY mode, long time exposure OFF)
OSD	Setup from SW board
WDR	LOW, MIDDLE, HIGH
DEFOG	↓
ACE	↓
privacy mask	BOX, POLYGON
DNR	LOW, MIDDLE, HIGH
Motion detection	DET WINDOW, SENSITIVITY, ESTIMATE
Day-night	AUTO, COLOR, B&W
DIS(Digital image stabilizer)	ON/OFF
D-ZOOM	1 to 16 times
Camera shutter	AUTO/MANUAL(×2, ×4, ×8, ×16, ×32, 1/25, 1/30, 1/50, 1/60, 1/100, 1/120, 1/250, 1/700, 1/1000, 1/1600, 1/2500, 1/5000, 1/7000, 1/10000)
Mirror image, flip	ON/OFF
Lens	F=3.3(H=105°)
Power consumption	1.8W
Power supply	DC+12V ± 10%
External dimensions	38(H) × 45.2 (W) × 32 (D)mm
Weight	Approx. 270g
Operating temperature	-10°C ~ +50°C
Operating humidity	20% ~ 80%
components	Camera body, Dedicated harness

### Externals



Connector : PNIIRP-05V-S (Manufactured by JST)

Pin number	Signal name
1	+12V
2	GND
3	HD-SDI OUT
4	OSD
5	OSD GND

# MOSWELL

<https://www.moswell.co.jp>  
E-mail: sales@moswell.co.jp

**MOSWELL CO., LTD.**  
7-15 GOSHOYAMA-CHO, NISHIKU,  
YOKOHAMA, KANAGAWA, 220-0043, JAPAN  
TEL: +81-45-334-7462 (Direct Sales)  
FAX: +81-45-334-7463

Store  
**ACCUM CO., LTD.**  
(Moswell's directly managed distributor)  
7-15 GOSHOYAMA-CHO, NISHIKU, YOKOHAMA,  
KANAGAWA, 220-0043, JAPAN  
TEL: +81-45-315-7464  
FAX: +81-45-315-7468