



GRAPHICS MEDIA

PRODUCT DATA SHEET

Product Code: 3635-100

Issued October 2017

3M™ Light Enhancement Film 3635-100

Product Bulletin 3635-100

Release D, Effective June 2016 (Replaces C, Jun '00)

Product Description

- Matte, white, diffuse reflective surface
- With or without protective premask for clean fabrication
- 5.5-mil construction
- Permanent, pressure-sensitive adhesive

Product Features

- 94% plus reflectivity
- Low light absorption increases efficiency
- Reduces hot spots on backlit sign faces

Recommended Types of Graphics and End Uses

Film 3635-100 is intended for covering all interior opaque surfaces within single-sided, internally illuminated cabinets in the following applications.

- For improving the reflectivity of internal surfaces of illuminated sign boxes or lighting fixtures
- Application to clean flat surfaces
- For use in new and retrofit construction
- Signs and light boxes
- Channel letters
- POP or trade-show displays
- Posters and informational graphics light boxes
- Transit shelter advertising boxes
- Vending or dispensing machines
- ATM's
- Casino gaming machines

Limitations of End Uses

Specifically, we do not warrant this film for the following:

- Use as a graphics marking film for digital, screen printing or other decoration method
- Application to substrates with low surface energy coating or paints with components such as silicone
- Application to unclean surfaces containing rust, debris, or physical deterioration

Graphic Protection

Generally, when applied to internal surfaces, no graphic protection film is required.

Quick Links

- [3M Graphics Warranties](#)
- [Technical Information Selector](#)
- [Safety Data Sheets \(SDS\)](#)
- [Flammability](#)
- [Videos](#)



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Characteristics

These are typical values for unprocessed product. Processing may change the values.

Physical Characteristics

Characteristic	Value
Film	5.5 mil, matte white
Thickness	Film and adhesive: 0.0055 to 0.0065 inch (0.140 to 0.165 mm) Film, adhesive and protective top covering: 0.0085 to 0.0095 inch (0.216 to 0.241 mm)
Adhesive	Clear, pressure-sensitive
Liner	78 pound white kraft paper
Protective Premask	Blue polyethylene with or without
Application surface	Light box interiors
Application substrates	<ul style="list-style-type: none">• Bare aluminum• Galvanized sheet metal• Painted metal• Rigid plastics*
Minimum application temperature	40 °F (4.5 °C) air, film, and substrate
Chemical Resistance	<ul style="list-style-type: none">• Resists mild alkalis, mild acids, and salt• Excellent resistance to water (<i>does not include immersion</i>)
Removability	Permanent

*Film 3635-100 typically adheres to solar-grade polycarbonate substrate. However, some lots of this substrate may inhibit the adhesion of this film. Contact 3M Commercial Solutions Technical Service if you have difficulty with this combination. See [3M Instruction Bulletin 5.7](#) for additional information.

Polycarbonate substrates may require drying by baking before use. Refer to the manufacturers' instructions.

Application Characteristics

Characteristic	Value
Tensile Strength (minimum)	10 lbs/inch at 73 °F (23 °C)
Applied Shrinkage	0.010 inch
Service Temperature Range	-20 to +175 °F (-29 to +79 °C) (not for extended periods of time at the extremes)
Light Reflectance	94.5% typical

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How 3M™ Light Enhancement Film Increase Sign Luminance

A light box or channel letter contains lighting elements that illuminate the front sign face and transmit some light to the viewer. However, much of the illumination is reflected or absorbed by other materials in the light box.

The white sign face materials typically used in cabinets transmit only about 25% to 48% (B) of the light that strikes them (A). The white face material can absorb as much as 15% of the light and reflects the remaining light (C) back into the cabinet. Light from the rear of the light source and light that is reflected back into the cabinet strikes the cabinet sides and back (D). Some of this light is reflected and some of it is absorbed.

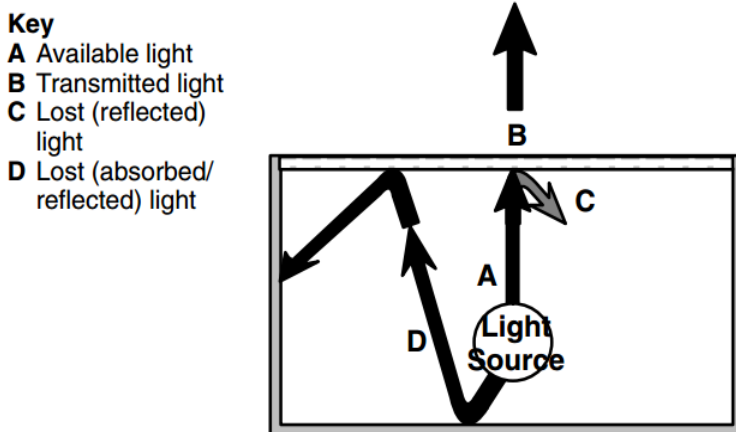


Figure 1. Example of Light Lost in a Cabinet

When efficient reflective material is put on the sides and back of the light box, more light is reflected to the front face for increased illumination. Film 3635-100, which has very low light absorption, is more efficient than most reflective materials including ordinary mirrors. In addition, the diffuse reflective properties of the film help spread light instead of focusing it like a mirror. This feature eliminates hot spots.

Advantages

- Matte white diffuse reflective surface
- Reduces hot spots
- 94% plus reflectivity increases light output for greater sign luminance
- Low light absorption increases efficiency
- Protective top covering for clean fabrication
- 5.5 mil construction for easy handling
- Permanent, pressure-sensitive adhesive

Factors that Affect Graphic Performance Life

The actual performance life of a graphic is affected by:

- selection and preparation of the substrate.
- application methods.
- cleaning or maintenance methods.
- exposure conditions.
- cabinet design and maintenance.
- lamp selection and intensity.

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Warranty Information

Warranty Coverage Overview

The warranty coverage for eligible graphics is based on the user both reading and following all applicable and current 3M Graphics Product and Instruction Bulletins. The warranty period for eligible graphics is as stated in the 3M Graphics Warranties Matrices at the time that the film was purchased. Information found at 3MGraphics.com/warranties includes:

- [3M Graphics Warranties Bulletin](#)
 - This bulletin contains information on limitations and exceptions, and warranty period reductions for 3M Graphics Warranties. The warranty period may be reduced and stipulations may apply for certain constructions, applications, and graphic exposures as covered in this Bulletin.
- [3M Graphics Warranties Selector](#)
 - Use this selector to search for your vertical warranty period by product type, ink type, film name, and/or ink/printer platform.
- [U.S. Desert Southwest Region Map](#)
 - Use this map of hot, arid desert areas to determine if you are subject to reduced warranted durabilities.

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

3M Basic Product Warranty

3M Graphics Products are warranted to be free of defects in materials and manufacture at the time of shipment and to meet the specifications stated in its applicable 3M Graphics Product Bulletin and as further set forth in the [3M Graphics Warranties Bulletin](#).

Limited Remedy

The limited remedy applicable to each warranty is addressed in the 3M Graphics Warranties Bulletin found at 3MGraphics.com/warranties.

Limitation of Liability

Except to the extent prohibited by law, 3M SHALL NOT UNDER ANY CIRCUMSTANCES BE LIABLE TO PURCHASER OR USER FOR ANY DIRECT (EXCEPT FOR THE LIMITED REMEDY PROVIDED HEREIN), 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 3M'S GRAPHICS 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.

Warranty Period

Film 3635-100 is warranted for 5 years for when applied to the interior of newly constructed light cabinets with these conditions:

- The cabinet interior must have a functioning drain system for water elimination.
- The cabinet must be designed to all local codes for electrical, structural and other hazard prevention.

Warranty Exceptions

- Film exposed to abrasive washing conditions, harsh cleaners, or chemicals.
- Film exposed to too high a temperature in application.
- Film exposed to light sources that are placed too close.
- Use as a graphic marking film for electronic cutting, screen printing or other decorated method.
- Application substrates with low surface energy coatings or paints with components such as silicones.

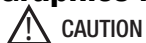
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Additional Limitations

See the 3M Graphics Warranties Bulletin at 3MGraphics.com/warranties, for terms, additional limitations of your warranty, if any, information on reduced warranties for different exposures, and limitations of liability.

Graphics Manufacturing



Before using any equipment, always read the manufacturer's instructions for safe operation.

Fabrication

All interior surfaces, except the front sign face, should be covered with Film 3635-100. Refer to [3M Instruction Bulletin 2.4](#) for details.

Cutting

See [3M Instruction Bulletin 4.1](#) for Sheeting, Scoring and Film Cutting details.

Finishing

- Film 3635-100 tents around rivets, corrugations and sharp angles. This does not inhibit the performance of light reflection efficiency.
- This film performs effectively even if the application is wrinkled, creased or bubbled.
- This film may be patched with another piece of the film if a section of it is cut, gouged, or otherwise damaged.
Refer to [3M Instruction Bulletin 2.4](#) for more details.

Application Tapes

There are two types of application tapes. See [3M Instruction Bulletin AT-1](#) to determine what application tape is recommended for your film or finished graphic.

Premasking Tape

Increases stiffness during application while preventing stretching and damage. Use when little or no liner is exposed. See [3M Instruction Bulletin 4.3](#) for complete details.

Prespacing Tape

Holds cut and weeded letters or graphics in place during application and after removing the film liner, while preventing stretching and damage. Use when large amounts of liner are exposed. See [3M Instruction Bulletin 4.3](#) for complete details.

Application and Installation

Film 3635-100 can be applied by hand or automated roll lamination.

Before using this film to retrofit existing cabinets or channel letters, clean the components to remove dirt and corrosion.

In addition to other 3M Bulletins specified in this document, the following Bulletins provide details that you may need to successfully apply a graphic.

- [3M Instruction Bulletin 2.1](#) Design of Graphics
- [3M Instruction Bulletin 6.5](#) Storage, Handling, Maintenance, and Removal of Films and Sheetings

Maintenance and Cleaning

Film 3635-100 should be cleaned a minimum of once per year, and more frequently in dirty environments, to maintain peak efficiency.

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without strong solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). See [3M Instruction Bulletin 6.1](#) for details.

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Shelf Life and Storage

Shelf Life

The shelf life is **never more than 2 years** from the date of manufacture on the original box.

If you process the film, the shelf life is changed to **1 year** from the processing date, but not later than the 2 year maximum from the manufacturing date.

Storage Conditions

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

Health and Safety



When handling any chemical products, read the manufacturer's container labels and the Safety Data Sheets (SDS) for important health, safety and environmental information. To obtain SDS sheets for 3M products go to 3M.com/SDS, or by mail or in case of an emergency, call 1-800-364-3577 or 1-651-737-6501.

When using any equipment, always follow the manufacturer's instructions for safe operation.

Bulletin Change Summary

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. Please read the entire Bulletin thoroughly.

Release D JUN-2016:

- Updated Product Bulletin to new format. Please read the entire Bulletin thoroughly.

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