# BOBCAT
## INTELLIGENT CAMERA SERIES



## ICL-B1020

The ICL-B1020 is an advanced progressive scan, fully programmable CCD camera designed for imaging applications that require high quality images, powerful features and flexibility. The camera is small, light weight, and built around Kodak´s KAI-01050 5.5 micron Interline Transfer CCD image sensor with a 1/2" optical format.

The ICL-B1020 provides an image resolution of 1032 x 1032 and delivers up to 74 frames per second at full resolution. The camera's 14 bit internal data image processing engine is based on an industrial grade high-speed, high-density FPGA, enabling a broad standard feature set and easy implementation of demanding custom imaging solutions. The thermally optimized, mechanical and electrical design plus the extended operating temperature range (-40°C to +85°C), and high MTBF of 660,000 hrs @ 40C, make this Camera Link® camera a perfect fit for the most demanding industrial, medical, scientific and military applications. This camera is also available with the following interfaces: CoaXPress and GigE Vision.

## Features

- 1032/1032 x 1024/1024
- Mono or color 8, 10, 12, bit single or dual output
        (14 bit single output only)
- Normal and over-clock operation (60/74 fps)
- Base CameraLink
- RS232 serial communication
- Analog and digital gain and offset control
- 1x, 2x, 3x, 4x, 8x horizontal and vertical binning
- Eight (8) independent horizontal and vertical AOIs
- Programmable horizontal and vertical resolution
- Programmable line time, frame time and speed
- Programmable external trigger
- Internal/External exposure control
- Standard, fast, frame accumulation, double and
        asynchronous triggering modes
- Automatic gain, exposure and iris control

- Automatic white balance
- Internal/External H and V sync input/output
- Left/right digital bit shift
- Test image with image superimposition
- Built in pulse generator
- Programmable I/O mapping
- Dynamic transfer function correction
- Dynamic black level correction
- Defective and hot pixel correction (static/dynamic)
- Temperature monitor
- Field upgradeable firmware
- Customer defined Look Up Table (LUT)
- Two dimensional Flat Field Correction (optional)
- Reverse image (H mirror)
- MTBF of 660,000 hrs. @ 40°C.

# BOBCAT ICL-B1020 Specifications

| | | | |
|---|---|---|---|
| Maximum Resolution | 1032 x 1032 | Data Corrections | DPC, HPC, LUT |
| Sensor Type | 1/2" CCD KAI-01050 | Hardware Trigger | LVTTL or TTL via IN1/IN2, level, edge, pulse-width, programmable |
| Pixel Size | 5.50 µm | | |
| Frame Rate | 60/74 fps (normal/overclock) | Software Trigger | Software internal, level, edge, pulse-width, programmable |
| Max Frame Rate | 354 FPS | | |
| Minimum S/N ratio | 60 db | Trigger Modes | Programmable, standard, double exposure, fast, frame accumulation, asynchronous |
| Video Output | Base Camera Link, mini CL interface, PoCL | | |
| Output Format | Mono or color 8, 10, 12, bit single or dual output (14 bit single output only) | Min. Illumination | 1 Lux, F/1.4 |
| | | Supply Input Range | 12 VDC, (10V min, 15V max) |
| Binning H & V | x1, x2, x3, x4, x8 | Power Consumption | 3.0 W,  250 mA steady, 1.5 A inrush |
| Area of Interest | 8 independent AOIs, 2 x 2 to 1032 x 1032 | Size (W x H x L) | 46 x 46 x 50.6mm |
| Shutter Speed | 1/500,000 to 1/60 sec (nom) | Weight | 186g |
| Long Integration | Up to 16 sec | Lens Mount | C mount |
| Gamma Correction | G=1.0, G= 0.45, user upgradable LUT | Vibration, Shock | 10G (20 - 200) Hz XYZ, 70G |
| Video Gain | 36 dB range, 1024 steps, 0.0351 dB per step | Environmental | Operation (-40° to +85°)C  Storage (-40° to +90°)C |
| Exposure and AGC | Manual, Auto, Programmable | | |
| Iris Control | Auto, Programmable | Humidity | 10% to 90% non-condensing |
| Strobe Output | Programmable position and duration | MTBF | 660,000 hrs. @ 40°C |
| Image Overlay | Yes, Programmable | Regulatory | FCC 15 part A, CE, RoHS |
| RS232 Interface | Yes | | |

## Power and I/O Interface:
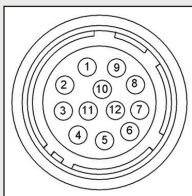
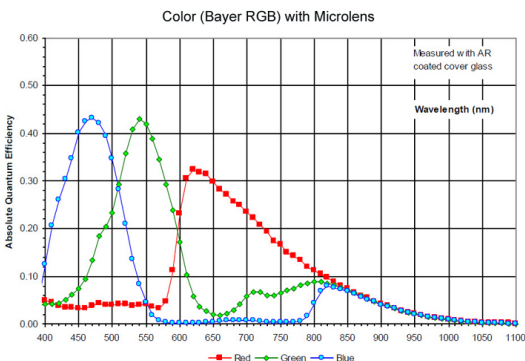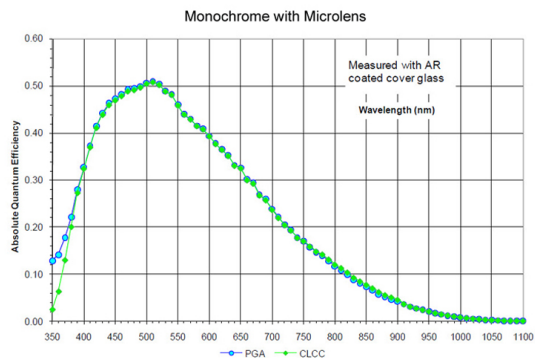| | | | |
|---|---|---|---|
| 1 | 12V DC Return | 7 | OUT1 Signal |
| 2 | +12V DC | 8 | IN1 Signal |
| 3 | IRIS VCC | 9 | IN2 Signal |
| 4 | IRIS Video | 10 | IN1/2 Return |
| 5 | IRIS Return | 11 | Reserved |
| 6 | OUT1/2 Return | 12 | OUT2 Signal |

Connector: Hirose HR 10A-10R-12PB(71)

## Order Options:

| | |
|---|---|
| ICL-B1020M-KCO | Monochrome Camera Link Output |
| ICL-B1020C-KCO | Color Camera Link Output |

## Accessories:
PS12V04: Power Supply (sold separately)

## Spectral Response | Software/Drivers/Interface | Mechanical Dimensions



Monochrome with Microlens

Measured with AR coated cover glass

Wavelength (nm)

PGA    CLCC



Color (Bayer RGB) with Microlens

Measured with AR coated cover glass

Wavelength (nm)

Red    Green    Blue



CamConfig

Menu      View      Help

Camera Info

| | | |
|---|---|---|
| Size | 1032x1032 | PxL |
| FPS | 59.545 | fps |
| FTM | 16.794 | ms |
| EXP | 16.794 | ms |
| TMP | 0.00 | °C |

| | |
|---|---|
| Video Amp | |
| I/O Control | [Off] |
| Trigger | [Off] |
| Pulse | [Off] |
| Exposure | [Off] |
| Test Image | [Off] |
| Strobe | |
| AOI | [Off] |
| Processing | |
| Color | |
| Data Out | [Dual:8 ] |

ICL-B1020C-KC000