

PRODUCT SUMMARY MPB - 2019/2

Head Mount Multi Plane Stereoscopic 3D Displays

“Image Guided Enterprise” or iG series Augmented Reality mpS3D Near Eye displays

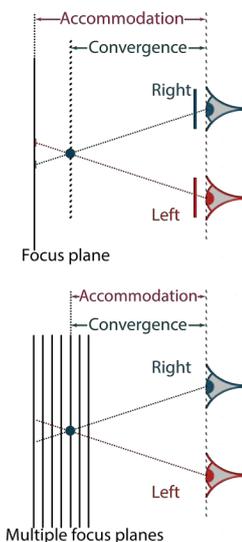
“Image Guided Enterprise” or iG series Augmented Reality mpS3D near eye displays – VR Head Set and Smart Glasses are aimed at professionals in fields of manufacturing, quality assurance, maintenance, repairs, training, industry and medicine, requiring visualization in a high resolution and optical precision information graphic and 3D visual objects in full color, natively at arm length distance in virtual or mixed 3D reality without Vergence Accommodation Conflict for human vision system.

LightSpace Technology’s VR Head set and AR smart glasses are prescription based vision enhancing devices correcting human eye vision curves. They accommodate visual object field of depth continuously from 0.3m to infinity.



Multi-plane technology

Advantages



+ Reproduction of true 3D images in real-time

- without any moving parts
- continues depth perception by binocular and monocular depth cues
- with all physical and psychological depth cues

- perceptually flicker free

+ The technology is scalable

- can be implemented in large-size displays, as well as in wearable or otherwise portable display devices.

+ Key enabling technology

- the proprietary liquid crystal based optical diffuser element with ultra-low response time

+ Technology matches accommodation and convergence depth cues

- which is a culprit of all currently available conventional stereoscopic 3D imaging methods with a single focal plane images

+ Does not cause eyestrain and fatigue

- after longer viewing periods, in comparison to conventional 2D displays or stereo VR/AR headsets*.

*Clinically approved testing in progress

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iG-1000 AR smart glasses reference product



Reference Model Comparison table (preliminary specifications)*

Reference model	p2001	iG1000
Description	low resolution proof of concept VR head set demo device	high image quality "Image Guided Enterprise" AR smart glasses device
Status	released	in development, prototypes expected Q3 2019
Image characteristics		
X, Y, Z resolution, perceivable pixels (voxels)	800 x 480 x 6	1920 x 1080 x 6
Physical image focus planes	6	from 4 to 6
Physical addressable voxels, million	up to 2.4 per eye	up to 12 per eye
Horizontal field of view	72	TBD
Field of focus depth dimensions	focus planes cover field of depth 0.3m to 4m (∞)	focus planes cover field of depth 0.3m to 4m (∞)
Average interplane distance, diopters	<0.6	<0.6
Image refresh rate, Hz	60	TBD
Color modes	RGB up to 24bpv	RGB up to 24bpv
Computer and software compatibility		
Data interface	2x HDMI, power lead	DisplayPort over USB-C
Supported operation system	Win10; Linux	Win10, Linux

*All specifications subject to change without notice

Features of mpS3D Technology

The multi-plane stereoscopic 3D optical architecture delivers continuous focus depth cues over whole displayable field of depth starting with 0.3m to infinity. As such it does not create vergence accommodation conflict which so far has been major obstacle in development of VR/AR system usability. It does create realistic 3D reality reconstruction if inter plane distance does not exceed 0.6 diopters.

AR Glasses top Highlights

LightSpace Technologies "Image Guided Enterprise" - series AR smart glasses are based around patent pending multi-plane Stereoscopic 3D near eye display technology. They deliver full accommodation for human vision across whole reconstructed 3D reality image space.

This is currently leading technically feasible technology allowing high refresh rate visualization of 3D imagery focused at arm lengths distance in front of viewer.

Glasses hold in-out image and spatial configuration capturing module that can be tailor customized for various tasks – overlay image matching, registration, hand gesturing control, various image guided task execution.

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