**Piranha XL 16K**
Multi-line CMOS Color TDI Camera

**Key Features**
- Trilinear color TDI sensor
- True exposure control
- Up to 70 kHz of three line RGB data
- High full well maximizing signal-to-noise
- High dynamic range using a look-up table (LUT)
- Bidirectional scanning
- Smart lens shading correction
- Parallax correction for applications using angled cameras
- CX4 active optical cable compatibility

**Programmability**
- Sub-pixel spatial correction for precise encoder timing alignment
- White balancing
- Multiple areas of interest (AOI) for data reduction
- Multiple regions of interest (ROI) for easy calibration
- Lens and shading correction
- Test pattern and diagnostics

**Typical Applications**
- Flat panel display inspection
- Film and web inspection
- Printed circuit board inspection
- High throughput and high resolution applications
- Print inspection

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**Multi-line CMOS Color TDI Camera Delivers Breakthrough Performance**

Teledyne DALSA presents our latest multi-line CMOS color camera—Piranha™ XL 16k. This camera delivers an unprecedented combination of speed and responsivity with low noise and in color. Each color uses four rows, resulting in an exceptionally responsive tricolor operation with no color interpolation.

The camera uses the field-proven Camera Link HS™ interface based on Teledyne DALSA's technology. The camera achieves very high data throughput with long transmission distances and reliability. This camera, combined with the XTIUM Camera Link HS frame grabber, offers a complete solution for the next generation Automatic Optical Inspection.

**Specifications**

- **Resolution** 16,352 x 12 pixels (4 rows per color)
- **Line Rate** 40 kHz / 70 kHz maximum x 3
  (120 kHz / 210 kHz aggregate)
- **Pixel Size** 5 µm x 5 µm
- **Data Format** 8 bit
- **Output** Camera Link HS (1 or 2 cables)
- **Lens Mount** M90 x 1 mm
- **Peak Responsivity**
  - 21 nJ / cm² @ 460 nm, 8 bit, 1x gain
  - 22 nJ / cm² @ 525 nm, 8 bit, 1x gain
  - 25 nJ / cm² @ 625 nm, 8 bit, 1x gain
- **NEE**
  - 20 pJ / cm² @ 460 nm
  - 18 pJ / cm² @ 525 nm
  - 12 pJ / cm² @ 625 nm
- **Nominal Gain Range** 1x to 5x
- **Antiblooming** > 100x
- **Size**
  - 97 (W) x 97 (H) x 85.2 (D) mm (40 kHz model)
  - 97 (W) x 140.21 (H) x 78.7 (D) mm (70 kHz model)
- **Mass**
  - 790 g (40 kHz model)
  - 1080 g (70 kHz model)
- **Operating Temp** 0 to +60 °C (front plate)
- **Power**
  - +12 V to +24 V DC, Hirose 6-pin
  - 29 W, max (40 kHz model)
  - 36 W, max (70 kHz model)
- **Control & Data** Camera Link HS
- **Regulatory Compliance** CE and RoHS

<table>
<thead>
<tr>
<th>Models</th>
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<th>Maximum Line Rates</th>
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