

# LLumar® Decorative Gradient 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. Gradient Series: These films are intended to give graduated privacy while still allowing for a sense of openness. Partially block out views, selectively hide unattractive areas or add a fresh design element easily with this versatile series.

## 1.6 PERFORMANCE REQUIREMENTS

- A. Ultraviolet Transmission: Provide decorative films with UV absorbing materials that limit the weighted UV Transmission to [0][1][2][4][5][10][17][25][73][75] percent when measured according to ASTM E903.
- B. Provide Decorative films that do not have a masking sheet.

## 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 manufacturer.
- 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. Manufacturer Qualifications: A qualified manufacturer that has a minimum of 10 years of documented experience manufacturing decorative films similar to be used for this project.
- B. Installer Qualifications: A firm that is authorized by decorative film manufacturer to install film in accordance with guidelines set forth by the manufacturer.
- C. Source Limitations: Obtain each type of decorative film from same manufacturer.
- 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 manufacturer's protective packaging.
- B. Store and protect materials according to manufacturer'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 manufacturer.

## 1.11 LIMITED WARRANTY

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

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Basis-of-Design Product: The design for decorative films is based on LLumar® Decorative Gradient Films manufactured by an Eastman Chemical Company business: CPFilms Inc., 575 Maryville Centre Drive, St. Louis, Missouri 63141; Telephone: 800-255-8627; Email address: commercialalerts@eastman.com; 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 GRADIENT FILMS

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

% Visible Light Transmission - range	49 - 79
% Diffuse Visible Light Reflectance (exterior) - range	8 - 30
Privacy Film Rating - range	1 - 7
Thickness without Liner	0.002 inches
Film Color	Dot Matrix Gradient

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

% Visible Light Transmission - range	55 - 85
% Diffuse Visible Light Reflectance (exterior) - range	8 - 30
Privacy Film Rating - range	0 - 5
Thickness without Liner	0.002 inches
Film Color	Mini Dot Matrix Gradient

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

% Visible Light Transmission - range	47 - 78
% Diffuse Visible Light Reflectance (exterior) - range	8 - 30
Privacy Film Rating - range	1 - 6
Thickness without Liner	0.002 inches
Film Color	Mirrored Mini Dot Matrix Gradient

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

% Visible Light Transmission - range	57 - 88
% Diffuse Visible Light Reflectance (exterior) - range	8 - 30
Privacy Film Rating - range	0 - 7
Thickness without Liner	0.002 inches
Film Color	Grass Blade Gradient

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

% Visible Light Transmission - range	59 - 81
% Diffuse Visible Light Reflectance (exterior) - range	8 - 30
Privacy Film Rating - range	1 - 5
Thickness without Liner	0.002 inches
Film Color	Blizzard Gradient

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

% Visible Light Transmission - range	62 - 88
% Diffuse Visible Light Reflectance (exterior) - range	8 - 30
Privacy Film Rating - range	0 - 6
Thickness without Liner	0.002 inches
Film Color	Static Gradient

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

% Visible Light Transmission - range	61 - 83
% Diffuse Visible Light Reflectance (exterior) - range	8 - 30
Privacy Film Rating - range	0 - 5
Thickness without Liner	0.002 inches
Film Color	Blinds Gradient

## 2.3 DECORATIVE FILM ACCESSORIES

- A. General: Provide accessories either manufactured by or acceptable to Decorative film manufacturer for application indicated, and with a proven record of compatibility with surfaces contacted in installation.

- B. Pressure Sensitive Adhesive: This adhesive is activated by pressure and water. It is characterized by its permanently tacky nature and its installation ease.
- C. Cleaners, Primers, and Sealers: Types recommended by film manufacturer.

## **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 manufacturer's written instructions for surface preparation.
- B. Clean substrates thoroughly prior to installation.
- C. Prepare substrates using methods recommended by film manufacturer 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 manufacturer'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 manufacturer.
- 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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