



A3RO DS-62/S

Army Aircrew Augmented Reality Optics and Display System

Vision Products was selected by the U.S. Army to develop the A3RO DS-62/S system as a Future Vertical Lift (FVL) program risk reduction. This program converts Vision Products' SA-62/S augmented reality helmet mounted display (HMD) into a redesigned DS-62/S binocular HMD that mounts to aviators' HGU-56/P helmet, allowing the pilot to deploy the clear and semi-transparent visors. The HMD can also be used simultaneously at night with aviators' ANVIS-9 Night Vision Goggles (NVG).

The DS-62/S HMD provides the aviator augmentation of high resolution (1920 x 1200) full color symbology and video imagery over a very wide 62° diagonal field of view (FOV). Vision Products' innovative freeform prism eyepiece design with minimal peripheral obscuration provides aviators an unobstructed view of the real world.

The A3RO DS-62/S system consists of the DS-62/S HMD, an aviator wearable control panel (WCP), and a quick disconnect connection (QDC) between the WCP and the aircraft interface unit (AIU). The WCP controls the day and night brightness of the HMD, whereas the QDC provides for safe egress, and passthrough of all video, head tracking information, and power from the AIU. The AIU interfaces with the aircraft and processes the video and tracker information. The A3RO DS-62/S will be DoD qualified for use in the U.S. military helicopter community. Standard SMPTE video interface and MIL standard power eases integration to current and future platforms.



Vision Products, LLC

Vision Products is a pioneer in the development and deployment of innovative photonics solutions for military and commercial markets. Vision Products personnel have been designing head mounted displays for over 30 years and have built some of the world's most successful HMDs for use in extremely challenging environments.

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Benefits of the A3RO DS-62/S HMD Include:

- Utilizes Mature Optical Design with a Proven Track Record
- High Resolution Display with Fast Switching Speeds and Excellent Contrast
- Wide Field of View for Improved Situational Awareness
- Compatible with Currently Fielded Army Equipment
 - Standard NVGs
 - Standard Army Aviation Helmets (HGU-56/P and HGU-56/R)
- Leverages DoD SBIR and ManTech Investments
- Open-architecture Electronics allow for Future-proofing of the A3RO DS-62/S HMD Installation into Multiple Helicopter Platforms
- Designed to be Integrated with Advanced Sensors and Symbology

Specification	A3RO DS-62/S
ANVIS Mounting	Maintains Standard ANVIS Interface
Std. Dual Visor Configuration	Compatible with HGU-56/P Clear/Dark Dual Visor Assembly
Interface Content	High speed video, Real-time head position, Optical characterization data, Tracker characterization data
Cabling	Aircraft Interface Unit (AIU). MIL-STD-38999 Bulkhead Connectors Quick Disconnect Connector(QDC) In-line, Wearable Control Panel (WCP)
Refresh Rate	60 Hz
Binocular Overlap	100%
Field of View	53° H x 33° V (Future Growth 50° H x 40° V Zero Distortion Prisms)
Display Format	1920 x 1200 Full Color (Future Growth 2048 x 2048)
On-axis Exit Pupil Diameter	10 mm
Off-axis Exit Pupil Diameter	7 mm
Eye Relief	25 mm
Interpupillary Adjustment	55 to 75 mm
Head Supported Weight/CG	Meets Flight & Crash Curves / USAARL Defined Mass Property Curves
Eyepiece Focus	Fixed -0.25 D
Distortion (Compensated)	Less than 2.0%
Helmet	HGU-56/P and HGU-56/R
Helmet Tracker	Vision Products' Hybrid Tracker - Standard UART Digital Interface
Video	Standard Commercial SMPTE 3G/6G
AIU Power	Standard 28 VDC Aircraft Power

