FASTVISION

FastCamera 200

The FastCamera 200 is a high-speed 2 megapixel digital camera system, using a CMOS imager with an electronic global shutter. This camera has a the option of a high-speed, scalable, integrated FPGA, image processor, and memory subsystem which enables stand-alone high speed in camera image processing and extended storage. Options include back thinned versions with high QE in the visible and NIR range, ruggedized, Camera Link output. When integrated with a high powered frame grabber /coprocessor board, the resulting system capabilities can be expanded by adding processors and memory on the board according to the needs of the user.
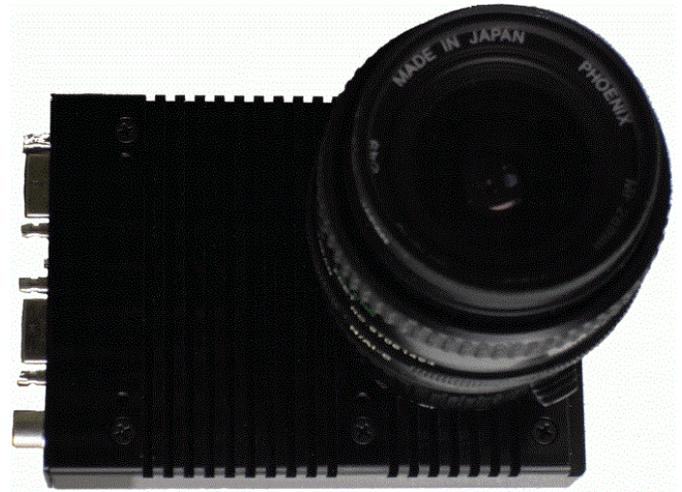
FastCamera 200 Key Features:

- **High resolution**
  - 1920 X 1080 resolution (2.146 Mpixel)
  - 5.0 μm(H) X 5.0 μm(V) per pixel
  - 9.6 mm (H) x 5.4 mm (V) 16:9 sensor active area
  - HDTV 2/3" ROI optical format (11.00mm)
  - • **Variable speed**
  - 1 fps to 272 fps at 1920x1080 (4 Ports)
  - 1,2 or 4 port operation (one port 1/4 speed)
  - Up to 648 Mega pixels/sec. (4 ports)
- **High sensitivity and dynamic range**
  - 66 to 492 μV/electron selectable
  - < 6 electrons rms noise rolling shutter
  - < 8 electrons rms noise global shutter
  - 1.4 Volt full scale range
  - >62 dB dynamic range single read, global shutter
  - >70 dB dynamic range single read, rolling shutter
  - >120 dB w/High Dynamic Range (HDR) extension
- **Excellent Image Quality**
  - 12 Bit Distributed A/D
  - Up to 22 Bit with dual gain sampling
 - Allows for all pixels to be sampled at high and low gain for extreme dynamic range in one exposure
  - Correlated Multi-Sampling(CMS) – for reduced noise
  - Dual exposure on alternate rows for HDR
  - 12 bit LUT to control output and compress video
- **Multiple operating modes**
  - Rolling Shutter or Global shutter
  - High Dynamic Range Enhanced mode
  - Region Of Interest (ROI)
  - Binning within column- digital
 - Single, Dual, or Quad data rate

Modes of operation:

The system supports a wide range of custom user selected ROIs and operating modes with a 1 usec shutter. Camera Link output modes are available. Optional Bayer pattern color, back thinned and ruggedized. The system can be provided with dedicated software to perform gauging, tooling and pattern matching in the camera. Thus providing a standalone system for real-time, flexible measurement and pattern analysis applications.

Spectral Response

Color (R, G1, G2, B) with mircolens & IR-cut Filter (700nm) and Mono without and with microlens

- Mono w/microlens
- G1
- G2
- R
- B
- Mono wo/microlens
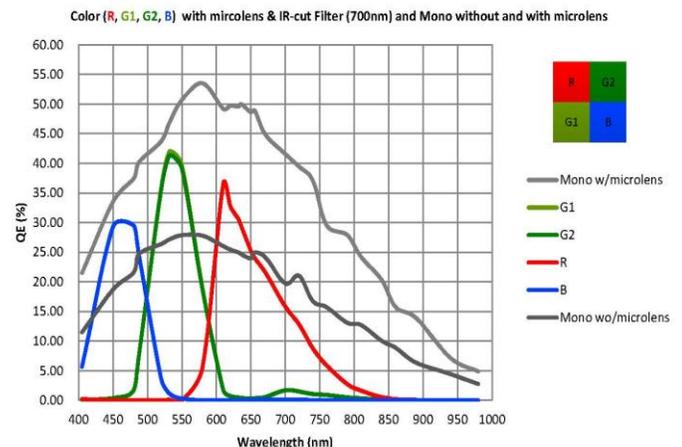
SMART CAMERAS FOR IMAGING

FastCamera 200

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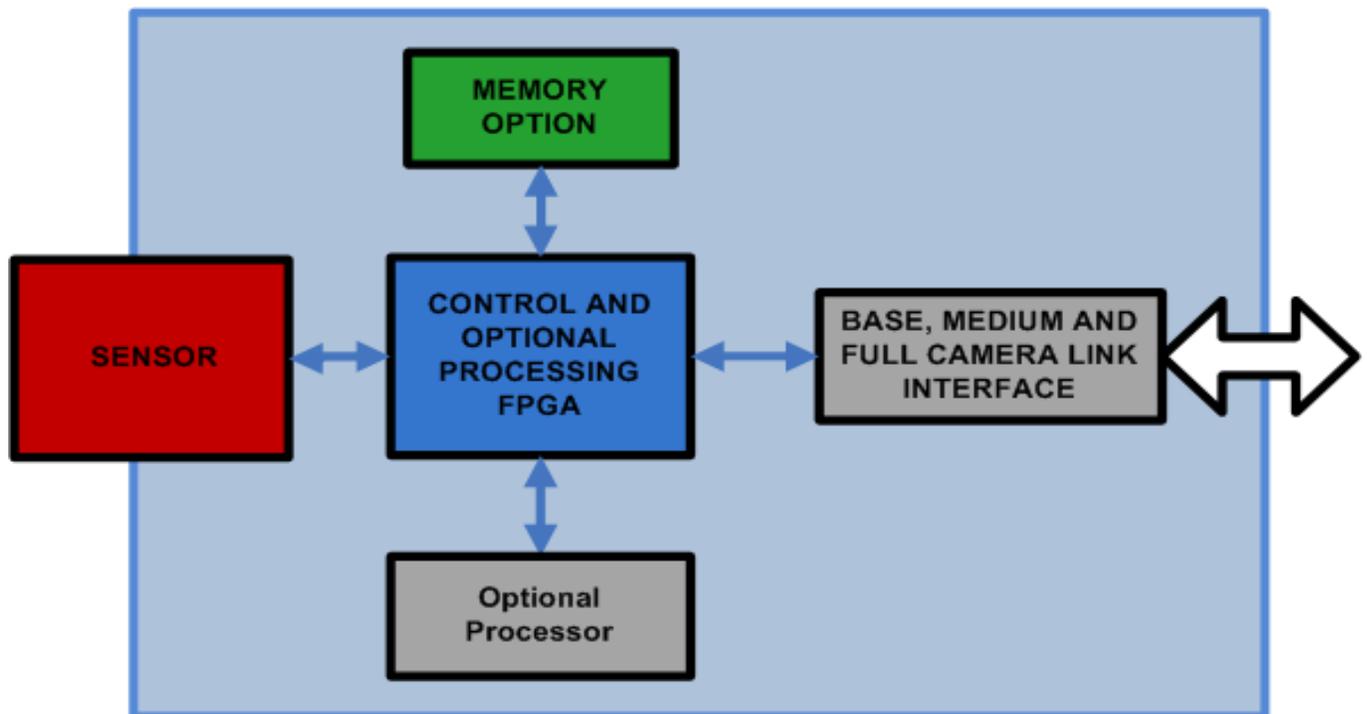
IN-CAMERA PROCESSING OPTIONS

- ☐ Image averaging
- ☐ By pixel gain and offset calibration
- ☐ Programmable ROI (via serial port)
- ☐ Image sub-sampling
- ☐ Convolution filtering
- ☐ Binarization with dynamic threshold
- ☐ VHDL customizable processing
- ☐ Optional programmable processor
- ☐ Processor option provides programmable logic controller functions
- ☐ Super framing (Multiple exp/image)
- ☐ Customer programmable (C/C++, OpenCL)

SENSOR OPTIONS

- ☐ Monochrome with or w/o Micro-lens
- ☐ Bayer Pattern Color
- ☐ Back Side Illumination
- ☐ UV Enhanced QE Delta Doped
- ☐ Glass / Fused Silica / No Window

OUTPUT SPECIFICATIONS

- ☐ Base, Medium or Full Camera Link
- ☐ Camera Link™ interface supported

PHYSICAL SPECIFICATIONS

- ☐ 107 mm x 98 mm x 19 mm
- ☐ 6 Pin Hirose Power Connector
- ☐ +5 Volt Input 4Watts (w/o CPU)
- ☐ External Trigger In and Out
- ☐ 0 to 50 Degree C operating
- ☐ Weight < 310 grams

FPGA AND MEMORY OPTIONS

- ☐ Spartan 6 Xilinx FPGA
- ☐ High speed buffer memory

CAMERA CONTROL INTERFACE

- ☐ FastCamera 300 uses RS-644 serial communication as specified in the Camera Link™ standard
- ☐ The RS-644 serial connection in the Camera Link™ interface is used to issue commands to the camera for changing modes and parameters

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