

## I) TECHNICAL CHARACTERISTICS



The ARvision-3D 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

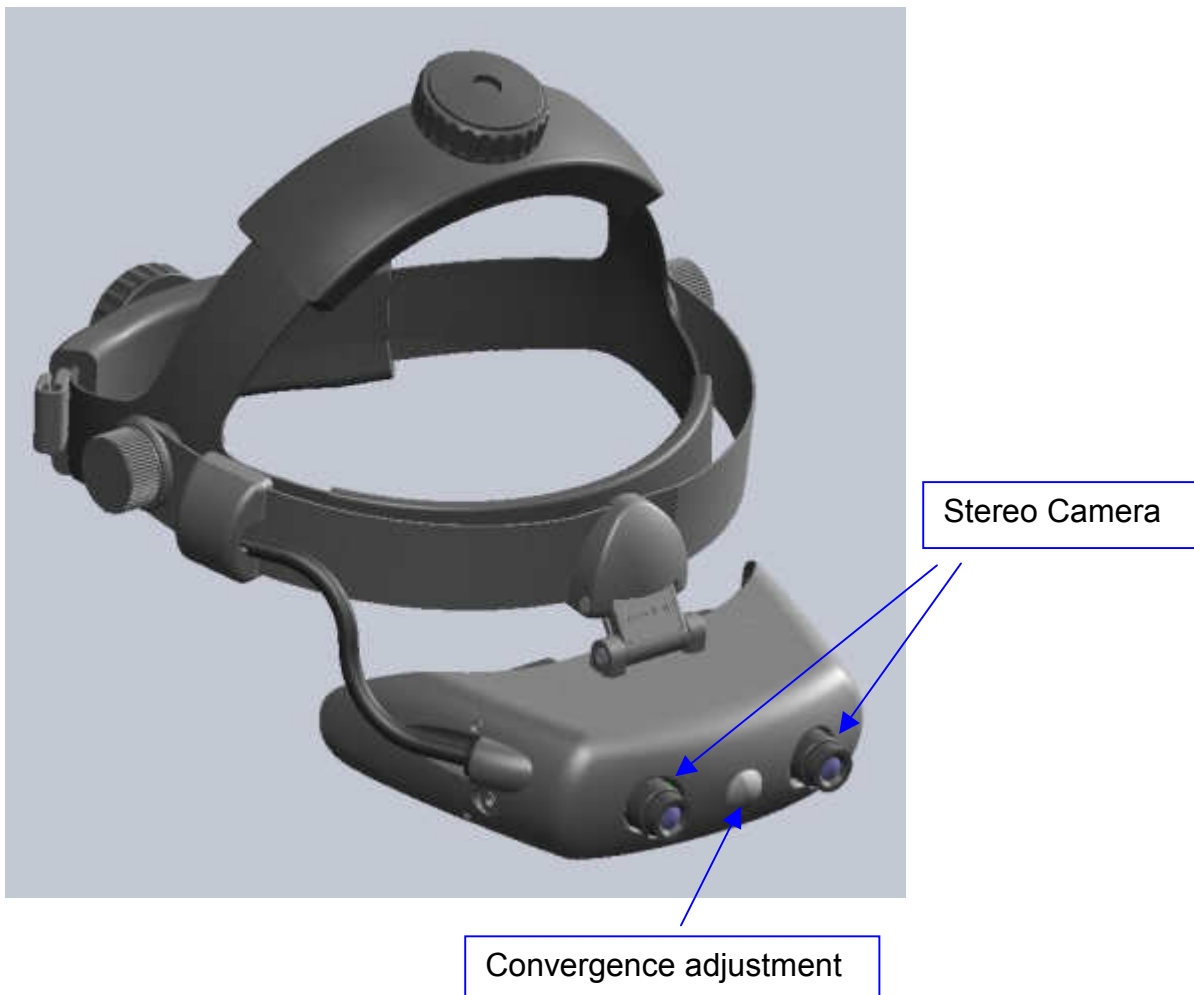
The ARvision-3D offers micro-screens with the following characteristics:

- 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**

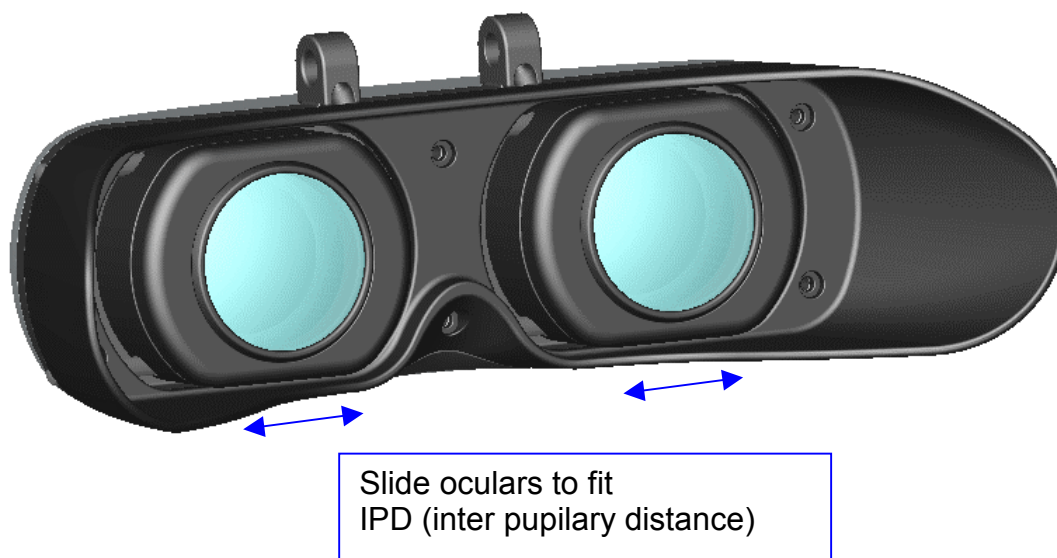
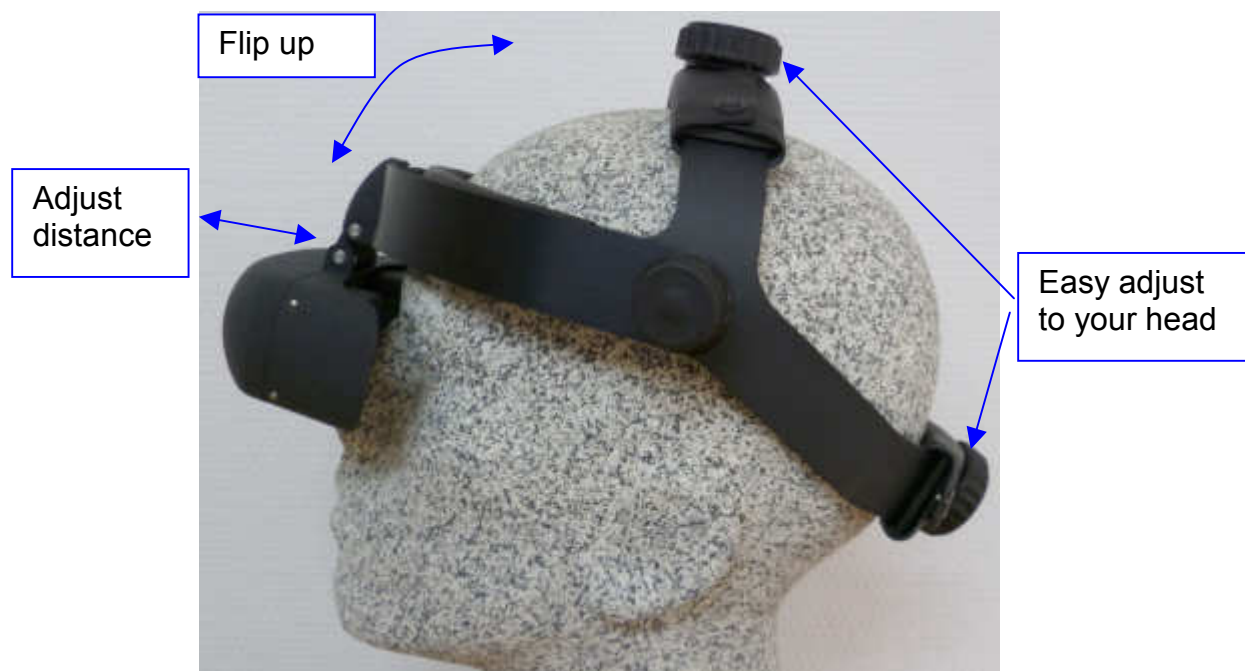
The cameras we offer for the Augmented Reality range of products are:

- 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
- Convergence adjustment



### c) Attachment and Mechanical Adjustment

- Head Band: The ARvision-3D-HMD

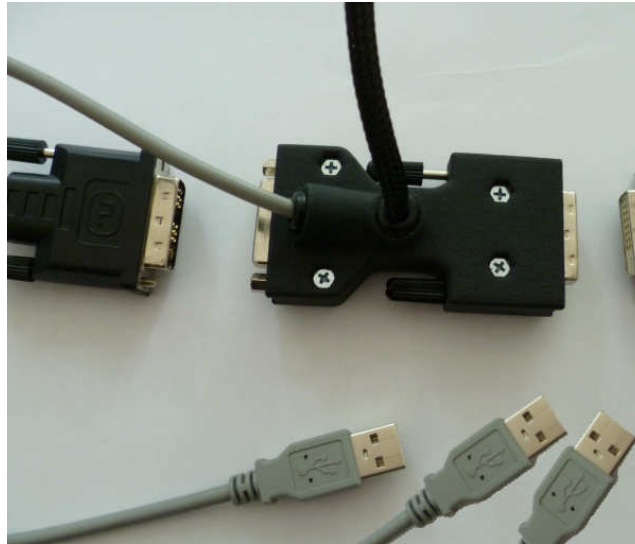


#### d) Connectivity and GPU Support

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-Cameras 2x

#### e) Stereoscopic Signals

The ARvision-3D-HMD offers two stereo options:

- Passive stereo (two DVI channels)
- Active Stereo

#### f) Audio

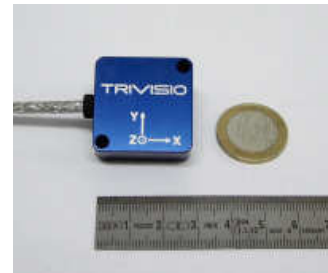
- Microphone is integrated
- Earphone jack (3.5 mm) for external earphones
- Audio signals by USB

## 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

<b>Technical Specifications</b>	Cameras 2x	752x480 (max 61fps), USB 2.0 (optional IEEE1394)
	Camera Sensor	1/3" CMOS, progressive scan, global shutter
	Convergence	manually adjustable
	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° (horiz), 24.5° (vert))
	Distortion	3.1% (horiz), 1.9% (vert),4.0% corner
	Eye distance (IPD)	55-72mm adjustable
	Eye Relief	27mm
	Eye Motion Box	7mm (horiz) x 6mm (vert)
	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 each (5V, taken from USB port)
Operating Temperature	0°C to +40°C	
Weight	290 g (without headband)	
Dimensions (W/H/D):	150mm x 42mm x 84mm	

Subject to technical modifications