ALI-CD1720PVF HD-TVI Outdoor Infrared Dome Camera
Quick Installation and User Guide

The ALI-CD1720PVF camera features a 1/3" CMOS image sensor that delivers HD-TVI high-definition video resolution over RG59 coax or any standard analog CCTV cabling. These HD video cameras are ideal for security applications that require a high level of detail, such as facial recognition or license plate identification.

### Features
- CMOS image sensor
- HD-TVI technology produces 720p HD video for sharp, detailed images
- 2.8 ~ 12 mm vari-focal lens with viewing angle of 78° ~ 28°
- Built-in IR LEDs enable the camera to see up to 131 feet in the dark
- Smart IR technology reduces over-exposure of the IR LEDs at the center of the image
- True day/night (ICR) captures sharp, clear images in low light and at night
- OSD (On-Screen Display) controls for customizing the camera settings for the installation venue
- -4 °F ~ 140 °F temperature operating range
- IP66 weather-rated housing, vandal proof IK10 rating

### What’s in the box
- Camera assembly
- Mounting screws and wall inserts (four each)
- Security L-wrench
- Video test cable
- Drill template
- This installation guide

### Tools You Need
To install the camera, you will need:
- 12 Vdc power source. See Specifications for wattage requirement.
- Tools and additional fasteners (may be required) for mounting the camera
- Phillips #2 screwdriver
- Video and power extension cables
- CCTV video setup monitor (optional)

### Step 1. Install the camera
The camera includes hardware to install it directly to a mounting surface. You can also easily install the camera onto a single- or double-gang electrical box. Camera drop cables can be routed through the conduit port on the side of the camera base housing, through the mounting surface or into an electrical box, if used.

Before installation:
- Make sure that the device is in good condition and all the assembly parts are included.
- Check the specification of the products for the installation environment.
- Make sure that the wall or the ceiling is strong enough to withstand 3 times the weight of the camera.
- To avoid fire or shock hazard, use only UL listed power supplies. Verify that the power supply will provide the rated voltage and wattage for the camera. See the Specifications section.
During installation:

- **Camera Lens**: Handle the camera carefully to prevent scratching or soiling the lens or dome. If the lens or IR array shield becomes soiled, clean it only with approved products. See the Cleaning section.
- **Monitor impedance**: You can attach the CVBS drop cable to a setup monitor. Ensure that the monitor input impedance is set to 75 Ω.
- **Power supply**: The camera drop cable includes two connectors:
  - **Video BNC connector**: For transmission of the video signal across a coax (75 Ω) extension cable.
  - **Power connector**: When applying Vdc power, observe the power polarity. See the picture to the right for the connector polarity configuration.

The following procedure outlines an installation of the camera to a mounting surface. Your installation steps may differ, depending on how the camera is mounted and how the drop cable connects to video and power extension cables. To install the camera onto a surface:

1. Separate the camera dome cover assembly from the camera module by loosening the three captive dome screws using the security L-wrench provided. Note that the dome cover is tethered to the camera module.
2. Remove the camera module assembly from the base housing after loosening the three captive screws. Note that the camera module may be tethered to the base housing.
3. Using the drill template or the base housing, mark the locations of the mounting screw holes, and the hole for the drop cable if routing the cable through the mounting surface.
4. Using appropriate fasteners, secure the base housing to the mounting surface or gang box. The mounting screws and wall inserts are adequate for surface types.
5. Route power and video extension cables from your 12 Vdc power source and monitoring equipment to the mounting location. **Do not** apply power to the power extension cable at this time. If the extension cables will be attached to the camera drop cables within the base housing, route the cables into the housing.

**NOTE** Camera drop cable connectors are not waterproof.

6. Connect the camera drop cables to the video and power extension cables, and then secure the camera module to the housing using the security L-wrench provided. Tighten the screws until snug.

7. Apply power to the camera. Use caution to observe the DC power polarity shown in the photo on page 1.
8. Verify that a video signal can be seen on your video monitoring equipment.

**Step 2. Adjust the camera for your surveillance target**

1. Observe the live video on your monitoring equipment, or plug the video test cable provided into the mating plug on the camera module and then into a local video setup monitor (not provided).
2. Remove the black liner from the camera gimbal.
3. To adjust the camera pan, grasp the camera gimbal on both sides at the pivot point, then rotate the camera as shown in the illustration below to point it at your surveillance target.

**Pan adjustment**

To adjust the tilt, rock the gimbal as shown above in the right illustration.

To adjust the camera horizon line, grasp the camera head carefully and rotate it as shown in the photo below.

4. Unscrew the Wide - Tele and Near - Far adjustment levers about 1/4 turn, then adjust the lens zoom and focus as needed. Tighten the levers screws until snug to hold them in place.

**Unscrew**

5. Reinstall the black liner.
6. Reinstall the camera dome cover assembly. Ensure that the clear dome is clean.
Step 3. Setup the camera using the OSD

Use the OSD to adjust the internal settings of the camera for the installation venue as needed.

1. Remove the cover on the underside of the camera to access OSD joystick and HD-TVI/CVBS switch. See the photos above.

   The OSD joystick is used to open the OSD menu and navigate through the menus. To open the camera menus and select a menu option, press the joystick down (in toward the base assembly). To navigate the menus, rock the joystick up (UP (▲)), see photo above) or down (▼) to move through the parameter list menus vertically, rock the joystick left (◄) or right (►) to change the parameter value that appears for the parameter. Press the joystick down (in toward the base assembly) to select the parameter value shown. Changes made to the OSD setup must be saved to be restored after power off and power on.

2. Open the OSD menus by pressing the joystick in toward the base assembly. The OSD menu tree is shown below. Use the OSD to configure the camera as needed.

   SETUP menu

   - VIDEO STANDARD: Rock the joystick right or left to select either NTSC or PAL.
   - LANGUAGE: Rock the joystick right or left to select either ENGLISH or CHINESE.

   MAIN MENU

   - AE (Automatic Exposure)
     - BRIGHTNESS: Rock the joystick right or left to set the brightness level (1 .. 10).
     - AE MODE: Rock the joystick right or left to select either GLOBAL AE or DWDR
     - AGC (Automatic Gain Control): Rock the joystick right or left to select either LOW / MIDDLE / HIGH / OFF.
     - SENSE UP: Rock the joystick right or left to select either 2, 4, 6, 8, 10, 12, 14 or 16.
   - WB (White Balance): Rock the joystick right or left to select either AUTO or MANUAL.
     - AUTO: Use automatic white balance.
     - MANUAL: Set white balance manually.
     - RGAIN: Rock the joystick right or left to set the red gain value (1 .. 10)
     - BAGAIN: Rock the joystick right or left to set the blue gain value (1 .. 10)

   - DAY&NIGHT: Set Day and Night mode functions.
     - SMART: Use SMART IR settings. Push the joystick in to open the submenu:
       - SMART IR: Rock the joystick right or left to set the SMART IR level (0 .. 5)
     - COLOR: Use COLOR mode.
     - B/W: Use black and white mode
   - VIDEO SETTINGS
     - CONTRAST: Rock the joystick right or left to set the contrast level (1 .. 10).
     - SHARPNESS: Push the joystick in to open the submenu:
       - EDGE: Rock the joystick right or left to set the edge sharpness level (1 .. 10).
       - DETAIL: Rock the joystick right or left to set the detail sharpness level (1 .. 10).
     - COLOR GAIN: Rock the joystick right or left to set the color gain level (1 .. 10).
     - 3DNR: Rock the joystick right or left to set the 3DNR noise reduction to either LOW / MIDDLE / HIGH / OFF.
     - MIRROR: Rock the joystick right or left to set the mirror (image flip) effect to either OFF, H (horizontal flip), V (vertical flip), HV (horizontal and vertical flips).
   - FUNCTION
     - DETECTION (motion detection): Push the joystick in to open the motion detection submenu.
     - SENSITIVITY: Rock the joystick right or left to set the sensitivity level to HIGH / MEDIUM / LOW / WEAK.
     - AREA NO. 0 .. AREA NO. 3: Push the joystick in to open the motion detection area submenu. For each area, you can select:
       - STATUS: Rock the joystick right or left to select either ON or OFF for the area.
       - COLOR: Rock the joystick right or left to select an area border to either WHITE, YELLOW, CYAN, GREEN, RED, MAGENTA, BLUE, or BLACK.
       - HORIZONTAL SIZE: Rock the joystick right or left to set the horizontal size in pixels of the detection area to either 10, 20, 30, ..
       - VERTICAL SIZE: Rock the joystick right or left to set the vertical size in pixels of the detection area to either 10, 20, 30, ..
       - HORIZONTAL MOVE: Rock the joystick right or left to set the horizontal offset from the upper left corner of the screen to either 10, 20, 30, ..
       - VERTICAL MOVE: Rock the joystick right or left to set the vertical offset from the upper left corner of the screen to either 10, 20, 30, ..
     - MASKING (privacy - image blocking): Push the joystick in to open the privacy submenu.
       - COLOR: Rock the joystick right or left to select an area border to either MOSAIC, WHITE, YELLOW, CYAN, GREEN, RED, MAGENTA, BLUE, or BLACK.
     - AREA NO. 0 .. AREA NO. 7: Push the joystick in to open the privacy area submenu. For each area, you can select:
       - STATUS: Rock the joystick right or left to select either ON or OFF for the area.
       - HORIZONTAL SIZE: Rock the joystick right or left to set the horizontal size in pixels of the detection area to either 10, 20, 30, ..
       - VERTICAL SIZE: Rock the joystick right or left to set the vertical size in pixels of the detection area to either 10, 20, 30, ..
       - HORIZONTAL MOVE: Rock the joystick right or left to set the horizontal offset from the upper left corner of the screen to either 10, 20, 30, ..
       - VERTICAL MOVE: Rock the joystick right or left to set the vertical offset from the upper left corner of the screen to either 10, 20, 30, ..
     - ZOOM IN: Rock the joystick right to set the zoom level (100 (full zoom), 90, 80, .. 50 (zoom out)).
   - RESET: Select to reset the camera to factory default settings.
   - SAVE&EXIT: Select to save configuration settings and exit the menu system. Use this option to restore the new configuration settings after the camera is powered off, and then powered on.
**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Camera</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Sensor</td>
<td>1/3” Progressive Scan CMOS</td>
</tr>
<tr>
<td>Signal System</td>
<td>NTSC</td>
</tr>
<tr>
<td>Effective Pixels</td>
<td>1305 (H) × 1049 (V)</td>
</tr>
<tr>
<td>Min. Illumination</td>
<td>0.001 lux @ (F1.2, AGC on), 0 lux with IR</td>
</tr>
<tr>
<td>Shutter speed</td>
<td>1/60 sec to 1/50,000 sec</td>
</tr>
<tr>
<td>Synchronization</td>
<td>Internal synchronization</td>
</tr>
<tr>
<td>Video Frame Rate</td>
<td>720p @ 60 fps</td>
</tr>
<tr>
<td>HD Video Output</td>
<td>1 analog HD-TVI (BNC)</td>
</tr>
<tr>
<td>Video Output</td>
<td>(CVBS) 1 Vp-p composite output (75 Ω/BNC)</td>
</tr>
<tr>
<td>Lens</td>
<td>2.8 - 12 mm @ F1.4</td>
</tr>
<tr>
<td>Angle of view</td>
<td>78° ~ 28°</td>
</tr>
<tr>
<td>Day &amp; Night</td>
<td>ICR</td>
</tr>
<tr>
<td>S/N Ratio</td>
<td>&gt; 62 dB</td>
</tr>
</tbody>
</table>

**Menu**

- Automatic Exposure: Global AE / D/NDR
- AGC: Low / Middle / High / Off
- Slow Shutter: Support
- White balance: Auto / Manual
- D/N Mode: Color / BW / SMART IR
- 3D DNR: Low / Middle / High / Off
- Motion Detection: Support, maximum 4 zones
- Privacy Mask: On / Off, maximum 8 zones
- UTC Function: Support
- Language: English
- Function: Digital Wide Dynamic Range, 3D Digital Noise Reduction, Sharpness, Brightness, Digital Zoom, Mirror

**General**

- Operating Conditions: -4 °F ~ 140 °F (-20 °C ~ 60 °C)
- Humidity: 90% or less (non-condensing)
- Power Supply: 12 Vdc
- Power Consumption: 12 Vdc: Max. 4W
- Weather Proof: IP66
- IR Range: up to 131 ft (40 m) approx.
- Communication: In-line UTC controller
- Protocol: Pelco-C (Coaxitron)
- Dimension: 65.72” x 4.89” (Ø 145.3 x 124.2 mm)
- Weight: 1.95 lbs (880 g)

**CLEANING**

Clean the camera dome with an approved glass cleaning solution and a lint free cloth.

- Dust can be removed from the unit by wiping it with a soft damp cloth. To remove stains, gently rub the surface with a soft cloth moistened with a mild detergent solution, then rinse and dry it with a soft cloth.
- Remove all foreign particles, such as plastic or rubber materials, attached to the camera housing. These may cause damage to the surface over time.

**TROUBLESHOOTING**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing appears on the screen</td>
<td>- Check the power connection.</td>
</tr>
<tr>
<td>- Check the video signal cable connection to the monitor.</td>
<td></td>
</tr>
<tr>
<td>The video image is dim or not clear.</td>
<td>- If the camera lens is dirty, clean it with a soft, clean cloth.</td>
</tr>
<tr>
<td>- Adjust the monitor controls, if necessary.</td>
<td></td>
</tr>
<tr>
<td>- If the camera is facing a very strong light, change the camera position.</td>
<td></td>
</tr>
<tr>
<td>- Adjust the lens focus.</td>
<td></td>
</tr>
<tr>
<td>The screen is dark.</td>
<td>- Adjust the contrast control of the monitor.</td>
</tr>
<tr>
<td>- If you have an intermediate device, set the impedance (75 Ω /Hi-Z) properly, and check the cable connections.</td>
<td></td>
</tr>
<tr>
<td>The camera is not working properly and the surface of the camera is hot.</td>
<td>- Verify that the camera is correctly connected to an appropriate regulated power source.</td>
</tr>
<tr>
<td>The image on the monitor flickers</td>
<td>- Make sure that the camera isn’t facing direct sunlight or fluorescent light.</td>
</tr>
<tr>
<td>- If necessary, change the camera position.</td>
<td></td>
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</tbody>
</table>