

I) TECHNICAL CHARACTERISTICS



The ARvision-S is a specialized product designed for Augmented Reality applications. It is an opto-electronic device that projects an image or a streaming video through the near-the-eye micro-displays.

a) Display Features

The ARvision-S offers micro-screens with the following characteristics:

- 800 x 600 resolution, equals 1.4M pixels and full color.
- Displays are Liquid Crystal (LCD), one of the best quality of image. The image has an excellent sharpness, brightness, and contrast which allows a comfortable reading visibility without getting your eyes tired.
- Brightness and contrast are adjusted by computer, through a software, provided for the device.

b) Camera Features

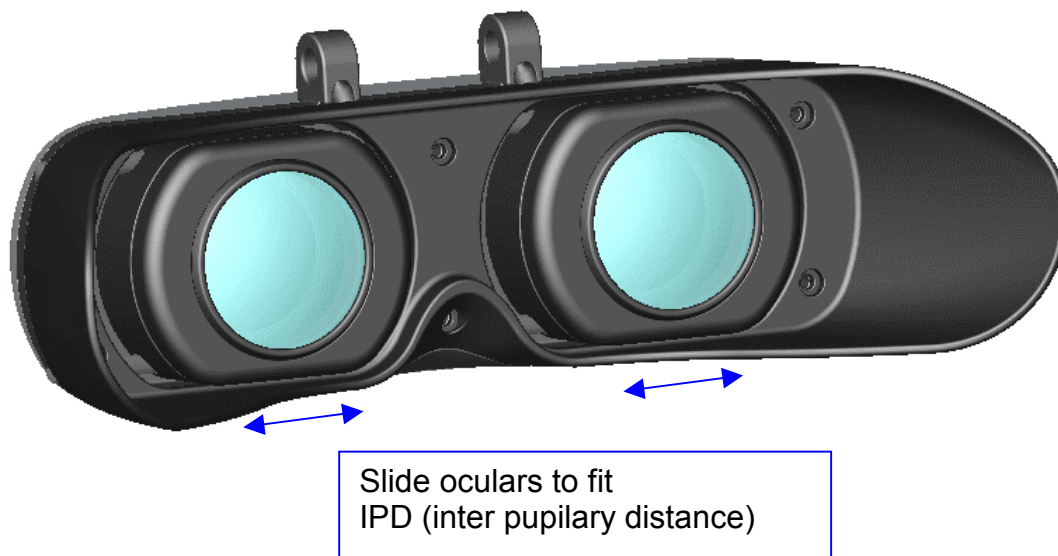
The cameras we offer for the Augmented Reality range of products are:

- USB 2.0
- IEEE 1394 (FireWire)
- 752 x 480 resolution, 61fps, color or b/w
- Progressive scan 1/3" CMOS, global shutter
- Camera control by software
- Gain control: automatic / manual, 0 dB to 12 dB
- Shutter Speed: automatic / manual, 0.12 ms to 512 ms
- Synchronization: external trigger, software trigger, or free-running
- Power requirement: 5V (USB), <1 Watt
- Standard lens 6mm, changeable by user, lens mount M12



c) Attachment and Mechanical Adjustment

- Head Band: The ARvision-S-HMD



d) Connectivity and GPU Support

Any computer, laptop or other video source with digital DVI output is suitable

... to HMD

DVI socket
Aux = Right channel
(cable from 2nd DVI
graphics card output)



DVI socket
Main=Left channel
(graphics card or
extender cable)

USB
- Power supply 5V/0.5A
- Audio signals
- Display adjustments
- Firmware updates

USB-Camera

e) Stereoscopic Signals

The ARvision-S-HMD offers two stereo options:

- Passive stereo (two DVI channels)
- Active Stereo

f) Audio

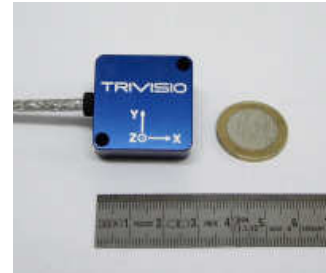
- Microphone is integrated
- Earphone jack (3.5 mm) for external earphones
- Audio signals by USB

II) Additional Features and Options

a) Inertial Motion Sensor

Upon request we can integrate inertial motion sensors:

- Wireless Colibri
- Colibri (with USB cable)



b) Cable Length

The HMD comes with a basic cable length of 2.2 meters, but can be extended upon request to 5m.

c) VGA Interface

There will be a variant with analog VGA video interface, final development stage Dec 2010.

III) Overview

| | | |
|---------------------------------|--|--|
| Technical Specifications | Camera | 752x480 (max 61fps), USB 2.0 (optional IEEE1394) |
| | Camera Sensor | 1/3" CMOS, progressive scan, global shutter |
| | Focus | manually adjustable |
| | Iris | fixed |
| | Lens | 6mm (0.9x vision), changeable by user , lens mount M12 |
| | Microdisplays 2x | SVGA AMLCD 800x600 color (equals 1,440,000 pixels) |
| | Display Color | 24 bit |
| | Frame Rate | 60fps |
| | Overlap | 100% |
| | Field of View | 40.6° diagonal (4:3, 32.7° (H), 24.5° (V)) |
| | Distortion | 3.1% (H), 1.9% (V),4.0% corner |
| | Eye distance (IPD) | 55-72mm adjustable |
| | Eye Relief | 27mm |
| | Eye Motion Box | 7mm (H) x 6mm (V) |
| | Video Interface | DVI-D |
| | Stereoscopic Modes | Mono, passive stereo, active stereo |
| | Audio | Microphone integrated, 3.5mm socket for headset |
| | Cable Length | 2.2m (optional 5m) |
| Power Consumption | Display 2.5W, Camera <1W (5V, taken from USB port) | |
| Operating Temperature | 0°C to +40°C | |
| Weight | 250 g (without headband) | |
| Dimensions (W/H/D): | 150mm x 42mm x 79mm | |

Subject to technical modifications