FOR A GOOD **REASON**
GRUNDIG

Owner's Manual

Cameras & Domes

GCA-B0002B	1/3" CCD Colour Camera, 650L, 230VAC
GCA-B0302B	1/3" CCD Colour Camera, 650L, 12VDC/24VAC

Content:

1. Available Versions

These instructions apply to the following products. For the different properties of the products please refer to the table.

	Supply Voltage	Day/Night	WDR
GCA-B0002B	230 VAC	Soft	-
GCA-B0302B	12V DC/24V AC	Soft	-

2. 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.

3. Package Contents

These parts are included:
Camera, Manual, Power Terminal Block, 230V Power cable (only for GCA-B0002B), C/CS Mount Adapter, Back Focus Adjuster

4. Installation

Do not install this product in a location subject to high temperature (over 45°C), low temperature (below 0°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.

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.

4.1. Camera Overview

GCA-B0002B
230V AC

GCA-B0302B
12V DC/24V AC
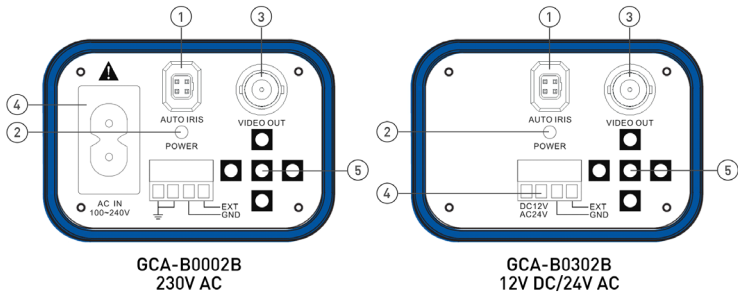
1. AUTO IRIS Connector: Auto iris lens connector
2. POWER LED: Red light indicates good power connection.
3. VIDEO OUT (BNC Connector): For video output
4. For GCA-B0002B: 230V AC Connector /
   For GCA-B0302B: DC 12V/AC 24V Connector
5. OSD Control Keys

4.2. 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

4.3. 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. Back focus adjuster (in the package of the camera)
2. Test chart / contrasting object

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 focus ring's retaining screw with the supplied back focus adjuster.

Back Focus Adjuster

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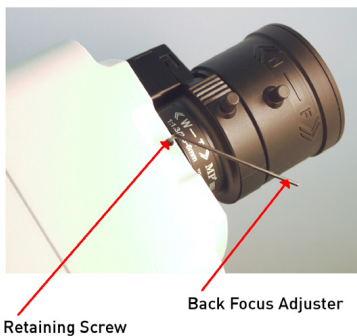
Step 2: Make sure the iris is wide open. Therefore, it is advised to keep the environment in low light condition. To open the automatic lens completely, please use a neutral density filter. With this filter it is possible to simulate a low light condition so that the lens can open up completely.

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

Step 4: Turn the zoom to the wide angle (telephoto) position, and then focus with the back focus on the subject.

Step 5: Set the zoom to the most extreme wide angle (telephoto) position.

Step 6: Focus on the object with the back focus ring. Check now whether it is possible to adjust the focus with the back focus ring also in the wide angle range.

Step 7: Repeat steps 3 ~ 6 until the focus can be adjusted throughout the zoom range. When using a zoom lens and changing the focal length, the focus does not need to be adjusted again once the back focus adjustment has been completed. This does not apply to vario lenses.
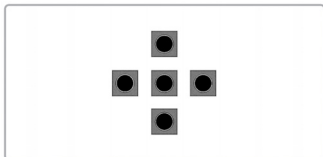
Step 8: Tighten the back focus ring's retaining screw to fix the ring.

4.4. Power Connection

For the camera with 230V power supply, please put the power cable into the camera.
For the camera with 12V DC/24V AC power supply, connect the power terminal block.
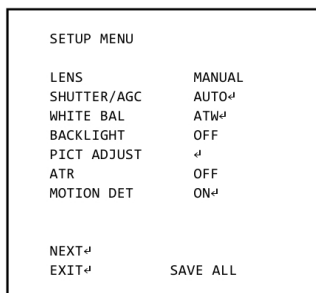
5. OSD Control Keys

- OK key (in the middle): 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 OK key and hold it for a while to access the menu mode.
2. Select the desired feature by using the UP/DOWN keys.
3. If there is a setting for this feature on the the right side of the screen, use the LEFT/RIGHT keys to switch between the settings and confirm your choice by pressing the OK key. If an ENTER arrow (↵) is displayed, press OK to access the according submenu.
4. When the settings are completed, go to SAVE ALL and press the OK key to save the settings. If you have not done this and the power is turned off, the changes in the settings will not be kept.
5. In the sub-menus, please press with the OK key on RETURN to return to the previous menu.
6. Please press with the OK key on NEXT or BACK to switch between the SETUP MENU pages.
7. To exit the menu, please press with the OK key on EXIT in the main menu.

```
SETUP MENU

LENS          MANUAL
SHUTTER/AGC   AUTO↵
WHITE BAL     ATW↵
BACKLIGHT     OFF
PICT ADJUST   ↵
ATR           OFF
MOTION DET    ON↵


NEXT↵
EXIT↵         SAVE ALL
```

LENS: Here you can configure the lens setting.

SHUTTER/AGC: This function is used to control the light exposure.

WHITE BAL: You can control the white balance under different lighting conditions here.

BACKLIGHT: You can control the backlight compensation here.

PICT ADJUST: You can set different picture related settings like mirroring, brightness, sharpness, contrast, hue and gain.

ATR: This function is used to improve the contrast of the image (similar to WDR).

MOTION DET: This function is used to detect moving objects in the monitoring area.

NEXT: Choose this option to view the second menu page.

```
SETUP MENU

PRIVACY          OFF
DAY/NIGHT        AUTO↵
NR               ↵
CAMERA ID        OFF
SYNC             INT
LANGUAGE         ENGLISH
CAMERA RESET


BACK↵
EXIT↵        SAVE ALL
```

PRIVACY: You can mask specific areas in the monitoring area here.

DAY/NIGHT: This function is used to improve the camera's sensitivity at night or when the brigthness level of the ambient environment is low.

NR: This noise reduction function is to decrease the noise which can be generated under low light conditions.

CAMERA ID: Here you can assign a unique name or title to the camera.

SYNC: This function refers to the Internal Syncronisation.

LANGUAGE: Here you can choose your preferred language.

CAMERA RESET: This function is for resetting the camera to factory default.

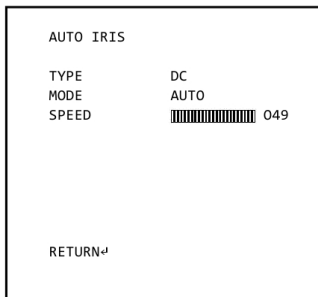BACK: Choose this option to view the first menu page again.

EXIT: Here you can exit the menu.

SAVE ALL: Choose this option to save all changes in the settings.

6.1. LENS

You can select MANUAL or AUTO mode for this function, depending on the lens type.

```
AUTO IRIS

TYPE        DC
MODE        AUTO
SPEED       ▐▊▊▊▊▊▊▊▊▊▊▊▊  049




RETURN↵
```

AUTO:
Here you can set the operation mode of the lens and adjust the iris speed.
- TYPE [DC, VIDEO] : Please do not select VIDEO mode. Please choose DC for this camera model.
- MODE [AUTO, OPEN, CLOSE] : Choose whether the lens iris should be controlled automatically or be fixed to open or close.
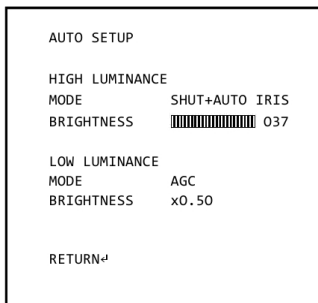- SPEED [000~255] : Sets the convergence speed of the lens iris. If the value is too high, the iris might operate improperly.

MANUAL:
Select this item for the manual iris lens.

6.2. SHUTTER/ AGC

This function is used to control the light exposure. You can either select AUTO for the auto iris lens (here you can set the shutter value and the brightness level depending on the lighting conditions) or you can choose MANUAL for the manual iris lens (here you can set up the electronic shutter speed and the AGC value manually).

```
AUTO SETUP

HIGH LUMINANCE
MODE        SHUT+AUTO IRIS
BRIGHTNESS  ▐▊▊▊▊▊▊▊▊▊▊▊  037

LOW LUMINANCE
MODE        AGC
BRIGHTNESS  x0.50


RETURN↵
```

AUTO:
Here you can set the auto exposure mode in two different lighting conditions (HIGH LUMINANCE for middle/high-bright lighting conditions and LOW LUMINANCE for low-bright lighting conditions).

HIGH LUMINANCE
- MODE [AUTO IRIS, SHUT+AUTO IRIS] :
When choosing AUTO IRIS, the electronic shutter is fixed, and the exposure is controlled using the mechanical iris. When choosing SHUT+AUTO IRIS, the auto exposure is controlled by using the electronic shutter in middle-bright light conditions, and using the mechanical iris in high-bright light conditions.
- BRIGHTNESS [000~255] :
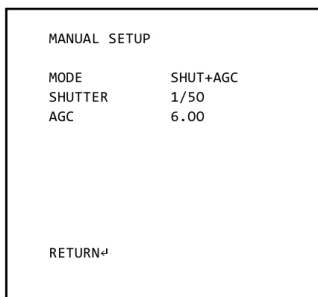Sets the value of auto exposure operations. As the value increases, the screen gets brighter.

LOW LUMINANCE
- MODE [AGC, OFF] :
When choosing AGC, the auto exposure is controlled by using AGC.
- BRIGHTNESS [x0.25, x0.50, x0.75, x1.00] :
Sets the value of auto exposure operations. As the value increases, the screen gets brighter.

```
MANUAL SETUP

MODE        SHUT+AGC
SHUTTER     1/50
AGC         6.00




RETURN↵
```

MANUAL:
Here you can set the SHUTTER value and the AGC value.
- MODE [SHUT+AGC] : The mode is fixed to SHUT+AGC.
- SHUTTER [PAL: 1/50, 1/100, 1/250, 1/500, 1/1000, 1/4000, 1/10000] : Choose the desired value.
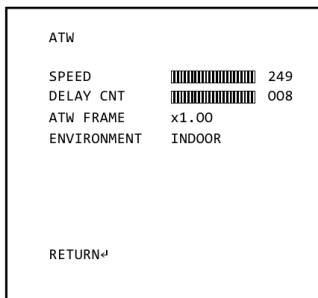- AGC [6.00, 12.00, 18.00, 24.00, 30.00, 36.00, 42.00, 44.80] : As the AGC value increases, the overall screen gets brighter but the level of noise is also increasing.

6.3. WHITE BAL (White Balance)

This function is used to control the white balance under different lighting conditions. Adjusting the setting calibrates the camera for correct and natural colour rendering. Adjust the functions PUSH, ANTI CR, PUSH LOCK or select a submenu (MANUAL, ATW, USER1, USER2).

```
ATW

SPEED         ||||||||||||||||||||  249
DELAY CNT     ||||||||||||||||||||  008
ATW FRAME     x1.00
ENVIRONMENT   INDOOR




RETURN↵
```

ATW:
In this mode, the camera automatically tracks changes in the colour temperature, and adjusts the white balance according to the ambient conditions.

- SPEED [000~255] : Sets the speed of searching for White Balance when the colour temperature changed.
- DELAY CNT [000~255] : This sets the delay time of searching for White Balance, when the colour temperature changed.
- ATW FRAME [x0.5, x1.0, x1,5, x2.0] : Adjust ATW by increasing or decreasing the colour temperature.
- ENVIRONMENT [INDOOR, OUTDOOR] : Choose INDOOR when the camera is installed indoors (this is mainly for sodium vapor lamps or indoor lighting conditions, it means ATW is set to Low Colour Temperature/warm) or choose OUTDOOR when the camera is installed outdoors (this is mainly for sunlight conditions, it means ATW is set to High Colour Temperature/cool).
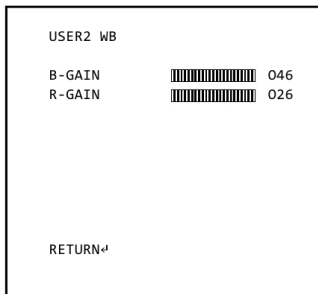
PUSH:
Adjusts the white balance regardless of the ambient conditions.

```
  USER1 WB

  B-GAIN          ||||||||||||||||  030
  R-GAIN          ||||||||||||||||  033




  RETURN↵
```
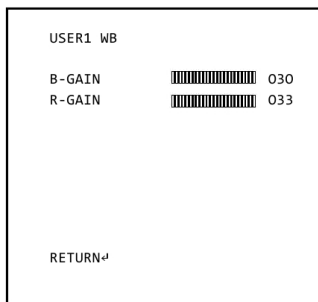
USER1:
This mode is the fixed outdoor gain mode and is fitted for outdoor lighting conditions.
- B-GAIN: Adjusts the White Balance for the colour Blue.
- R-GAIN: Adjusts the White Balance for the colour Red.

```
  USER2 WB

  B-GAIN          ||||||||||||||||  046
  R-GAIN          ||||||||||||||||  026




  RETURN↵
```
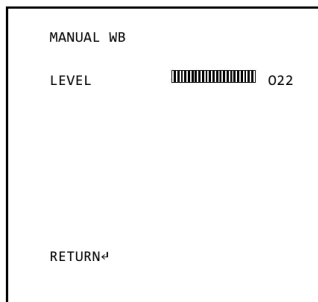
USER2:
This mode is the fixed fluorescent light gain mode and is fitted for indoor lighting conditions.
- B-GAIN: Adjusts the White Balance for the colour Blue.
- R-GAIN: Adjusts the White Balance for the colour Red.

ANTI CR:
With this function you can minimise the problems related to colour rolling caused by the flickering of fluorescent lights.

```
┌─────────────────────────────────┐
│                                 │
│  MANUAL WB                      │
│                                 │
│  LEVEL        ▊▊▊▊▊▊▊▊▊▊▊ 022    │
│                                 │
│                                 │
│                                 │
│                                 │
│                                 │
│                                 │
│  RETURN↵                        │
│                                 │
└─────────────────────────────────┘
```

MANUAL:
This function allows the white balance to be adjusted manually. An increased level produces a strong blue tone on the screen and a decreased level produces a strong red tone on the screen.

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

6.4. BACKLIGHT

This function is used for backlight compensation. Please choose from OFF, BLC and HLC.
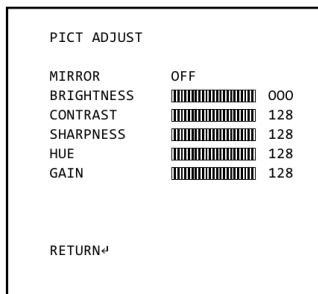
BLC (Back Light Compensation):
This function is used to counterbalance the screen image by increasing the brightness so that a subject which appears dark due to a strong backlight can be displayed in more detail.

HLC (High Light Compensation):
This function is used to surpress or mask a strong light source (for example, headlights of cars during night-time) so that other subjects can be seen in more detail.

6.5. PICT ADJUST (Picture Adjustment)

When selecting ↵, the following submenu will appear.

```
PICT ADJUST

MIRROR        OFF
BRIGHTNESS    ||||||||||||||||||||  OOO
CONTRAST      ||||||||||||||||||||  128
SHARPNESS     ||||||||||||||||||||  128
HUE           ||||||||||||||||||||  128
GAIN          ||||||||||||||||||||  128



RETURN↵
```

MIRROR [ON, OFF] :
This function is used to inverse the camera picture.

BRIGHTNESS [000~255] :
This function is used to adjust the brightness of the camera picture.

CONTRAST [000~255] :
This function is used to adjust the contrast of the image (the difference between light and dark areas on the screen).

SHARPNESS [000~255] :
This function is used to adjust the sharpness of the displayed image.

HUE [000~255] :
This function is used to adjust the colour tone of the displayed image.

GAIN [000~255] :
This function is used to adjust the saturation of the displayed image.

6.6. ATR (Adaptive Tone-Curve Reproduction)

ATR [ON, OFF] :
When both low-luminance and high-luminance areas exist in the same picture, this function can improve the visibility of the entire picture by providing a tone-curve correction (similar to WDR). When selecting ON, the following submenu will appear.

```
ATR

LUMINANCE     MID
CONTRAST      MID






RETURN↵
```
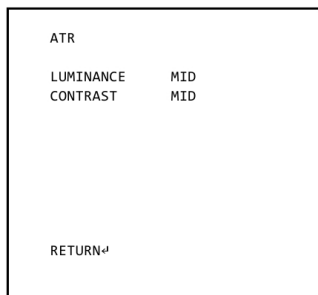
LUMINANCE [LOW, MID, HIGH] :
This improves the visibility of bright areas.

CONTRAST [LOW, MIDLOW, MID, MIDHIGH, HIGH] :
This improves the visibilty of dark areas.

6.7. MOTION DET (Motion Detection)

MOTION DET [ON, OFF] :
This function is used to detect moving objects in the monitored area. There are 4 predefined boxes representing the areas that can be monitored for motion.
When choosing ON, the following submenu will appear where you can adjust the settings for the MOTION DET function.

```
   MOTION DET

   DETECT SENSE  |||||||||||||||||||  111
   BLOCK DISP    OFF
   MONITOR AREA  OFF
   AREA SEL      1/4
    TOP          |||||||||||||||||||  020
    BOTTOM       |||||||||||||||||||  134
    LEFT         |||||||||||||||||||  020
    RIGHT        |||||||||||||||||||  224

   RETURN↵
```

DETECT SENSE [000~127] :
Sets the motion detection sensitivity.

BLOCK DISP [OFF, ON, ENABLE] :
Controls the ON/OFF status of the motion detection block display.
- ON, OFF: Turns the block display on/off.

- ENABLE: If the BLOCK DISPLAY is set to ON, you can choose in this setting with the OK key areas where the motion detection (in block format) should not be displayed. Using this option is only possible when MONITOR AREA is set to ON. To exit this setting, press the OK key and hold it for a while.

MONITOR AREA [OFF, ON] :
If you choose ON, the areas for motion detection monitoring will be shown on the screen.

AREA SEL [1/4 ~ 4/4] :
Select a monitoring area out of the 4 monitoring areas and set the options below for the selected monitoring area.
- TOP: Sets the top side of the selected monitoring area.
- BOTTOM: Sets the bottom side of the selected monitoring area.
- LEFT: Sets the left side of the selected monitoring area.
- RIGHT: Sets the right side of the selected monitoring area.

6.8. PRIVACY

```
PRIVACY

AREA SEL    1/4
  TOP        ||||||||||||||||  OOO
  BOTTOM     ||||||||||||||||  128
  LEFT       ||||||||||||||||  128
  RIGHT      ||||||||||||||||  128
COLOR        1
TRANSP       1.00
MOSAIC       OFF
RETURN↵
```

When selecting ON, a submenu will appear where you can set the privacy masks and their colours. This function is used to mask specific areas within the frame of the camera.

AREA SEL [1/8 ~ 8/8] :
Select a mask out of the 8 mask areas and set the options below for the selected mask. If MONITOR AREA in the MOTION DET menu has been set to ON, four areas will be selectable.
- TOP: Sets the top side of the selected mask area.
- BOTTOM: Sets the bottom side of the selected mask area.
- LEFT: Sets the left side of the selected mask area.
- RIGHT: Sets the right side of the selected mask area.

COLOR [1 ~ 8] :
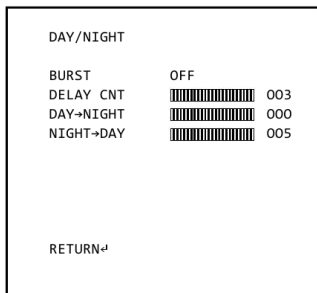Choose one of 8 colours for the mask areas.

TRANSP [0.00, 0.5, 0.75, 1.0] :
Choose one of 4 transparency levels for the mask areas.

MOSAIC [OFF, ON] :
Set the mosaic function for the mask areas to OFF or ON. The mosaic will be shown in the mask areas when TRANSP is set to lower than 1.00.

6.9. DAY/NIGHT

This function is used to improve the camera's sensitivity at night or when the brigthness level of the ambient environment is low.

```
DAY/NIGHT

BURST        OFF
DELAY CNT    |||||||||||||||||||||  003
DAY→NIGHT    |||||||||||||||||||||  000
NIGHT→DAY    |||||||||||||||||||||  005




RETURN↵
```

AUTO [BURST, DELAY CNT,
DAY→NIGHT, NIGHT→DAY] :
This mode automatically switches the video
signals between COLOR and B/W when the
according ambient illumination/brightness is
reached.

- BURST: Set this option to ON to output a burst signal in B/W mode.
- DELAY CNT: Sets the delay time for switching between COLOR and B/W mode.
- DAY→NIGHT: Sets the brightness level for switching from COLOR to B/W mode.
- NIGHT→DAY: Sets the brightness level for switching from B/W to COLOR mode.

COLOR:
If set to COLOR, the camera will be fixed to COLOR mode regardless of the ambient
conditions.

```
B/W

BURST        OFF
IR OPTIMIZER ON
MODE         CENTER
LEVEL        |||||||||||||||||||||  005




RETURN↵
```
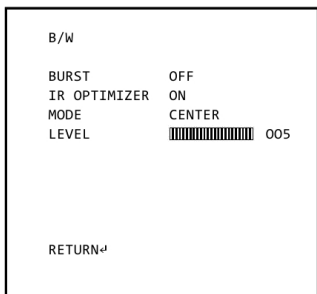
B/W [BURST, IR OPTIMIZER, MODE,
LEVEL] :
If set to B/W, the camera will be fixed to
B/W mode regardless of the ambient
conditions.

- BURST: Set this option to ON to output a burst signal in B/W mode.
- IR OPTIMIZER: Set the IR OPTIMIZER to ON to control the screen overexposure
caused by the camera's (optional) bright LED light in dark ambient conditions.
- MODE: Choose CENTER if the subjects which can cause overexposure are located
near the centre of the monitored area. Choose AUTO if the subjects which can cause
overexposure are scattered on the monitored area.
- LEVEL: Sets the reference level of the IR OPTIMIZER. If the value is too high, the
screen may be overexposed.

EXT1:
Please choose this option if a high current flow means "Day Mode" and a low current flow means "Night Mode" for the external LED board you use.

EXT2:
Please choose this option if a high current flow means "Night Mode" and a low current flow means "Day Mode" for the external LED board you use.

6.10. NR (Noise Reduction)

When selecting ↵, the following submenu will appear.

```
   NR

   NR MODE        C
   Y LEVEL        -
   C LEVEL        ▓▓▓▓▓▓▓▓▓▓▓▓▓▓  O1O




   RETURN↵
```

NR MODE [OFF, Y, C, Y/C] :
This function is used to improve the picture quality by filtering the noise which is generated under low bright light conditions. You can set up Y (luminance), C (chroma) and Y/C mode as well as adjust the filtering level/s for each mode.

6.11. CAMERA ID

CAMERA ID [ON, OFF] :
When choosing ON, the following submenu will appear where you adjust the settings for the CAMERA ID.

```
   CAMERA ID

   CAMERAID


   ABCDEFGHIJKLMNOPQRSTUV
   WXYZ0123456789-!"#$%'
   ()_`,¥:;<=>?@^*.x+/
     CHR1  CHR2
     ←→↑↓ CLR POS↵
 RETURN↵
```

This menu is used to assign a unique name to a camera. You can enter up to 52 alphanumeric or special characters for the CAMERA ID. Select POS and press the OK key to be able to move the display position of the CAMERA ID.

Steps for programming the Camera ID:
1. Turn on the CAMERA ID mode and enter the submenu.
2. Using the four direction keys, switch between the characters. Press the OK key to make a desired figure.
3. Press CLR if you need to delete letters.

NOTE: CHR1 is the preset selection of characters for this camera (letters from A to Z, numerals from 0 to 9, symbols). The camera ID is always created with letters and numbers out of CHR1. The option CHR2 has no function in this camera model.

6.12. SYNC

This camera model is set to fixed INT (Internal Syncronisation).

6.13. LANGUAGE

The camera supports 8 different languages. Select your preferred language from the list.

6.14. CAMERA RESET

All settings will be restored to factory default.

6.15. NEXT / BACK

When you select NEXT, the second main menu page will be shown. When you select BACK, the first main menu page will be shown.

6.16. EXIT

Exits the menu without saving any changes in the settings.

6.17. SAVE ALL

Saves the changes in the settings.

Specifications   GCA-B0002B

Image Sensor	1/3" CCD Sony 960H Ex-view HAD II
Scanning System	PAL, 50Hz, 625L (V), 2:1 Inter Line Transfer
Pixels - Effective	976(H) x 582(V)
Resolution	650 (H) lines
Col/B&W	Auto (Electronic) / Color / B/W / External
Sensitivity Colour	0.01 Lux (50IRE) @ F1.2
S/N Ratio	>52dB (AGC off)
Lens Mount	C/CS mount with adaptor
Lens Drive Type	Auto iris (DC)
Number of Privacy Zones	8
High Speed Shutter	1/50 ~ 1/100.000 sec, auto
BLC	BLC / HLC / off
AGC	Off, On (x0.25/x0.5/x0.75/x1)
Digital Noise Reduction (DNR)	Off, On 2D
Additional Features	H Reverse, High Light Compensation
Motion Detection	On/Off
OSD	Yes (DE,EN,ES,FR,RU,PT,JP)
Camera ID	52 character, 2 lines
White Balance	ATW/PUSH/Anti CR/Manual/User 1/User 2
Video Outputs	1 CVBS, 1Vpp, BNC
Humidity	less than 90%
Operating Temperature	-10°C ~ +45°C
Supply Voltage	100 ~ 240 VAC, 50/60Hz
Power Consumption	3 W
Weight	0.4 kg
Dimensions (wxhxd)	76 x 53 x 126 mm

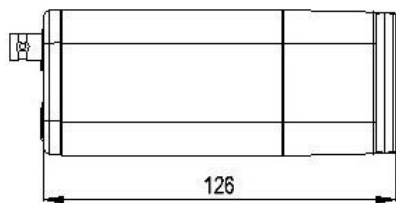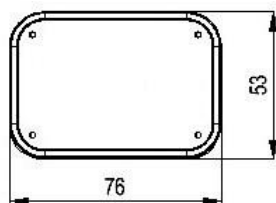## Specifications   GCA-B0302B

Supply Voltage	12 VDC/24 VAC
Power Consumption	3 W
Weight	0.4 kg
Dimensions (wxhxd)	76 x 53 x 126 mm

Dimensions

EC Declaration of Conformity

GCA-B0002B   1/3" CCD Colour Camera, 650L, 230VAC

GCA-B0302B   1/3" CCD Colour Camera, 650L, 12VDC/24VAC

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

EC EMC Directive 2004/108/EC
Low Voltage Directive 2006/95/EC

Applied harmonised standards and technical specifications:

EN 61000-3-2
EN 61000-3-3
EN 61000-6-1
EN 61000-6-3
EN 60950

ASP AG

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Remscheid, 14.06.2012

GRUNDIG

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