Intelligent Wide Dynamic High Definition Color Camera

USERMANUAL

2011 NOV. V1.0

Optional
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A. Product Features

1. High Sensitivity 1/3" CCD WDR Color Camera
2. High Resolution Color up to 600TVL
3. 2D/3D Noise Reduction (HDNR)
4. Super Real WDR Range/Digital WDR Function
5. Digital Slow Shutter from x2 up to x256 (Max)
6. Back Light Compensation(BLC) / High light Control(HLC)
7. E-PTZ (Zoom x 2) / Digital Zoom x 256
8. Editable Privacy Mask x 8 (Color)
9. Light Detection On Human Face With Dynamic Light Compensation
10. Human Face Detection With Auto Zoom In Feature
11. Process The Images With High Quality Demisted Surveillance system
12. Night Intelligence IR Detection/ Auto Adjustment On Exposure
13. Multi-Language OSD Control
14. Motion detection
15. Color Rolling Suppression
B. Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>NTSC</th>
<th>PAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video System</td>
<td>NTSC</td>
<td>PAL</td>
</tr>
<tr>
<td>Pick Up Element</td>
<td>1/3” 760H CCD Image Sensor</td>
<td></td>
</tr>
<tr>
<td>Image Signal Process</td>
<td>Digital Signal Processor</td>
<td></td>
</tr>
<tr>
<td>Number of Pixels</td>
<td>768 (H) × 494 (V)</td>
<td>752 (H) × 582 (V)</td>
</tr>
<tr>
<td>Picture Elements</td>
<td>Approx. 380K</td>
<td>Approx. 440K</td>
</tr>
<tr>
<td>Horizontal Resolution</td>
<td>Color: 600 TVL</td>
<td></td>
</tr>
<tr>
<td>Power Supply</td>
<td>DC +12V</td>
<td></td>
</tr>
<tr>
<td>Power Consumption</td>
<td>180 mA</td>
<td></td>
</tr>
<tr>
<td>Synchronization</td>
<td>Internal Synchronization</td>
<td></td>
</tr>
<tr>
<td>Scanning System</td>
<td>2 : 1 Interface</td>
<td></td>
</tr>
<tr>
<td>Minimum Illumination</td>
<td>0.01 Lux</td>
<td></td>
</tr>
<tr>
<td>S/N Ration</td>
<td>Max. 52 dB ( AGC Off, )</td>
<td></td>
</tr>
<tr>
<td>OSD Menu</td>
<td>Build-in Multi-layers semi-opacity Menu Setting</td>
<td></td>
</tr>
<tr>
<td>Camera Title/ Function</td>
<td>Camera Title/ Function Enable Display</td>
<td></td>
</tr>
<tr>
<td>Enable Display</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wide Dynamic Range</td>
<td>WDR real wide dynamic range compression</td>
<td></td>
</tr>
<tr>
<td>Digital Slow Shutter</td>
<td>X2 ~ X256</td>
<td></td>
</tr>
<tr>
<td>( BLC ) Backlight Compensation Function</td>
<td>HLC / BLC / off</td>
<td></td>
</tr>
<tr>
<td>( AGC ) Automatic Gain Control</td>
<td>on / off</td>
<td></td>
</tr>
<tr>
<td>( DNR ) Digital Noise Reduction</td>
<td>2D/3D-NR</td>
<td></td>
</tr>
<tr>
<td>Digital Demist Process</td>
<td>On / Off</td>
<td></td>
</tr>
<tr>
<td>Digital Zoom</td>
<td>Zoom 256X</td>
<td></td>
</tr>
<tr>
<td>(D &amp; N) Digital Day &amp; Night Mode</td>
<td>on (Black &amp; White)/Auto/External input/off (color)</td>
<td></td>
</tr>
<tr>
<td>Face Tracking Auto Zoom</td>
<td>on / off</td>
<td></td>
</tr>
<tr>
<td>Face Detection</td>
<td>on / off</td>
<td></td>
</tr>
<tr>
<td>Face Metering Compensation</td>
<td>on / off</td>
<td></td>
</tr>
<tr>
<td>Motion Detecting Function</td>
<td>on / off</td>
<td></td>
</tr>
<tr>
<td>Flash Suppression Function</td>
<td>on / off</td>
<td></td>
</tr>
<tr>
<td>Privacy Masking Function</td>
<td>on/off (8 Editable area)</td>
<td></td>
</tr>
<tr>
<td>Automatic Iris Control</td>
<td>DC Lens drive</td>
<td></td>
</tr>
<tr>
<td>Blemish Compensation</td>
<td>Static &amp; Dynamic (4096 points)</td>
<td></td>
</tr>
<tr>
<td>Image Quality Adjustment</td>
<td>Brightness / Contract / Saturation / Sharpness / Hue</td>
<td></td>
</tr>
<tr>
<td>Auto White Balance</td>
<td>AWB/ATW</td>
<td></td>
</tr>
<tr>
<td>--------------------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>English / Simplified Chinese / (support multi-language)</td>
<td></td>
</tr>
<tr>
<td>Electronic Shutter Speed</td>
<td>Auto: 1/60(50)S TO 1/100,000 S</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manual: 1/60(50)S, FL1/120(100)S, 1/250S, 1/500S, 1/1,000S, 1/2,000S, 1/4,000S, 1/10,000S</td>
<td></td>
</tr>
<tr>
<td>Video Signal Output</td>
<td>1 Vp-p standard video signal output, 75 Ohms</td>
<td></td>
</tr>
<tr>
<td>Operation Temperature</td>
<td>-5°C ~ +40°C</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>L: 124mm  W: 66mm  H: 54mm</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 295 g</td>
<td></td>
</tr>
</tbody>
</table>

C. Dimensions
Unit: mm

![Dimensions Diagram]

D. Real panel:
- Auto Iris Lens Connector
- Power Indicator
- Power Input DC12V/AC24V
- OSD operation
  - Set up / Up / Right
  - / Left / Down
- Video Out
# E. OSD Functions

<table>
<thead>
<tr>
<th>MENU</th>
<th>Function</th>
<th>Remark</th>
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</thead>
<tbody>
<tr>
<td>AE mode</td>
<td>1. Standard AE</td>
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</tr>
<tr>
<td></td>
<td>2. SWDR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. BLC (back light compensation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. HLC (high light compensation)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Face AE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Face auto zoom</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Demist</td>
<td>Please refer to OSD operation F-1 AE mode setting</td>
</tr>
<tr>
<td>Color adjust</td>
<td>1. AWB (Auto white balance)</td>
<td>Please refer to OSD operation F-2 Color adjust</td>
</tr>
<tr>
<td></td>
<td>2. Brightness</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Color-Red</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Color-Green</td>
<td></td>
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<tr>
<td></td>
<td>5. Color-Blue</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Contrast</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Saturation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. CR suppress</td>
<td></td>
</tr>
<tr>
<td>Image Adjust</td>
<td>1. Day &amp; Night</td>
<td>Please refer to OSD operation F-3 Image adjust</td>
</tr>
<tr>
<td></td>
<td>2. Digital slow shutter</td>
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</tr>
<tr>
<td></td>
<td>3. 3D-NR 3D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. 2D-NR-1 2D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. 2D-NR-2 2D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. Sharpen</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. FC suppress</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Blemish compensation</td>
<td></td>
</tr>
<tr>
<td>Intelligence</td>
<td>1. Face detection</td>
<td>Please refer to OSD operation F-4 Intelligence setting</td>
</tr>
<tr>
<td></td>
<td>2. Motion detection</td>
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</tr>
<tr>
<td></td>
<td>3. Digital-Zoom</td>
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</tr>
<tr>
<td></td>
<td>4. Privacy mask</td>
<td></td>
</tr>
<tr>
<td>System setting</td>
<td>1. Lens</td>
<td>Please refer to OSD operation F-5 System setting</td>
</tr>
<tr>
<td></td>
<td>2. IR input level IR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Smart IR control Smart IR</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Camera ID</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Baud rate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. AC Freq</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Language</td>
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<tr>
<td></td>
<td>8. ID/Icon Display</td>
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</tr>
<tr>
<td>Information</td>
<td>Display the local information</td>
<td></td>
</tr>
</tbody>
</table>
F. OSD operation

Main menu

- Setup: 1. Click one time to enter the Main menu
  
  Click twice ( to Exit OSD menu, Reload Fty, Return to Previous page, Exit & Save)

- UP / Down: Selection.

- Left / Right: Enter & Return.

(1) AE Mode setting

- Press to into OSD.

- Press to into sub-menu.

- Press : Selection.

- Press : Return.

1. Standard AE

   Under Standard mode AE, symbol will be shown on the upper left corner of Live view.

2. SWDR

   - Level: (Setting value: 0-8), smaller value will make outside image brighter, the higher value will make image brighter.

   - DWDR: (On/Off) enable the digital WDR with the double scan WDR will make images brighter.

   - Saturation Enhance.

   - Saturation set up.

   - Star Light WDR

   - WDR enhance.
- Symbol 📅 will be shown on the upper left corner of Live view.

3. **BLC: Back light compensation**
   - Level: (Auto, low, Middle, high)
   - Symbol 📅 will be shown on the upper left corner of Live view.

4. **HLC: High light compensation**
   - Set Range: Click Right button to enter the menu, press SETUP button in order to set up next corner point. (in this area, any brighter light source will be blocked)

   - Press 🔍 to into OSD.
   - Press ➩ to into sub-menu.
   - Press ⏯ : Selection.
   - Press ◀ : Return.

   Detection are (area marked in Red)
■ Level: Low, Middle, High.
■ Mask Grayscale: (Value: 1-6) Mask color set up, the color is closer to white when the value is higher.
■ Symbol 📸 will be shown on the upper left corner of Live view.

5. Face AE
■ Frame: (ON/OFF) Box up the human faces when human faces are detected.
■ Sensitivity: (Value: 0~11) human face detection sensitivity: The higher number, the more sensitive
■ Symbol 📸 will be shown on the upper left corner of Live view

6. Face auto zoom
■ Frame: (ON/OFF) Box up the human faces when human faces are detected.
■ Sensitivity: (Value: 0~11) human face detection sensitivity: The higher number, the more sensitive.
■ Warning Trigger: Level: (High/Low/Off) Alarm output when human face is detected. Default output port: PIO2.
■ Warning Seconds: (Value: 0-65536 /sec) timer of alarm output, when human face is detected.
■ Symbol 📸 will be shown on the upper left corner of Live view.
7. Demist
- Level: (Auto/Low/Middle/High)
- Symbol will be shown on the upper left corner of Live view

Normal  Demist activated

(Heavy Fog)

(Middle Fog)

(Light Fog)

(2) Color Adjust

- Press to into OSD.
- Press to into sub-menu.
- Press : Selection.
- Press : Return.

2. Brightness: (0~99).
5. Color-Blue: Blue (0~99).
6. Contrast: (0~99).
7. Saturation: (0~99).
8. CR suppress: ON/OFF
(3) Image adjust

1. Day & Night
   - Mode: Auto-General
     When the condition light value matches the setting value, it will switch to mode BLACK and WHITE automatically.

   (1) Color Burst
     ON/OFF only be activated under mode BW and mode Auto-General.

   (2) Delay Control
     (0~255)
     Day and Night switch timer set up. Only be activated under mode Auto-General.

   (3) Day to Night: (Value: 0-255). “Only” be activated under mode Auto-General.
     The value of Day to Night switches point setting (Color to BW switch). The Day to Night switch point “MUST” be latter than Night to Day recovery point.

   (4) Night to Day: (Value: 0-255). “Only” be activated under mode Auto-General.
     The value of Night to Day switch point set up (BW to Color). The Night to Day recovery point “MUST” be latter than the Day to Night switch point.

   (5) IR CUT output
     LEVEL: (High/Low/Off) only be activated under mode Auto-General. A high/low signal generated by GPIO3 in order to provide a standard point for IR-CUT switching.

   - Mode: External input
     External control, input port: PIO0, Caution: Please go to the menu System Setting→IR Voltage Level input setting →set up the value of
input voltage level.

- Mode: Color
  Color mode only
- Mode: BW
  BW mode only
- Mode: Auto-Progressive

2. Slow shutter
   1/100000, 1/10000, 1/5000, 1/2000, 1/500, 1/240, 1/120, 1/60, AUTO, 2x, 3x, 4x, 5x, 8x, 16x, 32x, 64x, 128x, 256x
   To extend the photoperiod in order to enhance the sensitization. It will help to have brighter images in a condition with lack of light.

3. 3D DNR (0~3)
   To reduce image Noise

4. 2D DNR1: (0~32)
5. 2D DNR2: (0~32)
6. Sharpen: (0~32)
   The higher value, the stronger effects.
7. FC suppress: (0~15).
   The higher value, the stronger effects.
8. Blemish compensation
(4) Intelligent

1. Face detection
   - Human face detection: ON/OFF
   - Frame: (ON/OFF)
     Box up the human faces when human faces are detected.
   - Sensitivity: (Value: 0~11) human face detection sensitivity:
     The higher number, the more sensitive.

8. Warning Trigger: level: (High/Low/Off)
   Alarm output when human faces are detected. Default output port: PIO2.

9. Warning Seconds: (Value: 0-65536 /sec) timer of alarm output, when human face is detected.

2. Motion
   - ON/OFF: Motion detection
   - Set Area:
     Motion detection area set up( Click Right button to set up / click SETUP to remove the area and Exit).
   - Sensitivity: (-2~2)
     The higher number, the more sensitive.

10. Warning Trigger:
    Level: (High/Low/Off)
    An alarm outputs when a motion is detected. Default output port: PIO2.

11. Warning Seconds:
    (Value: 0-65536 /sec)
    Timer of alarm output, when a motion is detected.
3. Digital-Zoom
   - Zoom in range: 1~255x.
   - Vertical: (-100~100)
     Image vertical position set up after zoom in
   - Horizon: (-100~100)
     Image horizontal position set up after zoom in

4. Privacy mask
   - Opacity: (0~3)
     Mask transparency setting.
   - Mask select: (1~8)
     Select and set up the mask, maximum 8.
   - Set mask range: Mask range set up (click Right button to set up)
   - Switch: ON/OFF.
   - Mask color: (0~65535)
     Masks color setting
(5) System setting

1. **Lens**
   - **Mode:**
     - To select lens type
     - DC indoor/ DC outdoor/ Manual
     - Brightness: only be activated with DC IRIS (-50~50).

2. **Smart IR: ON/OFF**

3. **Camera ID: Pepco ID (0~255).**

4. **Baud rate:** (1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800).

5. **AC Freq:** Frequency setting (50HZ / 60HZ).

6. **Language:** language switch(English / Simply Chinese / Español / Française).

7. **ID/Icon display:** Pelco ID display and Icon display