

Film Series 3630

Film Series 3730

Product Description

- 2-mil, vinyl translucent films, available in crisp, clear colors (many with simulated PANTONE® color references)
- For screen printing, cut graphics, and thermoforming
 - Use Film Series 3630 for fluorescent or LED lighting applications
 - Use Film Series 3730 for LED applications

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.

Product Features

- 3M™ Scotchcal™ Translucent Film Series 3630 and 3M™ Envision™ Translucent Film Series 3730 (the “Products”) have matte surface finishes to eliminate glare and provide uniform color in reflected and transmitted light
- Pressure-sensitive, non-removable adhesive adheres to rigid and flexible substrates alike
- Synthetic, lay-flat liner is unaffected by water or humidity
- Cut electronically
- Thermoformable
- Not removable
- Expected performance life of seven years (unwarranted period for unprinted film with no graphic protection, applied to a flat, vertical, outdoor surface)

Recommended Types of Graphics and End Uses

- For indoor or outdoor use on internally-illuminated sign faces
- First and second surface application on rigid substrates
- First surface applications only on flexible substrates
- Thermoforming on rigid plastic substrates
- For use with fluorescent bulbs or LEDs. For best results, 3M recommends:
 - film 3630 for fluorescent or LED light applications
 - film 3730 for LED applications

When constructed and used as described in this bulletin, these types of graphics and end uses may be warranted by the 3M™ MCS™ Warranty or the 3M Performance Guarantee. Please read the entire bulletin for details.

Special Considerations

3M recommends weeding before thermoforming when using film with red pigments. The red pigments available to film manufacturers today can stain plastic when thermoformed.

3M helps users match day/night colors when the same color density is required in frontlit and backlit graphics to maximize a sign’s effectiveness. Please contact 3M for assistance when this is a concern.

Recommended Compatible Products

Screen Printing Inks

- [3M™ Screen Printing Ink Series 1900](#)
- [3M™ Screen Printing UV Ink Series 9800](#)



3M™ Scotchcal™ Translucent Graphic Film Series 3630

3M™ Envision™ Translucent Film Series 3730

Films

- [3M™ Day/Night Film 3635-91](#)
- [3M™ Diffuser Film 3635-30](#)
- [3M™ Diffuser Film 3635-70](#)
- [3M™ Envision™ Diffuser Film 3735-50](#)
- [3M™ Envision™ Diffuser Film 3735-60](#)
- [3M™ Blockout Film 3635-20B](#)
- [3M™ Blockout Film 3635-22B](#)
- [3M™ Dual-Color Film Series 3635-200](#)

Substrates

- [3M™ Panagraphics™ III Wide-Width Flexible Substrate](#)
- [3M™ Envision™ Flexible Substrate FS-1](#)
- Flat, rigid substrates (see “Application Characteristics” on page 3)

Graphic Protection

- [3M™ Scotchcal™ Gloss Overlamine 3658G](#)
- [3M™ Scotchcal™ Matte Overlamine 3660M](#)
- [3M™ Screen Print Gloss Clear 1920DR](#)
- [3M™ Screen Print UV Gloss Clear 9740i](#)
- [3M™ Screen Print UV Gloss Clear 9800CL](#)

Certificate of 3M™ MCS™ Warranty

Graphic manufacturers who produce digitally printed graphics made with all 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	Film Series 3630: Translucent, 78 colors Film Series 3730: Translucent, 25 colors See “Colors” on page 4.
Thickness	Without adhesive: 2 mil (0.05 mm) With adhesive: 3 – 4 mil (0.08 – 0.1 mm)
Adhesive	Pressure-sensitive
Adhesive Color	Clear
Liner	Translucent, synthetic lay-flat liner
Typical Adhesion 24 Hours After Application	Acrylic and uncoated, clear polycarbonate: 4 lbs/in. (0.7 kg/cm)
Chemical Resistance	Resists mild alkalis, mild acids, and salt Excellent resistance to water (<i>does not include immersion</i>)
Flammability	Users may view the linked ASTM E84 reports 3630 and 3730 or go to the online product catalog at 3mgraphics.com . For all other test reports call 1-800-328-3908.

3M™ Scotchcal™ Translucent Graphic Film Series 3630

3M™ Envision™ Translucent Film Series 3730

Application Characteristics

Characteristic	Value
Finished Graphic Application Recommendation	<p>Surface type: Flat, without rivets</p> <p>Surface type*: 3M flexible substrates; rigid substrates such as flat acrylic, polycarbonate**, high temperature co-polyester sheet, glass</p> <p>Application method: Wet or dry, typical</p> <p>Application temperature: 60°F (16°C) minimum air, substrate</p>
Temperature Range After Application	<p>-50°F to +170°F (-45°C to +77°C)</p> <p>(Though not for extended periods of time at the extremes.)</p> <p>Low temperature impacts on film applied to flexible substrates may result in cracking of the film and/or substrate</p>
Recommended Light Source (for best results)	<p>Film Series 3630: Fluorescent bulbs</p> <p>Film Series 3730: LEDs</p>
Graphic Removal	Not removable

*These films typically adhere to solar-grade polycarbonate substrates. However, some lots of this substrate may inhibit adhesion. See [3M Instruction Bulletin 5.7](#) for additional information.

**Polycarbonate substrates require oven drying before use to remove moisture from the polycarbonate that will otherwise cause the film to bubble. Refer to manufacturers instructions for proper drying times and temperatures.

IMPORTANT NOTE

Surface impressions may occur when the film is rolled up and the liner impresses slightly upon the vinyl surface. These impressions may disappear when the film is exposed to the sun, or a heat gun can be used on dull areas to restore the film's original appearance. Surface impressions are not considered a product quality defect as they are temporary in nature.

IMPORTANT NOTE

The user is responsible for determining and complying with all applicable building codes affecting the use of materials in interior and exterior awning, banner, and sign face applications, including flammability standards. For more information on flammability requirements, contact your local building code officials. For information on the results of flammability testing on 3M flexible substrates, call 1-800-328-3908.

3M™ Scotchcal™ Translucent Graphic Film Series 3630

3M™ Envision™ Translucent Film Series 3730

Colors

Colors shown on a monitor and when printed are approximate representations of the actual color available.

Some of these products are a simulation of the closest PANTONE®-identified color standard. Consult current PANTONE Color Publications for accurate color. PANTONE® is a trademark or registered trademark of Pantone LLC in the United States and/or other countries.

IMPORTANT NOTE

All color references are based on reflected, not transmitted, light viewing.

Color Chart for 3M™ Scotchcal™ Translucent Film Series 3630

Product Color	PANTONE Color	Product Color	PANTONE Color	Product Color	PANTONE Color
 3630-005	PANTONE 7500 C	 3630-74	PANTONE 151 C	 3630-137	PANTONE 2757 C
 3630-015	PANTONE 116 C	 3630-75	PANTONE 7549 C	 3630-141**	Not Available
 3630-20	Not Available	 3630-76	PANTONE 7734 C	 3630-143	PANTONE 485 C
 3630-22*	PANTONE Black C	 3630-77	Not Available	 3630-144	Not Available
 3630-25	PANTONE 130 C	 3630-78	PANTONE 206 C	 3630-146	PANTONE 340 C
 3630-26	PANTONE 7727 C	 3630-83	PANTONE 200 C	 3630-147	PANTONE 7690 C
 3630-27	Not Available	 3630-84	PANTONE 1575 C	 3630-149	Not Available
 3630-33	PANTONE 1797 C	 3630-86	Not Available	 3630-156	PANTONE 356 C
 3630-36	PANTONE 281 C	 3630-87	PANTONE 2745 C	 3630-157	PANTONE 287 C
 3630-37	Not Available	 3630-93	Not Available Not	 3630-158	Not Available
 3630-38	Not Available	 3630-97	Available Not	 3630-163	Not Available
 3630-39	Not Available	 3630-98	Available	 3630-167	PANTONE 2945 C
 3630-43	Not Available	 3630-106	PANTONE 368 C	 3630-187	Not Available
 3630-44	Not Available	 3630-111	Not Available	 3630-196	Not Available
 3630-47	Not Available	 3630-115	Not Available	 3630-216	Not Available
 3630-49	Not Available	 3630-118	PANTONE 241 C	 3630-217	Not Available
 3630-51	Not Available	 3630-121**	PANTONE 877 C	 3630-227	Not Available
 3630-53	PANTONE 187 C	 3630-124	Not Available	 3630-235	Not Available
 3630-56	Not Available	 3630-125	PANTONE 1235 C	 3630-236	PANTONE 3282 C
 3630-57	Not Available	 3630-126	PANTONE 3425 C	 3630-246	PANTONE 321 C
 3630-59	Not Available	 3630-127	PANTONE 300 C	 3630-276	Not Available
 3630-61	PANTONE 431 C	 3630-128	PANTONE 525 C	 3630-287	Not Available
 3630-63	PANTONE 7610 C	 3630-131**	PANTONE 872 C	 3630-297	Not Available
 3630-69*	PANTONE Black 7 C	 3630-133	PANTONE 220 C	 3630-316	Not Available
 3630-71	PANTONE Warm Gray 7 C	 3630-135	Not Available	 3630-328	Not Available
 3630-73	PANTONE 7621 C	 3630-136	PANTONE 361 C	 3630-337	Not Available


























* Films 3630-22 and 3630-69 are effectively opaque for most sign uses.

** Films 3630-121, 3630-131, and 3630-141 are metallic colors with reduced MCS™ Matrix warranties. Refer to the MCS™ Matrix Warranty for additional information.

3M™ Scotchcal™ Translucent Graphic Film Series 3630

3M™ Envision™ Translucent Film Series 3730

Color Chart for 3M™ Envision™ Translucent Film Series 3730

Product Color	PANTONE Color	Product Color	PANTONE Color	Product Color	PANTONE Color	
	3730-015L Yellow	PANTONE 116 C		3730-57L Olympic Blue	Not Available	
	3730-20L White	Not Available		3730-73L Dark Red	PANTONE 7621 C	
	3730-26L Green	PANTONE 7727 C		3730-76L Holly Green	Not Available	
	3730-33L Red	PANTONE 186 C		3730-83L Regal Red	Not Available	
	3730-36L Blue	Not Available		3730-97L Bristol Blue	Not Available	
	3730-43L Lt. Tomato Red	PANTONE 1795 C		3730-106L Brilliant Green	Not Available	
	3730-44L Orange	Not Available		3730-125L Golden Yellow	PANTONE 1235 C	
	3730-49L Burgundy	Not Available		3730-127L Intense Blue	Not Available	
	3730-53L Cardinal Red	PANTONE 200 C				
					3730-128L Plum Purple	Not Available
					3730-133L Raspberry	Not Available
					3730-137L European Blue	Not Available
					3730-156L Vivid Green	PANTONE 348 C
					3730-157L Sultan Blue	Not Available
					3730-167L Bright Blue	PANTONE 2935 C
					3730-246L Teal Green	Not Available
					3730-337L Process Blue	Not Available

Custom Colors and Color Matching

- Custom colors are available by request. Pigment durability and manufacturing limitations do not permit exact color matching of all colors.
- When viewed in reflected light rather than illuminated light, similar colors in Film Series 3630 and 3730 will look the same.
- Because Film Series 3630 and 3730 are optimized for different light sources, an exact color match between these two colored films may not be possible when illuminated. 3M formulates the Film Series 3730 colors to match the Film Series 3630 colors as closely as possible. However, in some instances a slight color variation between the products may be noticeable in transmitted light.
- The “L” behind a color number (e.g., 3730-33L) designates the color is optimized for LED light sources.

Factors Affecting Graphic Performance Life

The actual performance life of a graphic is affected by:

- The combination of graphic materials used
- 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

Graphics Manufacturing



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

Illuminated Signs Require Special Consideration

Clear and translucent films tend to be more sensitive to shrinkage when printed with high total ink coverage. Printed film that is not sufficiently dried prior to creating an overlap may shrink and result in a light leak.

Backlighting any film, no matter how it is imaged, may reduce the density of the colors on the image.

3M™ Scotchcal™ Translucent Graphic Film Series 3630

3M™ Envision™ Translucent Film Series 3730

Illuminated Signs Using LEDs

Making a successful sign requires users to consider many factors. This section provides general guidelines for illuminating signs using LEDs. Please contact Technical Service (1-800-328-3908) before starting to resolve any questions or concerns about sign making.

Comparing Light Transmission using LEDs

Most 3M™ Envision™ Translucent Films 3730 are designed to deliver an increase in light transmission compared to 3M™ Scotchcal™ Translucent Films 3630.

Film		Typical % Increase (Gain) in Light Transmission (New Calculation)*
Product Number 3630-xxx/3730-xxx	Color	When Comparing Unmounted Film with Adhesive - 3630 Series to Similar 3730 Series
015 / 015L	Yellow	-6
20 / 20L	White	64
33 / 33L	Red	61
43 / 43L	Lt. Tomato Red	12
44 / 44L	Orange	36
49 / 49L	Burgundy	15
57 / 57L	Olympic Blue	0
73 / 73L	Dark Red	42
76 / 76L	Holly Green	16
83 / 83L	Regal Red	29
106 / 106L	Brilliant Green	19
125 / 125L	Golden Yellow	28
127 / 127L	Intense Blue	18
128 / 128L	Plum Purple	3
133 / 133L	Raspberry	4
156 / 156L	Vivid Green	35
157 / 157L	Sultan Blue	29
167 / 167L	Bright Blue	52
246 / 246L	Teal Green	43
337 / 337L	Process Blue	36
26 / 26L	Green	-3

* Instrument:

X-Rite Ci7800 d/8° benchtop spectrophotometer. CIE Y is the reported transmission metric based on D65/10° weighting functions.

Sample measurement: Samples tested through poly liner, adhesive, and film.

Color-to-Color Variation for Gain

The variation in gain from color-to-color is attributable to the different film color formulations. In general, every individual color in Film Series 3630 and 3730 produces its own unique light transmission value.

3M™ Scotchcal™ Translucent Graphic Film Series 3630

3M™ Envision™ Translucent Film Series 3730

Other Considerations for Signs using LEDs

- A significant reduction in LEDs may affect other performance factors of an illuminated sign, such as uniformity. Users are responsible for ensuring their LED layout meets all of its intended performance requirements.
- If the brightness of signs created using a film from the 3630 series is acceptable, then:
 - a comparable brightness may be achieved using a film from the 3730 series with fewer LEDs.
 - a similar level of brightness for white may be maintained.
 - acceptable sign face uniformity may be maintained without any changes to the light box depth if the LED layout is adjusted properly.
- Some sign box manufacturers prefer to apply color translucent films directly to a rigid diffuse substrate, such as diffuse polycarbonate or acrylic; instead of using diffuser film. In this case, there will still be an increase in light output over the use of 3630 films, however, the gain in light transmission for using 3730 films would be less than the values shown in the "Comparing Light Transmission using LEDs" on page 8.
- See [3M Instruction Bulletin 4.60](#) for additional guidelines and suggestions for using 3M™ Envision™ Translucent and Diffuser Films.

Video

Click [here](#) to see a brief lightbox demonstration comparing Film Series 3730 to Film Series 3630.

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.

Graphic protection can improve the appearance, performance, and durability of a graphic. A clear coat also prevents chalking on unprinted films.

Whether users apply screen print clears with traditional screening methods or roller coating, they should use equipment designed to handle high viscosity materials and ensure the coating is evenly applied according to the specifications in the clear's instruction bulletin.

Construction Options

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

Maximum of Three Layers of Film

IMPORTANT NOTE

A third layer of film on any one surface is warranted only 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 doing so creates four layers.

Thermoforming

CAUTION

The Products may emit vapors during the thermoforming process. Be sure to read and follow the information contained in [3M Instruction Bulletin 5.16](#) before thermoforming.

Channel Letter Faces

IMPORTANT NOTE

When using the Products on rigid plastic channel letter faces, avoid contact between the film and the adhesive used to attach the trim cap edge. These adhesives attack film and cause curling, lifting, and premature failure of the film.

3M™ Scotchcal™ Translucent Graphic Film Series 3630

3M™ Envision™ Translucent Film Series 3730

Spray Painting

The performance of or application of Lacryl™ or other diffuser paints to the Products is not warranted. The Products can be spray painted with Lacryl™ diffuser paints with good performance. However, certain additional warranty limitations apply. Additionally, the user is responsible for ensuring that the selected diffuser paint is compatible with the Products. 3M reserves the right to deny warranty coverage if 3M determines, at its sole discretion, that the use of diffuser paint adversely affected the appearance, durability, or performance of the Products.

Cutting

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

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 4.22](#) Lamination Basics for Inkjet Printed Graphics
- [3M Instruction Bulletin 4.60](#) 3M™ Envision™ Translucent and Diffuser Films, Guidelines for Backlit Signs.
- [3M Instruction Bulletin 5.1](#) Select and Prepare Substrates for Graphic Application
- [3M Instruction Bulletin 5.30](#) Application of 3M Pressure Sensitive Films to 3M Flexible Substrates
- [3M Instruction Bulletin 5.4](#) Application: Fleet Trucks.
- [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
 - For applications by hand, the detergent and water application method is recommended for this pressure-sensitive film. Dry application by hand may leave dark streaks or bubbles that could be visible in transmitted light.
- [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

These films are not removable. See [3M Instruction Bulletin 6.5](#) for details.

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 that 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 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.

Technical Information

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3M™ Scotchcal™ Translucent Graphic Film Series 3630

3M™ Envision™ Translucent Film Series 3730

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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