

# 3M™ Image Quality Polarizer Enhanced (3M IQP E)

## Product Description

3M IQP E film with optically clear adhesive provides a highly efficient reflective polarizer designed for use in folded optics for virtual reality head mounted displays (VR HMD). It has a very low transmission leak state. The IQP E polarization axis is aligned relative to the sheet edge. There is some variation in polarization axis from sheet to sheet as a natural occurrence of the manufacturing process. The tech data sheet describes the IQP E film properties with optically clear adhesives, including the axis variation.

This film utilizes a tuned interference stack composed of multiple layers of transparent dielectric materials.

## Construction/Performance

Premask (30 μm)



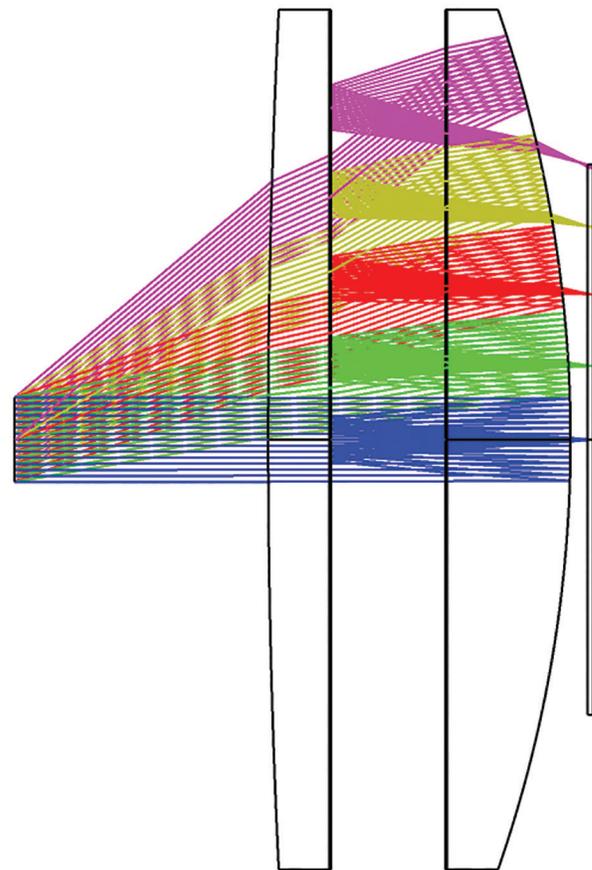
Reflective Polarizer (53 μm)



Adhesive (9 μm)



Liner (50 μm)

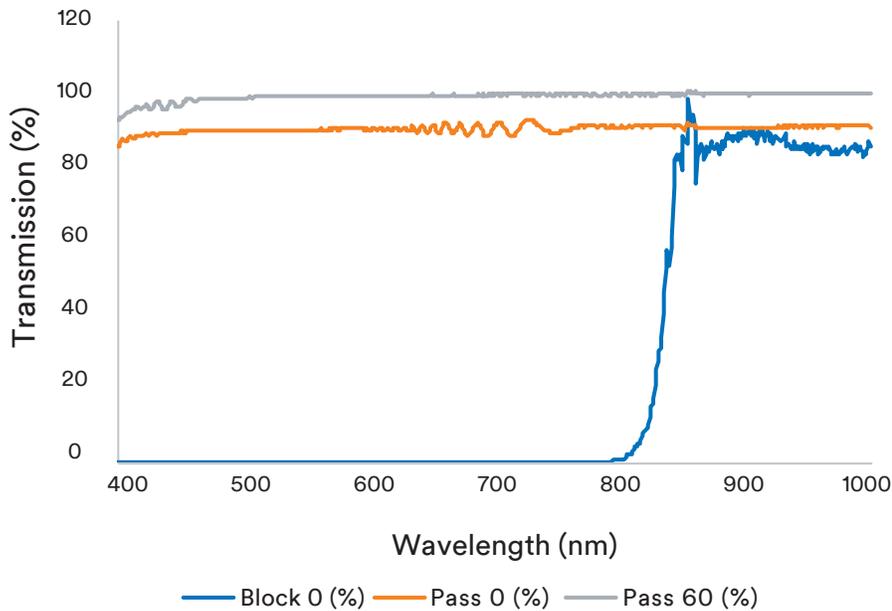


Property	Typical Value
Pass Transmission (430-650 nm) 0° incidence	89.5%
Pass Transmission (430-650 nm) 60° incidence	97.5%
Block Transmission (430-650 nm) 0° incidence	0.05%
Haze	1%
Thickness (film + adhesive), μm	64

### Environmental Testing

Item	Condition
Heat resistance	85°C x 1000 hours
Cold resistance	-40°C x 1000 hours
Humidity resistance	65°C, 95% RH x 1000 hours
Thermal shock	(-40°C x 1 hr / 85°C x 1 hr) x 100 cycles

### Transmission Spectra (film measured without optically clear adhesive)



### Refractive Index

Refractive Index Details					
WL (nm)	409	450	532	594	636
n	1.60	1.59	1.57	1.56	1.56

Note: This technical information and data should be considered representative or typical only and should not be used for specification purposes.

## Recommended Applications

Size information: available in A4 sheets.

Polarization axis: transmission/pass state along the long direction  $\pm 2$  degrees to the edge, change within the sheet is  $\leq 1^\circ$ .

Can be applied to either glass or plastic surfaces.

Film refractive index is 1.58 @ 532 nm.

## Storage and Handling

- Avoid applying pressure or resting objects on the product to prevent marking, denting, or deforming the surface.
- Wear gloves to prevent fingerprints or nail marks when handling.
- Store in sealed bag, under room temperature and between 40 – 60% relative humidity.
- We recommend die cutting. Scissors/shears can cause defects.

## Regulatory

For regulatory information about this product, please contact your 3M representative.

## Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes reliable, but the accuracy or completeness of such information is not guaranteed.

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