

Vista™ by LLumar® Harmony Series

Note: Click on "Show/Hide ¶" button to reveal "Specifier Notes" throughout section. Delete this text when editing is complete.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SECTION INCLUDES

- A. Solar control films.
- B. [Insert item description.]

1.3 RELATED SECTIONS

- A. Section 08 80 00 - Glazing: Substrate for application of solar control 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.
- B. National Fenestration Rating Council Inc. (NFRC):
 - 1. NFRC 302 - Optical Spectral Data Verification Program.

1.5 DEFINITIONS

- A. Low Reflectance Solar Control Films: Film products whose visible light reflectance values are very close to that of ordinary glass.

1.6 PERFORMANCE REQUIREMENTS

- A. Ultraviolet Transmission: Provide solar control films with UV absorbing materials that limit the weighted UV Transmission to less than one (1.0) percent when measured according to ASTM E903.
- B. Provide solar control films that do not have a masking sheet.
- C. Product Standard: Comply with NFRC 302 for window film energy performance ratings.
 - 1. Window Film Energy Performance Certification: NFRC certified with label attached to each product package.

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 solar control film specified, two (2) samples, 12 inches square.
- D. Qualification Data: Submit documentation indicating qualifications of solar control film manufacturer.
- E. Operation and Maintenance Data: Submit for solar control 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 solar control films similar to that used for this project.
- B. Installer Qualifications: A firm that is authorized by solar control film manufacturer to install film in accordance with guidelines set forth by the manufacturer.
- C. Source Limitations: Obtain each type of solar control film from same manufacturer.
- D. Mockups: Build mockups to verify selections made under sample submittals and to evaluate surface preparation techniques and application workmanship.
 - 1. Construct mockups in the location and of the size indicated or, if not indicated, as directed by Architect.
 - 2. Approved mockups 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 solar control 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 low reflectance solar control films is based on Vista™ by LLumar® Harmony Series Solar Control 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 SOLAR CONTROL FILMS

- A. Solar Control Film: Vista™ by LLumar® Harmony Terre V31SRCDF Solar Control Film with the following performance characteristics when applied to the interior surface of single-pane, 1/4-inch clear glass:

% Total Solar Transmittance	19
% Total Solar Reflectance	18
% Total Solar Absorptance	63
% Visible Light Transmission	35
% Visible Light Reflection - Exterior	6
% Visible Light Reflection - Interior	8
Winter U-Value	0.88
Shading Coefficient	0.41
% Ultraviolet Ray Protection (280nm-380nm)	>99
Emissivity	0.57
Solar Heat Gain Coefficient	0.36
% Total Solar Energy Rejection	64
Light-to-Solar Heat Gain Ratio	0.97
% Summer Solar Heat Reduction	56
% Winter Heat Loss Reduction	15
% Glare Reduction	60
Thickness without Liner	41 μ
Film Color	Warm Gray
NFRC Certification Number	CPF-K-004

- B. Solar Control Film: Vista™ by LLumar® Harmony Ciel V40SRCDF Control Film with the following performance characteristics when applied to the interior surface of single-pane, 1/4-inch clear glass:

% Total Solar Transmittance	30
% Total Solar Reflectance	16
% Total Solar Absorptance	54
% Visible Light Transmission	40
% Visible Light Reflection - Exterior	8
% Visible Light Reflection - Interior	8
Winter U-Value	0.89

Shading Coefficient	0.51
% Ultraviolet Ray Protection (280nm-380nm)	>99
Emissivity	0.59
Solar Heat Gain Coefficient	0.45
% Total Solar Energy Rejection	55
Light-to-Solar Heat Gain Ratio	0.89
% Summer Solar Heat Reduction	45
% Winter Heat Loss Reduction	14
% Glare Reduction	55
Thickness without Liner	41 μ
Film Color	Blue Gray
NFRC Certification Number	CPF-K-007

- C. Solar Control Film: Vista™ by LLumar® Harmony Terre V41SRCDF with the following performance characteristics when applied to the interior surface of single-pane, 1/4-inch clear glass:

% Total Solar Transmittance	26
% Total Solar Reflectance	17
% Total Solar Absorptance	57
% Visible Light Transmission	44
% Visible Light Reflection - Exterior	7
% Visible Light Reflection - Interior	7
Winter U-Value	0.89
Shading Coefficient	0.48
% Ultraviolet Ray Protection (280nm-380nm)	>99
Emissivity	0.59
Solar Heat Gain Coefficient	0.42
% Total Solar Energy Rejection	58
Light-to-Solar Heat Gain Ratio	1.05
% Summer Solar Heat Reduction	49
% Winter Heat Loss Reduction	14
% Glare Reduction	50
Thickness without Liner	55 μ
Film Color	Warm Gray
NFRC Certification Number	CPF-K-008

- D. Solar Control Film: Vista™ Harmony Terre V51SRCDF with the following performance characteristics when applied to the interior surface of single-pane, 1/4-inch clear glass:

% Total Solar Transmittance	30
% Total Solar Reflectance	20
% Total Solar Absorptance	50
% Visible Light Transmission	53
% Visible Light Reflection - Exterior	7
% Visible Light Reflection - Interior	7
Winter U-Value	0.88
Shading Coefficient	0.50
% Ultraviolet Ray Protection (280nm-380nm)	>99
Emissivity	0.58
Solar Heat Gain Coefficient	0.44
% Total Solar Energy Rejection	56

Light-to-Solar Heat Gain Ratio	1.20
% Summer Solar Heat Reduction	46
% Winter Heat Loss Reduction	15
% Glare Reduction	40
Thickness without Liner	55 μ
Film Color	Warm Gray
NFRC Certification Number	CPF-K-035

2.3 SOLAR CONTROL FILM ACCESSORIES

- A. General: Provide accessories either manufactured by or acceptable to solar control film manufacturer for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Adhesive: Water-activated, dry-adhesive system that forms a molecular bond between the film and glass. Protect adhesive from contamination by applying a release liner that will be removed and discarded at installation.
- C. Cleaners, Primers, and Sealers: Types recommended by solar control film manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates for compliance with requirements and for conditions affecting performance of solar control 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 film continuously, but not necessarily in one (1) continuous length. 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. Install film with mounting solution and custom cut to the glass with neat, square corners and edges to within 1/32 to 1/16 inch of window frame for solar control films and to within 1/8-inch of window frame for safety-and-security films.
- 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 solar control 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

EASTMAN

VISTA[®] 
W I N D O W F I L M

For inquiries inside the U.S. and Canada

Eastman Chemical Company
Advanced Materials - Performance Films
P.O. Box 5068
Martinsville, Virginia 24115
1-800-345-6088
www.vista-films.com

For inquiries outside the U.S. and Canada

Contact your regional technical services
representative or visit www.llumar.com.

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