

# Visible Transmission Test Report

*Using the HUNTER CQ-XE*

Analyzed for: <b>VISTAMATIC</b>	Work Order # <b>15905</b>	Measurement Date <b>8/15/2014</b> Test Report Date <b>8/19/2014</b>
---------------------------------	---------------------------	--

## Sample Information

Sample :	Sample Description:		
1	Aluminum blind window	<i>Between Glass Blinds</i>	<i>A Side to source – Rel. Trans.</i> <i>B Side to source – Total Trans.</i>
2	White Vinyl	<i>VW Vistamatic Vision panel</i>	<i>A Side to source – Rel. Trans.</i> <i>B Side to source – Total Trans.</i>
3	Black Vinyl	<i>VB Vistamatic Vision panel</i>	<i>A Side to source – Rel. Trans.</i> <i>B Side to source – Total Trans.</i>
4	Sandblasted	<i>VS Vistamatic Vision panel</i>	<i>A Side to source – Rel. Trans.</i> <i>B Side to source – Total Trans.</i>
<i>See Appendix photographs</i>			

## Transmission Results

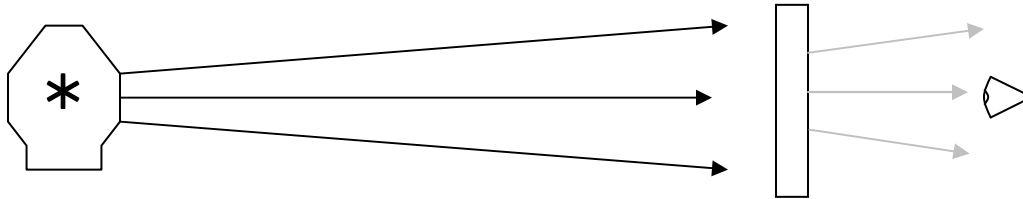
Number of Specimens Analyzed: Four, each scanned at 5 locations; measurements 400 – 700 nm on each sample.

	Visible Light Transmission Results :	Average (T <sub>i</sub> )	Standard Deviation:
1	All 5 locations T < 0.9% , 4 locations < 0.25% <span style="float:right">Relative</span>	<b>0.26%</b>	<b>.31</b>
	One location (with holes) had the higher transmission, each mode Average Transmissions without outliers:	0.15% 0.06%	
	All 5 locations T < 2.1% , 4 locations < 0.13% <span style="float:right">Total</span>	<b>0.44%</b>	<b>.82</b>
2	All 5 locations T < 8.6% <span style="float:right">Relative</span>	<b>5.5%</b>	<b>1.57</b>
	All 5 locations T < 0.16% <span style="float:right">Total</span>	<b>0.11%</b>	<b>.03</b>
3	All 5 locations T < 0.11% <span style="float:right">Relative</span>	<b>0.014%</b>	<b>.02</b>
	All 5 locations T < 0.07% <span style="float:right">Total</span>	<b>0.01%</b>	<b>.02</b>
4	All 5 locations T < 77% <span style="float:right">Relative</span>	<b>58.9%</b>	<b>5.1</b>
	All 5 locations T < 12% <span style="float:right">Total</span>	<b>10.9%</b>	<b>0.72</b>

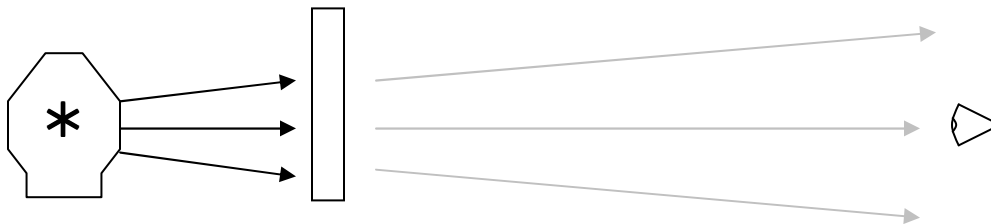
Measurement process: The spectrophotometer was warmed-up for a minimum of 30 min. The apparatus was then standardized for the specific mode of operation, Relative Transmission, or Total Transmission. Each sample was set into the spectrophotometer and scanned according to the standard procedure.

The measurements have been performed in order to demonstrate the light transmission properties in two ways, **Relative, and Total.**

The **Relative** transmission is approximately the visible light transmission that will be provided when the observer is close to the sample and the source is more distant.



The **Total** transmission is approximately the visible light transmission that will be provided when the source is close to the sample and the observer is more distant.



## Review of Results

These samples of combined glass / shade materials provide different levels of transmission of visible light. The Black vinyl transmits only a very small amount of light. The Aluminum blind 'Between Glass Blinds' sample had a low light transmission, although, light can leer through the holes in the blinds, shifting upward the average when that location is included.

The White vinyl sample has a low **total** transmission, however, in relative mode, there is a significant light transmission ( $\approx 5\%$ ).

The Sandblasted sample has a dramatically high transmission in Relative mode, and significant, but lower transmission in total mode.

## Summary of Relative Transmission Averages

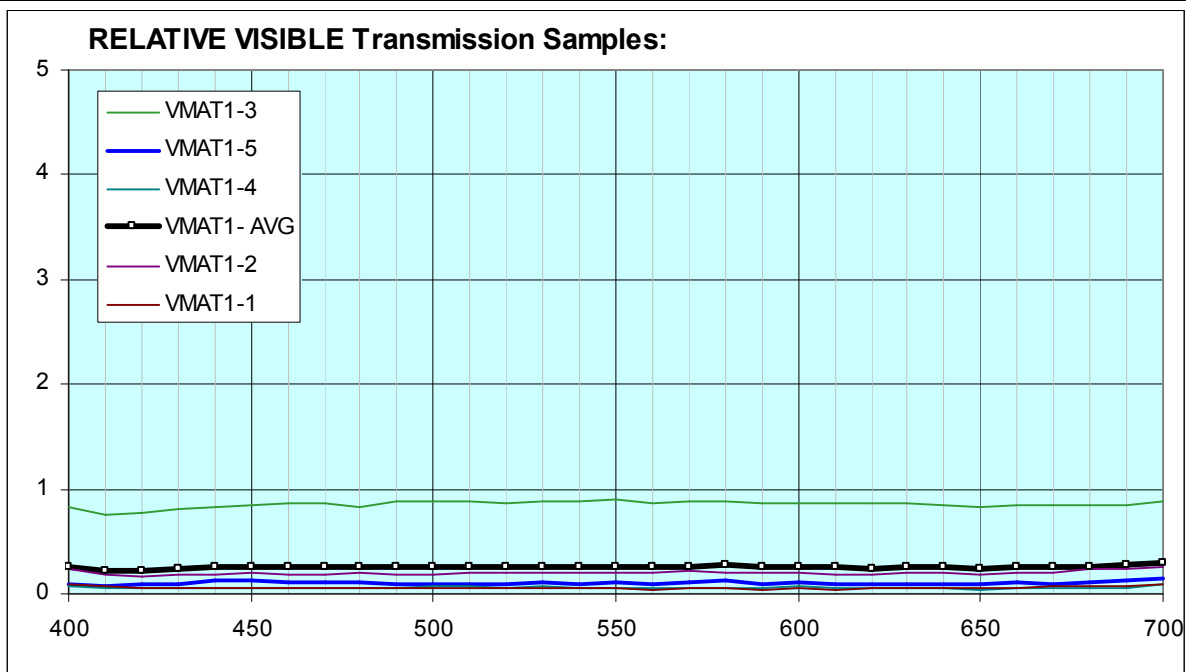
<i>Between Glass Blinds</i>	0.255	0.145	Avg. w/o outlier
White Vinyl	5.537		
<i>Black Vinyl</i>	0.014		
<i>Sandblasted</i>	58.941		

## Summary of Total Transmission Averages

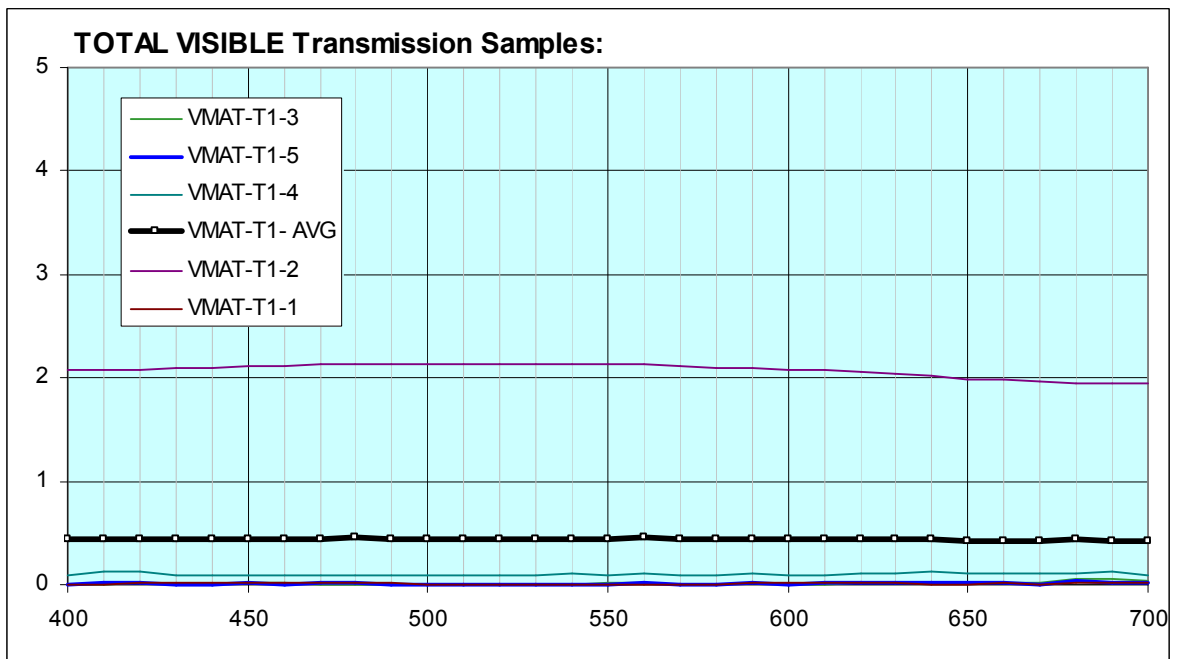
<i>Between Glass Blinds</i>	0.441	0.060	Avg. w/o outlier
White Vinyl	0.106		
<i>Black Vinyl</i>	0.018		
<i>Sandblasted</i>	10.873		

## Spectral Charts

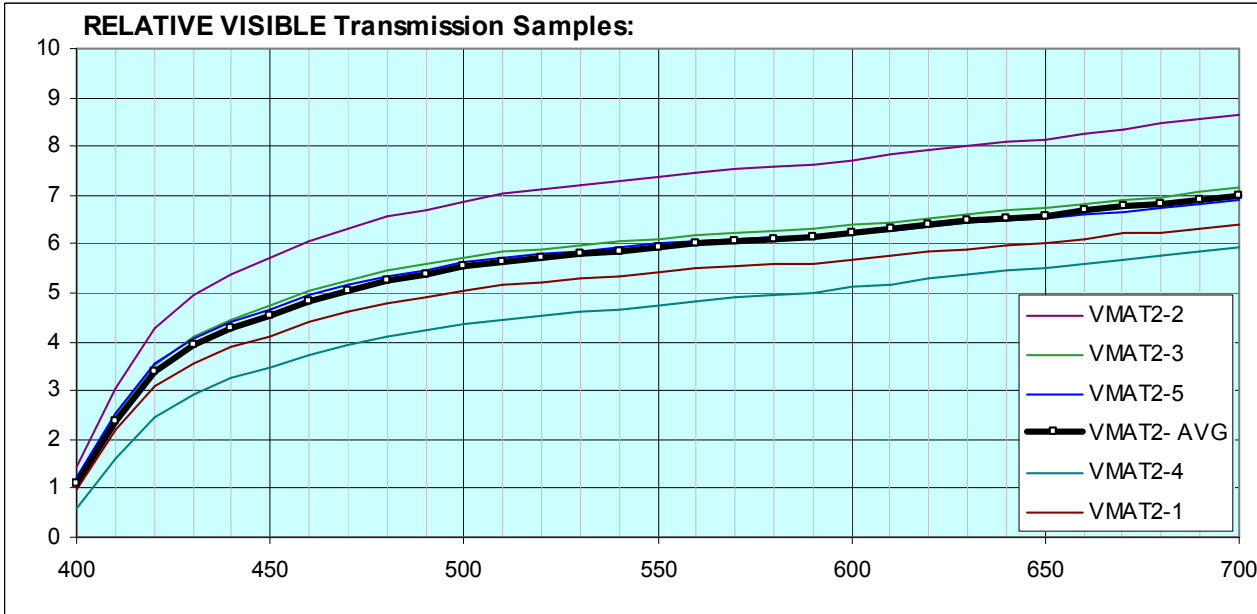
SAMPLE 1  
RELATIVE



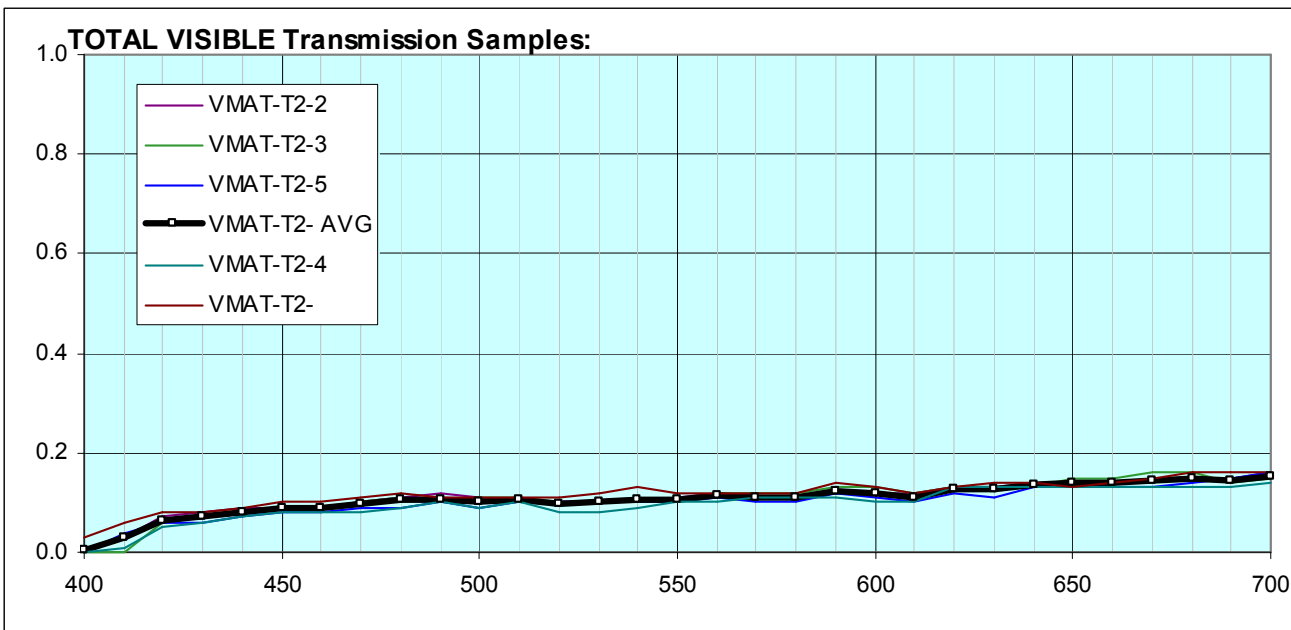
SAMPLE 1



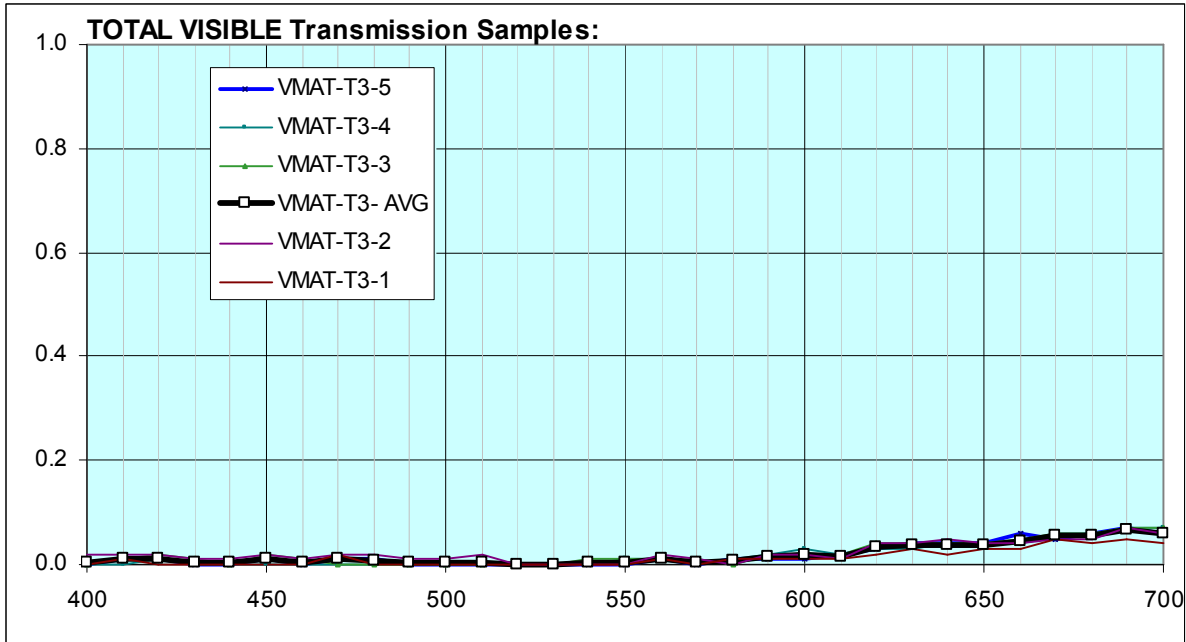
SAMPLE 2  
RELATIVE



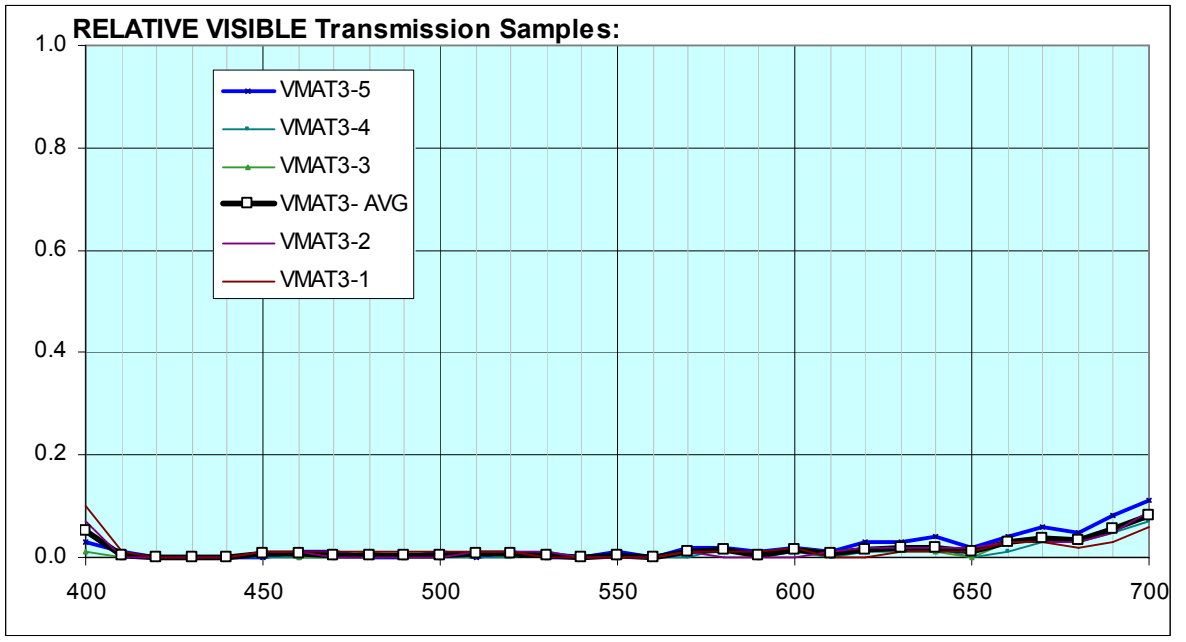
SAMPLE 2  
TOTAL

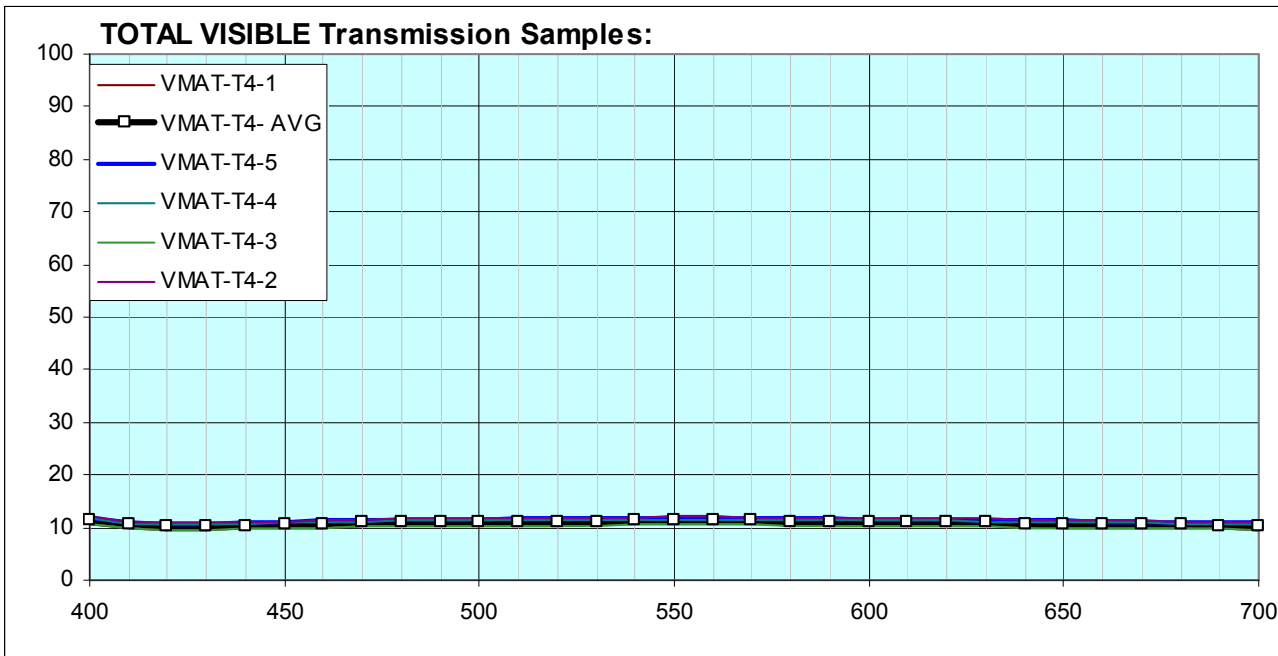


SAMPLE 3  
RELATIVE

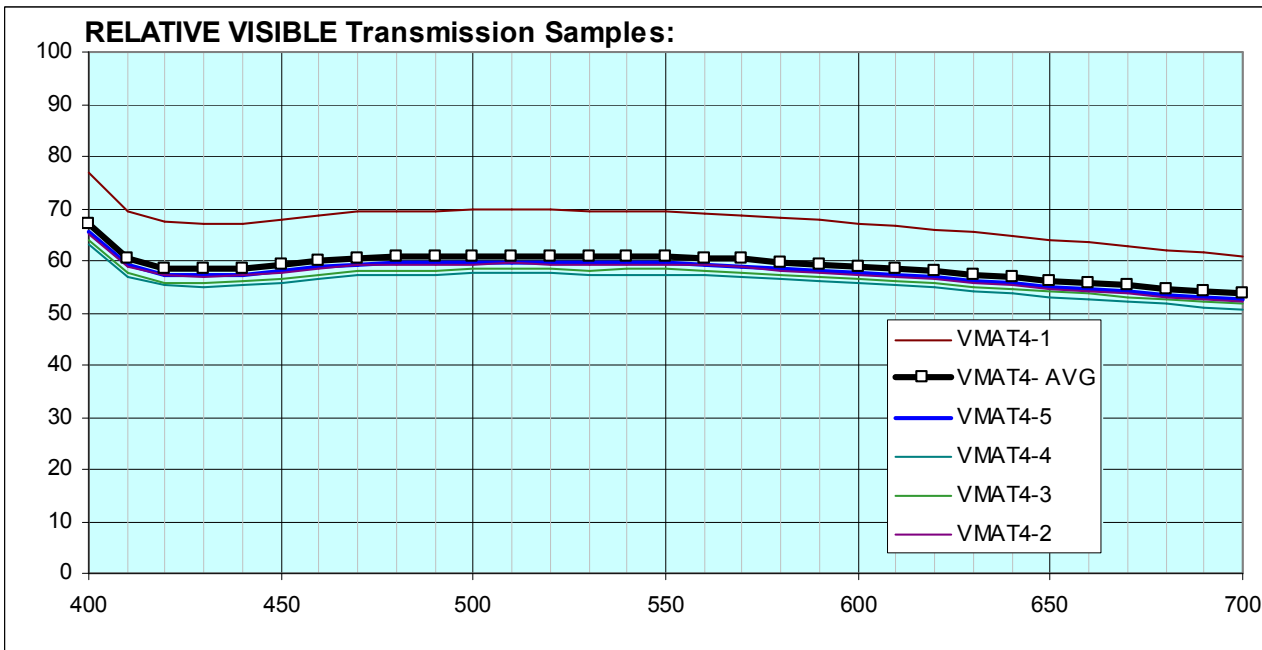


SAMPLE 3  
TOTAL





SAMPLE 4  
 RELATIVE



SAMPLE 4  
 TOTAL

# Ultraviolet Transmission Test Report

Using the LabSphere UV-1000F

Analyzed for: VISTAMATIC	Work Order # 15905	Measurement Date 8/15/2014 Test Report Date 8/18/2014
--------------------------	--------------------	--

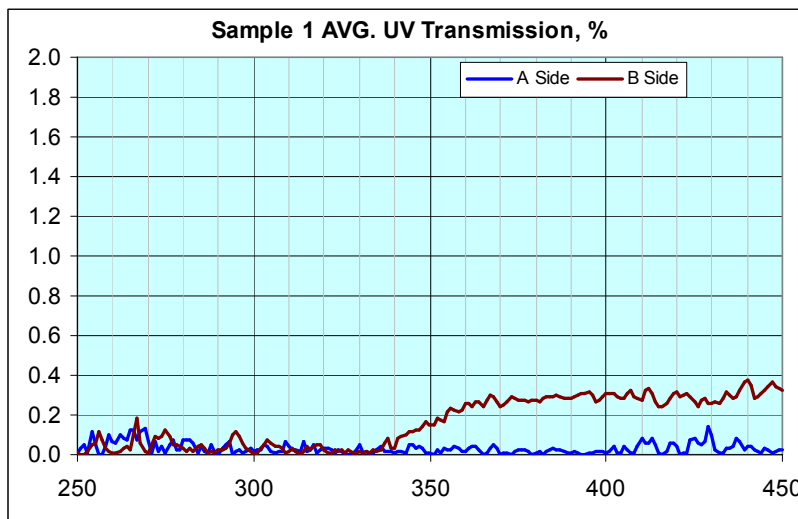
## Sample Information

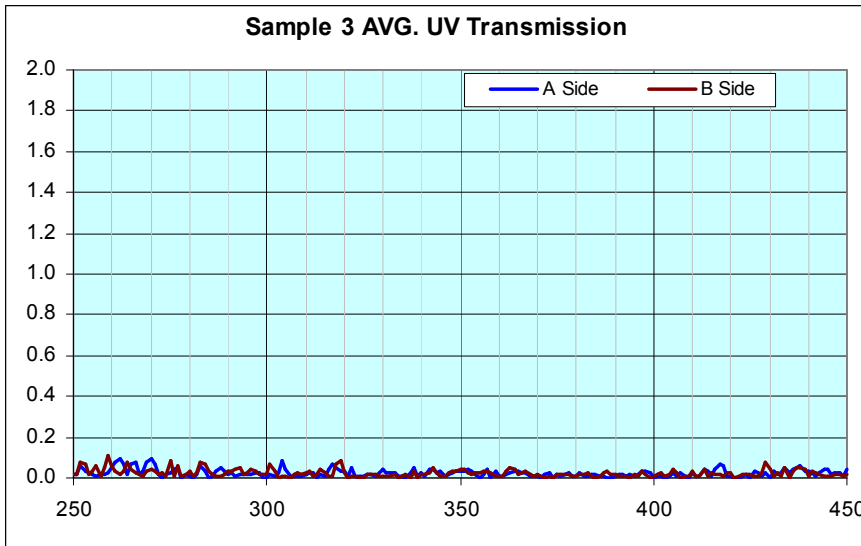
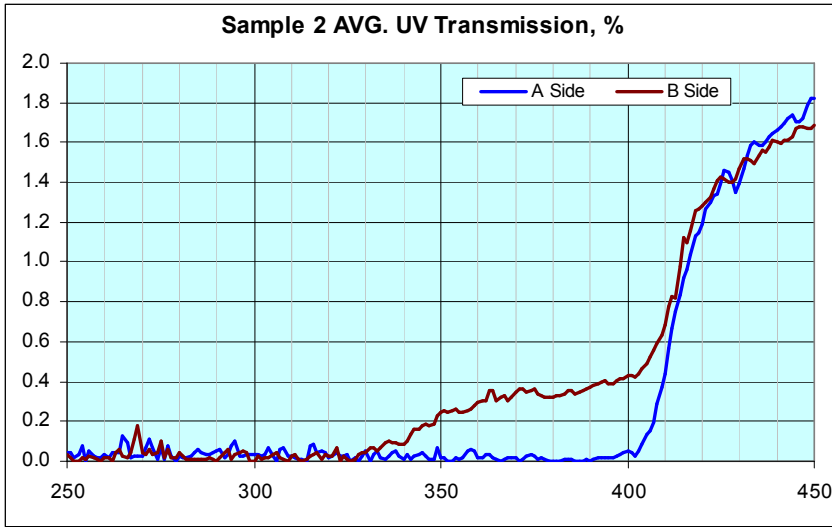
Sample :	Sample Description:		
1	Aluminum blind window	A Side	'Between Glass Blinds
		B Side	
2	White Vinyl	A Side	VW Vistamatic Vision panel
		B Side	
3	Black Vinyl	A Side	VB Vistamatic Vision panel
		B Side	
4	Sandblasted	A Side	VS Vistamatic Vision panel
		B Side	
	See Appendix photographs		

## Transmission Results

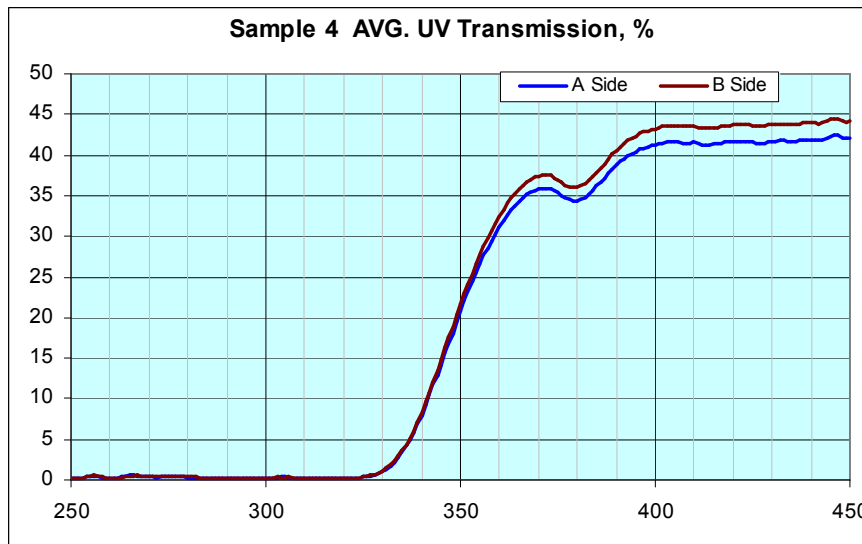
Number of Specimens Analyzed: Four, each side scanned at 4 locations; measurements 250 – 450 nm on each sample.

Sample	Side	Results :	Average (ABS(T <sub>i</sub> ))	Standard Deviation:
1	A	All 4 locations T < 0.3%	0.3%	.049
	B	3 of 4 locations T < 0.2% one leaked light at ≈ 0.5%	0.16%	.291
2	A	In UV T < 0.1% Vis 1 – 2%	0.31%	.127
	B	In UV T < 0.1% Vis 1 – 2% one loc. leaked light at ≈ 0.3%	0.41%	.242
3	A	All locations T < 0.1%	0.02%	.048
	B	All locations T < 0.1%	0.02%	.043
4	A	Significant UVA Trans. >10% at 342 nm, and >40% in VIs	20%	1.8
	B	Significant UVA Trans. >10% at 342 nm, and >40% in VIs	22%	1.45





Note Y Scale  
change to  
50%







100 East Glenside Avenue, Glenside, PA 19038  
Phone: (215) 517-8700, Fax: (215) 517-8747

Website: [www.solarlight.com](http://www.solarlight.com)  
E-mail: [info@solarlight.com](mailto:info@solarlight.com)

## Review of Results

These samples of combined glass / shade materials provide different levels of protection against solar ultraviolet radiation (UVR).

Samples 1, 2 and 3 provide a high degree of UV blocking; the presence of individual sample light leaking for one location each in samples 1 and 3 is likely an artifact of the thickness of the test samples.

Sample 2, White vinyl (VW) did demonstrate transmission of visible light (>400 nm) for all locations, although, only to a level of 1 – 2%.

Sample 3, Black Vinyl (VB) provided excellent blocking of UV and the short wave visible.

Sample 4 did not provide UV blocking above a wavelength of 330 nm, and its visible transmission was approximately 50%

*The results in this report are applicable to the sample tested and may not apply to other batches of the same material or similar materials. It is a condition of the provision of these test results that you do not use the name of the Test Lab, Solar Light, or any words, marks or devices which may imply a connection with Solar Light, in connection with the promotion or sale of your products, unless Solar Light has given express written authority to do so. This test report may only be reproduced in full and without alteration.*

<b>Work Order#</b>	
<b>Date of measurement</b>	
<b>Engineer</b>	<i>Drew Hmiel</i>
<b>Measurement System</b>	<i>UV-1000F</i>
<b>Laboratory Conditions</b>	
<b>Temperature</b>	<i>27.5°C</i>
<b>Humidity</b>	<i>30.1 %</i>

## Statistical Uncertainties

**Total Measurement Uncertainty:**

**Coverage Factor (99% confidence):**

The maximum instrumental contribution to the uncertainty in the transmittance values T(%) used to calculate the results is 0.3 at the 99% confidence level.

APPENDIX

Sample 1A



Sample 2A



Sample 3A



Sample 4A



Sample 1B



Sample 2B



Sample 3B



Sample 4B

