



Scotchcal™ Translucent Graphic Film

IJ3630-20, RG3630-20 and FN3630-20

For Piezo Inkjet Printing and Cut Graphics

Product Description

Films IJ3630-20, RG3630-20 and FN3630-20 are 2 mil, medium-term films designed for piezo inkjet printing. Use these films for making flat, medium-term, backlit sign graphics. These films have consistent printed color, although the color may shift between reflected and transmitted light.

Recommended Types of Graphics and End Uses

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.

- For indoor or outdoor use on internally-illuminated vertical sign faces

Limitations of End Uses

3M specifically does not recommend or warrant the following uses, but please contact us to discuss your needs or recommend other products.

Unsuitable Applications for this Film

- Fleet graphics
- Graphic constructions with more than two layers of film, including the overlaminates
- Graphics that require the same color density in front lit and backlit graphics
- Graphics applied to:
 - surfaces with rivets or corrugations.
 - non-3M flexible substrates.
 - substrates with coatings such as silicone.
- Graphics made for automotive Original Equipment Manufacturers (OEM); contact 3M Automotive Division at 1-800-328-1684 for alternatives.

Compatible Products

3M Graphic Materials

This Bulletin provides details about the base film and construction options and warranty. Additional specific information about compatible products can be found in the Product and Instruction Bulletins listed in **3M Related Literature** at the end of this bulletin.

Piezo Inkjet Printers and Inks

Refer to the Warranty tables to determine which film to use with each ink series

Ink Series	Printer
• 3M™ Piezo Inkjet Ink Series 1500v2	EFI™ VUTEk® 150, 2360/3360, 3300/5300 and 3000/5000 Printers
• 3M™ Piezo Inkjet Ink Series 4400	HP XLJet 1200 and 1500 Printers
• 3M™ Piezo Inkjet Ink Series 4600	HP Scitex Pressjet-W™ Printer
• 3M™ Piezo Inkjet Ink Series 4800	HP Scitex TJ8300 Series Digital Press
• 3M™ Piezo Inkjet Ink Series 5500	Océ Arizona 600 Printer
• 3M™ Piezo Inkjet Ink Series 6000	Océ Arizona 30s Printer
• 3M™ Piezo Inkjet Ink Series 6800	Océ Arizona 180 and 90 Printers
• 3M™ Piezo Inkjet Ink Series 2200UV	EFI™ VUTEk® PV 200 Printer
• 3M™ Piezo Inkjet Ink Series 2600UVv2	3M™ Printer 2500UV
• 3M™ Piezo Inkjet Ink Series 2700UV	Durst Rho 160R Printer
• 3M™ Piezo Inkjet Ink Series 2800UV	EFI™ VUTEk® QS2000/QS3200 Printers
• 3M™ Piezo Inkjet Ink Series 5400UV	HP Designjet H35000/H45000
• Mimaki Ink Series LF-200 <i>manufactured by 3M</i>	Mimaki UJV-160 Printer
• Mimaki Ink Series F-200 <i>manufactured by 3M</i>	Mimaki JF-1610, 1631 Printers

Graphic Protection Options

- 3M™ Screen Print Gloss Clear 1920DR
- 3M™ Screen Print UV Gloss Clear 9720i
- 3M™ Screen Print Clear 9720UV
- 3M™ Scotchcal™ Gloss Overlamine 8518
- 3M™ Scotchcal™ Luster Overlamine 3619
- 3M™ Scotchcal™ Matte Overlamine 3620
- 3M™ Scotchcal™ Luster Overlamine 8519
- 3M™ Scotchcal™ Matte Overlamine 8520
- 3M™ Scotchcal™ Luster Overlamine 8908
- 3M™ Scotchcal™ Matte Overlamine 8909
- 3M™ Scotchcal™ Ultra Matte Overlamine 8915

Light Control Films

- 3M™ Diffuser Films 3635-30
- 3M™ Diffuser Films 3635-70
- 3M™ Blockout Film 3635-20B
- 3M™ Blockout Film 3630-22B

Substrates

- 3M™ Panaflex™ Awning and Sign Facing 945GPS
- 3M™ Panagraphics™ III Wide-Width Flexible Substrate
- Flat, rigid substrates such as flat acrylic, polycarbonate, high temperature copolyester sheet, glass

Other Products

- 3M™ Prespacing Tape SCPS-2
- 3M™ Prespacing Tape SCPS-53X
- 3M™ Premasking Tape SCPM-3
- 3M™ Premasking Tape SCPM-44X

Characteristics

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

Physical Characteristics

Characteristic	Value
Film	Vinyl
Colors	Translucent white
Thickness	Without adhesive: 2 mils (0.05 mm) With adhesive: 3 to 4 mils (0.08 to 0.1 mm)
Adhesive type	Pressure sensitive
Adhesive color	Clear
Liner	Polyethylene-coated paper
Adhesion <i>24 hours after application</i>	Acrylic and uncoated, clear polycarbonate: 4 pounds/inch (0.7 kg/cm)
Chemical resistance	Resists mild alkalis, mild acids, and salt Excellent resistance to water (<i>not immersion</i>)
Flammability	Call 1-800-328-3908 for information

Application Characteristics

Finished graphic application recommendation	Application temperature: 60°F (16°C) <i>minimum air and substrate</i> Application method: Wet, typical Surface type: Flat, without rivets
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Continued on the next page.

Characteristic	Value
Finished graphic application recommendation, <i>continued</i>	<p>Substrate type: 3M flexible substrates; Rigid substrates such as flat acrylic, polycarbonate, high temperature copolyester sheet, glass</p> <ul style="list-style-type: none"> - These films typically adhere to solar-grade polycarbonate substrate. However, some lots of this substrate may inhibit film adhesion. Contact Technical Service if you are having difficulty with this combination. See Instruction Bulletin 5.7 for additional information. - Polycarbonate substrates may require oven drying before use because outgassing of moisture from the polycarbonate may cause the film to bubble. Refer to the manufacturers' instructions.
Finished graphic exposure temperature	<p>-50° to +170°F (-45° to +77°C)</p> <p>Impact at low temperatures of film applied to flexible substrates may result in cracking of the film and/or substrate.</p>
Graphic removal	None, permanent

Important Note!
3M Flexible Substrates

The user is responsible for determining and complying with all applicable building codes that affect the use of materials in interior and exterior awning, banner and sign face applications, including flammability standards. For information on flammability requirements, contact your local building code officials. For information on the results of flammability testing on 3M flexible substrates, including the product covered in this Product Bulletin from 3M Commercial Graphics Division, call 1-800-328-3908.

Warranty and Durability

See the 3M Graphics Center Warranty Brochure for the complete warranty and remedy details. The warranty given in the Product Bulletin that is current at the time you purchased the film is the one that 3M will honor.

	EFI™		HP		HP Scitex		HP Scitex	
	VUTEk® 150, 2360/3360, 3300/5300, 3000/5000		XLJet Series 1200, 1500		Pressjet™ -W		TJ8300 Series Digital Press	
	Ink Series 1500v2		Ink Series 4400		Ink Series 4600		Ink Series 4800	
Graphic Protection	Use IJ Films		Use IJ Films		Use IJ Films		Use IJ Films	
	outdoor	indoor	outdoor	indoor	outdoor	indoor	outdoor	indoor
3619, 3620	5	8	5	8	5	8	5	8
8519, 8520	4	8	4	8	4	8	4	8
8908, 8909	1	3	1	3	1	3	1	3
8915	4	8	4	8	4	8	4	8
1920DR	—	—	—	—	4	8	3	8
9720UV	—	—	—	—	4	8	3	8
9720i	4	8	4	8	4	8	4	8
none	2	2	2	3	3	3	2	3

	Océ		Océ		Océ	
	Arizona 30s		Arizona 600		Arizona 180 and 90	
	Ink Series 6000		Ink Series 5500		Ink Series 6800	
Graphic Protection	Use IJ Films		Use FN films		Use RG films	
	outdoor	indoor	outdoor	indoor	outdoor	indoor
3619, 3620	5	8	5	8	5	8
8519, 8520	4	8	4	8	4	8
8908, 8909	1	3	1	3	1	3
8915	4	8	4	8	4	8
1920DR	4	8	4	8	4	8
9720UV	4	8	4	8	4	8
9720i	4	8	4	8	4	8
none	3	3	3	3	3	3

	EFI™		3M		Durst		EFI™	
	VUTEK® PV200		Printer 2500UV		Rho 160R and 351R		VUTEK® QS2000, QS3200	
	Ink Series 2200UV		Ink Series 2600UVv2		Ink Series 2700UV		Ink Series 2800UV	
Graphic Protection	Use IJ Films		Use IJ Films		Use IJ Films		Use IJ Films	
	outdoor	indoor	outdoor	indoor	outdoor	indoor	outdoor	indoor
3619, 3620	5	8	5	8	5	8	5	8
8519, 8520	4	8	4	8	4	8	4	8
8915	4	8	4	8	4	8	4	8
1920DR	—	—	4	8	—	—	—	—
9720UV	4	8	4	8	4	8	4	8
9720i	4	8	4	8	4	8	4	8
none	3	3	3	3	3	3	3	3

	HP		Mimaki		Mimaki	
	Designjet H35000/H45000		UJV-160		JF-1610, 1631	
	Ink Series 5400UV		Ink Series LF-200		Ink Series F-200	
Graphic Protection	Use IJ Films		Use IJ Films		Use IJ Films	
	outdoor	indoor	outdoor	indoor	outdoor	indoor
3619, 3620	5	8	—	—	—	—
8519, 8520	4	8	3	8	3	8
8915	4	8	3	8	3	8
1920DR	—	—	—	—	—	—
9720UV	4	8	—	—	—	—
9720i	4	8	—	—	—	—
none	3	3	2	3	2	3

Note: IJ3630 may be applied to Panagraphics III Substrate with all listed graphic protection options or Panaflex Substrate 945GPS with overlaminate 3619, 3620, 8519, 8520 or 8915.

**3M™ MCS™ Warranty
for Non-Vertical and
Desert Southwest**

Use the years of warranted durability for your graphic construction in the above table and these following formulas to determine other durabilities. A map of the US Desert Southwest is available at 3Mgraphics.com under Warranties.

Outdoor Exposure	Percentage of U.S. Vertical Outdoor Exposure	Example
U.S. Non-vertical	50% (0.5)	0.5 x 4 years = 2 years
Desert Southwest Vertical	70% (0.7)	0.7 x 4 years = 2.8 years
Desert Southwest Non-vertical	35% (0.35)	0.35 x 5 years = 1.4 years

**3M Performance Guarantee
Graphic Constructions
and Durability**

For Product Performance Only

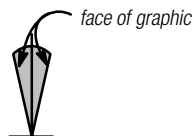
Graphics constructed as described in the table below are eligible for the 3M Performance Guarantee when exposed in a vertical exposure in the United States. This warranty covers the performance of only the recommended 3M products used in the graphic construction when imaged with the printers and OEM inks listed in the most current version of Product Bulletin PG Matrix. That Bulletin may also list certain restrictions for using the film covered in this Bulletin. 3M will honor the warranty given in the version of this Bulletin that was current at the time you purchased the film.

Film	Graphic Protection	Vehicle Outdoor Indoor	Inks and Printers
IJ3630	8518 8519 8520 1920DR 9720UV	2	See the Performance Guarantee Printer and Ink Matrix at www.3Mgraphics.com

**Warranty Details and
General Exceptions**

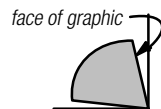
Definitions

Vertical Exposure



The face of the graphic is $\pm 10^\circ$ from vertical.

Non-vertical Exposure



The face of the graphic is greater than 10° from vertical and greater than 5° from horizontal.

Desert Southwest

Graphics exposed to solar energy more than half of the time in Arizona, New Mexico and the desert areas of California, Nevada, Utah and Texas. A detailed map is available upon request.

Vehicles

Refers to commercial fleet, buses, vans and automobiles unless otherwise noted.

Factors that Affect Graphic Performance Life

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

- Correct combination of 3M-recommended graphics products
- Ink formulation
- Adequate ink drying and/or UV curing
- Selection and preparation of the substrate
- Surface texture
- Application methods
- Angle and direction of sun exposure
- Environmental conditions
- Cleaning or maintenance methods

Application Outside the U.S.

Contact the 3M organization for that country.

Graphics Made with Components Not Sold or Recommended by 3M

The 3M™ MCS™ Warranty does not cover finished graphics made with other manufacturers' inks, film, graphic protection and/or application tapes. The user is solely responsible for the graphic appearance, performance and durability of graphic constructions that include non-3M graphic products.

The 3M Performance Guarantee covers selected 3M graphic products when used with qualified printers and OEM inks. See Product Bulletin: PG Matrix.

Application to Glass

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

Graphic Protection

For the best performance and appearance, an overlamine is strongly recommended when this film is used on an awning due to the effects of roof run-off.

Overlaminates must be cold roll applied.

Warranty and Limited Remedy

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: all 3M products are 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. 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. **In no case shall 3M be liable for any direct, indirect, or consequential damages, including any labor or non-3M materials charges.**

See the Graphics Market Center Warranty Brochure, which gives the terms, additional limitations of the warranty, if any, and limitations of liability.

Printer Support Information

Ink

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 with all approved 3M piezo solvent inks.

280% when printed with all approved 3M UV inks.

250% when printed on the Mimaki JV5 Series printer with HS ink series (Performance Guarantee).

Too high a total physical ink amount on the film results in media characteristic changes, inadequate drying, overlamine lifting, and/or poor graphic performance. Refer to the Instruction Bulletin for the ink system being used for additional details about total ink coverage.

Graphics Manufacturing

Important Note!

Adequately Dry Graphics

Refer to the 3M Related Literature section for a list of the Product and Instruction Bulletins that may be needed to make a graphic.

Inadequate drying can result in graphic failure including curling, increased shrinkage and adhesion failure, which are not covered under warranty.

Always build enough time into your process to ensure adequate drying of the graphic. Poorly dried film may become soft and stretchy, and the adhesive may become too aggressive. This can cause difficulty when applying an overlamine, rolling the graphic, and applying the film. See the ink's Instruction Bulletin for more details.

Cutting

The following are common cutting methods for this film. See Instruction Bulletin 4.1 for details.

For the inside corners of cut out letters and symbols, and the pointed end of stripes, cut the largest radius consistent with an acceptable appearance. This technique helps avoid stress cracking due to age, and lifting of pointed ends during maintenance.

For individual pieces, use one of these cutting methods.

- Hand cut
- Die cut
- Kiss cut
- Electronic cutter

For multiple pieces, use one of these cutting methods.

- Guillotine
- Die cut

Application Tapes

When to Use Premasking Tape

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

When to Use Prespacing Tape

- Hold cut and weeded letters or graphics in registration after removing the film liner.
- Protect cut graphic parts from scratching or damage during application.
- Use when large amounts of liner are exposed.

How to Select a Tape

Determine whether you want to premask the graphic or prespace film elements. Then locate the graphic protection on your graphic in the table below, and use the corresponding tape. See Instruction Bulletin 4.3 for complete details.

EXAMPLE: If the film is protected by overlamine 8519 and you want to premask the film, use premasking tape SCPM-3. If it is protected by clear 9720i, use premasking tape SCPM-44X.

Graphic Protection						
Refer to the Warranty table to determine what graphic protection is approved for your graphic construction.						
Tape	None UV ink series only	None Other ink series	3619, 3620 8519, 8520 8518	8908 8909	1920DR	9720i 9720UV
Premasking SCPM-3		■	■	■	■	
Prespacing SCPS-2		■	■	■	■	
Premasking SCPM-44X	■					■
Prespacing SCPS-53X	■					■

NR= Prespacing and/or premasking it not recommended when using this graphic protection option.

Application

For application by hand, the detergent and water application method is recommended. Dry application by hand may leave some dark streaks or bubbles that could be visible in transmitted light.

For roll application, the dry method is acceptable.

Maintenance and Cleaning

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.)

Refer to Instruction Bulletin 6.5 for general maintenance and cleaning information.

Shelf Life, Storage and Shipping

Shelf Life	Total shelf life: 2 years from the date on the original box Up to 2 years unprocessed, OR process within 1 year and apply within 1 year of processing
Storage Conditions	<ul style="list-style-type: none"> • 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
Shipping Finished Graphics	Flat, or rolled printed side out on 5 inch (13 cm) or larger core. This helps prevent the liner and, if used, the application tape from popping off.

Health and Safety



CAUTION

When handling any chemical products, read the manufacturers' container labels and the Material Safety Data Sheets (MSDS) for important health, safety and environmental information. To obtain MSDS sheets for 3M products go to 3M.com/MSDS, 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 manufacturers' instructions for safe operation.

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™ Piezo Inkjet Ink Series 1500v2	PB-IB	1500
3M™ Piezo Inkjet Ink Series 4400	PB-IB	4400
3M™ Piezo Inkjet Ink Series 4600	PB-IB	4600
3M™ Piezo Inkjet Ink Series 4800	PB-IB	4800
3M™ Piezo Inkjet Ink Series 5500	PB-IB	5500
3M™ Piezo Inkjet Ink Series 6000	PB-IB	6000
3M™ Piezo Inkjet Ink Series 6800	PB-IB	6800
3M™ Piezo Inkjet Ink Series 2200UV	PB-IB	2200UV
3M™ Piezo Inkjet Ink Series 2600UVv2	PB-IB	2600UV
3M™ Piezo Inkjet Ink Series 2700UV	PB-IB	2700UV
3M™ Piezo Inkjet Ink Series 2800UV	PB-IB	2800UV
3M™ Piezo Inkjet Ink Series 5400UV	PB-IB	5400UV
Mimaki Ink Series LF-200	PB-IB	LF200
Mimaki Ink Series F-200	PB-IB	F200
3M™ Scotchcal™ Luster Overlaminates 3619 and Matte 3620	PB	3619/3620
3M™ Scotchcal™ Luster Overlaminates 8519 and Matte 8520	PB	8519/8520
3M™ Scotchcal™ Luster Overlaminates 8908 and Matte 8909	PB	8908/8909

Subject	Type	Bulletin No.
3M™ Scotchcal™ Ultra-Matte Overlamine 8915	PB	8915
3M™ Screen Print Gloss Clear 1920DR - Applying screen printing clear 1920DR	PB IB	1900 3.12
3M™ Screen Print UV Gloss Clear 9720i	PB-IB	9720i
3M™ Screen Print Gloss Clear 9720UV and Matte Clear 9730UV - Applying screen printing clears 9720UV and 9730UV	PB IB	9700 3.4
3M™ Panaflex™ Awning and Sign Facing 945GPS	PB	945
3M™ Panagraphics™ III Wide-Width Flexible Substrate - Application of 3M pressure sensitive films to Panagraphics substrate	PB IB	P3I 5.30
3M Light Management Films -3M™ Blockout Films 3635-20B, 3635-22B -3M™ Diffuser Films 3635-30, 3635-70 -3M™ Day/Night Films 3635-91	PB	3635
Cold roll lamination	IB	4.22
Scoring and cutting	IB	4.1
Using 3M application tapes; premasking and prespacing for films	IB	4.3
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 and cut graphics	IB	5.7
Application, special applications and vehicles	IB	5.4
Storage, handling, maintenance, removal	IB	6.5
Performance Guarantee Printer Matrix	PB	PG Matrix
3M Graphics Center Warranty Brochure		go to www.3Mgraphics.com , Warranties

Warranties

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EFI is a trademark and VUTEK is a registered trademark of EFI Inc.; Pressjet-W is a trademark of HP Scitex Corporation Ltd.; All other trademarks are the property of their respective owners.

Bulletin Change Summary

New Compatible Products: Ink series 4000, 5400UV, LF-200, L200; overlaminates 3619, 3620, 8915. Discontinued Product: Panagraphics II Substrate. Total Ink Coverage: 270% (3M solvent inks), 280% (3M UV Inks).



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