



The Condor³

CIE-618

Applications

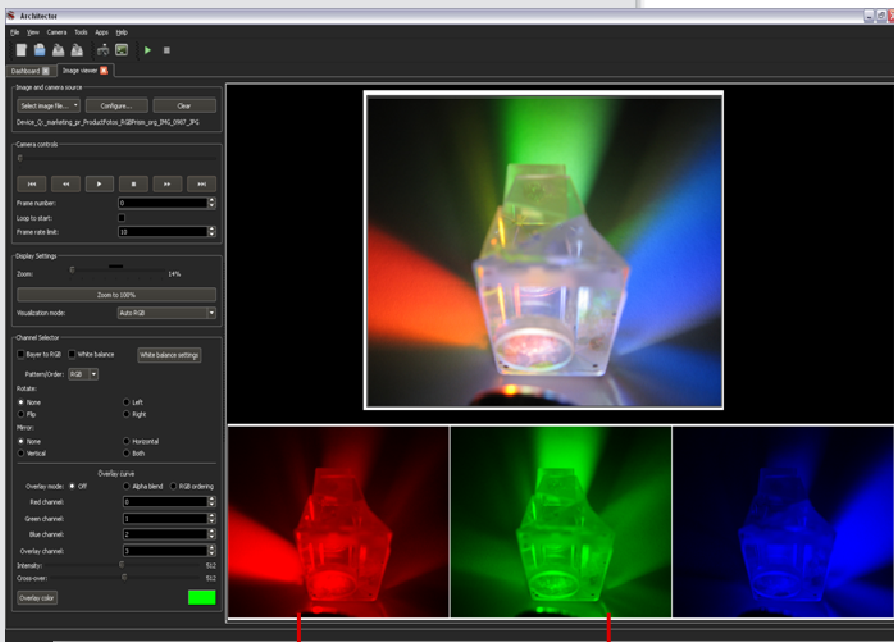
- CIE Color imaging
- Demanding machine vision
- High speed photography
- Scientific experiments
- Microscopy
- Fluorescent imaging

Benefits

- Parallel CIE image acquisition
- True color pictures
- Much sharper vision around the edges
- High light sensitivity
- Pixel to Pixel co-registration of three images

High end color camera with CIE filter curve for High quality color images

The Condor³ CIE camera uses custom CIE filters for high quality color sensing close to the human eye. Ideal for demanding machine vision applications across a diverse range of industries. Beam split coatings and custom CIE filters separate the incoming light into CIE-X, CIE-Y and CIE-Z wavelengths which are directed to three precisely-aligned CCDs, acquiring the CIE images simultaneously. No longer do you require a filter wheel solution for CIE imaging with motion artifact. The Quest Innovation Condor³ RGB 618 combines the best of four worlds:



The powerful and flexible Architector software for multispectral imaging analysis is specifically designed to maximize analysis performance of the Quest Condor line.

Architector software shows the whole picture and the three channels separately. Making it possible to analyze each separate color level.

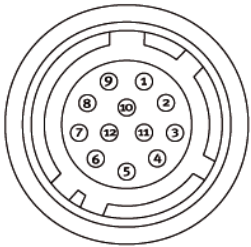

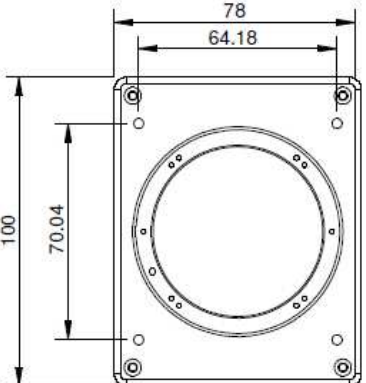
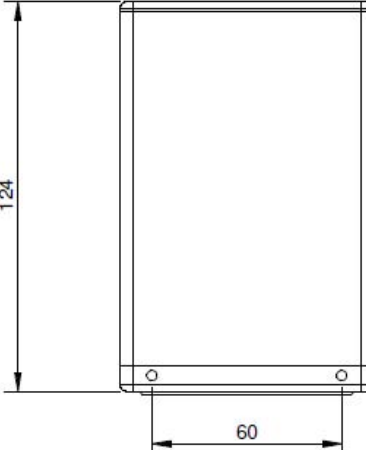
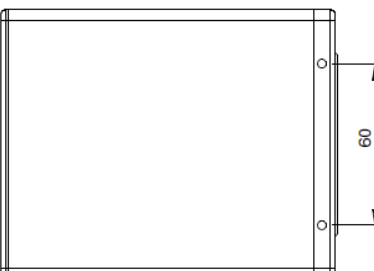
1. interpolation routines, 3-CCD results in more accurate per-pixel color values. In addition, because there is no interpolation, 3-CCD images offer more precise spatial resolution, enabling more accurate edge detection.
2. **High speed:** The three channel solution has the advantage of a high frame rate up to 120 frames per second. This makes demanding machine vision applications possible.
3. **Low price in relation to quality:** The combination of ICX618 sensors and accompanying prism result in a very affordable high quality camera.
4. **High sensitivity:** Because the Condor³ prism technology does not use absorption filters, it minimizes optical energy loss. A high sensitivity is guaranteed.

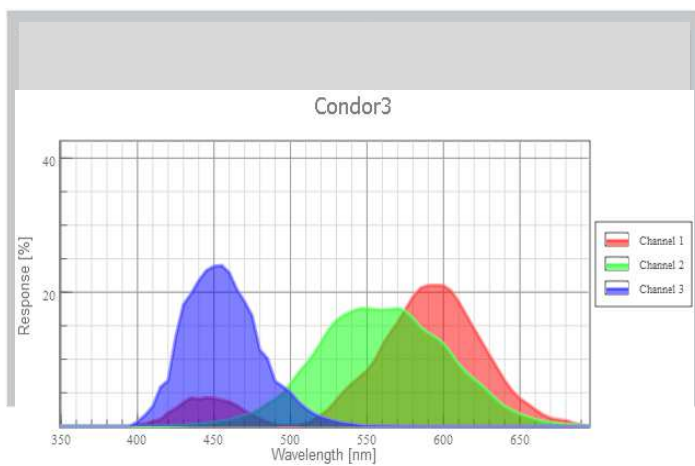
Visitor address

Quest Innovations BV
 Industrieweg 41
 1775 PW Middenmeer
 The Netherlands

Tel: +31 (0)227 604046
 Fax: +31 (0)227 604053
 info@quest-innovations.com
 www.quest-innovations.com



| Specifications | | Connector | Dimensions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|----------------|--------|----------|---|-----|--------|---|-----|---------|---|-----|----------------|---|-----|----------------|---|-----|----------------|---|-----|----------------|---|------------|---------------|---|-------------|----------------|---|-----|----------------|----|-----|----------------|----|-----|----------------|----|-----|----------------|-----|--------|----------|---|--------|--|---|------------|---------|---|------------|---------|---|------------|---------|---|----------------|--------|---|------------|---------|---|--------------------|-----------|---|----------------------|------------|---|--------------|--|----|--------------|----------|----|--------------|----------|----|--------------|----------|----|--------|--|--|
| Sensor | ICX 618 | <p>DC-In / Trigger</p>  <p>Hirose HR10A-10P-12S</p> <table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Function</th> </tr> </thead> <tbody> <tr><td>1</td><td>GND</td><td>GROUND</td></tr> <tr><td>2</td><td>Vin</td><td>+15-24V</td></tr> <tr><td>3</td><td>DNC</td><td>Do not connect</td></tr> <tr><td>4</td><td>DNC</td><td>Do not connect</td></tr> <tr><td>5</td><td>DNC</td><td>Do not connect</td></tr> <tr><td>6</td><td>DNC</td><td>Do not connect</td></tr> <tr><td>7</td><td>Trigger in</td><td>Input trigger</td></tr> <tr><td>8</td><td>Trigger out</td><td>Output trigger</td></tr> <tr><td>9</td><td>DNC</td><td>Do not connect</td></tr> <tr><td>10</td><td>DNC</td><td>Do not connect</td></tr> <tr><td>11</td><td>DNC</td><td>Do not connect</td></tr> <tr><td>12</td><td>DNC</td><td>Do not connect</td></tr> </tbody> </table> <p>Camera Link Interface 26 pin MDR connector 3M 10226-1A10JL</p>  <table border="1"> <thead> <tr> <th>Pin</th> <th>Signal</th> <th>Function</th> </tr> </thead> <tbody> <tr><td>1</td><td>14 GND</td><td></td></tr> <tr><td>2</td><td>15 X0-/X0+</td><td>CL Data</td></tr> <tr><td>3</td><td>16 X1-/X1+</td><td>CL Data</td></tr> <tr><td>4</td><td>17 X2-/X2+</td><td>CL Data</td></tr> <tr><td>5</td><td>18 Xclk-/Xclk+</td><td>CL Clk</td></tr> <tr><td>6</td><td>19 X3-/X3+</td><td>CL Data</td></tr> <tr><td>7</td><td>20 Ser TC+/Ser TC-</td><td>Serial in</td></tr> <tr><td>8</td><td>21 Ser TFG-/Ser TFG+</td><td>Serial out</td></tr> <tr><td>9</td><td>22 CC1-/CC1+</td><td></td></tr> <tr><td>10</td><td>23 CC2-/CC2-</td><td>Not Used</td></tr> <tr><td>11</td><td>24 CC3-/CC3+</td><td>Not Used</td></tr> <tr><td>12</td><td>25 CC4-/CC4-</td><td>Not Used</td></tr> <tr><td>13</td><td>26 GND</td><td></td></tr> </tbody> </table> | Pin | Signal | Function | 1 | GND | GROUND | 2 | Vin | +15-24V | 3 | DNC | Do not connect | 4 | DNC | Do not connect | 5 | DNC | Do not connect | 6 | DNC | Do not connect | 7 | Trigger in | Input trigger | 8 | Trigger out | Output trigger | 9 | DNC | Do not connect | 10 | DNC | Do not connect | 11 | DNC | Do not connect | 12 | DNC | Do not connect | Pin | Signal | Function | 1 | 14 GND | | 2 | 15 X0-/X0+ | CL Data | 3 | 16 X1-/X1+ | CL Data | 4 | 17 X2-/X2+ | CL Data | 5 | 18 Xclk-/Xclk+ | CL Clk | 6 | 19 X3-/X3+ | CL Data | 7 | 20 Ser TC+/Ser TC- | Serial in | 8 | 21 Ser TFG-/Ser TFG+ | Serial out | 9 | 22 CC1-/CC1+ | | 10 | 23 CC2-/CC2- | Not Used | 11 | 24 CC3-/CC3+ | Not Used | 12 | 25 CC4-/CC4- | Not Used | 13 | 26 GND | |    |
| Pin | Signal | | Function | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | GND | | GROUND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Vin | | +15-24V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | DNC | | Do not connect | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | DNC | | Do not connect | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | DNC | | Do not connect | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | DNC | | Do not connect | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Trigger in | | Input trigger | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Trigger out | | Output trigger | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | DNC | | Do not connect | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | DNC | | Do not connect | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | DNC | Do not connect | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | DNC | Do not connect | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin | Signal | Function | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 14 GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 15 X0-/X0+ | CL Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 16 X1-/X1+ | CL Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 17 X2-/X2+ | CL Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 18 Xclk-/Xclk+ | CL Clk | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 19 X3-/X3+ | CL Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | 20 Ser TC+/Ser TC- | Serial in | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | 21 Ser TFG-/Ser TFG+ | Serial out | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | 22 CC1-/CC1+ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 23 CC2-/CC2- | Not Used | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | 24 CC3-/CC3+ | Not Used | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | 25 CC4-/CC4- | Not Used | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | 26 GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Active area | 1/4" sensor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pixel size | 5.6µm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pixel clock | 50 MHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Active pixels | 640(H) x 494(V) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Frame rate | 120 Fps full resolution | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Channels | Channel 1: CIE-X Channel 2: CIE-Y Channel 3: CIE-Z | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alignment accuracy | Mechanically better than 1/4 th of a pixel | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dynamic range | >56 dB | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bit depths | 8 bit 3 channel, 12 bit 3 channel | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gain | 0 to 36 dB analog gain | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Video output | Camera Link Base / GigE Vision | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Trigger modes | Internal and external source (on CameraLink and Hirose connectors) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Synchronization | All Sensors clock synchronized. Smart trigger unit for advanced trigger schemes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Electronic shutter | Synchronized exposure with channel independent duration. (1 µs to 1s) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Control interface | All commands through Camera Link serial interface | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lookup tables | Lookup tables available in 8bit mode, full access to table entries. Table data programmed in flash memory (on request) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| External control capability *)Selectable per channel | Gain*, exposure*, lookup tables*, region of interest, image bit depth, trigger source | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Weight | 785 grams excluding lens | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dimensions | 100 x 78 X 124 mm | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lens mount options | F-mount or M42 custom lens | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating temperature | -20 - +50 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Regulations | CE (EN 61000-6-2 EN 61000-6-3), FCC Part 15 class B, RoHS/WEE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Back focal length | ≥ 17.52 mm in air | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power | 18-24V DC +/-10%, 6W | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Humidity | 20-90% Non condensing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



Examples

Shown is the actual camera response curve closing matching CIE.

The filters are not compensated for sensor responsivity

Camera needs to be calibrated by customer and is dependent on the lens used