The right look matters

Enabling customer success with 3M display solutions.

- Enhanced Visual Quality
- Energy Efficient
- Simplified Design
Create amazing displays.

3M Display Enhancement Films

- **Wide viewing angle**
  All seats in front of the TV are the best seats

- **More colorful**
  3M color enhancing film makes your product a stand-out

- **More energy efficient**
  3M films provide brightness with efficiency

- **Brighter**
  3M™ DBEF is proven to maximize light to the viewer
Excellent color performance.

3M Display Enhancement Solutions Introduction

Reflective Polarizer Films
- Increases backlight efficiency (~ 50%)
- Increase brightness or reduces power
- Increases wide angle luminance

Brightness Enhancement Films
- Increases forward brightness
- Enhances uniformity and backlight defect hiding

Multifunctional Enhancement Films
- Reflective polarizer + geometric enhancement
- Enables reduction in number of films
- Increases brightness compared to reflective polarizer alone

Uniformity + Color Enhancement Films
- Enables light source removal beyond traditional uniformity limits
- Efficiently enables color gamuts beyond 100% NTSC

Ultra high definition.
Direct-Lit Solutions*

**Entry Level**
- LCD Panel
- 3M DBEF DLF-250
- Diffuser Plate
- White Reflector

**Low Sparkle – High Brightness**
- LCD Panel
- 3M DBEF ULF-250
- Diffuser Plate
- White Reflector

**Efficiency Solution**
- LCD Panel
- 3M DBEF D4-400
- 3M BEF
- Diffuser Plate
- White Reflector

**Color Solution**
- LCD Panel
- 3M DBEF D4-400
- 3M BEF
- 3M QDEF
- Diffuser Plate
- White Reflector

**Brighter Color Solution**
- LCD Panel
- 3M DBEF QvX
- 3M BEF
- 3M QDEF
- Diffuser Plate
- White Reflector
Edge-Lit Solutions*

Entry Level

High Brightness

Low Sparkle – High Brightness

High Brightness – Large Sizes

Thin Solution

Color Solution

HCG Thin Solution

* Representations for illustration purposes only—not to scale
# Brightness Enhancement Film (BEF)

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Structure Description</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>3M BEF3-T-285</td>
<td>Sharp-tipped prism films on 7 and 10 mil PET substrates</td>
<td>Suitable for applications that can tolerate a reduction in viewing cone to achieve higher brightness.</td>
</tr>
<tr>
<td>3M BEF3-T-205</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# Reflective Polarizer Films

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Structure Description</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>3M D2-400, -280</td>
<td>Reflective polarizer between two stiffening and diffusing sheets of polycarbonate. Nominal thickness in microns is indicated by the name.</td>
<td>Products perform similar optical function and are suitable for edge and direct-lit applications of all sizes which require an efficiency improvement.</td>
</tr>
<tr>
<td>3M D3-260</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3M D4-400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3M D5-315</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3M LEF-D2-350</td>
<td>Highest efficiency reflective polarizer between two sheets of reduced-haze polycarbonate.</td>
<td>Highest efficiency backlight reflective polarizer suitable for large sized applications with luminance demands.</td>
</tr>
<tr>
<td>3M DBEF-Qvx, Qv2</td>
<td>Reflective polarizer delivered on the rear display polarizer.</td>
<td>High brightness solution integrated with the LCD for increased robustness.</td>
</tr>
<tr>
<td>3M DBEF-LS</td>
<td>Reflective polarizer between two stiffening and customized diffusing sheets of polycarbonate.</td>
<td>Reduced sparkle backlight reflective polarizer suitable for high resolution applications with luminance demands.</td>
</tr>
</tbody>
</table>

# Multifunctional Films

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Structure Description</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>3M DLF-250</td>
<td>Reflective polarizer with integrated gain diffuser and anti-stat matte rear-side coating.</td>
<td>Displays that require high efficiency and uniformity. Can be used with or without an additional prism film. Edge and direct lit application.</td>
</tr>
<tr>
<td>3M DBEF ULF-250</td>
<td>Reflective polarizer with integrated gain diffuser and anti-stat matte rear-side coating.</td>
<td>Displays that require high efficiency and uniformity. Can be used with or without an additional prism film. Edge and direct lit application. Higher brightness.</td>
</tr>
<tr>
<td>3M DBEF ULF-400</td>
<td>Reflective polarizer between two stiffening and customized diffusing sheets of polycarbonate.</td>
<td>Reduced sparkle backlight reflective polarizer suitable for high resolution applications with luminance demands.</td>
</tr>
</tbody>
</table>

# Uniformity and Color Enhancement Films

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Structure Description</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>3M Uniformity Tape</td>
<td>Microreplicated prism film with adhesive applied to the input edge of the lightguide.</td>
<td>Edge-lit systems where LED removal would result in a spatial nonuniformity. Enables minimum number of light sources in edge lit applications.</td>
</tr>
<tr>
<td>3M Quantum Dot Enhancement Film</td>
<td>Light conversion film that generates white light output from blue light input</td>
<td>Intended for applications of all sizes and architectures that demand the highest possible color rendering</td>
</tr>
</tbody>
</table>