

# LLumar<sup>®</sup> Decorative Pattern Series

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## **PART 1 - GENERAL**

### **1.1 RELATED DOCUMENTS**

- A. The General Conditions, Supplementary Conditions, and Division 01 – General Requirements apply.

### **1.2 SECTION INCLUDES**

- A. Decorative films
- B. [Insert item description.]

### **1.3 RELATED SECTIONS**

- A. Section 08 80 00 - Glazing: Substrate for application of decorative film.
- B. Section [xxxxx] – [Section Title]: [Include brief description of work specified in another section that is related to the work of this section.]

### **1.4 REFERENCES**

- A. ASTM International (ASTM):
  - 1. ASTM E903 - Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres.

### **1.5 DEFINITIONS**

- A. Visible Light Transmittance: The ratio of the amount of visible light (380-780 nm) that is allowed to pass through a glazing system to the amount of visible light falling on the glazing system. The value is expressed as a percentage.
- B. Diffuse Visible Light Reflectance (exterior): The percentage of visible light falling on a flat, non-mirrored surface that is neither transmitted nor absorbed, but scattered backwardly at random angles from that surface. This value is also known as "non-specular reflectance".
- C. Privacy Film Rating: This number, between 0 (clear) and 10 (opaque), represents the relative difficulty an observer has in identifying the nature and character of an object located on the opposite side of the window, with the observer and the object both located at least 2 feet from the pane upon which the product has been installed.

- D. Pattern Series: These films invigorate interiors with privacy-enhancing geometric designs that help disguise views. This broad-ranging selection of transparent and opaque film styles features graphic lines and squares that provide clear distinction of space.

## 1.6 PERFORMANCE REQUIREMENTS

- A. Provide a decorative film with the % Visible Light Transmitted and Privacy Rating as shown in Section 2.2.

## 1.7 SUBMITTALS

- A. Submit under provisions of Section [01 33 00] [\_\_\_\_\_].
- B. Product Data: Submit for each product specified indicating:
  - 1. Performance properties.
  - 2. Preparation and installation instructions and recommendations.
  - 3. Storage and handling recommendations.
- C. Samples: For each type of decorative film specified, two (2) samples, 12 inches square.
- D. Qualification Data: Submit documentation indicating qualifications of decorative film supplier.
- E. Operation and Maintenance Data: Submit for decorative film to include in maintenance manuals.
- F. Warranty: Submit sample special warranty specified in this section.

## 1.8 QUALITY ASSURANCE

- A. Supplier Qualifications: A qualified supplier that has a minimum of 10 years of documented experience supplying decorative films similar to the film used for this project.
- B. Installer Qualifications: A firm that is authorized by decorative film supplier to install film in accordance with guidelines set forth by the supplier.
- C. Source Limitations: Obtain each type of decorative film from same supplier.
- D. Mock-ups: Build mock-ups to verify selections made under sample submittals and to evaluate surface preparation techniques and application workmanship.
  - 1. Construct mock-ups in the location and of the size indicated or, if not indicated, as directed by Architect.
  - 2. Approved mock-ups may become part of the completed work if undisturbed at time of Substantial Completion.
- E. Pre-installation Conference: Conduct conference at project site to discuss methods and procedures relating to installation of the decorative films.

## 1.9 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle materials in supplier's protective packaging.

- B. Store and protect materials according to supplier's written recommendations to prevent damage from condensation, temperature changes, direct exposure to sun, or other causes.

**1.10 SITE CONDITIONS**

- A. Ambient Conditions: Maintain temperature, humidity, and ventilation within limits recommended by supplier.

**1.11 LIMITED WARRANTY**

- A. Limited Warranty: Certain restrictions apply. The Limited Warranty can be viewed in full by [clicking here](#).

**PART 2 - PRODUCTS**

**2.1 SUPPLIER**

- A. Basis-of-Design Product: The design for decorative films is based on LLumar® Decorative Films supplied by Eastman Performance Films, LLC., 575 Maryville Centre Drive, St. Louis, Missouri 63141; Telephone: 800-851-7781 (Option 2); <https://northamerica.llumar.com/contact-llumar>; Web Site: www.llumar.com.
- B. Representative: [Insert contact information.]
- C. Substitutions will be considered, subject to compliance with requirements of this section, under provisions of Section 01 60 00.

**2.2 DECORATIVE PATTERN SERIES FILMS**

- A. Decorative Film: LLumar® Bands Film (NRM FB) with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	63
% Diffuse Visible Light Reflectance (exterior)	23
Privacy Film Rating	1
Thickness without Liner	0.002
Film Construction	Polyester

- B. Decorative Film: LLumar® Barcode Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	69
% Diffuse Visible Light Reflectance (exterior)	25
Privacy Film Rating	4
Thickness without Liner	0.002
Film Construction	Polyester

- C. Decorative Film: LLumar® Fluted Glass Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	86
% Diffuse Visible Light Reflectance (exterior)	11
Privacy Film Rating	5
Thickness without Liner	0.003
Film Construction	Polyester

- D. Decorative Film: LLumar Frosted Tiles Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	67
% Diffuse Visible Light Reflectance (exterior)	9
Privacy Film Rating	4
Thickness without Liner	0.004
Film Construction	Polyester

- E. Decorative Film: LLumar® Grey Pinstripes Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	69
% Diffuse Visible Light Reflectance (exterior)	9
Privacy Film Rating	4
Thickness without Liner	0.0035
Film Construction	Polyester

- F. Decorative Film: LLumar® Medium Etched Stripes Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	74
% Diffuse Visible Light Reflectance (exterior)	11
Privacy Film Rating	1
Thickness without Liner	0.002
Film Construction	Polyester

- G. Decorative Film: LLumar® Metro Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	65
% Diffuse Visible Light Reflectance (exterior)	27
Privacy Film Rating	7
Thickness without Liner	0.002
Film Construction	Polyester

- H. Decorative Film: LLumar® Mini Blinds Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	68
% Diffuse Visible Light Reflectance (exterior)	20
Privacy Film Rating	3
Thickness without Liner	0.002
Film Construction	Polyester

- I. Decorative Film: LLumar® Pinstripes Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	74
% Diffuse Visible Light Reflectance (exterior)	13
Privacy Film Rating	3
Thickness without Liner	0.002
Film Construction	Polyester

- J. Decorative Film: LLumar® Privacy Stripes Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	71
% Diffuse Visible Light Reflectance (exterior)	7
Privacy Film Rating	4
Thickness without Liner	0.002
Film Construction	Polyester

- K. Decorative Film: LLumar® Small Etched Stripes Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	82
% Diffuse Visible Light Reflectance (exterior)	14
Privacy Film Rating	2
Thickness without Liner	0.002
Film Construction	Polyester

- L. Decorative Film: LLumar® Stripes Film (NRM FS) with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	73
% Diffuse Visible Light Reflectance (exterior)	20
Privacy Film Rating	1
Thickness without Liner	0.002
Film Construction	Polyester

- M. Decorative Film: LLumar® Squares Film (NRM FSQ) with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	69
% Diffuse Visible Light Reflectance (exterior)	20
Privacy Film Rating	1
Thickness without Liner	0.002
Film Construction	Polyester

- N. Decorative Film: LLumar® Thin Lines Film (NRM FTL) with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	73
% Diffuse Visible Light Reflectance (exterior)	20
Privacy Film Rating	3
Thickness without Liner	0.002
Film Construction	Polyester

- O. Decorative Film: LLumar® Variated Stripes Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	88
% Diffuse Visible Light Reflectance (exterior)	8
Privacy Film Rating	5
Thickness without Liner	0.006
Film Construction	Vinyl

- P. Decorative Film: LLumar® White Bands Film with the following performance characteristics when applied to the interior surface of single-pane, 1/8-inch clear glass:

% Visible Light Transmission	78
% Diffuse Visible Light Reflectance (exterior)	16
Privacy Film Rating	1
Thickness without Liner	0.002
Film Construction	Polyester

## 2.3 DECORATIVE FILM ACCESSORIES

- A. General: Provide accessories either manufactured by or acceptable to Decorative film supplier for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Pressure Sensitive Adhesive: This adhesive is characterized by its tacky nature and its ease of installation.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates for compliance with requirements and for conditions affecting performance of Decorative film including glass that is broken, chipped, cracked, abraded, or damaged in any way.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Comply with supplier's written instructions for surface preparation.
- B. Clean substrates thoroughly prior to installation.

- C. Prepare substrates using methods recommended by film supplier to achieve the best results for the substrate under project conditions.
- D. Protect window frames and surrounding surfaces to prevent damage during installation.

### 3.3 INSTALLATION

- A. Install in accordance with supplier's written instructions.
- B. Install with no gaps or overlaps.
- C. If seamed, make seams non-overlapping.
- D. Do not remove release liner from film until just before each piece of film is cut and ready for installation.
- E. Custom cut to the glass with neat, square corners and edges to within 1/8-inch of the window frame.
- F. Remove air bubbles, blisters, and other defects. Be careful to remove "fingers" to eliminate any contamination or excess water pockets. It is crucial to remove as much water as possible during installation.

### 3.4 FIELD QUALITY CONTROL

- A. After installation, view film from a distance of 10 feet against a bright uniform sky or background. Film shall appear uniform in appearance with no visible streaks, wrinkles, banding, thin spots or pinholes.
- B. If installed film does not meet these criteria, remove and replace with new film.

### 3.5 CLEANING AND PROTECTION

- A. Remove excess mounting solution at finished seams, perimeter edges, and adjacent surfaces.
- B. Use cleaning methods recommended by film supplier.
- C. Replace films that cannot be cleaned.
- D. Protect installed products until completion of project.
- E. Touch-up, repair or replace damaged products before substantial completion.

END OF SECTION

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**EASTMAN**



**For inquiries inside the U.S. and Canada**

Eastman Chemical Company  
Advanced Materials - Performance Films  
P.O. Box 5068  
Martinsville, Virginia 24115  
1-800-2LLUMAR  
www.llumar.com

**For inquiries outside the U.S. and Canada**

Contact your regional technical services  
representative or visit [www.llumar.com](http://www.llumar.com).

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