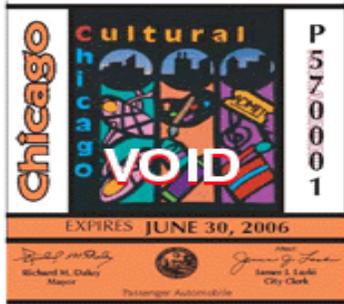


# Avery Dennison® LW Series Retroreflective Window Sticker Film

Issued: July 2013

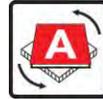
LW series window stickers are designed to be variable printed for use inside or outside the vehicle. Reflective permit stickers provide easy verification for authenticity.



**Performance:**  
L-S-300C Table IV



**Durability:** 3 years  
Vertical exposure only



**Orientation:** Omni-Directional



**Face:**  
See Product Availability



**Application Surface:**  
Glass or Automobile

## Features:

- Available with custom colors
- Avery Secure Mark™ custom designed to prevent counterfeiting
- Wide variety of converting methods
- High legibility day and night at various of entrance angles
- Omni-Directional
- High quality manufacturing - ISO certified – Lean Six Sigma

## Conversion:

- Solvent Based Screen Printing
- UV Based Screen Printing
- Thermal Transfer Printing
- Rotary Screen Printing
- Thermal Die-Cut
- Guillotine Cutting
- Steel Rule Sign-Cut
- Rotary Press Die-Cut

## Product Availability:

<i>Product</i>	<i>Face</i>	<i>Application</i>
LW-1000	Urethane	Stickers requiring metalized layer for security
LW-0400	Printable polyester	Stickers requiring protective layer
LWF-0100	Urethane	Stickers requiring a front face adhesive

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## Retroreflectivity:

LW Series Retroreflective Window Sticker Film **exceeds** all minimum coefficients of retroreflection values seen in **Table A**.

**Table A:**  
Minimum Coefficient of Retroreflection ( $R_A$ )<sup>1</sup>

Observation Angle	Color	Initial	Aged <sup>2</sup>
		Entrance Angle	Entrance Angle
		- 4°	- 4°
0.2°	White	50	25

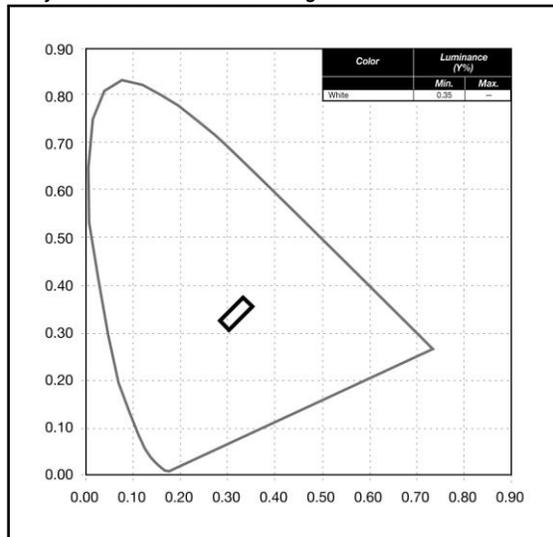
<sup>1</sup> $R_A$  = candelas per foot-candle per square foot (cd/ft<sup>2</sup>)

<sup>2</sup>Refer to L-S-300C for detailed test method

## Colors and Specification Limits:

L-3050 Series **meets** the color and minimum luminance requirements for ISO 7591 shown in **Figure A**.

**Figure A:**  
Daytime Color – CIE Color Diagram<sup>3</sup>



Daytime Color – Coordinates<sup>3</sup>

	White	
	X	Y
1	0.355	0.355
2	0.305	0.305
3	0.285	0.325
4	0.335	0.375
Luminance Factor	> 0.35	

<sup>3</sup>The four pairs of chromaticity coordinates and luminance range in **Figure A** determine the acceptable color in terms of the CIE Document No. 15 (1971) and illuminated with the CIE Standard Illuminant D65, 45°/0° geometry.

# Avery Dennison® LW Series

## Retroreflective Window Sticker Film

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### Characteristics:

<i>Property</i>	<i>LW-1000</i>	<i>LW-0400</i>	<i>LWF-0100</i>
Shelf-Life	1 year from date of purchase when stored at the following conditions; 65°-75°F (18°-24°C) and 50% ± 5% R.H.		
Typical Total Caliper	5 - 7 mil	8.7 – 9.7 mil	6.5 – 7.5 mil
Min. Application Temperature	NA	NA	65° F (18°C)
Service Temperature	NA	NA	-10°F to +150°F (-23°C to + 65°C)
Liner	Polyester protective layer that must be removed prior to printing	NA	Polyester
Adhesive	Requires a transfer tape adhesive after printing	Requires a transfer tape adhesive after printing	Permanent Pressure Sensitive Acrylic

# Avery Dennison® LW Series

## Retroreflective Window Sticker Film

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### Converting Information:

The following Avery Dennison literature will provide information to the user for proper application, storage, and other requirements. Find the latest information on the Avery Dennison website, [www.reflectives.averydennison.com](http://www.reflectives.averydennison.com). We encourage you to check our website periodically for updates.

### Substrates:

The application of Avery Dennison LW Series sheeting is limited to properly prepared clean glass. Users are urged to carefully evaluate, under actual use conditions, any film application to other substrates. Failure of film caused by other substrates, materials, contamination, or improper surface preparation is not the responsibility of Avery Dennison.

### Converting Steps:

LW-1000	<ul style="list-style-type: none"> <li>• Laser etch the exposed metal layer</li> <li>• Laminate a protective layer to the metal layer</li> <li>• Remove the polyester protective film</li> <li>• Variable print reflective face</li> <li>• Laminate transfer tape to reflective face</li> <li>• Die-Cut</li> </ul>
LW-0400	<ul style="list-style-type: none"> <li>• Variable print reflective face</li> <li>• Laminate transfer tape to reflective face</li> <li>• Die-Cut</li> </ul>
LWF-0100	<ul style="list-style-type: none"> <li>• Variable print a reverse image on a clear polyester pressure sensitive material</li> <li>• Laminate LWF-0100 to the print side</li> <li>• Die-Cut</li> </ul>

### General Converting Information:

Transfer Tape	<ul style="list-style-type: none"> <li>• UV resistant acrylic (to avoid yellowing due sunlight)</li> <li>• Verify adhesion to reflective printed surface.</li> </ul>
Die-Cutting	<ul style="list-style-type: none"> <li>• During die cutting the glass bead technology used to produce retroreflective film will act as an abrasive agent. This will shorten cutting/perforating tool life expectancies. Please consult your die manufacturer for insight on tooling specifics prior to purchase.</li> <li>• Hardened rotary dies are suggested.</li> </ul>

# Avery Dennison<sup>®</sup> LW Series Retroreflective Window Sticker Film

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## Warranty:

Avery Dennison LW Series beaded retroreflective sheeting ("Product(s)") are warranted to be free from defects in material and workmanship for one (1) year from date of purchase (or the period stated on the specific product information literature in effect at time of delivery, if longer). It is expressly agreed and understood that Avery Dennison's sole obligation and Purchaser's exclusive remedy under this warranty, under any other warranty, express or implied, or otherwise, shall be limited to repair or replacement of defective Product without charge at Avery Dennison's plant or at the location of Product (at Avery Dennison's election), or in the event replacement or repairs is not commercially practical, to Avery Dennison's issuing Purchaser a credit reasonable in light of the defect in the Product.

### CONDITIONS

This warranty shall be effective only if all of the following conditions are met:

Fabrication and/or installation must occur within one (1) year from the date of purchase.

The failure must have resulted solely from a manufacturing defect or deterioration of the Product due to natural causes under the Performance Warranty. Without limiting the generality of the foregoing, there is no warranty for the failure of the sheeting due to improper sign fabrication, improper storage, handling, installation, maintenance, failure of the sign substrate, vandalism or mischief. Slight color fading, cracking, chalking, edge lifting, or slight reduction in gloss or reflectivity will not materially detract from appearance and does not constitute a breach of warranty.

Avery Dennison has published instructional bulletins pertaining to the storage, handling, and cleaning of Product, approved substrates, and application procedures (collectively, the "Procedures"). The Product must have been processed and applied to blank, clean material in accordance with the Procedures, as such may be amended from time to time. Avery Dennison reserves the right to reject any warranty claim where the fabricator or installer cannot satisfactorily prove or demonstrate that the Avery Dennison procedures were utilized. The date of installation, warranty registration, and claim procedures established by Avery Dennison must be followed, and failure to follow such procedures shall void this warranty. Replacement Product carries only the unexpired warranty portion of the Product it replaces. The Product must be properly stored and applied within the shelf-life as stated in the applicable Avery Dennison Product Data Sheet including adhesive and other material product data sheets.

WARRANTY/LIABILITY LIMITATIONS. The remedies provided under this warranty are exclusive. Avery Dennison shall not be liable for any direct, indirect, incidental or consequential damages or specific relief, including costs of procurement of substitute goods or services, arising in any way or under any cause of action whether or not Avery Dennison has been advised of the possibility of such damages. These limitations will apply notwithstanding the failure of the essential purpose of any limited remedy. Except as specifically provided herein, in no event shall Avery Dennison's liability hereunder exceed the remedies specifically set forth in this warranty or shall Avery Dennison's liability exceed the replacement value of the Products purchased.

**THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHERS. ANY AND ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY EXPRESSLY DISCLAIMED.**

All Avery Dennison products are sold with the understanding that Purchaser has independently determined the suitability of such products for its intended and other purposes.

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