

spherical digital video camera

Six cameras covering 75% of a sphere

Up to 20 minutes of video recording

Minimal parallax between cameras

Fully digital, portable solution

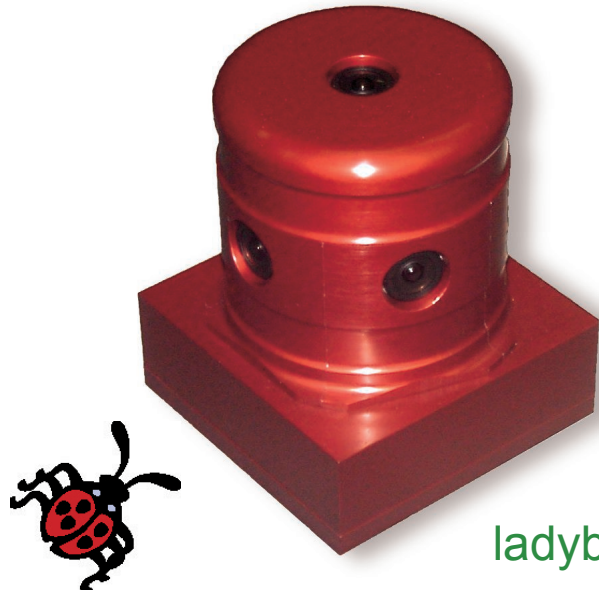
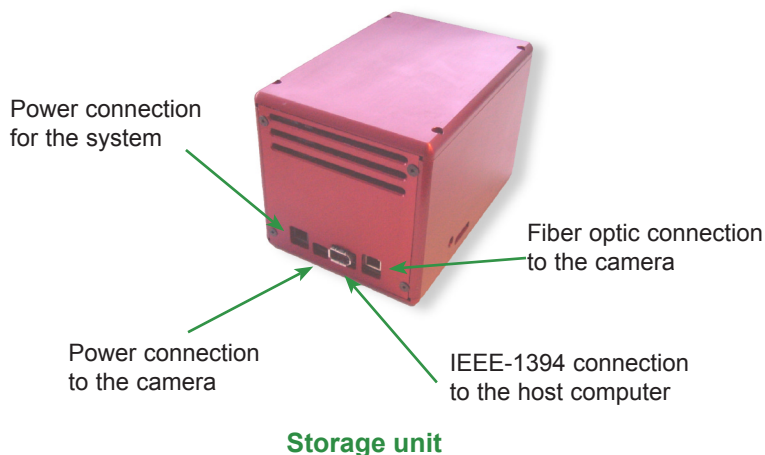
High-resolution uncompressed images

The Ladybug™ is an omni-directional camera system for acquisition of high quality hemi-spherical video. The system has six cameras: five are configured in a horizontal ring and one is pointing vertically. The cameras are packed tightly together such that the distance between adjacent cameras is less than 20mm. This configuration enables the system to collect video from more than 75% of the full sphere with almost the same apparent point of view.



Image obtained by the horizontal cameras

The Ladybug is composed of a head unit and a storage unit. The storage unit is connected to the camera head via a high-speed fiber-optic connection. The storage unit can record up to 20 minutes of full frame, raw, uncompressed video. Any standard PC with a IEEE-1394 capability can be used to preview or control the system, as well as, to retrieve and process previously recorded video data.



ladybug™

Camera head

- Six Sony ICX204AK color CCD image sensors
- 1/3 inch, progressive scan CCD
- 1024 by 768 square pixels at 15 Hz frame rate
- 10 bit A/D
- High quality 2.5mm focal length micro lenses
- Automatic/manual gain and shutter control with adjustable frame rate
- Independent control of CCD gains for image intensity balancing
- Bayer tiled images with reconstruction on host
- Size: 9cm X 9cm X 11cm
- Weight: 920g
- Power consumption: 6.5W
- Communication: 1 Gbit/s fiber optic connection with the storage unit

Storage unit

- Four 40GB Ultra ATA/66 notebook hard drives
- Size: 10cm X 10cm X 15cm
- Weight: 1600g
- Communication: IEEE-1394 400Mbit/s for host control and preview
- Power consumption: 20W, supplied via IEEE-1394 or an A/C adapter

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Point Grey Research is a product engineering and technology company founded in January 1997. The company designs and develops computer vision technologies for commercial applications worldwide. Point Grey Research technology has been successfully used in people tracking, object tracking, modeling and dimensioning, mobile robotics, mining and many other computer vision applications.