BOBCAT
INTELLIGENT CAMERA SERIES

IGV-B1020

IMPERX IGV-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 the TRUESENSE Imaging KAI-01050 5.5micron interline transfer CCD image sensor with a 1/2" optical format.

IMPERX IGV-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 hours @ 40C, make this GigE Vision camera a perfect fit for the most demanding industrial, medical, scientific and military applications. This camera is also available with CoaXPress and Camera Link® interfaces.

Features

- 1032/1032 x 1024/1024
- Mono or color 8, 10, 12 bit single or dual output
  - (16 bit is single only)
- Normal and over-clock operation (60/74 fps)
- 10/100/1000 Gigabit Ethernet LAN (RJ-45) 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 hours @ 40°C

APPLICATIONS

Aerial Mapping	Automotive	Flat Panel Inspection	Metrology	Robotics
Aerial Robots: Military, Police	Biometrics	Food/Beverage	Microscopy	Scientific Apps
Aerospace	Broadcasting	Homeland Security	Military/Defense	Surveillance
Agriculture	Printed Circuit Board (PCB)	Law Enforcement	Pharmaceuticals	Semiconductors
Automation	Electronics	Intelligent Traffic Systems (ITS)	Particle Image Velocimetry (PIV)	Transportation
	Energy/Solar/Wind Power	Medical Devices/Imaging	Radiology	Textile/Apparel

IMPERX

BOBCAT IGV-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	RJ45 CAT5e, CAT6		
Output Format	Mono or color 8, 10, 12 bit single or dual output (16 bit is single only)	Min. Illumination	1 Lux, F/1.4
		Supply Input Range	12 VDC, (10 V – 15 V)
Binning H & V	x1, x2, x3, x4, x8	Power Consumption	4.4 W, 370 mA steady (Typ), 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 74.5mm
Shutter Speed	1/500,000 to 1/60 sec (nom)	Weight	229g
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
Exposure and AGC	Manual, Auto, Programmable		Storage: (-40° to +90°)C
Iris Control	Auto, Programmable	Humidity	10% to 90% non-condensing
Strobe Output	Programmable position and duration	MTBF	660,000 hours @ 40°C
Image Overlay	Yes, Programmable	Regulatory	FCC 15 part A, CE, RoHS

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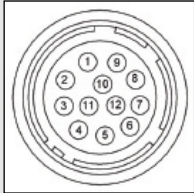
1	12V DC Return	7	OUT1 Signal
2	+12V DC	8	IN1 Signal
3	IRIS VCC	9	IN2 Signal
4	IRIS Video	10	IN1/2 Return
5	IRIS Return	11	Reserved
6	OUT1/2 Return	12	OUT2 Signal

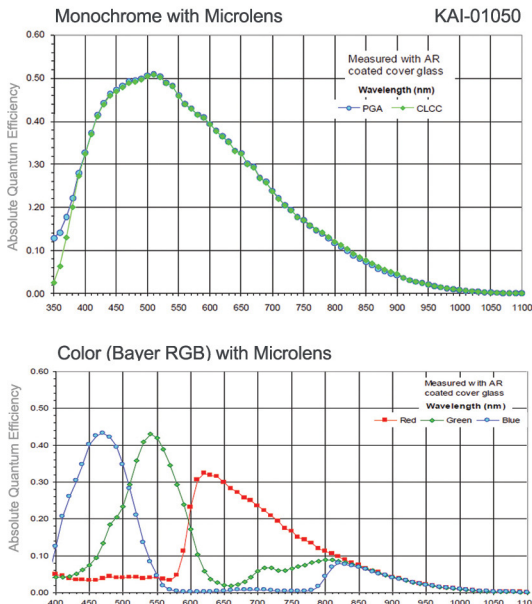Connector: Hirose HR 10A-10R-12PB(71)

Order Options:

IGV-B1020M-TCO   Monochrome GigE Vision Output
IGV-B1020C-TCO   Color GigE Vision Output

For specific details and ordering information, consult the camera user's manual or contact IMPERX at sales@imperx.com.

Accessories:

PS12V04: Power Supply (sold separately)

Spectral Response

Monochrome with Microlens — KAI-01050

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

Software/Drivers/Interface

GigE Vision Protocol: 10/100/1000 Mb/s, 802.3, Ethernet V2.0, IPv4, IGMPv.2, UDP and ICMP, and GenI-Cam
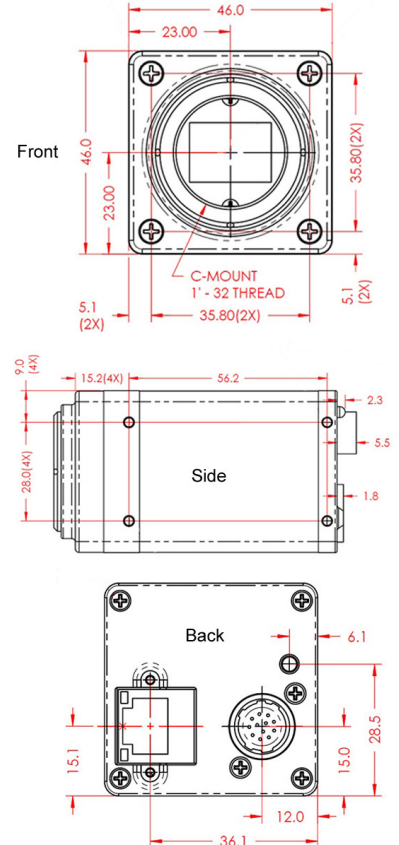
eBUS Drivers: Windows XP 32b, XP 64b, Vista 32b, Vista 64b, 7 32b, 7 64b. Linux: SuSE v10, RedHat 5 (Kernel 2.6)

Software: Pleora GEVPlayer, IM-PERX GEV Player(includes Cam-Config GUI), Bobcat GEV Download Utility, Net Command

SDK: PureGEV GigE Vision SDK for Windows (Microsoft Visual C++, COM, .NET, C#, VB.NET, Borland C++Builder), PureGEV, GigE Vision SDK for Linux

Compatible with: Labview, Halcon, MIL, Common Vision BLOX, StreamPix, ActiveGigE, and others

Multicast capable

Mechanical Dimensions