



3M™ Diffuser Films 3635-30, 3635-70 3M™ Envision™ Diffuser Films 3735-50, 3735-60

Use films 3635-30 and 3635-70 for fluorescent lighting applications

Use films 3735-50 and 3735-60 for LED applications

For the most current 3M Technical Information available to successfully use this product, please view this Bulletin electronically and click on the blue underlined links to view the relevant documents.

1. Product Description

A. Product Features

- 2-mil, white vinyl film
- Available in four transmission levels
- Pressure sensitive adhesive adheres to rigid substrates
- Create custom lighting effects for backlit applications
- Control brightness and light distribution within light boxes without hotspots
- Eliminate need to back-spray thermoformed applications
- Permanent film

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 applications using films 3635-30, 3735-50 and 3735-60 without being covered by another film.
- Second surface applications without applying 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 on page 3.

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 applied to a flat, first surface application and a substrate recommended by 3M.

9 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

- Do not print on the diffuser film.
- Do not use film 3635-70 for first surface applications that are not covered by a UV-resistant 3M film.

2. Compatible Products

These 3M diffuser films may be eligible for the 3M™ MCS™ Warranty when used with the 3M Products listed below. Click on the blue underlined text to view the Product Bulletin for that product.

A. Films

- [3M™ Translucent Graphic Film Series 3630](#)
- [3M™ Envision™ Translucent Film Series 3730](#)
- [3M™ Scotchcal™ Translucent Graphic Film IJ3630](#)
- [3M™ Envision™ Translucent Graphic Film IJ3730](#)

B. Graphic Protection

- [3M™ Scotchcal™ Gloss Overlaminate 3640GPS](#)
- [3M™ Scotchcal™ Matte Overlaminate 3642GPS](#)
- [3M™ Scotchcal™ Gloss Overlaminate 3658G](#)
- [3M™ Scotchcal™ Matte Overlaminate 3660M](#)

C. Other Products

- [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>)	
Flammability	Click on the appropriate link to see the ASTM E84 report— 3635-30 ; 3635-70 ; 3735-50 & 3735-60 -- or go to the On-line Product Catalog at 3Mgraphics.com . For all other test reports, call 1-800-328-3908.	
Light transmission*, <i>nominal</i>	3635-30: 42% +/- 2% 3635-70: 65%	3735-50: 52% +/- 2% 3735-60: 63% +/- 2%

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

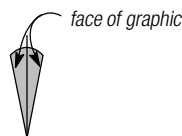
B. Application Characteristics

Characteristic	Value	
Finished graphic application recommendations	Surface type: Flat Substrate type: Acrylic, polycarbonate, PETG (glycol-modified polyethylene terephthalate) Application temperature: 60°F (16°C) <i>minimum</i> Application method: Wet application method or cold roll laminator	
Adhesion strength	Acrylic panels: 3 pounds/inch (0.5 kg/cm)	
Applied shrinkage	0.015 inch (0.4 mm)	
Finished graphic exposure temperature	-20° to +175°F (-29° to +80°C)	
Recommended light source <i>for best results</i>	Films 3635-30 and 3635-70: Fluorescent bulbs	Films 3735-50 and 3735-60: LEDs
Removability	Permanent (not intended to be removed)	

4. Definitions

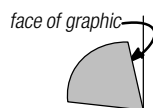
A. Exposure

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

Overlamine 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 Graphics Warranties 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 Graphics Warranties 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, below, are eligible for the 3M™ MCS™ Warranty. For warranties for other exposures, see Section G(1) on page 5.

(1) Warranty Period For Finished Graphics

Non-thermoformed Outdoor Signs				
Application Substrate	Application Surface	Graphic Protection	U.S. Vertical Exposure (<i>in years</i>)	
			Diffuser 3635-30 3735-50 3735-60	Diffuser 3635-70*
Acrylic Non-solar grade Polycarbonate PETG Glass	First	None	6	0*
	First	3640GPS 3642GPS 3658G 3660M	9	3*
Acrylic Non-solar grade polycarbonate PETG Glass	Second	None	6	5*
Solar grade polycarbonate UV-grade PETG	Second	None	9	6*
Thermoformed Outdoor Signs				
Acrylic Non-solar grade Polycarbonate PETG	First	None	4	0
	First	3640GPS 3642GPS 3658G 3660M	6	0
Acrylic Non-solar grade polycarbonate PETG	Second	None	4	3*
Solar grade polycarbonate UV-grade PETG	Second	None	6	3

* For warranted first surface applications, diffuser film 3635-70 must be completely covered by one of the following 3M UV-resistant films: film series 3630 or 3730, films IJ3630-20, IJ3730-50, IJ3730-60, or overlaminates 3640GPS, 3642GPS, 3658G or 3660M.

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 Graphics Warranties 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) on page 4 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	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 = 3.5 years 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% (0.0)	0 years (<i>no Warranty Period</i>)

(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 [3M 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:

- the combination of inks, printers and drying or curing, as appropriate.
- selection and preparation of the substrate.
- the method of decoration.
- application methods.
- exposure conditions.
- cleaning methods.

7. Application and Installation

In addition to other Bulletins specified in this document, the following Bulletins provide details that you may need to successfully apply a graphic.

- Design of graphics. [3M Instruction Bulletin 2.1](#).
- Design of cabinets for light boxes and channel letters. [3M Instruction Bulletin 2.4](#).
- Scoring and cutting. [3M Instruction Bulletin 4.1](#).
- Hot or cold roll lamination. [3M Instruction Bulletin 4.22](#).
- Making backlit signs with 3M digitally imaged graphics. [3M Instruction Bulletin 4.26](#).
- Thermoforming. [3M Instruction Bulletin 5.16](#).
- Application, general procedures for indoor and outdoor dry applications. [3M Instruction Bulletin 5.5](#).
- Storage, handling, maintenance, removal. [3M Instruction Bulletin 6.5](#).



CAUTION

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

A. Application Tape

(1) When to use a Tape

(2) Compatible Tape

B. Installation

See [3M Instruction Bulletin 4.3](#) for complete details on how to use application tapes.

- Use as an application aid to increase stiffness, and prevent stretching and damage during application.
- Use when little or no liner is exposed.
- Use SCPM-3 for the constructions shown in the Warranty Period table of this Bulletin.

Apply this film by one of the following methods.

- Using a cold roll laminator. See [3M Instruction Bulletin 4.2](#).
- By hand using the wet application method. See [3M Instruction Bulletin 5.7](#).

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

9. Bulletin Change Summary

Modified and new content is marked with a black bar in the margin. Diffuser films 3635-30, 3735-50, 3735-60 now can be used for first surface applications without being covered by a UV-resistant 3M film. Updated Light Transmission values. Links to flammability reports are included in Physical Characteristics. The Warranty Periods of film 3635-30 are now consistent with 3735-50 and 3735-60; most non-vertical Warranty Periods equal one-half of their corresponding vertical exposures. The 3M Related Literature section has been replaced by direct links to the most current versions of Bulletins or warranty information you may need to successfully use this product. All links are blue underlined text.



Commercial Solutions

3M Center, Building 220-12E-04
St. Paul, MN 55144 USA
General & Technical
1-800-328-3908
Fax 1-651-736-4233

www.3Mgraphics.com

3M Canada

PO Box 5757
London, Ontario
Canada N6A 4T1
General
1-800-265-1840
Fax 519-452-6245

3M México S.A. de C.V.

Av. Santa Fe No. 55
Col. Santa Fe, Del. Alvaro Obregón
México D.F. 01210
General 5255-5270-0400
Fax 5255-5270-2277

3M Puerto Rico, Inc.

350 Chardon Avenue
Suite 1100
San Juan, PR 00918
General 787-620-3000
Fax 787-620-3018

3M, Envision, Scotchcal and MCS are trademarks of 3M Company. All other trademarks are the property of their respective owners.

©3M 2014. All rights reserved.