<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACC330E</td>
<td>1/3” medium resolution color CCD camera - 24VAC</td>
<td></td>
</tr>
<tr>
<td>ACC470E</td>
<td>1/3” high resolution color CCD camera - 24VAC</td>
<td></td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>2</td>
</tr>
<tr>
<td>FEATURES</td>
<td>3</td>
</tr>
<tr>
<td>CAMERA DIAGRAM</td>
<td>4</td>
</tr>
<tr>
<td>CAMERA OPERATION</td>
<td>5-7</td>
</tr>
<tr>
<td>PRECAUTIONS</td>
<td>7-8</td>
</tr>
<tr>
<td>INSTALLATION</td>
<td>8-9</td>
</tr>
<tr>
<td>SPECIFICATIONS</td>
<td>9-12</td>
</tr>
<tr>
<td>OFFICES</td>
<td>13</td>
</tr>
</tbody>
</table>
INTRODUCTION

The ACC330E & ACC470E digital color cameras have been developed using the advanced technology of Digital Signal Processing LSI (DSP) together with a Sony 1/3” interline transfer CCD. This series of cameras is ideal for general-purpose surveillance applications, or as an input device for an image processing system.

FEATURES

- High sensitivity with minimum illumination needed for quality color video: 1.0 Lux for ACC330E and 1.5 Lux for ACC470E.
- Low image distortion and residual, withstanding electric and magnetic field interference and mechanical vibration.
- Applications:
  1) Surveillance
  2) Monitoring
  3) Security
- Excellent signal-to-noise ratio
- Well balanced aperture correction to produce > 120% signal amplitude at 200 TVL for ACC330E and at 300 TVL for ACC470E with minimum waveform distortion.
- Accurate color reproduction and auto-tracing-white balance (ATW) over a wide color temperature range of 2,700°K to 9,100°K.
- Aperture and color suppression under low light to reduce spectral and chroma noise.
- Automatic electronic shutter provides > 1,600:1, equivalent to 40 f steps, dynamic range to correct exposure, if a manual iris lens is used.
- The following functions are built in:
  1) Internal and line lock synchronization
  2) Auto Iris (AI) / Auto Electronic Shutter (AES)
  3) AGC ON/OFF Control
- The built-in backlight compensation (BLC) function improves the image quality for backlit subjects.
- The back focus adjustment function allows easy adjustment and installation.
- C or CS mount type lenses can be attached to the camera. (C-mount adapter is included).
Figure 1 – Camera diagram
1. **Lens Connector Plug:**
   This 4-pin connector supplies the power and DC control signal to a video auto iris lens or a DD lens.
   Note: Refer to figure 2 shown below to insure correct operation. (Pre-wired lenses are available)

<table>
<thead>
<tr>
<th>IRIS Pin Definitions</th>
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<tbody>
<tr>
<td>DD Lens</td>
</tr>
<tr>
<td>1  DAMP -</td>
</tr>
<tr>
<td>2  DAMP +</td>
</tr>
<tr>
<td>3  DRIVER +</td>
</tr>
<tr>
<td>4  DRIVER -</td>
</tr>
</tbody>
</table>

   Figure 2

2. **Back Focus Mechanism:**
   This adjustment is to ensure all lenses can be correctly focused. It may only be necessary to adjust this if using a zoom lens. Follow industry standards for back focusing a CCTV camera.

3. **Video Output Connector (VIDEO OUT):**
   A 1.0Vp-p/75ohms composite video signal is provided at this connector.

4. **ALC:**
   Used to adjust the video level when using a DD lens.

5. **V-Phase:**
   Line lock synchronization phase adjustment. Used to adjust the phase when the synchronization select switch 6 is set to “L/L”.

6. **Synchronization Mode Selector (INT, L/L):**
   Selects the camera synchronization mode in either internal sync mode (INT) or line-lock mode (L/L). Use INT setting for special applications only, as picture roll may occur in certain applications. It is highly recommended to use L/L and supply the camera with 24 VAC. Do not exceed 26.4 VAC at the camera when powered as this may cause the camera to sustain damage.

7. **Shutter Speed (AI/AES):**
   Selects the function of AI (shutter speed of 1/60 sec.) or AES (automatic shutter speed of 1/60 ~ 1/100000 sec.) by dipswitch settings. When using a DC drive lens, always use AI setting.

8. **Lens Drive Signal Selector (VIDEO, DD):**
   Selects between lens type employed, VIDEO for auto iris lens that requires a video drive signal, and DD for auto iris lens that requires a DC drive signal.

9. **Back Light Compensation (BLC) ON/OFF:**
   When strong, unwanted background lighting interferes with the clarity of important areas, turn this switch to the “ON” position. The BLC is center-balanced meaning that the BLC that compensates to the backlight conditions outside the central area.

10. **Auto Gain Control (AGC) ON/OFF:**
11. NC: Not connected.
12. Power Input: 24VAC Input Terminal (24VAC In only)
   This terminal is for connecting the 24VAC 60 Hz power supply cord. Voltage must not exceed 26.4VAC.
13. Power Indicator (POWER): LED
   Service pin: Used for factory alignment.
15. Y/C output, ACC470E only (See figure 3)
   This is an output connect of S video signal (Y and C separation signal out). The table below provides pin locations for the connector.

   |   |   |
---|---|---|
1  | Y (Luminance) |
2  | GND            |
3  | C (Chrome)     |
4  | GND            |

![Figure 3]

16. Tripod Mount for bracket

**Important Note:**
*When using the ACC330E & ACC470E with a manual Iris Lens under fluorescent lighting conditions, you are advised to turn off the EI and use the manual Iris to set the Video Level in order to avoid unnecessary Color Shift. If the manual iris control is not preferred, you are advised to use L/L mode. (With an AC power supply)*
PRECAUTIONS

1. Do not attempt to disassemble the camera.
   To prevent electric shock, do not remove screws or cover. There are no user-serviceable parts inside.
   Refer servicing to qualified service personnel.
2. Handle the camera with care.
   Do not abuse the camera. Avoid striking or shaking it, as the camera could be damaged by improper
   use or storage.
3. Do not expose the camera to rain or moisture, or try to operate it in wet areas.
   Take immediate action if the camera becomes wet. Turn power off and refer servicing to qualified service personnel as moisture can damage the camera and also create the
   danger of electric shock.
4. Never face the camera toward the sun. Permanent damage may occur when subjected to intense light.
   (Whether the camera is in use or not) Use cautiously when operating any electrical device.
   Keep the camera out of the direction of spotlights and light reflecting objects.
5. Do not operate the camera beyond its temperature, humidity or power source ratings.
   Do not use the camera in an extreme environment where high temperature or high humidity conditions exist.
   Use the camera under conditions where temperatures are within -10～+50°C, and humidity is below 80% Relative Humidity.
6. Do not touch the CCD sensor directly with your fingers. If necessary, use soft cloth moistened
   with alcohol to wipe off the dust.
7. When the camera is not in use, keep the cap on the lens to protect the CCD sensor.

INSTALLATION

Safety Advice
Excess voltage will destroy the camera – never apply more than the operating voltage range as indicated in the instruction manual. Prior to applying power make all connections.
Opening or removing of any assembly screws voids the warranty.
Use a monitor with 75-ohm impedance.
- The camera includes a CS mount lens already installed on the camera. (C-mount adapter supplied for C mount lenses.
- When using a manual lens, switch the shutter control to AES (Auto Electronic Shutter).
- When using a lens controlled by a DC signal, switch the shutter control to DD.
- Mount the camera using a compatible bracket.
- Connect the camera to the monitor using compatible co-axial cable.
- Use a BNC type connector for CCTV.
- Connect the camera to a power supply that provides 24 VAC (+/- 10%) at the camera.
- Plug in the power supply and switch on the power to the camera.
- Adjust the lens for optimum picture quality. It may be necessary to adjust the back focus mechanism.
- If using a DD lens, adjust the ALC control for 1V p-p. Careless adjustment of the ALC will cause a deteriorated video picture.
- Switch ON the Back Light Compensation if a strong background light source is present.
- Switch ON AGC (Auto Gain Control) if used in consistent low light conditions.
ACC330E SPECIFICATIONS:

Operational
Image Sensor : 1/3” Interline Transfer CCD Sensor
Effective Pixels : 510 (H) x 492 (V) Pixels
Resolution : 330 TVL
Sensitivity : 1.0 Lux (F1.2)
Signal to Noise Ratio : 46 dB (AGC OFF)
Video Output : 1.0 Vp-p composite video via 75Ω connector on the rear of the camera
Sync. : Internal / Line-Lock
AGC : ON / OFF
White Balance : Auto White Balance 2700°K ~ 9100°K
BLC : ON / OFF on AES / AI mode
Aperture Correction : Internal
Power Consumption : nominal 4.2 to max. 4.5
Operation Temperature : -10°C ~ +50°C, Less than 80% RH

Lens Options
Auto Electronic Shutter : 1/60s- 1/100000 s selectable on/off via dip switch.
Auto Iris : Video / DD
Manual : Any C or CS mount 1/3”,1/2”,2/3” or 1” lens

Electrical
Power Supply : 24VAC +/- 10%
Power Consumption : nominal 4.2W - max. 4.5W

Mechanical
Camera Dimensions : 2.55” (W) x 2.2” (H) x 4.95” (D) - 65(W) x 56(H) x 126(D) mm.
Weights : 1.4 lbs. (630 g.).
Lens Mount : CS or C (C mount adapter supplied)

Environmental
Operation
Temperature : -10°C ~ +50°C (14°F to 122°F)
Humidity : 20% to 80% relative humidity, non condensing.
Storage Temperature : -10°C ~ +70°C ((14°F to 158°F)
Humidity : 20% to 90% relative humidity, non condensing

Weights and dimensions indicated are approximate.
Specification subject to change without notice.
## ACC470E SPECIFICATIONS:

### Operational

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Sensor</td>
<td>1/3” Interline Transfer CCD Sensor</td>
</tr>
<tr>
<td>Effective Pixels</td>
<td>768 (H) x 494 (V) Pixels</td>
</tr>
<tr>
<td>Resolution</td>
<td>480 TVL</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>1.5 Lux (F1.2)</td>
</tr>
<tr>
<td>Signal to Noise Ratio</td>
<td>48 dB (AGC OFF)</td>
</tr>
<tr>
<td>Video Output</td>
<td>1.0 Vp-p composite video via 75Ω connector on the rear of the camera</td>
</tr>
<tr>
<td>Lens Mount</td>
<td>CS or C (C mount adapter supplied)</td>
</tr>
<tr>
<td>Sync.</td>
<td>Internal / Line-Lock</td>
</tr>
<tr>
<td>AGC</td>
<td>ON / OFF</td>
</tr>
<tr>
<td>White Balance</td>
<td>Auto White Balance 2700°K ~ 9100°K</td>
</tr>
<tr>
<td>BLC</td>
<td>ON / OFF on AES / AI mode</td>
</tr>
<tr>
<td>Aperture Correction</td>
<td>Internal</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>nominal 4.2 to max. 4.5</td>
</tr>
<tr>
<td>Operation Temperature</td>
<td>-10°C ~ +50°C, Less than 80% RH</td>
</tr>
</tbody>
</table>

### Lens Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Auto Electronic Shutter</td>
<td>1/60s-1/100000 s selectable on/off via dip switch.</td>
</tr>
<tr>
<td>Auto Iris</td>
<td>Video / DD</td>
</tr>
<tr>
<td>Manual</td>
<td>Any C or CS mount 1/3”, 1/2”, 2/3” or 1” lens</td>
</tr>
</tbody>
</table>

### Electrical

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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</thead>
<tbody>
<tr>
<td>Power Supply</td>
<td>24VAC +/- 10%</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>nominal 4.2W-max. 4.5W</td>
</tr>
</tbody>
</table>

### Mechanical

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera Dimensions</td>
<td>2.55”(W) x 2.2”(H) x 4.95”(D) - 65(W) x 56(H) x 126(D) mm.</td>
</tr>
<tr>
<td>Weights</td>
<td>1.4 lbs. (630 g.)</td>
</tr>
<tr>
<td>Lens Mount</td>
<td>CS or C (C mount adapter supplied)</td>
</tr>
</tbody>
</table>

### Environmental

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Operation Temperature</td>
<td>-10°C ~ +50°C (14°F to 122°F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>20% to 80% relative humidity, non condensing.</td>
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<tr>
<td>Storage Temperature</td>
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</tr>
</tbody>
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*Weights and dimensions indicated are approximate.*

*Specification subject to change without notice.*
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