WFO5 PRISM OPTIC

For Part Numbers:

WFO5 with bracket for use with SVGA+ Microdisplay	EMA-100169
WFO5 with bracket for use with SVGA150 Microdisplay	EMA-100204
WFO5 without bracket	EMA-100206

WFO5 Capabilities

The WFO5 prism optic provides a lightweight, low-cost solution for near-eye viewing devices. It incorporates a patented anamorphic design with state-of-the-art plastic optic manufacturing to ensure the clearest possible image at the lowest possible cost. The WFO5 prism optic simultaneously corrects for geometric distortions and aberrations.

At the same time, it delivers the full SVGA resolution provided by eMagin's SVGA+ and SVGA150 OLED microdisplays. The WFO5 incorporates features to adapt the OLED microdisplay easily through an integrated optic/display holder design. The assembly permits easy sealing against dust and moisture.

The WFO5's folded optical path and short focal length allow the single-element optical design to deliver the nearly 40 degree field-of-view that many consumer applications require – at the low cost consumer markets require.

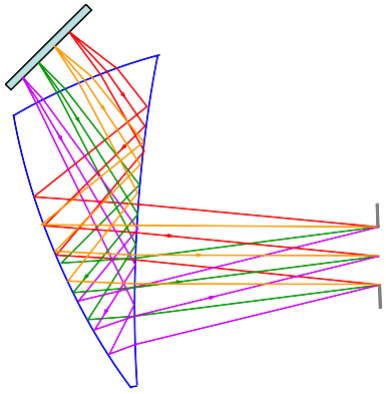
Military and industrial applications will also benefit from WFO5's combination of high performance and low cost. Combined with eMagin's OLED microdisplays, the optic enables applications that require compact viewing devices where large amounts information must be accessed immediately.

The WFO5 optic is available as an individual component or sealed to an eMagin OLED microdisplay as the basis for a compact display system.

Lightweight and low cost eMagin's WFO5 Prism Optic delivers field of view of nearly 40 deg with >60% light throughput.

WFO5 OPTIC ADVANTAGES

- Compact, single-element optic for simpler, lighter systems
- Anamorphic design corrects for geometric distortions and aberrations
- Lightweight molded plastic for high-consistency and low unit cost
- Single-piece design provides easy integration of optic



MODULE ADVANTAGES

- Compact, sealed display module for easy integration
- Unsurpassed power efficiency
- Wide field of view in a rugged single-optic design
- Wide operating temperature range
- Full color and monochrome (white, yellow, green, or custom) options
- Long life display

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See ECN-001053 for approvals

GENERAL OPERATING CHARACTERISTICS

WEIGHT
- < 11g

FOCAL LENGTH
- 22 mm

WIDE FIELD OF VIEW
- Diagonal – 39.5 deg
- Vertical – 24.2 deg
- Horizontal – 31.6 deg

LIGHT THROUGHPUT
- ~60%

FRONT LUMINANCE
- >70 cd/m² *

EYE RELIEF
- 27 mm

Eye Motion Range
- Vertical 8 mm
- Horizontal 14 mm

PUPIL DIAMETER
- 4 mm *

DESIGN RESOLUTION (MTF)
- 0.3 at 30 lp/mm at center of field
- 0.2 at 30 lp/mm at 0.7 field
- 0.1 at 30 lp/mm at corner of field

COATING
- Aluminized, protected mirror surfaces Dimensions

DIMENSIONS
- 45.3 mm (w) x 27.3 mm (h) x 27.5 mm (d)

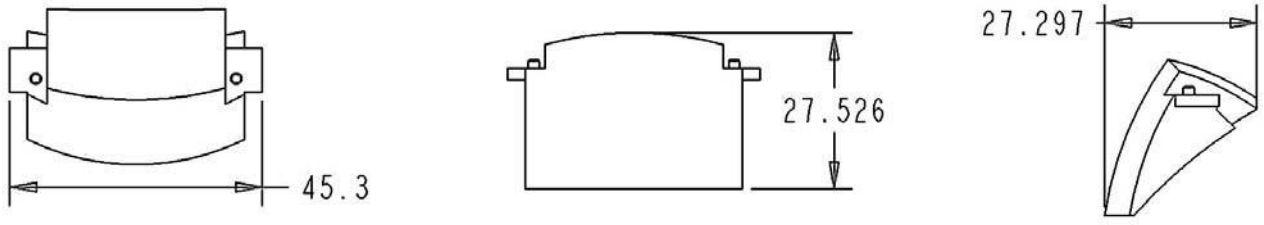
General Handling/Cleaning Guidelines

NOTE: The prisms are fragile and susceptible to scratches and digs if not handled properly. Please use caution and follow proper guidelines.

1. Gloves or finger cots must be worn when handling the prisms.
2. The prisms must only be handled by the outside mounting tabs. Do not handle by the mirrored or clear optical surfaces.

3. Filtered compressed air can be used to remove any loose debris.
4. Oils, particles and debris can be removed with 10% alcohol/water solution (methanol recommended) and a cotton swab. Do not use lint free wipes or lens cleaner as this can damage the surface.

Mechanical Outline



A leader in virtual imaging technology, eMagin integrates high-resolution OLED microdisplays, magnifying optics, and systems technologies to create a virtual image that appears comparable to that of a computer monitor or a large-screen television. With unique technology for producing high-performance small molecule OLED-on-silicon microdisplays and related optical systems, eMagin is the only company to supply these displays in commercial quantities to OEMs. In addition, the company sells integrated modules to military, industrial and medical customers.

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