

FOR A GOOD **REASON**
GRUNDIG

Owner's Manual



HD Video Cameras

GCH-K1305B-1 2 Megapixel Full HD CMOS Box Ex-SDI Camera ICR WDR

GCH-K1305B-1.164.1.18.06.2015

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1. Important Safety Instructions

Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product. Incorrectly connecting the power supply may cause explosion, fire, electric shock, or damage to the product. Do not connect multiple products to one single adapter. Exceeding the capacity may cause abnormal heat generation or fire.

Do not place conductive objects (e.g. screwdrivers, coins or any metal items) or containers filled with water on top of the product. Doing so may cause personal injury due to fire, electric shock, or falling objects.

If any unusual smells or smoke comes out of the unit, stop using the product. In this case, immediately disconnect the power source and contact the service center. Continued use in such a condition may cause fire or electric shock.

If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way. (GRUNDIG is not liable for problems caused by unauthorised modifications or attempted repair.)

To prevent fire or electric shock, do not expose the inside of this device to rain or moisture.

2. Package Contents

These parts are included:

Ex-SDI Camera, Installation Material, User's Manual

3. Installation

3.1. Installation Remarks

Do not install the product in a location subject to high temperature (over 50°C), low temperature (below -10°C), or high humidity. Doing so may cause fire or electric shock. Keep out of direct sunlight and heat radiation sources. This may cause fire. Avoid aiming the camera directly towards extremely bright objects such as the sun, as this may damage the image sensor.

Do not install the unit in humid, dusty or sooty locations. Doing so may cause fire or electric shock. Install it in a place with good ventilation.

When installing the unit, fasten it securely and firmly. A falling unit may cause personal injury.

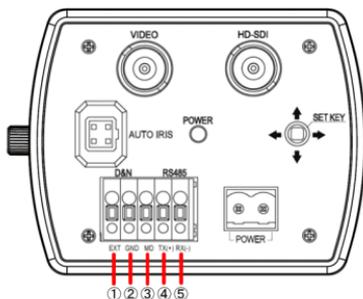
If you want to relocate the already installed product, be sure to turn the power off and then move or reinstall it.

Ex-SDI products can be connected through BNC cables. The installation is Plug & Play. There is no further configuration necessary.

If you do not get a signal, please check whether all cables are connected correctly. The distance of Ex-SDI signals is limited to approx. 200-300m when using a RG59 cable. If you want to use Ex-SDI for further distances, please use a higher quality cable (RG6 approx. 400-600m).

All Grundig Ex-SDI Cameras support also the HD-SDI standard so that they can be used with HD-SDI Recorders that do not support Ex-SDI signals.

3.2. Camera Overview



No.	
①	EXT (External)
②	GND (Ground)
③	MD (Motion Detection)
④	TX (+)
⑤	RX (-)

3.3. Lens Mounting

Lens Mounting for C/CS Mount Lens Model:

It is possible to attach all CS-Mount lenses with manual or DC controlled iris on the camera. Please remove the camera's plastic covering first and then attach the CS-Mount lens onto the camera. If you would like to use a C-Mount lens, you need a 5 mm C/CS Mount Adapter between the camera and the C-Mount lens, as shown in the illustration below.



C/CS Mount Adapter (on Camera)



Completion

3.4. Back Focus Adjustment

When to adjust the back focus:

Back Focus refers to the distance from the rear lens element to the camera focal plane.

It is only required to adjust the back focus only when the focus cannot be adjusted throughout its zoom range.

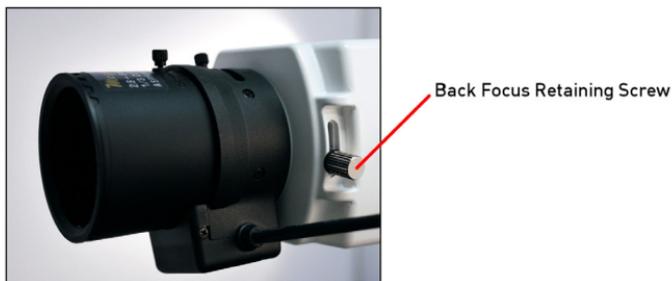
Requirements:

Tools required when carrying out back focus adjustment include:

1. Test chart / contrasting object
2. Allen Key (depending on the camera model)

How to adjust the back focus:

Step 1: Set the camera on a stable mount, with the test chart or object at least 75 feet (23 meters) away (or as far as possible). Please loosen the Back Focus Retaining Screw by hand or with the supplied Allen Key (depending on the camera model).



Step 2: Make sure the iris is wide open. Therefore, it is advised to keep the environment in low light condition. To open the automatic lens completely, please use a neutral density filter. With this filter it is possible to simulate a low light condition so that the lens can open up completely.

Step 3: Adjust the focus to infinite far (∞).

Step 4: Turn the zoom to the wide angle position, and then focus with the back focus adjustment on the test chart.

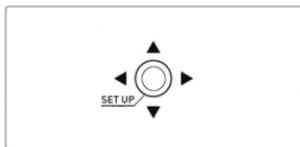
Step 5: Set the zoom now to the most extreme telephoto position.

Step 6: Focus on the object with the focus screw of the lens (not with the back focus adjustment!). If this procedure is successful, the back focus adjustment is finished and you can continue with step 8. If it was not successful, please carry on with Step 7.

Step 7: Repeat steps 3 ~ 6 until the focus can be adjusted throughout the zoom range. When using a zoom lens, the focus does not need to be adjusted again once the back focus adjustment has been completed. This does not apply to vario lenses.

Step 8: Tighten the back focus ring's retaining screw to fix the back focus adjustment.

4. Control Stick

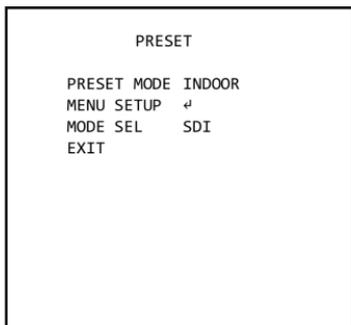


5. OSD Control

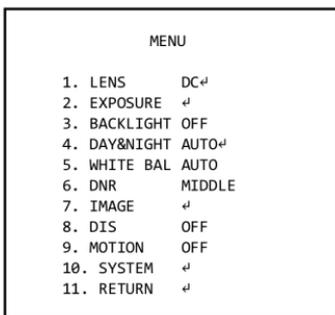
- Pressing the SET UP stick: Accesses the menu mode or confirms the setting.
- UP / DOWN: Chooses the desired menu.
- LEFT / RIGHT: Sets up the value of the selected menu and changes the settings.

6. OSD Menu

1. Press the SET UP stick to access the menu mode.
2. Select the desired feature by using the UP/DOWN direction (\wedge / \vee) of the SET UP stick. If an ENTER arrow (\leftarrow) is displayed next to the feature, press the SET UP stick to access the feature's menu.
3. If there is a setting for this feature on the right side of the screen, use the LEFT/RIGHT direction to switch between the settings and confirm your choice by pressing the SET UP stick.
4. When the settings are completed, go to EXIT to save and leave the OSD.



PRESET MODE [INDOOR, OUTDOOR, LOWLIGHT, HALLWAY, LOBBY, ELEVATOR]:
Select between the preconfigured setup modes. These settings can be further modified in the MENU SETUP menu.



MENU SETUP:

If you choose this item, a submenu will appear (see the picture on the left). Here you can configure all camera settings. This is the Main Menu.

Please see the following sub-chapters for further explanations of the settings.

MODE SEL [SDI, EX-SDI] :

Select between HD-SDI and Ex-SDI transmission mode.

EXIT:

Leave the OSD.

6.1. Lens

Here you can configure the lens setting.

MENU	
1. LENS	DC↵
2. EXPOSURE	↵
3. BACKLIGHT	OFF
4. DAY&NIGHT	AUTO↵
5. WHITE BAL	AUTO
6. DNR	MIDDLE
7. IMAGE	↵
8. DIS	OFF
9. MOTION	OFF
10. SYSTEM	↵
11. RETURN	↵

LENS [DC, MANUAL] :

If you are using a lens with manual Iris, set this item to MANUAL. If you are using a DC controlled lens, set it to DC.

6.2. Exposure

When selecting ↵, the following submenu will appear.

2. EXPOSURE	
BRIGHTNESS	10 
SHUTTER	AUTO↵
SENS-UP	x8
AGC	10 
RETURN	↵

The exposure is the amount of light received by the image sensor and is determined by the width of lens diaphragm opening, the amount of exposure by the sensor (shutter speed) and other exposure parameters. With this item, users can define how the Auto Exposure function should work.

BRIGHTNESS [0~20] :

This function is used to adjust the brightness of the camera picture.

SHUTTER [AUTO, MANUAL (1/25, 1/50, 1/100, 1/540, 1/700, 1/1000, 1/1600, 1/2500, 1/5000, 1/7000, 1/10000, 1/30000), FLICKER] :

You can select between automatic shutter and manual fixed shutter speed. If you notice flickering video images, you can use the FLICKER reducing mode.

SENS-UP [OFF, x2~x32 for 25fps / x2~x64 for 50fps] :

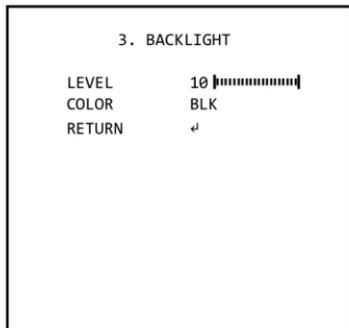
Automatically detects the ambient level of darkness in a dark or low contrast scene to extend the accumulated time, keeping the image bright and sharp.

AGC (Automatic Gain Control) [0-10] :

The AGC (Auto Gain Control) function is used to amplify the video signal when it falls below the set parameter. As the AGC level increases, the overall screen gets brighter but the level of noise will also increase at the same time.

6.3. Backlight

To overcome difficult light situations, the GRUNDIG HD-SDI cameras feature different options to improve the image quality.

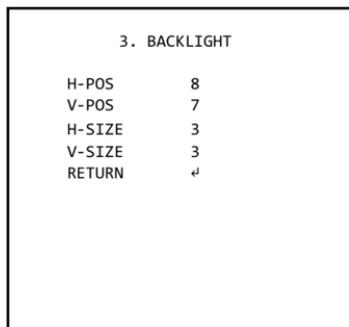


HLC (High Light Compensation):

This function is used to suppress or mask a strong light source (for example, headlights of cars during night-time) so that other subjects can be seen in more detail. If you select HLC, a submenu appears where you can make finer adjustments.

- LEVEL: Adjust the brightness level from which on the light source is to be masked out.

- COLOR: Select the colour that is to be used for the HLC mask.



BLC (Back Light Compensation):

This function is used to counterbalance the screen image by increasing the brightness so that a subject which appears dark due to a strong backlight can be displayed in more detail. If you select BLC, a submenu appears where you can make finer adjustments.

- H-POS/ V-POS/ H-SIZE/ V-SIZE: Define the position and size of the area of interest by changing the position & size.

WDR	
WEIGHT	MIDDLE
RETURN	

WDR:

The WDR (Wide Dynamic Range) function works to correct excessive light within the frame to produce a usable image. When the image has simultaneous bright and dark areas, it makes both areas distinct. If you select WDR, a submenu appears where you can make finer adjustments.

- WEIGHT [MIDDLE, HIGH, LOW]: Select the WDR level of the camera.

NOTE: If the WDR function is activated, the CVBS output will be deactivated.

6.4. Day&Night

Here you can choose different settings to control the DAY&NIGHT function.

COLOUR: The camera is always in colour mode regardless of the ambient conditions.

B/W: The camera is always in Black & White mode regardless of the ambient conditions.

4. DAY&NIGHT	
SMART IR	ON
ANTI-SAT.	4
DELAY	LOW
RETURN	↵

EXTERN:

Here you can activate the EXTERN function to activate the external Day & Night connector on the rear panel of the camera. If you select EXTERN, a submenu appears where you can make finer adjustments.

- SMART IR [OFF, ON]: Activate or deactivate the Smart IR function. This will reduce the shutter speed, if the image is overexposed in B&W mode.

- ANTI-SAT. [0-20]: Use the Anti-Saturation function to adjust the IR intensity to your needs. A higher value will reduce the IR intensity.

- DELAY [MIDDLE, HIGH, LOW]: Set the delay time for switching between COLOUR and B/W. If set to HIGH, the camera will stay longer in the current mode, before it switches to the other mode.

4. DAY&NIGHT

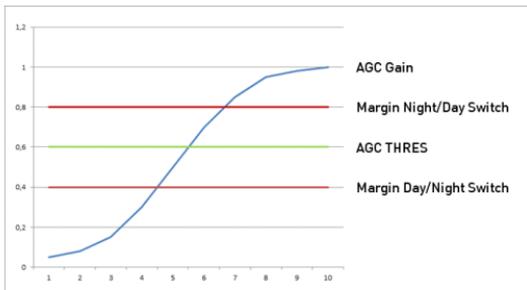
SMART IR	ON
ANTI-SAT.	4 ██████████
AGC THRES	10 ██████████
AGC MARGIN	10 ██████████
DELAY	LOW
RETURN	↵

AUTO:

The camera will automatically switch between DAY and NIGHT mode, according to the lighting condition. If you press the SET key, the AUTO sub-menu is selected.

- SMART IR [OFF, ON]: Activate or deactivate the Smart IR function. This will reduce the shutter speed, if the image is overexposed in B&W mode.
- ANTI-SAT. [0-20]: Use the Anti-Saturation function to adjust the IR intensity to your needs. A higher value will reduce the IR intensity.

- AGC THRES [0-20]: Execute the Day/Night switch depending on the AGC level that is used to increase the brightness of the image. Higher values require a darker illumination to execute the switch.
- AGC MARGIN [0-20]: Define the difference between the Day/Night & Night/Day switch based on AGC THRES. Higher values will increase this distance and can help to prevent continuous switching between Day & Night mode.
- DELAY [MIDDLE, HIGH, LOW]: Set the delay time for switching between COLOUR and B/W. If set to HIGH, the camera will stay longer in the current mode, before it switches to the other mode.



6.5. White Balance

The camera needs to find a reference colour temperature, which is a way of measuring the colour of a light source, for calculating all the other colours. The unit for measuring this ratio is in degree Kelvin (K). You can select one of the White Balance Control modes according to the installation condition.

AUTO (Auto Tracking White Balance):

With the Auto Tracking White Balance function, the white balance in a scene will be automatically adjusted while temperature colour is changing. The AUTO Mode is suitable for environments with a light source having a colour temperature in the range roughly from 1800 ~ 10500K.

AWB (Auto White Balance):

In this mode, white balance works within its colour temperature range. This mode computes the white balance value output using the colour information from the entire screen. It outputs the proper value using the colour temperature radiating from a black subject.

AWC-SET:

This mode is set to the current white balance condition and keeps its value. Select this mode and then press the SET key. If there is a change in location or light source, please repeat this procedure.

5. WHITE BAL	
C-TEMP	5000K
R-GAIN	10 ██████████
B-GAIN	10 ██████████
RETURN	↵

MANUAL:

Can be used for fine adjustment. Set the White Balance by first using AUTO or AWB and then change to MANUAL and press the SET key. Increase or decrease the value of R-Gain (Red) and B-Gain (Blue) while monitoring the colour of the image.

- C-TEMP [3000K, 5000K, 8000K]: Adjust the colour temperature based on the illumination source.
- R-GAIN: Adjusts the White Balance for the colour Red.
- B-GAIN: Adjusts the White Balance for the colour Blue.

6.6. DNR (Digital Noise Reduction)

This function is used to improve the picture quality by filtering the noise which is generated under low bright light conditions. You can set 3 different levels [LOW, MIDDLE, HIGH] here.

6.7. Image

When selecting ↵, the following submenu will appear.

7. IMAGE	
SHARPNESS	10 ██████████
COLOR GAIN	10 ██████████
GAMMA	0.55
MIRROR	OFF
FLIP	OFF
D-ZOOM	1.0x
D-WDR	OFF
DEFOG	OFF
SHADING	OFF
PRIVACY	↵
RETURN	↵

Here you can optimise the image quality by adjusting different options.

SHARPNESS [0 ~ 20] :

Adjusts the image sharpness. If the level goes up excessively, it may affect the video image and generate a noise.

COLOR GAIN [0 ~ 20] :

Adjusts the colour gain of the camera. If set to high values, the colours will be more saturated.

GAMMA [0.45 ~ 0.75] :
Changes the gamma curve of the camera.

MIRROR [ON, OFF] :
Mirrors the image horizontally on the screen.

FLIP [ON, OFF] :
Flips the image vertically on the screen.

D-ZOOM [1.0x~16.0x] :
You can use the up to x16 bi-cubic linear digital zoom.

D-WDR [LOW, MIDDLE, HIGH, OFF] :
The D-WDR (Wide Dynamic Range) function works to correct excessive light within the frame to produce a usable image. When the image has simultaneous bright and dark areas, it makes both areas distinct.

DEFOG	
MODE	AUTO
LEVEL	MIDDLE
RETURN	↵

DEFOG [OFF, ON] :
This function helps to recognize the object in a misty or dusty weather condition. When pressing ON, a submenu appears where you can make finer adjustments.
- MODE [MANUAL, AUTO]:
> AUTO: The camera will automatically adjust the defog function.
> MANUAL: Select manually under LEVEL a defog strength between LOW, MIDDLE and HIGH.
- LEVEL [LOW, MIDDLE, HIGH]: See above.

SHADING	
WEIGHT	100%
RETURN	↵

SHADING [ON, OFF] :
Compensates the shading effects of lenses when the lens is set to a very wide angle. This function will reduce the brightness difference between the centre and the edges. If you select ON, a submenu appears where you can make finer adjustments.
- WEIGHT [0%~100%] : You can set different levels here.

PRIVACY	
BOX	OFF
POLYGON	OFF
RETURN	↵

PRIVACY:

Masks areas that you want to hide on the screen. The camera can activate up to 16 privacy masks. When selecting PRIVACY (pressing the arrow sign), a submenu will appear where you can choose to set up up to 8 polygonal or up to 16 rectangular privacy masks.

- BOX [ON, OFF]:

If you are selecting ON, this submenu will appear. Here you can set up rectangular privacy masks.

> ZONE NUM [0 ~ 15]: Select a mask out of the 16 mask areas and set the options below for the selected mask.

> ZONE DISP [ON, OFF]: Choose ON to activate privacy masks and press OFF to deactivate masks.

> H-POS [0 ~ 60]: You can define here the horizontal start position of the privacy mask.

> V-POS [0 ~ 34]: You can define here the vertical start position of the privacy mask.

> H-SIZE [0 ~ 40]: You can define here the horizontal size of the privacy mask.

> V-SIZE [0 ~ 34]: You can define here the vertical size of the privacy mask.

> Y LEVEL [0 ~ 20]: You can define here the brightness of the mask colour.

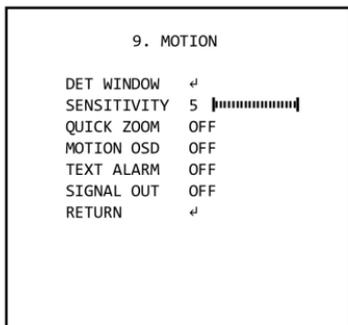
> CB LEVEL [0 ~ 20]: You can define here the blue amount of the mask colour.

> CR LEVEL [0 ~ 20]: You can define here the red amount of the mask colour.

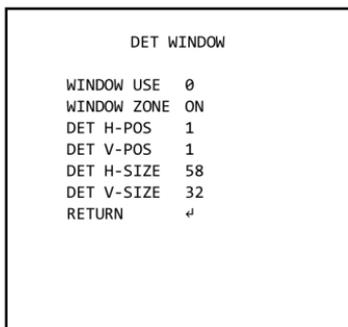
> TRANS [0~3]: Adjust the transparency of the privacy masks here.

BOX	
ZONE NUM	0
ZONE DISP	ON
H-POS	12
V-POS	2
H-SIZE	3
V-SIZE	3
Y LEVEL	10 ██████████
CB LEVEL	10 ██████████
CR LEVEL	10 ██████████
TRANS	2
RETURN	↵

6.9. Motion



This function is used to detect moving objects in the monitored area. When choosing ON, the following submenu will appear where you can adjust the settings for the MOTION function.



DET WINDOW:

When you select this submenu, you can activate 4 different motion detection zones and define their position.

- WINDOW USE [0-3]: Select the zone which you would like to edit.
- WINDOW ZONE [OFF, ON]: Activate or deactivate the selected motion zone.

- DET H-POS [0 ~ 60] :

Define the horizontal start position of the monitoring area.

- DET V-POS [0 ~ 34] :

Define the vertical start position of the monitoring area.

- DET H-SIZE [0 ~ 60] :

Define the horizontal size of the monitoring area.

- DET V-SIZE [0 ~ 34] :

Define the vertical size of the monitoring area.

SENSITIVITY [1 ~ 10] :

Set the sensitivity of the motion detection.

QUICK ZOOM	
ZOOM SPEED	MIDDLE
TRACKING	OFF
REPEAT	OFF
RETURN	↵

QUICK ZOOM [OFF, ON] :

Activates the digital zoom function if a motion is detected. If you choose ON, you will enter the submenu where you can make finer adjustments.

- ZOOM SPEED [LOW, MIDDLE, HIGH]:

Configures the speed of the digital zoom.

- TRACKING [OFF, ON]: Activates the tracking function as soon as a moving object is detected.

- REPEAT [OFF, ON]: Here you can choose the repetition function.

MOTION OSD [ON, OFF] :

Controls the ON/OFF status of the motion detection block display.

TEXT ALARM [ON, OFF] :

When the ALARM function is activated, the camera will detect movement within a monitoring area and then send an alarm signal automatically. The flash warning notice "MOTION !!!" will be displayed in the upper left corner of the screen. When the camera is moved, the flash warning notice "MOVING !!!" will be displayed in the upper left corner of the screen.

SIGNAL OUT [ON,OFF] :

No function in this camera model.

6.10. System

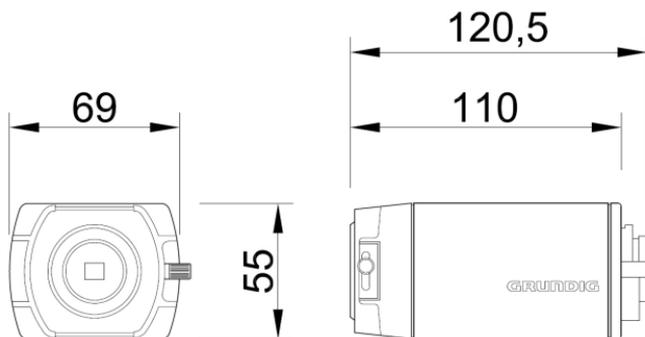
When selecting ↵, the following submenu will appear.

10. SYSTEM	
COM.	↵
FRAME RATE	1080_25p
FREQ	50HZ
LANGUAGE	ENG
CAM TITLE	OFF
RESET	ON
RETURN	↵

Specifications GCH-K1305B-1

Image Sensor	1/3" CMOS Sony Exmor 2 Megapixel
Pixels - Total	1952(H) x 1116(V)
Pixels - Effective	1944(H) x 1104(V)
Scanning System	Progressive
Image Size	1920x1080, 1280x720
Frame Rate	30/60, 25/50 fps at 1080p; 30/60, 25/50 fps at 720p
Compliant	SMPTE-292, Ex-SDI
Sensitivity Colour	0.5 Lux @ F1.2 (IRE50)
Sensitivity B&W	0.1 Lux@F1.2 (IRE50)
Sens Up	Off ~ x32, auto
S/N Ratio	>50 dB
Shutter Speed	AUTO, FLK, Manual 1/25 ~ 1/30,000
Col/B&W	On/Off/Auto/Ext, IR-cut filter removable (ICR)
Lens Drive Type	DC Auto Iris
OSD	English
Camera ID	Off / On, 8 character
Flip/Mirror	On/Off
Gamma correction	0.45 / 0.55 / 0.65 / 0.75
WDR	Off/Low/Middle/High
Number of Privacy Zones	16 (standard method) + 8 (polygonal method)
BLC Back Light	BLC, HSBLC, OFF
Digital Noise Reduction (DNR)	Off/Low/Mid/High (Adaptive 3D + 2D)
Motion Detection	On/ Off/ Sensitivity/ Area setting
Sharpness	Off / On (1~20)
Digital Zoom	Off/1 ~ 16x
White Balance	ATW, AWB, AWC, Manual
De-Fog	Off/Auto/Low/Middle/High
Presets	Indoor, Outdoor, Lowlight, Hallway, Lobby, Elevator
Video Outputs	1 Ch HD-SDI BNC or 1 Ch Composite BNC
Operating Temperature	-10°C ~ +50°C
Storage Temperature	-20°C ~ +60°C
Humidity	less than 85%
Supply Voltage	24 Vac / 12 Vdc
Power Consumption	3 W
Weight	0.33 kg
Dimensions (wxhxd)	69 x 55 x 120.5 mm

Dimensions



EC Declaration of Conformity



GCH-K1305B-1 2 Megapixel Full HD CMOS Box Ex-SDI Camera ICR WDR

It is hereby certified that the products meet the standards in the following relevant provisions:

EC EMC Directive 2004/108/EC

Applied harmonised standards and technical specifications:

EN 55022: 2006/A1: 2007 (Class A),
IEC/EN 61000-3-2: 2006/A1: 2009
IEC/EN 61000-3-3: 2008
AS/ NZS CISPR22: 2009 (Class A)
EN 50130-4: 1995 /A1: 1998/ A2: 2003,
IEC 61000-4-2: 2008
IEC 61000-4-3: 2010
IEC 61000-4-4: 2010
IEC 61000-4-5: 2005
IEC 61000-4-6: 2008
IEC 61000-4-11: 2004
Mains Supply Voltage Variations

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