HS385 1080P HDMI SDI bullet camera (IMX385_1080P-2MP) WDR Starlight 50/60fps HDMI SDI Dual output

CE

3.9cm/1.1inch

4.1cm/1.6inch

13.5cm/5.3inch

HDMI SDI Dual output camera
Version:V1.0

CATALOG

1. FEATURE

1-1 Characteristic

- *Adopt the video chip of Korean professional development   team EN779 the latest version.*
- *The version is using CMOS IMX385LQR, size: 8.35mm (1/2 inch). 3.75 μm big pixel big pixel, Fan-out capability 1080/120fps, be able to display FULL SCREEN resolution image.* With High resolution, and super sensitivity with good color reducibility. Itself adapt to the changes from a wider range of color temperature. And adopting unique digital processing technology. Excellent low illumination image quality. Even in star light illumination environment, it display objects in same color and clear with daytime image.
- *Especially for dust, fog, haze, steam, vapor, such as bad weathers:* this product has added defog function, to penetrate the fog to restore the original image images of objects, suitable for forest surveillance, oil field surveillance, Rivers and Seas surveillance Border and Seacoast surveillance, Traffic Management Surveillance, License Plate Recognition, safety city, etc.
- *Video output:* 1920*1080 30fps/60fps.
- *HLC (High Light Compensation):* Suppression all of brightness of the high light areas and masked, makes other low light area turn and gets more brightness. So that other objects can be seen clearly.
- *Intelligent 0SD (menu) operation system,:*   strong DSP memory function. The memory data will not lose when power off. Operation mode display function is simple, convenient, intuitive and clear, users can easily operate and use products, including many commonly used national languages in the software for customers to choose.
- *Super solar eclipse:* the selection of correct exposure in a specific area for the high light region and compensation.
- *BLC (super backlight compensation):* When there is a bright light source on the back of the subject, the dark part of the subject caused by the backlighting can be selectively illuminated to compensate for the backlight, so that the overall brightness of the subject is balanced.
- *Super WDR:* digital wide dynamic function, the bright surface dark surface of the same image or the area of the interior window, the light is completely balanced, the details can be seen.
- *Motion detection, privacy block, mirror, flipping, digital zoom function, etc.*
- *OSD:* by providing convenience for the user of the OSD menu shown on the screen easy to operation the camera function.
- *3D digital noise reduction, SEN-UP.*
- *Support coaxial control signal, Video* &OSD control signal mixing function.
- *HD-SDI and EX-SDI switching:* Press "left key" 3 times, and then press the confirmation key to switch to EX-SDI. Press "right" key 3 times, then press the confirmation key and switch to HD-SDI.

1-2 Effect of Contrast

1-1, AF 3X, 4X, 8X

0X   4X

►AF

It can fits 2MP/3MP/5MP+ high precision motor + HD IR-CUT, 3.6-11mm zoom lens and so on. Automatic implementation of the program to achieve rapid focus, real high-definition multiple zoom.
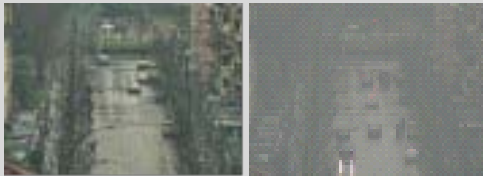
1-2, WDR

WDR   Normal

►WDR

Ultra wide dynamic capabilities in a very strong light, can see the features of the image contrast light in a small range, and super wide dynamic up to SNR 120Db, and the highest can reach 60fps.

1-3, DEFOG

DEFOG   Normal

►DEFOG

Using intelligent digital image enhancement techniques, in the fog, dust, fog, haze, stream, water, security surveillance over a long distance, it is well be have not a blind spot in 24-hours.

1-4, BLC

BLC   Normal

►BLC

When the camera in the backlight environment, the picture will appear black image, the function can compensate backlight to make the image clear and bright as a whole. Restore you a whole picture, if it is on.

1-2 Effect of Contrast

1-5, AGC

General effect of AGC

►AGC
The high rate gain automatically adjusts and adjusts the intensity of the signal automatically to ensure the high stability of the image signal, and does not worry about the complex installation environment interference.

1-6, 3 DNR

3D-DNR ordinary camera effect

►3D-NR
The noise reduction technology between frame and frame is used to denoise the image 3D.Image noise was reduced, the image more thorough, more pure and delicate details of the screen brightness!It is closer to the actual effect seen by the human eye.

1-7, MOTION (Auto Track Zoom) ALARM

►MOTION DETECTION & ALARM
Used for surveillance video unattended and automatic alarm, it track and rapid motion to zoom, tips or alarm response, when the abnormal movement happen.

1-8, Sens-Up
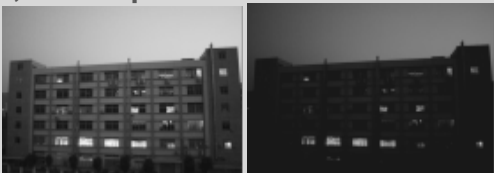
Sens-Up ordinary camera effect

►SENS-UP
The use of multiple frames overlap accumulated together to achieve a clearer, more details, making more brightness for the image in the night vision environment.

2 OSD MENU INTRODUCTION

2-1 OSD Instruction

1.IRIS

IRIS	ELC
2-MOTOR	⟵⎯
EXPOSURE	⟵⎯
BACKLIGHT	OFF
DAY&NIGHT	Outer
COLOR	⟵⎯
DNR	Middle
IMAGE	⟵⎯
MOTION	OFF
SYSTEM	⟵⎯
EXIT	

2. 2-MOTOR

IRIS	ELC		
2-MOTOR	⟵⎯		
EXPOSURE		AF MODE	AUTO
BACKLIGHT	OFF	SCANNING	HALF
DAY&NIGHT	Outer	ONEPUSH A	ON
COLOR		SYNC TDN	OFF
DNR	Middle	INITIAL	ON
IMAGE		Return	⟵⎯
MOTION	OFF		
SYSTEM	⟵⎯		
EXIT			

IRIS

►According to use environment choice model, using automatic aperture lens choosing the ALC.

►According to use environment choice model, using automatic aperture lens choosing ALC.

2-MOTOR

►AF MODE: automatic lens include auto and manual choose model.

SCANNING: lens scans range FULL/HALF

ONEPUH: manually adjustable lens at a time.

SYNC TDN: whether adjustment lens, when the day and night conversion.

INITIAL: After using for a long time, there is deviation occurs, but it can't be executed multiple times.

►AF operation: setting AF MODE MANUL, can via the menu up/down/left/right key to manual adjustment the lens;

Setting AF MODE AUTO, click the up or down key can zoom! When loosen the key, it will automatically finish automatic focus.

⚠️ _NOTE:_ the menu display 2-MOTOR and does not display the FUCUS ADJ, when motherboard have autofocus function,

3. EXPOSURE

IRIS	ELC
2-MOTOR	⇐
EXPOSURE	
BACKLIGHT	
DAY&NIGHT	
COLOR	
DNR	
IMAGE	⇐
MOTION	OFF
SYSTEM	⇐
EXIT	

BRIGHTNESS	10 ⊩⊪⊪⊪⊪⊪⊪⊪⊪⊩ 1 1
SHUTTER	MANUAL ⇐
SENS-UP	OFF
AGC	8 ⊩⊪⊪⊪⊪⊪⊪⊪⊪⊩ 1 1
RETURN	⇐

EXPOSURE

►BRIGHTNESS: 0-20 selectable.
►SHUTTER: AUTO/FLICKER/MANUAL
►MANUAL MODE：
1/25, 1/50, 1/100, 1/250, 1/500, 1/700,
1/1000, 1/1600, 1/2500, 1/5000, 1/7000,
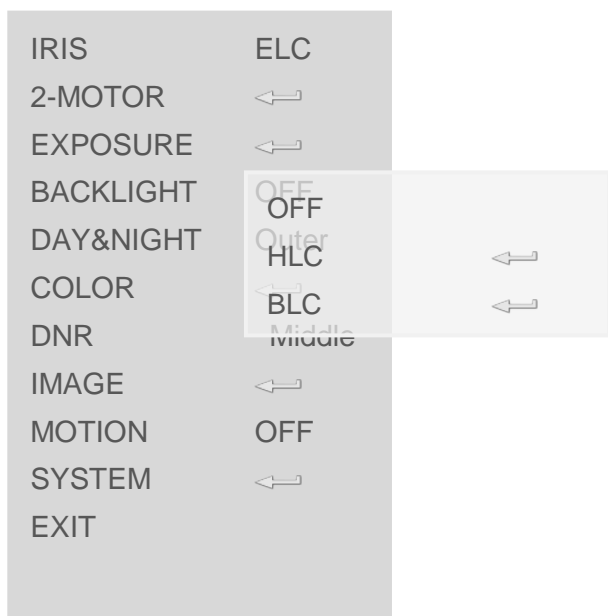1/10000, 1/30000 selectable.
AUTO：DEBLURE/NORMAL., selectable.
►SENS-UP: OFF, X2, X4, X8, X16, X32
selectable.
►AGC: 0-10 selectable

⚠️ **_NOTE:_** video system different
and the shutter will different. The manual
electronic shutter PAL is 1/25, when NTSC is
1/30.

4. BACKLIGHT

IRIS	ELC
2-MOTOR	⇐
EXPOSURE	⇐
BACKLIGHT	
DAY&NIGHT	
COLOR	
DNR	
IMAGE	⇐
MOTION	OFF
SYSTEM	⇐
EXIT	

OFF	
HLC	⇐
BLC	⇐

BACKLIGHT

►BACKLIGHT: OFF/HLC/BLC/WDR,
used in different environment.
HLC: strong light inhibition.
0-20, 8 kinds of highlight color,
respectively black, white, yellow, cyan,
green, purple, red, blue.
►BLC:
H-POS: 0-20 horizontal starting point;
V-POS: 0-20vertical ending point;
H-SIZE: 0-20 horizontal ending point;
V-SIZE: 0-20 vertical ending point;
►WDR: HIGH / MIDDLE / LOW level
selectable.

⚠️ **_NOTE:_** CVBS video signal will be
stopped output, when WDR is ON.

5. DAY & NIGHT

IRIS	ELC
2-MOTOR	⟵
EXPOSURE	⟵
BACKLIGHT	OFF
DAY&NIGHT	Outer
COLOR	
DNR	
IMAGE	
MOTION	
SYSTEM	
EXIT	

LED	OFF
ANTI-SAT.	|⸽⸽⸽⸽⸽⸽⸽⸽| 11
EXTERN SW	LOW
D > N THRES	|⸽⸽⸽⸽⸽⸽⸽⸽| 13
N > D THRES	|⸽⸽⸽⸽⸽⸽⸽⸽| 7
DELAY	LOW
Return⟵	

►Switch settings of Day & Night mode.
►AUTO: automatically switch to day mode or might mode by camera module reflecting to the external light.
►COLOR: Always day mode.
►B&W: Always night mode.
►EXTERN: Automatically switch to day mode or might mode by the IR illuminator reflecting to the external light.
►ANTI-SAT.: 0-20 smart IR overexposure control, the bigger the value is, the slighter the overexposure. 0-20 selectable.
►D＞N THRES & N＞D THRES：setting the day and night mode threshold for switching each other, 0-20selectable.
►DELAY: setting the switching time of day and night mode (Only available when mode is AUTO or EXTERN).

6. COLOR

IRIS	ELC
2-MOTOR	⟵
EXPOSURE	⟵
BACKLIGHT	OFF
DAY&NIGHT	Outer
COLOR	
DNR	
IMAGE	
MOTION	
SYSTEM	
EXIT	

AWB	AUTO⟵
COLOR GAIN	|⸽⸽⸽⸽⸽⸽⸽⸽| 10
Return	⟵

►AWB: MANUAL, AUTO, AUTOext, preset selectable.
►MANUAL: setting C-TEMP (color temperature) and R/B (red/blue) GAIN value, 0-20 selectable.
C-TEMP: 3000K/5000K/8000 selectable.
►AUTO: automatic white balance.
►AUTOext: automatic tracking white balance.
►PRESET: put the camera lens to one special environment, the camera will choose this environment as basic white balance.
►COLOR GAIN: 0-20 selectable.

7. DNR

IRIS	ELC
2-MOTOR	⟵
EXPOSURE	⟵
BACKLIGHT	OFF
DAY&NIGHT	Outer
COLOR	⟵
DNR	MIDDLE
IMAGE	
MOTION	OFF
SYSTEM	⟵
EXIT	

►3D-DNR: It can improves image roughness in low-light level environment, OFF / LOW / MIDDLE / HIGH.

►SHARPNESS: 0~10.
►GAMMA: Used to adjustment the monitor GAMMA value
0.45/0.55/0.65/0.75selectable.
►MIRROR: ON/OFF.
►FLIP: ON/OFF.
►D-ZOOM: Zoom image, range:
1.0/1.1-15.9/16,1-16X, 160 level selectable.
►ACE：D-WDR, OFF, LOW/MIDDLE/HIGH.
►DEFOG：ON-enter, processing fog in image, makes the image clear. ATUO and MANUAL options choices，
HIGH/MIDDEL/LOW.
►SHARDING: ON-enter, Increase the shadows in the image brightness, 0%-100%.
►PRIVACY: ON-enter, setting the mask area position and size, can setting BOX and POLYGON.
Can setting 16 boxes mask area(NO. 0-15); and 8 polygons mask area (NO. 0-7); BOX: ON-enter, ON/OFF hide the numbered mask. Mask setting：
H-POS: 0-60 horizontal starting point;
V-POS: 0-34 vertical ending point;
H-SIZE: 0-60 horizontal ending point;
V-SIZE: 0-34 vertical ending point;
Mask brightness & color U&V range: 0-20
TRANS: 0-3 levels transparence setting.
POLYGON：ON-enter in four corners of the screen as the basis: POS0, POS1, POS2, POS3, X range: 0-120, Y range: 0-68.
Mask brightness & color U&V range: 0-20
TRANS: 0-3 levels transparence setting.

8. IMAGE

IRIS	ELC
2-MOTOR	⟵
EXPOSURE	⟵
BACKLIGHT	OFF
DAY&NIGHT	Outer
COLOR	⟵
DNR	Middle
IMAGE	
MOTION	OFF
SYSTEM	
EXIT	

SHARPNESS	8 ▭▭▭ 1 1
GAMMA	0.45 ⟵
MIRROR	OFF
FLIP	OFF
D-ZOOM	1.0X
ACE	OFF
DEFOG	ON ⟵
SHADING	ON ⟵
Privacy	⟵
Return	⟵

9. MOTION

IRIS	ELC
2-MOTOR	⟵
EXPOSURE	⟵
BACKLIGHT	OFF
DAY&NIGHT	Outer
COLOR	⟵
DNR	Middle
IMAGE	⟵
MOTION	OFF
SYSTEM	
EXIT	

DET WINDOE	⟵	
SENSITIVITY	⟿⟿⟿⟿⟿	1 1
MOTION OSD	OFF	
TEXT ALARM	OFF	
SIGNAL OUT	OFF	
RETURN	⟵	

Setting the alarm area in the image to let the camera give out alarm signal when objects in alarm area is moving.

►DET WINDOW:0-3area selectable，(WINODW ZOOM). Each area is independent programmable.

H-POS: 0-60horizontal starting point;

V-POS: 0-34 vertical ending point;

H-SIZE: 0-60 horizontal ending point;

V-SIZE: 0-34vertical ending point;

►sensitivity：0-10level selectable, the smaller value is, the more sensitive the camera is.

►MOTION OSD：ON/OFF, display red box in the monitor when detecting moving objects.

►TEXT ALARM: display text "MOTION"in the monitor when detecting moving objects.

►SINGNAL OUT: ON/OFF, give out 3.3V alarm signal when detection moving objects.

⚠ *NOTE:* The options will be displayed in the WINDOW DET, when the"MOTION OSD"is on.

10.System

IRIS	ELC
2-MOTOR	⟵
EXPOSURE	⟵
BACKLIGHT	OFF
DAY&NIGHT	Outer
COLOR	⟵
DNR	Middle
IMAGE	⟵
MOTION	OFF
SYSTEM	
EXIT	

COMM	⟵
OUTPUT	⟵
IMAGE RANGE	USER⟵
COLOR SPACE	HD-CbCr
COLOR BAR	OFF
Language	CHN[S]
CAM TITLE	
RESET	
RETURN	⟵

SYSTEM

►COM: RS-485

Communication setting ID: 0-255,

BAUDRATE: 2400/4800/9600/57600/115200 selectable.

►IMAGE RANGE: USER/FULL/COMP, the OFFSET of USER:0-32.

►COLOR SPACE: HD-CbCr, YUY, SD-CbCr.

►FRAMERATE: 1080P/720P_(25fps/30fps), selectable.

►SDI MODE: HD-SDI / EX-SDI

►FREQ: 60Hz / 50Hz

►ANALOG MODE: CVBS/HD_T/HD_A/HD_C

►LAUGUAGE: multiple languages CHN [S], CHN, EN, JPN, KOR, ITA

►COLOR BAR: OFF/ON, used in color contrast test (color bar on screen).

►CAM TITLE: ON through up、down、left、right keys to set up letters or numbers, after been set editor is displayed in the upper right corner of the screen.

►RESET ：Long press to restore factory settings.

3 PARAMETER

3-1 Function & Parameter

Model	HS385-2MP
Image Sensor	1/2" SONY CMOS (IMX385)
Effective Pixels	1845(H) X 1097(V) Approx. 2.13M pixels
Scanning System	Progressive
Resolution	Analog HD: 1080p (30FPS) SDI:1080P (30/60fps)
Min-illumination	Color:DSS:0.00017LUX, BW DSS:0.00008 LUX
Video Output	Analog: CVBS (960H) 1Vp-p Composite Output (75 ohm /BNC)
SDI HD Output	SDI high-definition output: 3G-SDI
S/N Ratio	More than 42Db (AGC off)
ACE&WDR	Off/Low/Middle/High; WDR SNR:120dB
Lens	Motor/DC/Manual/fixed
Brightness	0-20 steps
AGC	0-10 steps
SENS-up	Off/X2/X4/X8/X16/X32/X64
Shutter Speed	AUTO/MANUAL (1/50\60 ~ 1/30000 sec)
Defog	Off/On
BLC	Off/BLC
HLC	Off/HLC
Day &Night	Auto/Color/B&W/EXTERN
Color (AWB)	Auto/Auto ext/Preset/Manual
DNR	Off/Low/Middle/High
Mirror	Off/ON
H-V-REV	Off/On
Sharpness	0-10 steps
Motion	Off/On
Privacy Mask	Off/On
Language	Chinese/English polyglot
Power (Max.) supply	DC12V±10%<2.5W
EX-SDI distance	BNC-Cable: 75-3, Transmission up to 500m
Size	41mm*41mm*135mm

4.ATTENTION

POWER OFF THE EQUIPMENT：

If the equipment goes wrong, please power it off and send it back to factory for analysis.

Those repair instructions are only used for the reference of qualified repairmen.

⚠️ *NOTE:*

To avoid electric shock, please don＇t do any mending for description in the operation instructions.

Please carefully, read the following safety precaution.

● Don't put the equipment on the surface

● Don't install the equipment on the surface which lead to be exposed outside or under direct
  Sunshine, or close to warmer equipment or ultra-cold environment.
● Do keep it away from conductor.
● Do keep it away from liquid-leaking things.
● Don't install it in place where is close to electromagnetic source.
● Don't put any heavy objects on it.
● Do keep it away from radioactive rays
● Don't mend the equipment by yourselves.

USER MANUAL AND INSTRUCTIONS, ALL SYMBOLS ARE USED FOR FOLLOWING PRUPOSES

REFERENCE: can provide help information lf how to use it.

⚠️ *NOTE:* can bring damage to humans or other objects if do not operate according to instructions.