

3M™ Dual Brightness Enhancement Film II (DBEF-II)

3M™ Dual Brightness Enhancement Film – QV2 with OCA (DBEF QV2 with OCA)

3M™ Dual Brightness Enhancement Film – D280 (DBEF-D2 280)

3M™ Dual Brightness Enhancement Film – D400 (DBEF-D2 400)

Description

The 3M™ Dual Brightness Enhancement Film (DBEF) family of 3M Brightness Enhancement Films are all reflective polarizers, in which light of one polarization is reflected and light of the other polarization is transmitted. 3M DBE films use 3M's multi-layer technology for this polarized light management in which illumination from the backlight is recycled for greater efficiency and performance.

All the films increase display brightness and can be used in conjunction with other 3M products such as 3M Brightness Enhancement Film (BEF) and 3M Enhanced Specular Reflector (ESR).

3M™ DBEF II Film (150 microns) this version of 3M DBEF film has a matte surface on both sides. The matte surface keeps the film from wetting out or optically coupling to the rear polarizer of liquid crystal panels.

3M™ DBEF-QV2 with OCA Film (117.4 microns) this version of 3M DBEF has a 1 mil thick 3M Optically Clear Adhesive on one side of the film. It would then be laminated to the rear polarizer of a liquid crystal panel.

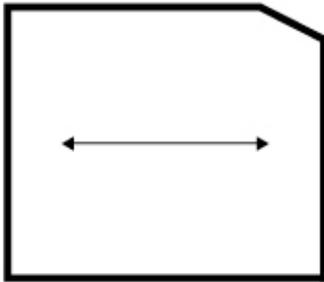
3M™ DBEF-D2 280 Film (280 microns) this version of 3M DBEF film has outer skins of diffuse polycarbonate. These skins improve the film's thermal and mechanical properties.

3M™ DBEF-D2 400 Film (395 microns) this version of 3M DBEF film has outer skins of diffuse polycarbonate. These skins improve the film's thermal and mechanical properties.

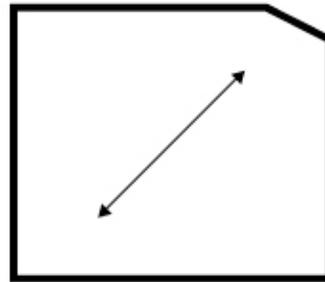
Formats

Reference the current price sheet or call customer service (1-800-553-9215) for information on part sizes.

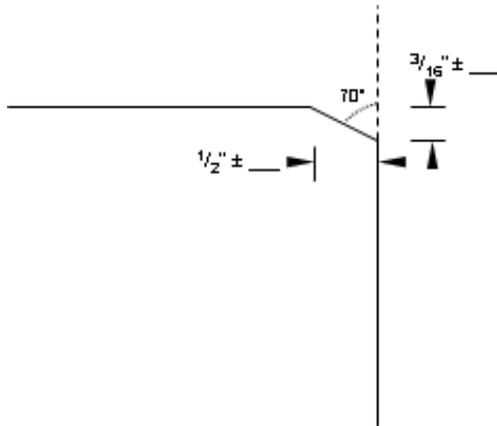
To help you orient the film, we have added a 70 degree chamfer to one corner. When positioned, as shown below, the front of the film will be facing you. This is the side that should face out of the display. For 3M™ Dual Brightness Enhancement Film (DBEF) QV2 with 3M Optically Clear Adhesive (OCA) this is the adhesive side.



0 degree transmission axis

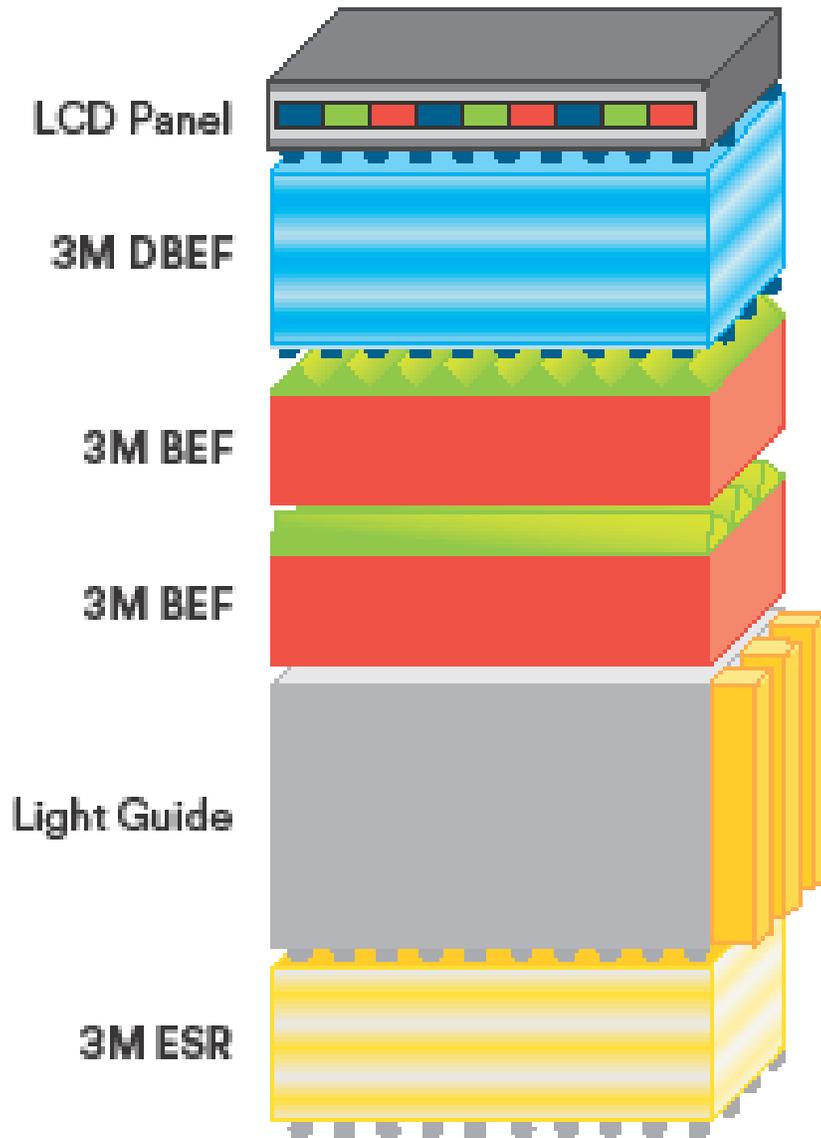


45 degree transmission axis



Typical Application

The film must be mounted with its transmission axis parallel to the transmission axis of the rear polarizer.



General Converting, Assembly and Handling Recommendations

During converting operations, both the front and rear protective liners should remain on the film.

Die cutting is the recommended form of converting and will result in the cleanest edges, although shear cutting and laser cutting may also be acceptable. Whatever method utilized, you should ensure that the part has clean, crisp edges without any raggedness or other damage.

The part should be precisely cut to provide a close fit in the cavity, yet not so close to experience binding or warping problems from thermal expansion.

The part should be left free-floating in the cavity to avoid warping or buckling. If necessary, the part may be tacked down along one edge or two adjacent corners with a double-coated tape, such as Scotch® Double-Coated Tape 415. Designs incorporating mounting tabs, or holes mated to mounting pins, are also popular.

Remove both protective liners, if the film has them, by tacking near an edge or corner with a piece of aggressive tape and pulling gently.

If two pieces of 3M™ BEF Prismatic Film are to be incorporated, they should be converted with the grooves of the prism structure of the first sheet at a 90-degree angle to the groove direction of the second sheet.

Be aware that handling any polymer film can generate electrostatic charges, which can attract dust and debris.

Remove any loose debris from the film by using compressed air.

Avoid fingerprints and debris by wearing clean latex gloves and holding the product at the edges.

Keep the area very clean to lessen the likelihood of debris contamination. Maintaining class 1000 clean-room conditions is recommended.

Using anti-static measures, such as ionized air blowers whenever possible, is recommended.

As always, protect the film, especially the edges, from any undue shock or stress.

Note: For 3M Dual Brightness Enhancement Film (DBEF) QV2 with 3M Optically Clear Adhesive (OCA), standard laminating procedures that would be used with any pressure-sensitive adhesive film should be employed.

Storage

Material should be stored in its original packaging, laying in a horizontal orientation, away from direct sunlight.

Heavy objects should not be piled on top of it to avoid damaging the product. Ambient temperature and humidity should be controlled to 10–30 degrees C at 35–65% R.H.

Important Notice to Purchaser

The following is made in lieu of all warranties, express or implied, including any implied warranties of merchantability or fitness for a particular purpose.

3M warrants that, at the time of shipment, product will meet 3M's published specification or that specification agreed in writing between 3M and purchaser, for twelve months after the date of receipt at purchaser's location provided that the product is stored flat in accordance with the requirements in the section titled Storage above and in the original package. Should product not meet specifications at time of shipment and for twelve months thereafter, 3M will replace or refund the purchase price of such quantity of the product found not to meet specifications. Given the variety of factors that can affect the use and performance of a 3M Product (the "Product"), some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M Product to determine whether it is suitable for user's particular purpose and suitable for user's method of application. 3M's statements, engineering/technical information, and recommendations are provided for user's convenience, but their accuracy or completeness is not warranted.

3M shall not be liable under any legal theory, including in contract or in tort, for any injury, loss, or damage, whether direct, indirect, incidental, special or consequential, arising out of the use of or the inability to use the product. The warranties and remedies set forth herein are purchaser's sole and exclusive warranties and remedies.

