



Quest | innovations



# Multispectral Imaging Systems



**Worlds first 5 Channel Multispectral parallel Imager enables you to develop the most demanding high speed multispectral applications.**

Conventional vision applications use a monochrome visualization of the visible spectrum (roughly 400 to 700nm). There are good reasons to use the visible spectrum: the first is the availability of cost-effective sensors that are sensitive to this range, such as CCD and CMOS. Another is that it seems only logical to use a camera that sees that same things as their human users do.

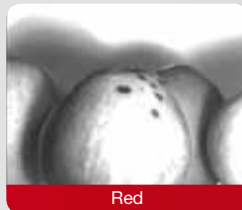
However, for some applications it is essential to use different spectral bands such as ultra violet (below 400 nm) or near infrared (700-1000nm) or to capture important features. Examples are found in medical camera systems (cancer surgery, diabetes), food inspection (fruit sorting), agriculture

(disease detection) or material surface inspection (fabric, metals, paper, print). In some areas such as food inspection and medical systems the use of infrared light offers the possibility to see through the surface and inspect the tissue underneath. Many liquids turn completely transparent when looked at in the NIR spectrum.

The Condor-1000 MS5 contains five optically separated spectral bands for red, green and blue in the visible spectrum and two infrared channels. This camera combines optimal image quality in the visible spectrum with the enhanced vision of two infrared channels.



RGB



Red



Green



Blue



IR 1



IR 2

## Key Features

- 5 Parallel optical acquisition channels
- 5 CMOS Sensors
- 150 Frames/second
- 210 Mbytes/second of data
- Individual Sensor control
- Parallel Sensor Synchronization
- Global and Rolling shutter
- Separate Integration time per image sensor
- 5 x 32-Bit processors optional
- 5 x Multi-Pixel Co processors optional
- Enhanced NIR efficiency
- Several Interfaces
  - Optical Fiber
  - Camera Link
  - GigE

## Programmable Options

- **Per Sensor**
  - Programmable gain
  - Programmable integration time
  - 8 or 10 bit output per channel. 44 bit max; RGB 24 bit, IR 2x 10 bit
  - Different Lookup Tables
  - User definable Lookup Tables
  - Region of Interest
  - Test pattern generation
- **Full register map**
- **General IO programmability**
- **Onboard processing capability**

## Applications



Medical



Agriculture



Multispectral



Military



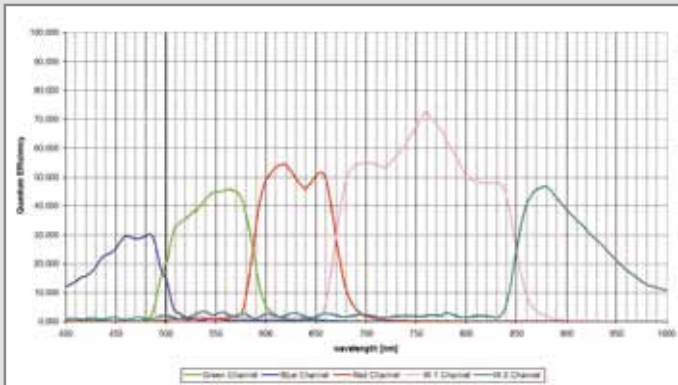
Spectroscopy



Microscopy



**The Condor-1000 MS5 is the worlds first 5 channel multispectral imaging device. This highly scalable hardware and software platform allows for easy development and integration in user applications and for massive processing power.**



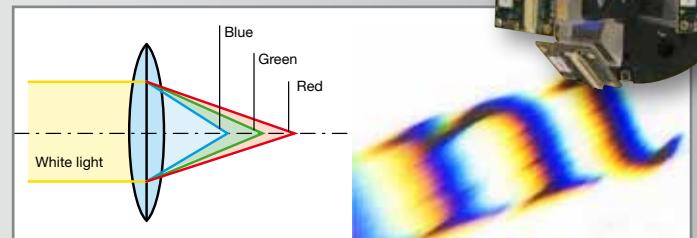
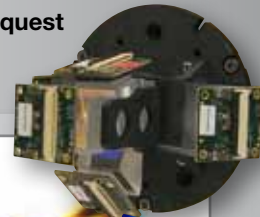
**5 channel curve output diagram**

The Condor multispectral imager is available with different spectral response curves. Shown is a standard spectral response curve for medical applications with 3 standard RGB spectral regions and 2 Infrared regions. Different spectral regions can be produced upon request in small quantities of cameras. Please keep checking the website for different versions as the website will be updated with new specifications when available as standard product.

**Specification**

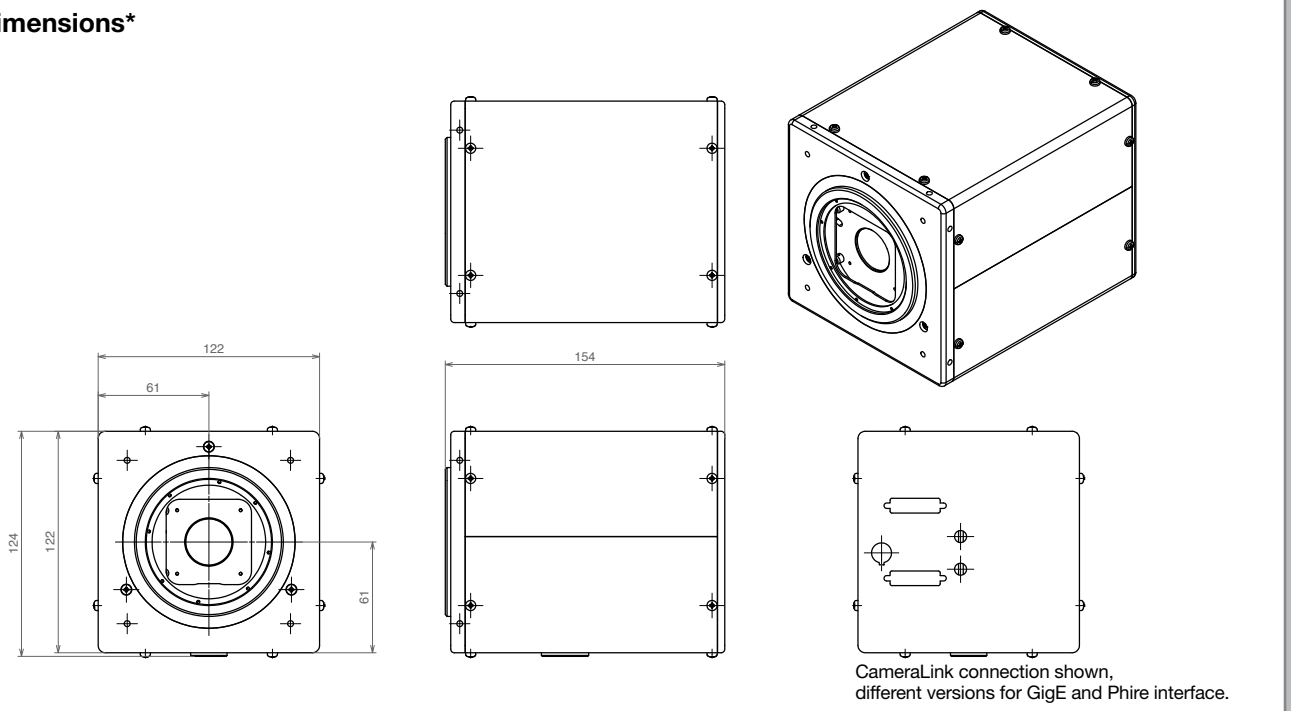
<b>Interface:</b>	Camera Link Optical Fiber GigE (reduced framerate)
<b>Resolution:</b>	1280x1024
<b>Data rate:</b>	>210Mbytes/sec
<b>Maximum system framerate:</b>	150 frames/sec
<b>Maximum sensor framerate:</b>	30 frames/sec
<b>Number of sensors:</b>	5
<b>Power supply:</b>	12 ... 24 volts Hirose HR10
<b>Size:</b>	124 x 122 x 154 mm (ex lens)
<b>Lens mount:</b>	Hasselblad, others available upon request

Always refer to the latest datasheet for detailed specifications.\*



Special designed prism prevents chromatic aberration

**Camera Dimensions\***



CameraLink connection shown, different versions for GigE and Phire interface.