

3M™ Image Directing Film – Reflective Polarizer

(IDF-RP)

- 3M IDF-RP 14D
- 3M IDF-RP 20D
- 3M IDF-RP 32D



Product Description

3M™ Image Directing Film - Reflective Polarizer (IDF-RP), a micro-replicated image redirecting solution for automotive displays, combines a unique light-directing optical structure with advanced multilayer optical film technology to redirect peak luminance from the display normal based on vehicle geometry. 3M film IDF-RP helps optimize brightness, efficiency, and viewing angle within the eyebox, enabling greater design freedom for emerging cabin trends such as panoramic head-up displays (PHUD). It helps enhance driver experience by helping drivers view critical information more clearly from their preferred position and angle.

Product Construction

Product	3M film IDF-RP 14D	3M film IDF-RP 20D	3M film IDF-RP 32D
Effective Transmission	1.60	1.60	1.60
Thickness	280 +/- 40	280 +/- 40	280 +/- 40
Outer Skins	Polycarbonate	Polycarbonate	Polycarbonate

Automotive Environmental Testing:

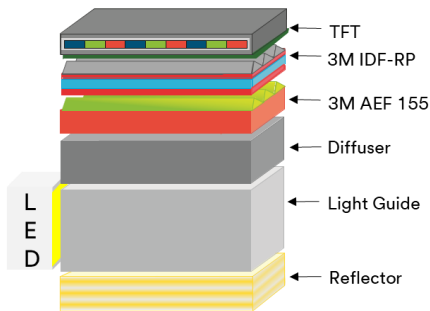
3M IDF-RP is tested under the following conditions with the film only.

Test	Condition
High Temperature	105°C for 1000 hours
Low Temperature	-40°C for 1000 hours
Temperature/Humidity	65°C and 95% relative humidity for 1000 hours
Thermal Shock	-40°C to 95°C for 1 hour dwell/300 cycles

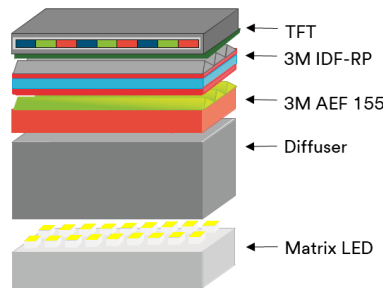
Automotive Display – Recommended Solutions

The product can be used with prisms UP or DOWN depending on architecture (buffer film may be needed)

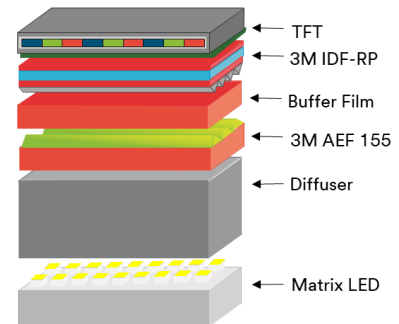
Side-Lit Light Guide Construction



Direct-Lit Back Light

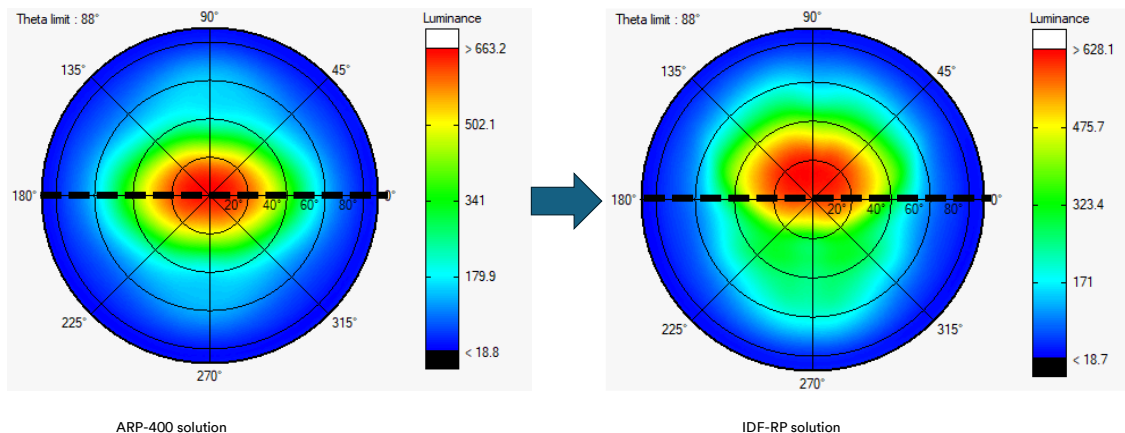


Prisms Down w/ Buffer Film



Film Stack	Maximum Luminance Angle Shift in 2D Matrix LED BLU	
	Prism Up	Prism down
Diffuser + 3M AEF-155 + 3M IDF-RF 14D	3°	7°
Diffuser + 3M AEF-155 + 3M IDF-RF 20D	4°	11°
Diffuser + 3M AEF-155 + 3M IDF-RF 32D	8°	18°

Example of light distribution using a 3M IDF-RP system compared to the standard back light system.



Applications

3M IDF-RP is designed for use in a variety of display technologies and environments, including but not limited to:

- Windshield Black Print Display
 - Redirects light for optimal display on dash output angle, providing a clean dashboard design.
- Room Mirror (e-mirror)
 - Displays images from the camera monitor system, optimizing light for the driver's viewing angle
- Tilted Display
 - Redirects light for the driver's viewing angle after center information display's tilted installation, providing high contrast and an optimal output light angle
- Other potential applications include rear seat entertainment in future shared vehicles, control panel displays, motorcycle displays, and other display technologies

3M™ Image Directing Film- Reflective Polarizer (IDF-RP) Series

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