REFERENCE DESIGN KIT FOR AUTOMOTIVE AUGMENTED REALITY HUDs

Heads Up Displays enabled by HoloCore allow bright, virtual, full-color images to be viewed in automotive windshields without obstructing the driver's view. Holoptic designs and manufactures a 3-color hologram in a single layer of photopolymer. Our AR HUD Reference Design Kit provides the opportunity to experiment with a small volume (<1.5 liter) and highly-efficient system that uses an off-the-shelf laser projector that projects onto a Luminit Light Shaping Diffuser. The image is then relayed onto the HoloCore 3-color reflection hologram that creates a virtual image at infinity so the user does not need to refocus. This compact, portable and highly efficient demo system uses simple geometries to showcase what is optically possible for future AR HUD designs.

>Transparent Full Color

>Low volume (<1.5 liters)

>High luminance in the virtual image

>Customized designs possible

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HoloCore™
by Holoptic

Bill of Materials:

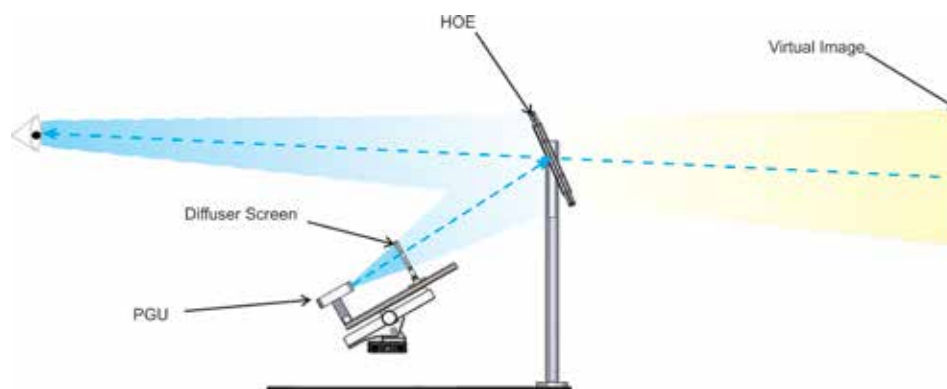**Projector**
>   Model: Laser Beam Pro C200
>   Type: Laser projector

Diffuser Screen
>   Luminit Diffuser: 55° HD on pc20
>   Screen size: 4"×2"

HOE
>   Single Layer
>   24 µm photopolymer
>   60 µm TAC

Specifications:

- Single-layer RGB holographic optical element (HOE) Heads-up display (HUD) combiner for bright daylight applications (automotive, avionics, etc.)

- Playback Wavelengths (ideal): 637nm±1 nm, 523nm±1 nm, 455nm ±1 nm

- Luminance of virtual image 15,000 nits with 60,000 nits on under-dash PGU diffuser screen with uniformity >80%

- Diffraction efficiency: >70% of input RGB laser light

- Transparency (white light): 84% with Haze <2%

- Physical size (combiner only): 190-mm (V) x 262-mm (H) (7.5" x 10.5")

- Eye box: 50-mm (V) x 100-mm (H)

- Eye relief: 50cm – 80cm

- FOV:8°(V) x 16°(H) with virtual image at infinity