LLD-3 VGA Video Camera with Crosshairs

User Manual

Features

- 2.0 megapixel CMOS sensor, resolution: 1920 × 1080
- Up to 32 adjustable crosshair lines (16 horizontal + 16 vertical)
- VGA output compatible with PC monitors, projectors, and digital displays
- User-friendly operation via rear keypad

Specifications

Image Sensor: 2.0 MP color CMOS, 1/3" format

Effective Pixels: 1920 (H) × 1080 (V)

Pixel Size: 2.8 μm × 2.8 μm

Frame Rate: Up to 30 fps at 1920 × 1080

White Balance: Auto / Manual

Exposure: Auto / Manual

Image Adjustment: Brightness, contrast, sharpness, saturation, noise reduction (NR), hue, black & white mode

Crosshair Settings:

- Up to 16 horizontal and 16 vertical lines
- Adjustable color, position, direction, and line width

Advanced Functions: Freeze, Flip, Mirror, Anti-flicker (On/Off)

Supported Display Resolutions:

1920×1080, 1600×1200, 1366×768, and others

Lens Mount: C / CS mount

Video Output: VGA

Power Supply: 12 VDC

Dimensions: 50 mm × 50 mm × 50 mm

Installation

1. Install a proper camera lens onto the CS mount of the camera
2. Connect the VGA OUT port to a display device using a VGA cable.
3. Connect a 12 VDC power adapter to the DC 12V IN socket.
4. The blue indicator LED will turn on. The camera is now ready for operation.

Rear Panel Menu Operation

- Power On/Off: Press and hold the MENU button for approximately 3 seconds.
- Open Menu: Press MENU once.
- Close Menu: Press MENU again.

Navigation

- ↑ / ↓: Select menu item
- → (+): Enter submenu or increase value
- ← (–): Decrease value
- Back: Return to the previous menu
- Save/Exit: Save settings and exit menu

Main menu items include:

White Balance, Exposure, Image, Crosshair, Resolution, Language, Factory Reset, Advanced Settings, Save & Exit.

White Balance

Adjust white balance for accurate color reproduction.

Auto White Balance (AWB)

1. Place a white sheet of paper under normal lighting.
2. Adjust focus until the paper fills the image clearly.
3. Go to Menu → White Balance → AWB Once.
4. Press + to perform calibration.

Manual White Balance

1. Go to Menu → White Balance → Mode.
2. Select Manual.
3. Adjust Red, Green, and Blue levels as needed.
4. Select Back, then Save/Exit.

Exposure

Controls image brightness.

Options: Auto, or Manual levels (MAN1–MAN9).

Image Settings

Adjust the following parameters:

- Brightness
- Contrast
- Saturation
- Sharpness
- Noise Reduction (NR)
- Hue
- Black & White mode

Crosshair Settings

Configure measurement or alignment lines.

- Line Group: A, B, C, or D
- Line ID: 1–32
- Line Display: ON / OFF
- Color: Red, Green, Blue, Black, White, Yellow, Orange
- Direction: Horizontal / Vertical
- Position: Adjust using + / –
- Width: 1–5 pixels

Resolution

Set the output resolution to match the display for optimal image quality.

Range: 1024 × 768 to 1920 × 1080

Language

Available languages:

English, Chinese, German, Spanish, French, Italian, Japanese, Portuguese.

Factory Reset

Restores all parameters to default factory settings.

Advanced Settings

- Freeze: Freeze current image (On/Off)
- Flip: Vertical image flip (On/Off)
- Mirror: Horizontal mirror (On/Off)
- Anti-flicker: Reduce flicker under artificial lighting
- Image Quality (UVC): Adjustable level (1–9)

Saving Settings

After making changes, select Save/Exit to store the parameters.

Unsaved changes will be lost after power off.

Troubleshooting

No image or unstable display

- Check the power connection
- Ensure the blue LED is on
- Verify VGA cable and display input

Image distortion or flickering

- Adjust the camera output resolution to match the display
- Try a different display resolution

Spots or dirt in the image

- Inspect the lens and sensor window
- Clean with lens cleaner or ethanol using a lint-free cloth

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