

Product Description

- 4.5 mil, white vinyl film
- For screen printing and solvent, UV, and latex inkjet printing

Product Features

- Creates the special effect of one color by day (non-lighted) and a different color by night (backlit)
- Dual-color perforation pattern allows background color to display when backlit*
- Exceptional color clarity and backlit brightness both day and night
- Pressure-sensitive adhesive designed specifically for light management applications
- Expected performance life of seven years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, outdoor surface)

*From a typical viewing distance for large format graphics viewers will see little or no perforation pattern. However, the colors and construction used will have an effect on how visible the perforation pattern is.

Recommended Types of Graphics and End Uses

- Backlit channel letters, signs, and displays
- First surface applications to acrylic, polycarbonate, and high temperature co-polyester sheets
- First surface application to selected 3M flexible substrates

When constructed and used as described in this bulletin, these types of graphics and end uses may be warranted by the 3M™ MCS™ Warranty. Refer to the base film or flexible substrate's 3M product bulletin for details on specific constructions and any 3M warranties that may be applicable when using this product.

Recommended Compatible Products

Visit [3Mgraphics.com/warranties](https://www.3mgraphics.com/warranties) for a complete list of compatible products approved by 3M for use with the base film covered in this bulletin and used for the creation of graphics that may be eligible for the 3M™ MCS™ Warranty or 3M Performance Guarantee.

OEM Inkjet Inks and Printers for the 3M Performance Guarantee

See the [3M Performance Guarantee Matrix](#) for a complete list of compatible OEM inkjet inks and printers that are approved by 3M for use with the base film described in this bulletin and for the creation of completed graphics that may be eligible for the 3M Performance Guarantee.

Screen Printing Ink

- [3M™ Screen Printing Ink Series 1900 \(Solvent\), line color and four color](#)
- [3M™ Screen Printing UV Ink Series 9800, line color and four color](#)

Films and Substrates

- [3M™ Scotchcal™ Translucent Film Series 3630](#)
- [3M™ Scotchcal™ Translucent Film Series 3730](#)
- [3M™ Diffuser Film 3635-30](#)
- [3M™ Diffuser Film 3635-70](#)
- [3M™ Envision™ Diffuser Film 3735-50](#)
- [3M™ Envision™ Diffuser Film 3735-60](#)
- [3M™ Light Enhancement Film 3635-100](#)
- [3M™ Panagraphics™ III Wide-Width Flexible Substrate](#)
- [3M™ Envision™ Flexible Substrate FS-1](#)
- [3M™ Blockout Film 3635-20B](#)
- [3M™ Blockout Film 3635-22B](#)
- [3M™ Day/Night Film 3635-91](#)

Quick Links

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

Some of these links lead to web-based resources that are not product-specific.



3M™ Dual-Color Film Series IJ3635-210SV/LX

3M™ Dual-Color Film Series IJ3635-210UV

Graphic Protection

- [3M™ Scotchcal™ Luster Overlamine 3619](#)
- [3M™ Scotchcal™ Matte Overlamine 3620](#)
- [3M™ Scotchcal™ Gloss Overlamine 3658G](#)
- [3M™ Scotchcal™ Matte Overlamine 3660M](#)

Other Products

- Flat, acrylic, polycarbonate, high temperature co-polyester sheet

NOTE: 3M™ Dual-Color Film Series IJ3635-210SV/LX and IJ3635-210UV typically adhere to solar-grade polycarbonate substrates. However, some lots of these substrates may inhibit the adhesion of these films. Contact 3M Technical Service if you have difficulty with this combination. See [3M Instruction Bulletin 5.1](#) for additional information.

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

Certificate of 3M™ MCS™ Warranty

Graphic manufacturers who produce digitally printed graphics made entirely with branded 3M Graphics products, including 3M ink purchased through a qualified 3M distributor or 3M printing partner, may register to be recognized with a Certificate of 3M™ MCS™ Warranty. Only graphic manufacturers having a current Certificate of 3M™ MCS™ Warranty are eligible to extend this warranty to their customers.

NOTE: For non-digitally printed finished graphics, check your eligibility for the 3M™ MCS™ Warranty by viewing the warranty period found within this product bulletin or by using the warranty selector at www.3mgraphics.com/warranties.

Characteristics

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

Physical Characteristics

Characteristic	Value
Material	Vinyl
Film Color	White, opaque
Thickness	Without adhesive: 4.5 mil (0.11 mm) With adhesive: 5.5 mil (0.14 mm)
Adhesive	Pressure-sensitive, permanent
Adhesive Color	White
Liner	IJ3635-210SV/LX: White non-perforated kraft paper IJ3635-210UV: White perforated kraft paper
Typical Adhesion 24 Hours After Application	Acrylic and uncoated, clear polycarbonate panels: 4 lbs/in. (0.7 kg/cm) First surface of 3M™ Panagraphics™ III: 3 lbs/in. (0.5 kg/cm) 3M™ Envision™ Flexible Substrate FS-1: 3 lbs/in. (0.5 kg/cm)
Chemical Resistance	<ul style="list-style-type: none">• Resists mild alkalis, mild acids, and salt• Excellent resistance to water (does not include immersion)
Flammability	Call 1-800-328-3908 for more information.



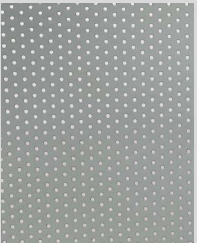

3M™ Dual-Color Film Series IJ3635-210SV/LX

3M™ Dual-Color Film Series IJ3635-210UV

Application Characteristics

Characteristic	Value
Applied Film Shrinkage	0.015 in. (0.4 mm)
Finished Graphic Application Recommendation	<p>Surface type: Flat, without rivets</p> <p>Substrate type: Acrylic, polycarbonate, high temperature co-polyester sheet; 3M™ Panagraphics™ III flexible substrate or 3M™ Envision™ Flexible Substrate FS-1</p> <p>Application method: Dry or wet</p> <p>Application temperature (air and substrate): 60°F to 100°F (16°C to 38°C)</p>
Temperature Range After Application	-65°F to +225°F (-54°C to +107°C) (Though not for extended periods of time at the extremes.)
Graphic Removal	Permanent

Film Description

Front Image	Back Image	Film
		<p>IJ3635-210SV/LX: White perforated film, non-perforated liner, with a matte surface. Can be screen printed or ink jet printed with solvent or latex inks. See the 3M Warranty Matrix for warranted printer/ink combinations</p>
		<p>IJ3635-210UV: White perforated film and perforated liner, with a matte surface. Can be screen printed or ink jet printed with UV inks. See the 3M Warranty Matrix for warranted printer/ink combinations</p>

Factors Affecting Graphic Performance Life

The actual performance life of a graphic is affected by:

- The combination of graphic materials used
- Ink formulation
- Complete ink drying or curing
- Selection, condition, and preparation of the substrate
- Surface texture
- Application methods
- Angle and direction of sun exposure
- Environmental conditions
- Cleaning and maintenance methods

3M™ Dual-Color Film Series IJ3635-210SV/LX

3M™ Dual-Color Film Series IJ3635-210UV

Graphics Manufacturing

CAUTION

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

Screen Printing

Formulations and processing conditions can affect ink durability. Users should refer to their ink's product and instruction bulletins for limitations and proper usage.

Inkjet Printing

Always read and follow the ink manufacturer's written instructions on usage.

Total Ink Coverage

The maximum recommended total ink coverage for this film is:

- **270%** when printed entirely with approved 3M solvent inkjet inks.
- **280%** when printed entirely with approved 3M UV inkjet inks.
- **280%** when printed entirely with approved 3M latex inks.
- **250%** when printed on the Mimaki® JV5 Series printer entirely with HS series inks ([3M Performance Guarantee](#)).

Do NOT exceed the recommended total ink coverage for this product. Having too much total physical ink on the product results in media characteristic changes, incomplete drying, overlamine lifting, and/or poor graphic performance. For additional details about total ink coverage, refer to the 3M product and instruction bulletins for 3M inks or the [3M Performance Guarantee Matrix](#) for OEM inks.

Completely Dry Graphics

IMPORTANT NOTE

Incomplete drying or curing can result in graphic failure including curling, increased shrinkage, and adhesion failure, which are not covered under any 3M Graphics warranty.

See the ink's 3M product and instruction bulletins for more details.

Cutting

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

IMPORTANT NOTE

For best results use a clear substrate and a diffuser with a dual color film. If the dual color film is applied to the first surface, apply the diffuser film to the second surface. Application of dual color film directly to a white substrate may result in the face color of the dual color film being washed out.

Construction Options

The construction options provided here are basic guidelines for creating effective backlit channel letters, signs, and displays. You can expand the options by experimenting with these as well as by creating your own unique ideas.

- Digitally print an image on film 3M™ Dual-Color Film IJ3635-210SV/LX or IJ3635-210UV. The image is visible during the day but with the creative use of blockout film and an additional layer of translucent film, you can have a totally different looking sign when backlit at night.
- Substitute selected areas of a translucent 3M film with cut out letters of 3M™ Dual Color Film Series IJ3635-210SV/LX or IJ3635-210UV. Place yet another color behind the dual-color film.

3M™ Dual-Color Film Series IJ3635-210SV/LX

3M™ Dual-Color Film Series IJ3635-210UV

Light Enhancement Film 3635-100

Light enhancement film can be used to line channel letters for increased sign luminance. Refer to the [“Application and Installation” section on page 7](#) for further information.

Construction Option 1: White Dual-Color Film with Colored Translucent Film

This construction typically provides the best daytime color density using white or a user specified dual-color film. See Figure 1.

i IMPORTANT NOTE

This nighttime example shows the channel letter glowing blue, an effect created by using blue film from 3M™ Scotchcal™ Translucent Film Series 3630 or 3M™ Envision™ Translucent Film Series 3730.

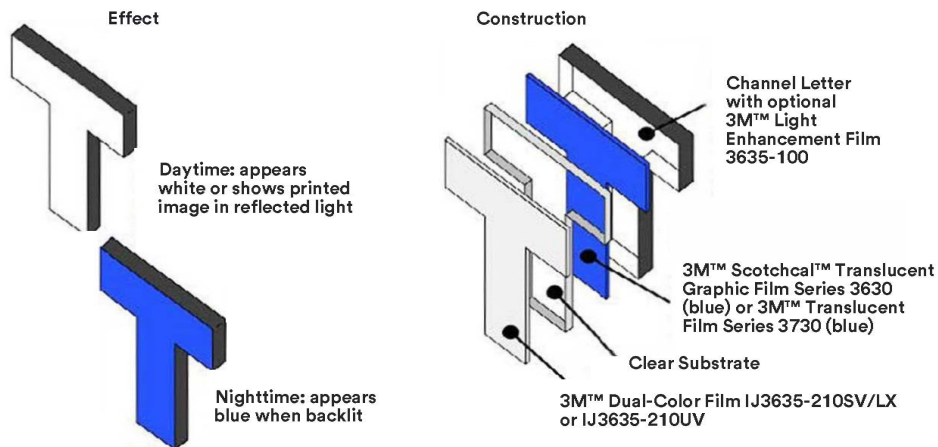


Figure 1. Construction Option 1, White Dual-Color Film (unprinted or printed)

Construction Option 2: Printed Dual-Color Film with Colored Translucent Film

This is the same construction as Option 1 except it uses black or a user specified dual-color film. See Figure 2.

i IMPORTANT NOTE

This nighttime example shows the channel letter glowing blue, an effect created by using blue film 3M™ Scotchcal™ Translucent Film Series 3630 or 3M™ Envision™ Translucent Film Series 3730.

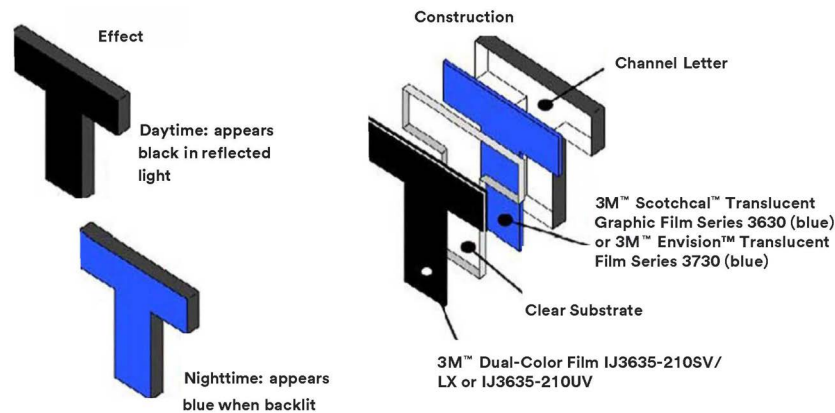


Figure 2. Construction Option 2, Printed Dual-Color Film

3M™ Dual-Color Film Series IJ3635-210SV/LX

3M™ Dual-Color Film Series IJ3635-210UV

Construction Option 3: Printed Dual-Color with No Color

This is the simplest option for channel letters that appear black during the day and glow white at night.

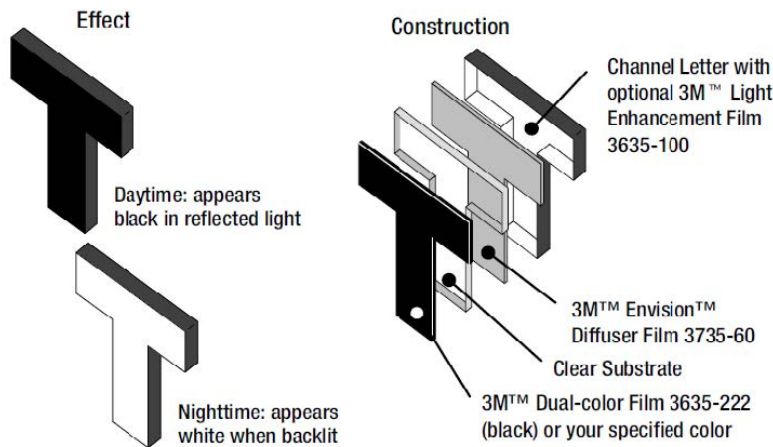


Figure 3. Construction Option 3, Printed Dual-Color Film

Dual-Color Film on Flexible Substrate Black Dual-Color with No Color

This option uses 3M™ Panagraphics™ III Wide Width Flexible Substrate or 3M™ Envision™ Flexible Substrate FS-1. Film can be applied only to the first surface of these substrates.

i IMPORTANT NOTE

This nighttime example shows the channel letter glowing blue, an effect created by using blue film from 3M™ Scotchcal™ Translucent Film Series 3630 or 3M™ Envision™ Translucent Film Series 3730.

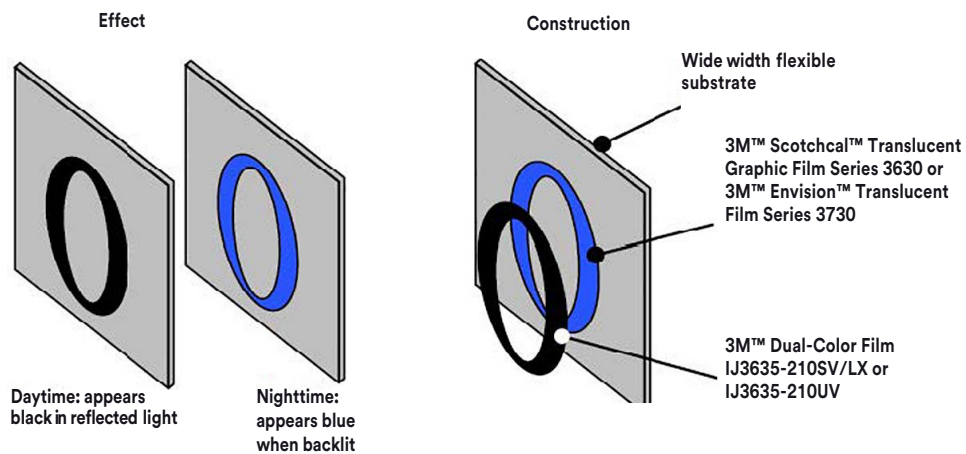


Figure 4. Dual-Color Film on Flexible Substrate

See [3M Instruction Bulletin 4.26](#) for detailed information.

Maximum Three Layers of Film

i IMPORTANT NOTE

A third layer of film on any one surface is only warranted if the top layer is an approved overlamine and no more than two layers of any film are even with the edges of the substrate.

NEVER place an overlap over an existing overlap, as this creates four layers.

3M™ Dual-Color Film Series IJ3635-210SV/LX

3M™ Dual-Color Film Series IJ3635-210UV

Graphic Protection

Graphic protection may improve the appearance, performance, and durability of the graphic. Click on the graphic protection options listed in this product bulletin or see the [3M Graphics Materials Product Catalog](#) for more information.

IMPORTANT NOTE

During installation, scratches may occur on films without graphic protection.

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

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

Prespacing tape holds cut and weeded letters or graphics in place during application and after removal of 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

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

- [3M Instruction Bulletin 2.1](#) Design of Graphics
- [3M Instruction Bulletin 2.4](#) Application Guidelines for 3M™ Light Enhancement Film 3635-100
- [3M Instruction Bulletin 5.1](#) Cleaning and Preparing Substrates for Graphic Application
- [3M Instruction Bulletin 5.5](#) Application, General Procedures for Interior and Exterior Dry Application
 - For roll application, the dry method is acceptable.
- [3M Instruction Bulletin 5.7](#) Application: Wet Method for Translucent, Inkjet, Screen Printed, and Cut Graphics
- [3M Instruction Bulletin 6.5](#) Storage, Handling, Maintenance, and Removal of Films and Sheetings

Maintenance and Cleaning

Use a cleaner designed for high-quality painted surfaces. The cleaner must be wet, non-abrasive, without solvents, and have a pH value between 3 and 11 (neither strongly acidic nor strongly alkaline). See [3M Instruction Bulletin 6.5](#) for details.

Removal

Permanent. 3M makes no claims as to the speed of removal. See [3M Instruction Bulletin 6.5](#) for details.

3M™ Dual-Color Film Series IJ3635-210SV/LX

3M™ Dual-Color Film Series IJ3635-210UV

Shelf Life, Storage, and Shipping

Shelf Life

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

Processing the film changes its shelf life to **one year** from the processing date, but no later than three years from the manufacturing date.

Storage Conditions

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

Shipping Finished Graphics

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

Health and Safety

CAUTION

When handling any chemical products, read the manufacturers' container labels and the safety data sheets (SDS) for important health, safety, and environmental information. To obtain SDS for 3M products go to [3M.com/SDS](https://www.3m.com/SDS). To request SDS by mail, or in case of an urgent situation, call 1-800-364-3577 or 1-651-737-6501.

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

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 the film was purchased. Information found at [3M.com/graphicswarranties](https://www.3m.com/graphicswarranties) includes:

- [3M Graphics Warranties Bulletin](#)
 - This bulletin contains information on limitations, 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.

Technical Information

The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

3M™ Dual-Color Film Series IJ3635-210SV/LX

3M™ Dual-Color Film Series IJ3635-210UV

Product Selection and Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment, reviewing all applicable regulations and standards, and reviewing the product label and use instructions. Failure to properly evaluate, select, and use a 3M product in accordance with instructions or to meet all applicable safety regulations may result in injury, sickness, death, and/or harm to property.

Warranty, Limited Remedy, and Disclaimer

Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature (in which case such warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE. If a 3M product does not conform to this warranty, the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

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Commercial Solutions

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