The **PMD [vision]® 1k-S** is a first-class system for the acquisition and handling of 3D data. It is comprised of a **high-speed 3D camera**, based on a 64 x 16 pixel Photonic Mixer Device (PMD) sensor array, and enables 3D distance measurements to be made quickly and accurately.

Distance data is acquired using the "time-of-flight" principle, with invisible modulated Near-Infra-Red (NIR) light. Each pixel simultaneously delivers distance information, distance resolution and grayscale information. The system is based on a 32-bit processor (AMD Elan SC520) using the eLinOS operating system, with PMD timing requirements being met by an FPGA.

One of the key features of the camera is the **active Suppression of Background Illumination (SBI)** for each pixel. These PMD Opto-ICs "see" only their own active illumination, and are not affected by ambient light, including sunlight. For this reason, they are especially suited to outdoor applications.

Output data from the camera can be attained in two ways, depending upon the needs of the user:

- Distance information can be calculated within the camera, with only 3D data being transferred to the PC.
- Raw data can be outputted from the camera, with the PC calculating the distance map. This mode has the advantage of additional image post-processing facilities.

All camera settings can be comfortably changed from a PC, using the TCP/IP protocol and a standard Ethernet interface. Furthermore, a high-speed IEEE 1394 interface enables high frame rates and thus makes the camera ready for **real-time applications**.
PMD [vision]® 1k-S

discovering new dimensions

Mechanical Dimensions

Specifications

Detector: 3:1 global shutter PMD sensor
Detector Dimensions: 9.94 mm (h) x 3.37 mm (v)
Pixel Dimensions: 155.3 μm (h) x 210.8 μm (v)
Resolution: 64 (h) x 16 (v)
Optical Fill Factor: 23 %
Receiver Optics: f = 16 mm; f/# = 1.4; C-mount
Max. Range: 7.5 m
Z-Resolution: > 6 mm
Field of View: 34° (h) x 12° (v) full angle
Illumination Power: approximately 1W optical
SBI™ - Performance: up to 40 dB (rejection of ambient light intensity)
Wavelength: 850 nm
Frame Rate (3D): up to 50 fps
Frame Rate (single phase): up to 200 fps
Digital Interface: IEEE 1394a and Ethernet (IEEE 802.3u)
Data Format: 12-bit single phase or 16-bit 3D plus 16-bit grayscale

* Active circuitry for Suppression of Background Illumination (SBI) in each pixel.

Certain dimensions and specifications are subject to change without notice.