digital stereo vision camera

- Two progressive scan CCDs
- High speed IEEE 1394 digital communication
- Accurately precalibrated
- Compatible with all Point Grey software
- Ideal for application prototyping

bumblebee™

POINT GREY RESEARCH

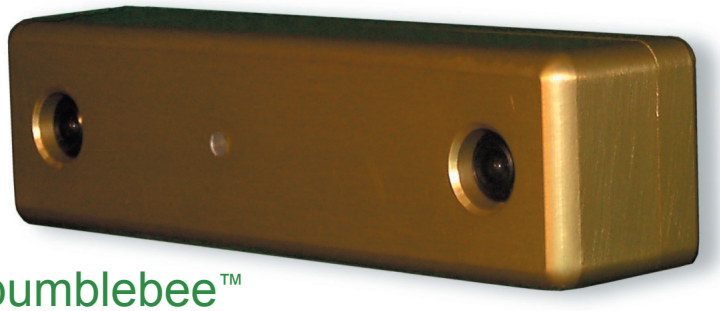
Bumblebee™ is Point Grey's new two lens stereo vision camera. It provides a balance between 3D data quality, processing speed, size and price. The camera is ideal for applications such as people tracking, gesture recognition, mobile robotics and other computer vision applications.

Bumblebee is compatible with the Triclops™ library and works with all of Point Grey's application level software, such as Censys3D® people tracking SDK and Multiclops™ inter camera calibration system. Users with Digiclops® camera can convert their existing application level software with minimal source code changes.

Bumblebee is precalibrated for lens distortions and camera misalignments. It doesn't require in-field calibration and is guaranteed to stay calibrated. The left and right images are aligned within 0.05 pixel RMS error. The calibration information is pre loaded on the camera, allowing the software to retrieve the image correction information. This allows seamless swapping of the cameras, or retrieving the correct information when multiple cameras are on the bus.

Bumblebee allows inter-camera synchronization. By virtue of being on the same Firewire bus, all Bumblebee cameras synchronize themselves. This is particularly useful for acquiring 3D data from multiple points of view, such that it is exactly registered in time and space. Multiclops software allows inter camera calibration and integration.

Bumblebee is supplied as a full development kit, including the camera head, interface card, 4.5m cable, device driver, image acquisition software, Triclops library, user manuals and 1-year technical support. As always, application level software, such as Censys3D and Multiclops is supplied for download free of charge.



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Specifications:

- 640x480 Option: two Sony ICX084 Color or BW CCDs
- 1024x768 Option: two Sony ICX204 Color or BW CCDs
- 1/3 inch, progressive scan CCDs
- 640x480 square pixels at 30 Hz frame rate
- 1024x768 square pixels at 15 Hz frame rate
- 10 bit A/D
- Shutter speed: 1/8000s to 1/30s @ 30hz at 640x480;
  1/6000s to 1/15s @ 15hz at 1024x768
- Baseline: 12cm
- Choice of 2mm, 4mm or 6mm focal length lenses (100°, 70°, and 50° HFOV respectively)
- Size: approx. 160 X 40 X 50 mm
- Weight: approx. 375g
- Signal to noise ratio: TBD
- Automatic/manual gain and shutter control with adjustable frame rate
- Independent control of CCD gains for image intensity balancing
- Color models provide Bayer tiled images for reconstruction on the host
- One IEEE-1394 6-pin connector
- Power supplied by IEEE-1394
- Power consumption: 2.1 W

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Point Grey Research (PGR) is a worldwide leader in the development of advanced digital camera technology products. Based in Vancouver, British Columbia, PGR designs, manufactures and distributes IEEE-1394 cameras, stereo vision cameras and spherical digital video cameras to a broad spectrum of industries. Through a close working relationship wtih its customers, PGR continues to be at the forefront of innovation.

Revised February 14, 2005