



Diffuser Films 3635-30, 3635-70 Envision™ Diffuser Films 3735-50, 3735-60

1. Product Description

A. Product Features

- 2-mil, white vinyl film
- Pressure sensitive adhesive adheres to rigid substrates
- Create custom lighting effects for backlit applications
- Control brightness and light distribution within light boxes without hotspots
- Available in three transmission levels: 30%, 50% and 60%
- Use with fluorescent bulbs or LEDs. Typically for best results, 3M recommends using:
 - films 3635-30 and 3635-70 for fluorescent lighting applications.
 - films 3735-50 and 3735-60 for LED applications.

B. Recommended Types of Graphics and End Uses

When used as described in this Bulletin, these types of graphics and end uses are warranted by the 3M™ MCS™ Warranty. Please read the entire Bulletin for additional details.

- Internally-illuminated signs
- Thermoformable under controlled conditions
- First surface application if completely covered by a UV-resistant 3M film
- Second surface applications without adding another film

C. Performance Overview

3M tests the performance of both individual products and finished graphic constructions. This table shows the best performance expected from these products without a Warranty Period and with a Warranty Period.

For detailed graphic construction and application options along with specific Warranty Periods, please see the Warranty Information, Section 5.

Expected Performance Life. This is the estimated period of time the product should perform satisfactorily.	
Unprinted film with no graphic protection, applied to a flat vertical outdoor surface.	7 years Unwarranted Period
3M™ MCS™ Warranty. This is the maximum period of time 3M will warrant the finished graphic performance.	
Unprinted film completely covered by a UV-resistant 3M film, applied to a flat, first surface application.	5 years Warranty Period

D. Limitations of End Uses

These 3M films are not designed or recommended for the following uses. Please contact us to discuss other options.

(1) Unsuitable End Uses for This Film

- Printing on the diffuser film
- First surface applications that are not covered by a UV-resistant 3M film

2. Compatible Products

This Bulletin provides details about the base film and its compatible products and warranted graphic constructions. Information about compatible products can be found in the Product and Instruction Bulletins listed in **3M Related Literature** at the end of this Bulletin.

- 3M™ Translucent Graphic Film Series 3630
- 3M™ Translucent Graphic Film IJ3630-20
- 3M™ Envision™ Translucent Film Series 3730
- 3M™ Envision™ Translucent Film IJ3730-50
- 3M™ Envision™ Translucent Film IJ3730-60
- 3M™ Premasking Tape SCPM-3

3. Physical and Application Characteristics

These are typical values for unprocessed product; processing may change the values. Contact your 3M representative for a custom specification.

A. Physical Characteristics

Characteristic	Value	
Material	Vinyl	
Film color	White color; uniform in both reflective and transmitted light	
Thickness	Without adhesive: 2 mil (0.05 mm) With adhesive: 3-4 mils (0.08 - 0.10 mm)	
Liner	78 pound, white kraft paper	
Adhesive type	Pressure sensitive	
Adhesive color	Clear	
Tensile strength	5 pounds/inch at 73°F (0.9 kg/cm at 23°C)	
Chemical resistance	Resists mild alkalis, mild acids, and salt; excellent resistance to water (<i>but not immersion</i>)	
Light transmission*	3635-30: 30% 3635-70: 60%	3735-50: 50% 3735-60: 60%

* Contact your 3M representative for alternatives if your application require a different light transmission value than listed above.

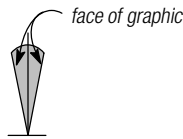
B. Application Characteristics

Characteristic	Value	
Application substrates	Flat acrylic, polycarbonate, PETG (glycol-modified polyethylene terephthalate)	
Application temperature	60°F (16°C) <i>minimum</i>	
Adhesion strength	Acrylic panels: 3 pounds/inch (0.5 kg/cm)	
Finished graphic exposure temperature	-20° to +175°F (-29° to +80°C)	
Applied shrinkage	0.015 inch (0.4 mm)	
Recommended light source <i>for best results</i>	3635-30 and 3635-70: Fluorescent bulbs	3735-50 and 3735-60: LEDs

4. Definitions

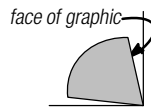
A. Exposure

U.S. Vertical Exposure



The face of the graphic is +/- 10° from vertical

U.S. Non-vertical Exposure



The face of the graphic is greater than 10° from vertical and greater than 5° from horizontal. This includes non-vertical surfaces of vehicle wraps or fleet graphics.

U.S. Desert Southwest Exposure

Any outdoor graphic exposed to solar energy more than half of the daylight hours in Arizona, New Mexico and the desert areas of California, Nevada, Utah and Texas is subject to reduced warranties. Click here for a [detailed map](#).

B. Graphic Construction

The products used to make a graphic, which may include film and/or flexible substrate, graphic protection, ink, printer and application tape.

C. Graphic Protection

Overlaminates films or clear coats used to protect the graphic and/or change gloss.

D. Graphic Types

Indoor Signs Stationary graphics applied indoors and *not* exposed to the elements

Outdoor Signs Stationary graphics applied outdoors and exposed to the elements

First Surface Film applied to a substrate so the viewer sees the film before the substrate

Second Surface Film applied to a substrate so the viewer sees through the substrate to the film

5. Warranty Information

A. Warranty Coverage Overview

The warranty coverage for each graphic is based on the user(s) both reading and following all applicable and current 3M Product and Instruction Bulletins. 3M will honor the Warranty Period stated in the base film's Product Bulletin that is current when the film was purchased. The Warranty Period may be reduced and stipulations may apply for certain constructions and applications, as covered in this Bulletin.

The following is made in lieu of all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose or implied warranty arising out of a course of dealing, custom or usage of trade.

B. 3M Basic Product Warranty

This product is warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in this Product Bulletin and as further set forth in the [3M Commercial Graphics Warranty Brochure](#).

C. Limited Remedy

3M will replace or refund the price of any 3M materials that do not meet this warranty within the specified time periods. These remedies are exclusive.

D. Limitation of Liability

Except where prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT (EXCEPT FOR THE LIMITED REMEDY PROVIDED ABOVE), INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LABOR, NON-3M MATERIAL CHARGES, LOSS OF PROFITS, REVENUE, BUSINESS, OPPORTUNITY, OR GOODWILL) RESULTING FROM OR IN ANY WAY RELATED TO SELLER'S PRODUCTS, SERVICES or THIS BULLETIN. This limitation of liability applies regardless of the legal or equitable theory under which such losses or damages are sought including breach of contract, breach of warranty, negligence, strict liability, or any other legal or equitable theory.

E. Additional Limitations

See the [3M Commercial Graphics Warranty Brochure](#) at 3Mgraphics.com, which gives the terms, additional limitations of the warranty, if any, and limitations of liability.

F. 3M™ MCS™ Warranty

Subject to Stipulations set forth in Section G., below

Finished graphics constructed with the materials specified and the exposure specified in the Warranty Period Table, Section F.(1), are eligible for the 3M™ MCS™ Warranty. For warranties for other exposures, see Section G.(1).

(1) Warranty Period for Finished Graphics in Standard U.S. Vertical and Non-Vertical Exposures

				Warranty Period in Years	
Application Substrate	Film	Sign Construction	Application Surface	U.S. Vertical Sign	U.S. Non-Vertical Sign
Acrylic Polycarbonate PETG	3635-30	Flat	First*	4	0
			Second	5	5
		Thermoform	First*	0	0
			Second	4	0
	3635-70	Flat	First*	3	0
			Second	5	5
		Thermoform	First*	0	0
			Second	3	0
	3735-50 3735-60	Flat	First*	5	5
			Second	6	6
		Thermoform	First*	5	5
			Second	6	6

* For warranted first surface applications: the diffuser film must be completely covered by one of the following 3M UV-resistant films: film series 3630 or 3730, or films IJ3630-20, IJ3730-50 or IJ3730-60.

G. General Warranty Stipulations for 3M™ MCS™ Warranty

These stipulations apply to graphics covered by the 3M™ MCS™ Warranty. Specific provisions of these stipulations are found in the [3M Commercial Graphics Warranty Brochure](#) at 3Mgraphics.com.

(1) Reduced Warranty Period for Other Graphic Exposures

For each exposure shown below, multiply the Warranty Period (in years) in the applicable warranty, Section F.(1) for your graphic construction by the percentage shown for the intended graphic exposure. This is the reduced warranty.

If the Graphic Exposure is:	Use this Percentage of U.S. Vertical Exposure Warranty Period	Calculation Examples
U.S. Non-vertical	50% (0.5)	0.5 x 5 years = 2.5 years 0.5 x 9 years = 4.5 years
Desert Southwest Vertical	70% (0.7)	0.7 x 5 years = 3.5years 0.7 x 9 years = 6.3 years
Desert Southwest Non-vertical	35% (0.35)	0.35 x 5 years = 1.65 years 0.35 x 9 years = 3.15 years
U.S. Horizontal	0%	0

(2) Abrasion and Loss of Gloss

Abrasion damage and loss of gloss are not covered by any 3M warranty. This is considered normal wear and tear.

(3) Application to Glass

3M accepts no liability for glass breakage when using this film for window graphics. See [Instruction Bulletin 5.1](#) for details.

(4) Application Outside the U.S.

Contact the 3M organization for that country.

(5) Graphics Made with Components Not Sold or Recommended by 3M

The 3M™ MCS™ Warranty does not, under any circumstances, cover graphics made with inks, film, graphic protection and/or application tapes that are not sold or recommended by 3M.

The user is solely responsible for the graphic appearance, performance and durability of graphic constructions that include any non recommended or qualified products.

6. Factors that Affect Graphic Performance Life

The actual performance life of a graphic is affected by all of the following.

- Combination of inks, printers and drying or curing, as appropriate
- Selection and preparation of the substrate
- Method of decoration
- Application methods
- Exposure conditions
- Cleaning methods

7. Application and Installation



Before using any equipment, always follow the manufacturers' instructions for safe operation.

A. Application Tape

See [Instruction Bulletin 4.3](#) for complete details on how to use application tapes.

(1) When to use a Tape

- Use as an application aid to increase stiffness, and prevent stretching and damage during application.
- Use when little or no liner is exposed.

(2) Compatible Tape

- Use SCPM-3 for the constructions shown in the Warranty Period table of this Bulletin.

B. Installation

Apply this film by one of the following methods.

- Using a cold roll laminator. See [Instruction Bulletin 4.2](#).
- By hand using the wet application method. See [Instruction Bulletin 5.7](#).

Refer to the 3M Related Literature section, located at the end of this bulletin, for a list of the Instruction Bulletins that may be needed to apply or install this film.

8. Shelf Life, Storage and Shipping

A. Shelf Life

Total shelf life: 3 years from the date of manufacture on the original box. If you do process the film, do so within 2 years and apply within 1 year. If you do not process the film, apply it within 3 years.

B. Storage Conditions

- 40° to 100°F (4° to 38°C)
- Out of sunlight
- Clean dry area
- Original container
- Bring the film to print room temperature before using

C. Shipping Finished Graphics

Flat, or rolled printed side out on 6 inch (15 cm) or larger core. This helps prevent the liner and, if used, the application tape from popping off.

9. 3M Related Literature

Before starting any job, be sure you have the most current Product and Instruction Bulletins.

The information in 3M Product and Instruction Bulletins is subject to change. [Current Bulletins](#) are available at 3Mgraphics.com. The following applicable Bulletins provide information and processes you need to properly make the graphics described in this Bulletin. Additional Bulletins may be needed as indicated in the 3M Related Literature section of other 3M components you use.

Bulletin types: PB = Product Bulletin; PB-IB = Product & Instruction Bulletin; IB = Instruction Bulletin

Subject	Type	Bulletin No.
3M™ Translucent Graphic Film IJ3630-20 3M™ Envision™ Translucent Films IJ3730-50, IJ3730-60	PB	IJ3630/3730
3M™ Translucent Film Series 3630 3M™ Envision™ Translucent Film Series 3730	PB	3630/3730
3M™ Blockout Films 3635-20B, 3635-22B 3M™ Day/Night Films 3635-91, 3635-1070	PB	3635
3M Graphic Protection Products <i>overview of all graphic protection products and specific information on most overlaminates</i>	PB	GP-1
Hot and cold roll lamination	IB	4.22
Design of graphics	IB	2.1
Design of cabinets for light boxes and channel letters	IB	2.4
Using 3M application tapes; premasking and prespacing for films	IB	4.3
Scoring and cutting	IB	4.1
Making backlit signs with 3M digitally imaged graphics	IB	4.26
Application, substrate selection, preparation and substrate-specific application techniques	IB	5.1
Application, general procedures for indoor and outdoor dry applications	IB	5.5
Application, wet method for translucent screen printed, thermal mass transfer and cut graphics	IB	5.7
Thermoforming	IB	5.16
Storage, handling, maintenance, removal	IB	6.5
3M Commercial Graphics Warranty Brochure		go to www.3Mgraphics.com

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