# TEST REPORT

## IEC 60825-4:2009-06

SAFETY OF LASER PRODUCTS - PART 4: LASER GUARDS

<table>
<thead>
<tr>
<th>Report reference No</th>
<th>LPS170555-000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tested by (name and signature)</td>
<td>Robert W. Wilcox</td>
</tr>
<tr>
<td>Approved by (printed name and signature)</td>
<td>Kenneth J. Puckett, LSO</td>
</tr>
<tr>
<td>Date of issue</td>
<td>2017-04-26 (8 pages, not including Attachments)</td>
</tr>
</tbody>
</table>
| Testing Laboratory name | Laser Product Safety LLC  
CARAT Laboratory |
| Address | 3290A Green Level West Road, Cary, North Carolina, 27519, USA |
| Report Type | Informative Report. |
| Applicant's name | Vistamatic LLC |
| Address | 11713 NW 39th St.  
Coral Springs, FL 33065 |
| Test specification | |
| Standard | IEC 60825-4:2009-06 |
| Non-published test method | N/A |
| Non-standard test method | N/A |
| Test Report | |
| Test Report No | LPS_60825-4.1 |
| TR originator | LPS LLC |
| Master TR | Dated November 2010 |

Copyright © 2010. LPS LLC. All rights reserved.

This informative document may be reproduced in whole or in part for non-commercial purposes as long as LPS is acknowledged as copyright owner and prior written approval is obtained from LPS. LPS takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. The client provided all of the test samples for testing by LPS. LPS did not select the samples or determine whether the samples provided were representative of other manufactured products. LPS has not established Factory Inspection Service or other surveillance of the product. LPS's name shall not be used on or in conjunction with the product. The client and or manufacturer are solely and fully responsible for conformity of all products to all applicable standards, specifications or requirements and for any damages caused to any parties. The test results may not be used, in whole or in part, in any other document without LPS's prior written approval.
<table>
<thead>
<tr>
<th><strong>Type of Product Tested</strong></th>
<th>Laser Cell Window</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturer’s Trademark</strong></td>
<td>ISTAMATIC Privacy Glass Solutions</td>
</tr>
<tr>
<td><strong>Model Number</strong></td>
<td>Model VBL</td>
</tr>
<tr>
<td><strong>Manufacturer Name</strong></td>
<td>Vistamatic LLC</td>
</tr>
<tr>
<td><strong>Address</strong></td>
<td>11713 NW 39th St, Coral Springs, FL 33065</td>
</tr>
</tbody>
</table>
Copy of the Marking Plate and Product Label information:

![Vistamatic LLC Marking Plate]

MODEL NUMBER: VBL 1/2
SERIAL NUMBER: MANUFACTURED DATE:

Attention: Laser Protection is only guaranteed when unit is in closed position.

This product complies with the requirements for protective housing schemes of IEC/EN 60825-1:2008-06.

![Vistamatic LLC Product Label]

DO NOT REMOVE
UNTIL WARRANTY REGISTRATION IS COMPLETED PLEASE VISIT www.vistamatic.com/warranty.html


NOTE: Contractor's Name should be written in ink over printed serial number, along with date of installation and written warranty number provided by the authorized installation dealer. The product label with serial number affixed to the back of the vision panel(s) ensures the registered warranty is valid. 

VISTAMATIC LIFETIME WARRANTY

INCREASED PERFORMANCE. UNPRECEDENTED VALUE. 

Laser Product Safety LLC
Cary, NC USA

Vistamatic LLC
Model VBL

TR originator: LPS LLC
TR No.: LPS_60825-4.1
# GENERAL INFORMATION:

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>All measurements and testing procedures is to be done in accordance with IEC 60825-4:2009-06.</td>
<td>Test procedures that were deemed applicable were performed.</td>
</tr>
</tbody>
</table>

## Test item particulars

| Equipment mobility                           | Stationary                     |
| Protection Class of equipment               | Class I                        |
| Mass of equipment (kg)                      | < 18 kg                        |

## Possible test case verdicts

- Test case does not apply to the test object .... : N/A
- Test item does meet the requirement ....... : P(ass)
- Test item does not meet the requirement ...... : F(ail)

## Testing

- Date of receipt of test item ................. : 2017-04-30
- Date(s) of performance of test .............. : 2017-05-11

General remarks:

This report shall not be reproduced except in full without the written approval of the testing laboratory.

"(See Attachment #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a point (comma) may be used as the decimal separator.

The test results presented in this report relate only to the item(s) tested.

List of test equipment must be kept on file and available for review.
General product information and considerations:
The unit covered by this report is a glass window intended to house an industrial laser. The window basically consists of 2 panes, ¼ in. tempered clear glass and 1 pane, 5/32 in. annealed clear glass. Sandwiched between the glass are stainless steel spacer bars, hot melt sealant, steel dampers and polymeric blocks. The unit employs three (3) pieces of glass sealed together using a hot melt sealant. On all three (3) pieces Avery HP 700 Vinyl is laid to allow no visibility in a closed position. These windows are intended to serve as part of the protective housing scheme; since doors, hatches, windows, removable and non-removable panels, interlocked and non-interlocked panels are all part of the protective housing scheme. Laser guards are a stand-alone and typically proprietary, item for special purpose application. In this investigation the windows were exposed to a free space collimated cw or pulsed CO2 industrial laser, a Holmium 2100nm YAG, a YAG 1064nm, a KTP 532nm and an Excimer 353nm laser at various power levels and the results documented.

Attachment 1 – Test Record
Attachment 2 – Installation Manual
Attachment 3 – Product Details
Attachment 4 – Film Coating Datasheet
Attachment 5 – Construction Illustration
Attachment 6 – Photographs
# IEC 60825-4:2009-06

<table>
<thead>
<tr>
<th>Clause</th>
<th>Requirement – Test</th>
<th>Result - Remark</th>
<th>Verdict</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0 Laser Processing Machines</td>
<td></td>
<td></td>
<td>P</td>
</tr>
<tr>
<td>4.1 Design requirements</td>
<td>The windows are intended to serve as an integral part of protective housing scheme. In the intended installation and application, the window is not intended to be exposed to laser radiation. However the windows were exposed to a free space laser beam. See Attachment 1.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>4.1.1 General requirements</td>
<td>No hazard. See Attachment 1.</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>4.1.2 Consumable parts of laser guards</td>
<td>Not a laser guard.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>4.2.1 General</td>
<td>No hazard. See Attachment 1.</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>4.2.2 Active laser guards</td>
<td>The window is not considered an active laser guard. It is part of the protective housing scheme.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>4.2.2a Protection time</td>
<td>The window is not considered an active laser guard. It is part of the protective housing scheme.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>4.2.2b Visible or audible warning</td>
<td>The window is not considered an active laser guard. It is part of the protective housing scheme.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>4.3 Validation</td>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>4.3.1 Validation of performance</td>
<td>No hazard. See Attachment 1.</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>4.3.1.1 FEL</td>
<td>No hazard. See Attachment 1.</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>4.3.1.2a Reproducing the conditions</td>
<td>No hazard. See Attachment 1.</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>4.3.1.2b Creating the conditions</td>
<td>No hazard. See Attachment 1.</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>4.4 User Information</td>
<td></td>
<td></td>
<td>P</td>
</tr>
<tr>
<td>4.4.1 Maintenance, cleaning, repair, etc..</td>
<td>See Attachment 2 for Manual.</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>Clause</td>
<td>Requirement – Test</td>
<td>Result - Remark</td>
<td>Verdict</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------------------</td>
<td>------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>4.4.2</td>
<td>Actuation of the safety control system</td>
<td>See Attachment 2 for Manual.</td>
<td>P</td>
</tr>
<tr>
<td>5.0</td>
<td>Proprietary Laser Guards</td>
<td>The window is not considered an active laser guard. It is part of the protective housing scheme.</td>
<td>N/A</td>
</tr>
<tr>
<td>5.1</td>
<td>Design requirements</td>
<td>The window is not considered an active laser guard. It is part of the protective housing scheme.</td>
<td>N/A</td>
</tr>
<tr>
<td>5.2</td>
<td>Performance requirements</td>
<td>No window at or beyond its rear surface below 200W direct exposure. See Attachment 1.</td>
<td>P</td>
</tr>
<tr>
<td>5.3</td>
<td>Specification requirements</td>
<td>No hazard. See Attachment 1.</td>
<td>P</td>
</tr>
<tr>
<td>5.4</td>
<td>Test Requirements</td>
<td>No hazard. See Attachment 1.</td>
<td>P</td>
</tr>
<tr>
<td>5.4.1</td>
<td>General</td>
<td>No hazard. See Attachment 1.</td>
<td>P</td>
</tr>
<tr>
<td>5.4.2</td>
<td>Sample testing</td>
<td>No hazard. See Attachment 1.</td>
<td>P</td>
</tr>
<tr>
<td>5.5</td>
<td>Labeling Requirements</td>
<td></td>
<td>P</td>
</tr>
<tr>
<td>5.5.1</td>
<td>Placement on rear</td>
<td>All labels are placed on the rear surface of the door.</td>
<td>P</td>
</tr>
<tr>
<td>5.5.2</td>
<td>Orientation</td>
<td>The rear surface is clearly identified.</td>
<td>P</td>
</tr>
<tr>
<td>5.5.3</td>
<td>Bold coloured outline</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>5.5.4</td>
<td>Full PEL specification</td>
<td>The window is not considered an active laser guard. It is part of the protective housing scheme.</td>
<td>N/A</td>
</tr>
<tr>
<td>5.5.5</td>
<td>Manufacturer’s name, date and place of manufacture</td>
<td>See page for 3 for label information.</td>
<td>P</td>
</tr>
<tr>
<td>5.6</td>
<td>User Information</td>
<td></td>
<td>P</td>
</tr>
<tr>
<td>5.6a</td>
<td>Description of the permitted uses of the laser guard;</td>
<td>Provided. See Attachment 2.</td>
<td>P</td>
</tr>
<tr>
<td>Clause</td>
<td>Requirement – Test</td>
<td>Result - Remark</td>
<td>Verdict</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>5.6b</td>
<td>Description of the form of mounting and connection of the laser guard;</td>
<td>Mounting information is provided. See Attachment 2.</td>
<td>P</td>
</tr>
<tr>
<td>5.6c</td>
<td>Information on the installation of the laser guard – for active laser guards this shall include interface and supply requirements for the guard;</td>
<td>Installation information is provided. See Attachment 2.</td>
<td>P</td>
</tr>
<tr>
<td>5.6d</td>
<td>Maintenance requirements, including for example details of inspection and test procedures, cleaning, replacement or repair of damaged parts;</td>
<td>Maintenance and inspection information is provided. See Attachment 2.</td>
<td>P</td>
</tr>
<tr>
<td>5.6e</td>
<td>Instructions, that after any actuation of the safety control system of an active guard, the cause shall be investigated, checks shall be made for damage, and the necessary remedial action to be taken before resetting the control system.</td>
<td>The window is not considered an active laser guard. It is part of the protective housing scheme.</td>
<td>N/A</td>
</tr>
<tr>
<td>5.6f</td>
<td>The labels in 5.5 and their location. If only part of the front surface of the guard is a guard, this area shall be identified.</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>5.6g</td>
<td>A statement of compliance with this standard</td>
<td></td>
<td>P</td>
</tr>
</tbody>
</table>
ATTACHMENT 1
TEST RECORD
TEST RECORD:

Method: A single 12.0 in.² panel of the Model VBL window material was mounted vertically as in intended normal operation and in normal intended installation. Under the conditions noted and tabulated below, a free space, collimated laser beam was directed at the front of the equipment under test (EUT), exposing the EUT to laser radiation in three (3) directions, normal (0°), positive diagonal (+45°), and negative diagonal (-45°). Laser radiation transmittance, $T_\lambda$, passing through to the rear of the product was measured directly on the surface of the window for the three (3) directions of exposure, documented and tabulated. The optical density, (OD) of the filter material was determined, documented and tabulated.

**FIGURE 1** shows the test configuration. The laser aperture was located at 100.0 mm from the front surface of the equipment under test (EUT). The figure below shows a side view of the EUT and test setup configuration.
FIGURE 2 shows a basic radiometric test and measurement configuration and technique for characterizing the distribution of laser radiation emissions in free space. The collimated laser beams used in this investigation are all under 1000um in diameter.

![Diagram of a basic radiometric test and measurement configuration](image)

**FIGURE 1**

<table>
<thead>
<tr>
<th>Model</th>
<th>EUT configuration</th>
<th>Laser type</th>
<th>Wave-Length</th>
<th>Output Power</th>
<th>Exposure duration</th>
<th>Angle from normal</th>
<th>Measured $T_A$</th>
<th>OD</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>CO2</td>
<td>10.6um</td>
<td>75W cw</td>
<td>10s</td>
<td>0°</td>
<td>2.6 x 10^{-4}</td>
<td>3.5</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>CO2</td>
<td>10.6um</td>
<td>75W cw</td>
<td>10s</td>
<td>+45°</td>
<td>2.5 x 10^{-4}</td>
<td>3.5</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>CO2</td>
<td>10.6um</td>
<td>75W cw</td>
<td>10s</td>
<td>-45°</td>
<td>2.5 x 10^{-4}</td>
<td>3.5</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>YAG</td>
<td>1064nm</td>
<td>30W cw</td>
<td>10s</td>
<td>0°</td>
<td>7.2 x 10^{-5}</td>
<td>4.1</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>YAG</td>
<td>1064nm</td>
<td>30W cw</td>
<td>10s</td>
<td>+45°</td>
<td>6.9 x 10^{-5}</td>
<td>4.1</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>YAG</td>
<td>1064nm</td>
<td>30W cw</td>
<td>10s</td>
<td>-45°</td>
<td>6.9 x 10^{-5}</td>
<td>4.1</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>KTP</td>
<td>532nm</td>
<td>30W cw</td>
<td>10s</td>
<td>0°</td>
<td>2.5 x 10^{-6}</td>
<td>5.5</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>KTP</td>
<td>532nm</td>
<td>30W cw</td>
<td>10s</td>
<td>+45°</td>
<td>2.3 x 10^{-6}</td>
<td>5.6</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>KTP</td>
<td>532nm</td>
<td>30W cw</td>
<td>10s</td>
<td>-45°</td>
<td>2.0 x 10^{-6}</td>
<td>5.6</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>Holmium</td>
<td>2100nm</td>
<td>15W pk</td>
<td>10s</td>
<td>0°</td>
<td>5.8 x 10^{-6}</td>
<td>5.2</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>Holmium</td>
<td>2100nm</td>
<td>15W pk</td>
<td>10s</td>
<td>+45°</td>
<td>5.6 x 10^{-6}</td>
<td>5.2</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>Holmium</td>
<td>2100nm</td>
<td>15W pk</td>
<td>10s</td>
<td>-45°</td>
<td>5.5 x 10^{-6}</td>
<td>5.2</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>Excimer</td>
<td>353nm</td>
<td>15W pk</td>
<td>10s</td>
<td>0°</td>
<td>6.5 x 10^{-7}</td>
<td>6.2</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>Excimer</td>
<td>353nm</td>
<td>15W pk</td>
<td>10s</td>
<td>+45°</td>
<td>6.6 x 10^{-7}</td>
<td>6.1</td>
</tr>
<tr>
<td>VBL</td>
<td>vertical</td>
<td>Excimer</td>
<td>353nm</td>
<td>15W pk</td>
<td>10s</td>
<td>-45°</td>
<td>6.6 x 10^{-7}</td>
<td>6.1</td>
</tr>
</tbody>
</table>
ATTACHMENT 2
INSTALLATION MANUAL
Technical Details Manual

Contents

1. Warranty Statement
2. Quality Assurance Statement
3. Cross Section of Vistamatic V51
4. Cross Section of Vistamatic V52
5. Hollow Metal Frame Fixing Detail
6. Hollow Metal Frame suggested Cut-out (if purchased by Vistamatic*)
7. Hardwood Bead Fixing Detail
8. Lead Door Bead Fixing Detail
9. Square Panel Cut-out
10. Oblong Panel Cut-out
11. Vistamatic Glass and Restrictions
12. Glazing Options
   a. Safety Glass
   b. Toughened Safety Glass
   c. Laminated Safety Glass
   d. Fire Resistant Glass
   e. Other Glazing: Laser, X-Ray Protective Glass, Tamper Proof
13. Fitting Instruction
14. Cleaning Instructions
15. Quality Specifications
16. Terms and Conditions for Warranty
17. Certificates

VISTAMATIC LLC
5645 Coral Ridge Drive, #279
Coral Springs, Fl, 33076
T: 866-466-9525 F: 866-861-9335
E: infous@vistamatic.com www.vistamatic.com
Specifying VISTAMATIC Vision Panels

**NOTE TO SPECIFIER** This master specification section has been prepared by Vistamatic, LLC for use in the preparation of a project specification section covering switchable privacy glass.

This specification is a part of the SpexPlus™ system, which comprises a fully architectural master specification that can be used to specify all project requirements.

The following should be noted in using this specification:

- Hypertext links to specific websites are included after manufacturer names and names of organizations whose standards are referenced within the text, to assist in product selection an further research. Hypertext links are contained in parenthesis and shown in blue, e.g. (www.spxplus.net)

- Optional text requiring a selection by the user is enclosed within brackets, e.g. "Section [09 6000.1] [_____.]"

- Items requiring user input are enclosed within brackets, e.g. "Section [_____ _____]"

- Optional paragraphs are separated by an "OK" statement, e.g.:

  **** OR ****

- Sustainable requirements are included for projects requiring LEED certification, and are included as green text.

For additional information on LEED, visit the U.S. Green Building Council website at www.USGBC.org.

For assistance on the use of the products in this section, contact Vistamatic, LLC by calling toll-free 1-866-466-9525, by e-mail at USSales@VISTAMATIC.com, or visit their website at www.VISTAMATIC.com.

For assistance with obtaining or using the SpexPlus™ Master Specification System, contact SpexPlus by calling 1-888-877-SPEX (1-88-877-7739), by e-mail at chaney@spxplus.net, or visit the website at www.Spxplus.net.
PART 1 GENERAL

1.1 SUMMARY
Edit the following paragraphs to include only those items specified in this section.
A. Sections Includes:
1. Switchable privacy glass vision panels.
Coordinate the following paragraphs with other sections in the project manual.
B. Related Sections:
1. Division 01: Administrative, procedural, and temporary work requirements.
2. Section [06 4600 - Wood Trim] [_______ - _______]: Wood frames to receive glass panels.
3. Section [08 1113 - Hollow Metal Doors and Frames] [_______ - _______]: Steel doors and frames to receive glass panels.
4. Section [08 1116 - Aluminum Doors and Frames] [_______ - _______]: Aluminum doors and frames to receive glass panels.
5. Section [08 1416 - Flush Wood Doors] [08 1433 - Stile and Rail Wood Doors] [_______ - _______]: Wood doors to receive glass panels.
7. Section [08 8000 - Glazing] [_______ - _______]: Glazing accessories.

1.2 REFERENCES
In the following paragraphs, retain only those reference standards that are used elsewhere in this section.
D. Underwriters Laboratories (UL):
2. 10C - Standard for Positive Pressure Fire Tests of Door Assemblies.
Specifying VISTAMATIC Vision Panels

1.3 SYSTEM DESCRIPTION
A. Switchable Privacy Glass Vision Panels: Patented dual-position safety vision panels providing for privacy and for observation without disturbance.

1.4 SUBMITTALS
Limiting submittals to only those actually required helps to minimize liability arising from the review of submittals.
Minimize submittals on smaller, less complex projects. Include the following for submission of shop drawings, product data, and samples for the Architect’s review.

A. Submittals for Review:
1. Shop Drawings: Include elevations and details showing joint locations, transitions, and terminations, and anchoring details.
2. Product Data: Include preparation instructions and recommendations, storage and handling requirements, and installation methods.
3. Samples: [12 x 12] [____ x ____] inch glass samples.
Include the following for submissions of quality control submittals. These submittals are intended for the Owner’s record purposes and are not intended to be reviewed by the Architect.

B. Quality Control Submittals:
1. Certificates of Compliance: Manufacturer’s certification that products furnished comply with specified requirements.
Include the following for submission of sustainable design submittals for LEED Regional Materials credit. Verify with Vistomatic, LLC that distance from manufacturing location to project site is within the required 500 mile radius.

C. Sustainable Design Submittals:
1. Regional Materials
Include the following for submission of closeout submittals for the Owner’s record purposes.

D. Closeout Submittals:
1. Operation and Maintenance Data: Maintenance instructions including recommendations for periodic checking and adjustment of cable tension and periodic cleaning and maintenance of components.

1.5 QUALITY ASSURANCE
The following paragraph specifies a minimum level of experience required of the parties performing the work of this section. Retain if required, and edit to suit project requirements.

A. Manufacturer Qualifications: Primary products furnished by single manufacturer with minimum ten years of experience.
B. Installer Qualifications: Minimum [three] [____] years of experience in work of this Section.
C. Switchable Privacy Glass: Tested and labeled to CPSC 16 CFR 1201.
Specifying VISTAMATIC Vision Panels

Include the following for full size mock-up for review of construction, coordination of work of several sections, testing, or observation of operation.

D. Mockup:
   1. Size: One typical switchable glass unit.
   2. Show glass and glazing accessories.
   3. Locate (where directed.)
   4. Approved mockup may [not] remain as part of the Work.

1.6 DELIVERY, STORAGE AND HANDLING
   A. Delivery glass with temporary label on each light identifying manufacturer, glass type, quality, and nominal thickness.
   B. Store glass in areas least subject to traffic and falling objects. Keep storage area dry.
   C. Stack individual panels on edge leaned slightly against upright supports with separators between panels.

1.7 PROJECT CONDITIONS
   A. Maintain temperature, humidity, and ventilation within limits recommended by glass manufacturer.
   B. Do not install products under environmental conditions outside manufacturer's limits.

1.8 WARRANTIES
   A. Furnish manufacturer's lifetime warranty providing coverage against handle mechanism failure due to faulty workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS
   A. Contract Documents are based on products by Vistamatic LLC, 4373 NW 124th Avenue, Coral Springs, Fl. 33076, phone 866-466-9525, fax 866-861-9135, email USales@vistamatic.com, www.VISTAMATIC.com.

Edit the following to indicate whether or not substitutions will be permitted for the products in this section.

B. Substitutions: [Under provisions of Division 01.] [Not permitted.]
Specify VISTAMATIC Vision Panels

2.2 MATERIALS

Edit the following to indicate required panel type. If multiple types are required, show locations on Drawings or in Schedule at end of section.

A. Switchable Privacy Glass Vision Panels:

Include the following for VISTA Max™ VISTAMATIC® Vision Panels with sandblasted lines incorporating the Impact Absorption System (IAS) damper system that slides the privacy control pane (middle sheet of glass). Maximum size is 40 x 40 inches.

1. VS1 Max: Vistamatic Vision Panel with one side handle, sandblasted lines incorporating IAS damper system.

2. VS2 Max: Vistamatic Vision Panel with two side handle, sandblasted lines incorporating IAS damper system.

3. VSN1 Max: Vistamatic Vision Panel with one side handle, sandblasted lines with wording incorporating IAS damper system.

4. VSN2 Max: Vistamatic Vision Panel with two side handle, sandblasted lines with wording incorporating IAS damper system.

Include the following for VISTA-Max™ VISTAMATIC® Vision Panels with vinyl lines for near or total blackout effect, incorporating the Impact Absorption System (IAS) damper system that slides the privacy control pane (middle sheet of glass). Maximum size is 40 x 40 inches.

5. VV1 Max: Vision Panel with one side handle, white vinyl lines (blackout) incorporating IAS damper system.

6. VV2 Max: Vision Panel with two side handle, white vinyl lines (blackout) incorporating IAS damper system.

7. VB1 Max: Vistamatic Vision Panel with one side handle, black vinyl lines (blackout) incorporating IAS damper system.

8. VB2 Max: Vistamatic Vision Panel with two side handle, black vinyl lines (blackout) incorporating IAS damper system.

Include the following for SuperMax™ VISTAMATIC® Vision Panels with a small mullion down center of panel and two working mechanisms, sandblasted lines incorporating the Impact Absorption System (IAS) damper system that slides the privacy control pane (middle sheet of glass). Maximum size is 80 x 40 inches or equivalent square footage.

9. SV1 SuperMax: Vistamatic Vision Panel with two one side handle, small mullion down center of panel and two working mechanisms, sandblasted lines incorporating IAS damper system.

10. SV2 SuperMax: Vistamatic Vision Panel with two two-side handles, small mullion down center of panel, and two working mechanisms, sandblasted lines incorporating IAS damper system.

Include the following for SuperMax™ VISTAMATIC® Vision Panels with a small mullion down center of panel and two working mechanisms, and vinyl lines for near or total blackout effect, incorporating the Impact Absorption System (IAS)
Specifying VISTOMATIC Vision Panels

damper system that glides the privacy control pane (middle sheet of glass). Maximum size is 80 X 40 inches or equivalent square footage.

11. VW1 SuperMax: Vistmatic Vision Panel with one side handle, small mullion down center of panel, mechanisms, white vinyl lines incorporating IAS damper system.

12. VW2 SuperMax: Vistmatic Vision Panel with two side handle, small mullion down center of panel, mechanisms, white vinyl lines incorporating IAS damper system.

13. VB3 SuperMax: Vistmatic Vision Panel with one side handle, small mullion down center of panel, mechanisms, black vinyl lines (blackout) incorporating IAS damper system.

14. VB2 SuperMax: Vistmatic Vision Panel with two side handle, small mullion down the center of panel and two working mechanisms, Black Vinyl Lines (Blackout) incorporating IAS damper system.

Include the following for MAX-XL® VISTOMATIC® Vision Panels with sandblasted lines, bottom 1/2 solid sandblasted (handle located 30-3/4 inches from top) incorporating the Impact Absorption System (IAS) damper system that glides the privacy control pane (middle sheet of glass). Maximum size is 80 X 40 inches.

15. Max XL1: Vistmatic Vision Panel with one side handle, sandblasted lines, bottom 1/2 solid sandblasted, handle located 30-3/4 inches from top, incorporating IAS damper system.

16. Max XL2: Vistmatic Vision Panel with two side handle, sandblasted lines, bottom 1/2 solid sandblasted, handles located 30 3/4 inches from top, incorporating IAS damper system.

Include the following for VISTA-Slide™ VISTOMATIC® Window with sandblasted vertical lines, moving side to side. Maximum size is 80 X 48 inches.

17. Vistaslide1: Vistmatic Window with one side handle, sandblasted vertical lines.

18. Vistaslide2: Vistmatic Window with two side handle, sandblasted vertical lines.

Include the following for VISTA-Slide™ VISTOMATIC® Window with vinyl vertical lines for near or total blackout, moving side to side. Maximum size is 80 X 48 inches.

19. VistaslideVW1: Vistmatic Window with one side handle, vinyl white vertical lines.

20. VistaslideVW2: Vistmatic Window with two side handle, vinyl white vertical lines.

21. VistaslideVB1: Vistmatic Window with one side handle, vinyl black vertical lines (blackout).

22. VistaslideVB2: Vistmatic Window with two side handle, vinyl black vertical lines (blackout).

Include the following for VistaPORT™ VISTOMATIC® Vision Port with sandblasted lines (15-3/4 inch diameter only).

23. Vistorp1: Vistmatic Vision Panel with one side handle, sandblasted lines.

Specifying VISTAMATIC Vision Panels

Edit the following to indicate required glass size. If more than one size is required, show sizes on Drawings or in Schedule at end of section. Refer to VISTAMATIC® technical literature for maximum glass sizes. Contact VISTAMATIC® for custom sizes.

B. Panel Size: [____ x ____] inches.

C. Panel Composition: Triple glazed panels, 11/16 inch (17.46 mm) thick, with 1/4 inch (6 mm) thick tempered glass outer panes.

Edit the following to indicate required pattern and opacity. The VISTAMATIC® product lines offers a choice of opacities providing for seamless transition from clear to opaque (allowing light through), black/white (as blackout effect), or with pictures or logos. If more than one type is required, show types on Drawings or in Schedule at end of section.

D. Panel Opacity and Pattern: [Natural sandblasted lines.] [Black vinyl lines.] [______] color lines.] [Custom pattern to be selected.] Edit the following to indicate required glass type. Typical glazing is heat treated float glass or safety glass depending on exposure. Specialty glasses are also available as noted below. If more than one type is required, indicate types on Drawings or in Schedule at end of section.

E. Glass Types:

2. Safety glass: [3/8 inch (10 mm) thick tempered glass.] [3/4 inch (19 mm) thick tempered glass.] [1/4 inch tempered glass.] [1/2 inch (12 mm) thick tempered glass.]
3. Bullet resistant glass: 3/4 inch (19 mm) thick laminated glass.
4. Fire safety glass: [Firelite NT 3/6 inch (5 mm) thick fire resisting [20] [45] minute minimum.] [Pyrugard CT30 1/4 inch (6 mm) thick fire resisting 20 minute.]
5. Leaded (x-ray radiation protection) glass: [1/16 inch (2.1 mm) thick leaded glass.] [1/16 inch (2.4 mm) thick leaded glass.] [1/8 inch (2.9 mm) thick leaded glass.]
8. Film: 3M Scotchguard Ultra Safety and Security Window Film.

Edit the following to indicate required options. Identify locations on Drawings or in Schedule at end of section.

F. Special Features:

1. Key locking knob.
2. Key locking knob and ligature free knob.
3. Lever handle.
4. Slim line lever handle operation for sliding doors.
5. Fire resistance; [20] [45] minute with hose stream, tested to UL 108 or 10C.
6. X-ray radiation protection.
Specifying VISTAMATIC Vision Panels

7. Laser protection.
8. Pictogram/logo.
9. High security.
10. [Single] [Double] side handle operation.
11. Framing for doors.

2.3 ACCESSORIES
A. Glazing Accessories: Specified in Section 08 8000.[________] ______

2.4 FABRICATION
A. Fabricate glazing units in required sizes with edge and face clearances, edge and surface conditions, and bite
in accordance with manufacturer requirements and reference standards, to comply with system performance
requirements.

PART 3 EXECUTION

3.1 EXAMINATION
A. Examine openings for proper site, plumb, square, and level.
B. Verify that openings conform to details, dimensions, and tolerances indicated on approved Shop Drawings.

3.2 PREPARATION
A. Clean surfaces to receive glass units prior to installation.
B. Prepare surfaces using methods recommended by manufacturer.

3.3 INSTALLATION
A. Install in accordance with manufacturer’s instructions and approved Shop Drawings.
B. Set glazing without bending, twisting, or forcing of units.
C. Do not allow glass to rest on or contact framing members.

Include the following for patterned glass
D. Install patterned glass units with pattern in same direction in all openings.

Include the following for insulating glass:
E. Insulating Glass Units:
   1. Use glazing gaskets of sufficient size and depth to completely cover glass seal or metal channel
   frame.
   2. Do not use putty or glazing compounds.
   3. Do not grind, nip, cut, or alter edges or corners.
Specifying VISTAMATIC Vision Panels

4. Install with tape or gunnable sealant in wood sash. Include the following for fire-rated glass.

   F. Fire Resistant Glass: Install in accordance with UL design requirements. Include the following for bullet resisting glass.

   G. Bullet Resisting Material: Use glazing material which will permit expansion and contraction of material in frame.

3.4 CLEANING
   A. Clean glass surfaces; remove temporary labels and foreign matter.

3.5 ADJUSTING
   A. Replace cracked, broken, and imperfect glass, and glass that has been improperly installed.

3.6 PROTECTION
   A. Protect installed products until completion of project.

3.7 SCHEDULE
   Include the following for a schedule listing the products in this section. Coordinate with Part 2 - Products. The following may assist in developing a schedule.

<table>
<thead>
<tr>
<th>MARK</th>
<th>PANEL TYPE</th>
<th>PANEL SIZE</th>
<th>PANEL OPACITY AND PATTERN</th>
<th>GLASS TYPE</th>
<th>SPECIAL FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>V51 MAX; VISTAMATIC Vision Panel with one side handle. sandblasted lines.</td>
<td>24 x 24 inches</td>
<td>Custom pattern to be selected</td>
<td>Heat-treated float glass</td>
<td>Key locking knob</td>
</tr>
</tbody>
</table>

<END OF SECTION>
ATTACHMENT 3
PRODUCT DETAILS
Vistatic Vision Panel with Vinyl and Handle (Code VB1 or VW1)
Unit must be in closed position for testing

Unit make-up
Glass:
2 x 3/4 Tempered Clear Glass
1 x 5/32 Annealed Clear Glass
Hole:
1 x hole in front of unit
Vinyl:
Avery Dennison HP 700 High Performance
Interior of unit:
Stainless Steel Spacer bars
Hot Melt Sealant
Dampers – Steel
Plastic Blocks

The unit is manufactured with three pieces of glass sealed together using a Hot Melt sealant. On all three pieces Avery HP 700 Vinyl is laid to allow no visibility in a closed position.
ATTACHMENT 4
FILM COATING DATASHEETS
Avery Dennison® HP 700 High Performance
Calendered Series
Opaque Permanent Kraft
(formerly: AS Opaque Series – 764)
Revision: 6 Dated: 03/17

Uses:
Avery Dennison® HP 700 series calendered films are premium quality, flexible, opaque solid color vinyl films (available in a number of finish options), designed for use in a wide range of sign making applications. This product is ideal for a variety of indoor and outdoor projects.

Features:
- Outstanding durability and outdoor performance
- Dimensionally stable liner for easy converting
- Medium gloss finish
- Excellent conversion on CAD plotters
- Easy cutting & weeding
- Good dimensional stability
- Good UV, temperature, humidity, and salt-spray resistance

Conversion:
- Thermal Die Cutting
- Flat Bed Sign-Cut
- Drum Roller Sign-Cut
- Steel Rule Die-Cutting
- Thermal Transfer

Common Applications:
- Trucks
- Trailers
- Cars & Vans
- Banners
- Architectural Signage
- Directional Signage
- Trains & light rail
- Buses
- Outdoor advertising

Product Data Sheet
Page 1 of 3

Avery Dennison Solutions
Customer Service: 800-252-0373
Avery Dennison® HP 700 High Performance Calendered Series
Opaque Permanent Kraft
(formerly: A6 Opaque Series - 78#)
Revision: 9  Dated: 03/13/17

Product Data Sheet
Page 2 of 3

---

Avery Dennison Solutions

---

Laser Product Safety LLC
Cary, NC USA

Vistamatic LLC
Model VBL

---

TR originator: LPS LLC  TR No.: LPS60825-4.1
Avery Dennison® HP 700 High Performance
Calendered Series
Opaque Permanent Kraft
(formerly: A6 Opaque Series – 78#)
Revision: 9    Dated: 03/13/17

Colors Cross Reference:

<table>
<thead>
<tr>
<th>HP 700 Series Name</th>
<th>Item #</th>
<th>Vertical Durability Zone / Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 700 TC High Sheen Transparent</td>
<td>13000</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Textured</td>
<td>13010</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Matte &amp; Textured</td>
<td>13020</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Matte</td>
<td>13030</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Mattye White</td>
<td>13040</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Satin</td>
<td>13050</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Matte</td>
<td>13060</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Mattye White</td>
<td>13070</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Satin</td>
<td>13080</td>
<td>4</td>
</tr>
</tbody>
</table>

NOTE: Some color dyes may occur in severe environmental areas. Refer NS 1.3.3 for durability guidelines.

Discontinued Colors:

<table>
<thead>
<tr>
<th>HP 700 Series Name</th>
<th>Item #</th>
<th>Vertical Durability Zone / Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 700 TC High Sheen Transparent</td>
<td>13000</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Textured</td>
<td>13010</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Matte &amp; Textured</td>
<td>13020</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Matte</td>
<td>13030</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Mattye White</td>
<td>13040</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Satin</td>
<td>13050</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Matte</td>
<td>13060</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Mattye White</td>
<td>13070</td>
<td>4</td>
</tr>
<tr>
<td>HP 700 TC High Sheen Satin</td>
<td>13080</td>
<td>4</td>
</tr>
</tbody>
</table>

Revisions are indicated
Avery Dennison is a registered trademark of Avery Dennison Corporation
ATTACHMENT 5
CONSTRUCTION ILLUSTRATION
NOTES:
1. ALL FRAMES, INCLUDING THOSE FOR DOORS AND WALLS ARE NOT PROVIDED BY VISTAMATIC. CONTRACTOR TO PROVIDE AND COORDINATE FOR INSTALLATION.
2. ALL PANELS AND GLASS ARE SEALED USING A HOT MELT BUTYL.
3. ALL C730 AND FIRELITE PANELS AND GLASS ARE SEALED WITH FIRE RETARDANT SEALANT.

Tracing Title: VB or VW 1 LEVER WITH 1/4" TEMPERED GLASS

DATE: 2012-09-22

RevitSafe
VISTAMATIC
VISION PANELS
600 Larch Range Ave., Kennesaw, GA 30144
Phone: 770-954-0270
Fax: 770-954-0271
E-Mail: info@vistapanel.com
Web: www.vistappanel.com

Vistamatic LLC
Model VBL

VBL originator: LPS LLC
ATTACHMENT 6
PHOTOGRAPHS OF EUT