

Ultraviolet Protection Factor Certification

Analyzed for: Customer

Date: 05 June 2026

Sample Type: Fabric

Sample Color: White

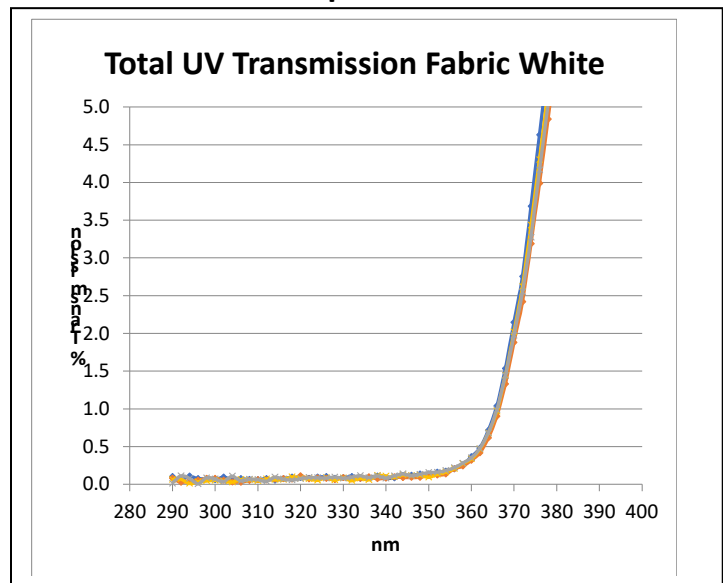
Description: The sample was tested as received to AATCC Method 183 Transmittance or Blocking of Erythemally Weighted Ultraviolet Radiation through Fabrics

Protection Factor Results

Number of Specimens Analyzed:

Rated UPF:	50+
Ranges from 15 to 50, and 50+.	
Protection Category:	EXCELLENT
Mean UVB Transmission:	0.07%
Mean UVA Transmission:	0.07%
Mean UPF:	471.5
Standard Deviation:	38.04
Standard Error of the Mean:	62.77
Coeff. Of Variation:	8.1%
Mean UPF – Std. Error	408.7
% Block(UVA)	99.928%
% Block(UVB)	99.930%

UV Transmission Spectrum



Review of Results

This fabric is effective as protection from solar ultraviolet radiation as it has an ultraviolet protection factor (UPF) greater than 55. A material with a rating of UPF 50+ reduces the amount of solar UVR by more than a factor of 55. A UPF rating of 50+ meets the EXCELLENT UV protection rating. The UPF rating is for the material only and does not address the design of the product. A garment can only protect skin that is covered by the material.

Unless otherwise stated the sample was tested unstretched and dry. This report has been prepared in accordance with standard AATCC TM183, "Transmittance or Blocking of Erythral Weighted Ultraviolet Radiation through Fabrics". The solar spectrum described in this standard was used to calculate the protection factor results. 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 these test results that the name of SOLAR LIGHT Co. Inc. or any words, marks or devices may not be used to imply a connection with SOLAR LIGHT Co. Inc. in connection with the promotion or sale of your products, unless SOLAR LIGHT Co. Inc. has given express written authority to do so. This test report may only be reproduced in full and without alteration.

ASTM D6603: Labeling of UV-Protective Textiles¹

9.1.1 For the Good UV-protection category to be stated on the label, the UPF value must lie between 15 and 24.

9.1.2 For the Very Good UV-protection category to be stated on the label, the UPF value must be between 25 and 39.

9.1.3 For the Excellent UV-protection category to be stated on the label, the UPF value must be 40 or greater.

Measurements performed by: Drew Hmiel

Project No. Rev A

Statistical Uncertainties

Total Measurement Uncertainty:

The maximum instrumental contribution to the uncertainty in the transmittance values $T(\%)$ used to calculate the results is 0.0010 at the 99% confidence level.

Total Measurement Uncertainty: This is a measure of the total uncertainty in the analysis and is equivalent to the Standard Error of the Mean.

Coverage factor (99% confidence): Known as **t-variate**. This is a statistical value used in calculation of the Standard Error of the Mean, calculated at the 99% confidence level *for this standard*.

For N = 4 $t_{k\alpha, 0.005} \times N^{-1/2} = 2.92$

And Standard Error of the Mean = $2.92 \cdot \sigma$

Review Standard Error of the Mean Calculation for the Various Standards

Standard	Confidence level coefficient	For N = 4	For N = 6
ASTM D6603, AS4399:2020, JISL1925_2019	$\alpha = 0.005$	$t_{k\alpha, 0.005} \times N^{-1/2} = 2.92$	$t_{k\alpha, 0.005} \times N^{-1/2} = 1.65$
EN13758:2002, GBT18830-2009	$\alpha = 0.05$	$t_{k\alpha, 0.05} \times N^{-1/2} = 3.18$	$t_{k\alpha, 0.05} \times N^{-1/2} = 2.57$

Additional Information

UVA: Ultraviolet radiation in the region 315 nanometers to 400 nanometers.

UVB: Ultraviolet radiation in the region 290 nanometers to 315 nanometers.

How UPF ratings are calculated:

1. The transmission of ultraviolet through the material is determined using a calibrated ultraviolet spectral analyzer. Measurements are made on at least four specimens.
2. The UPF result for each measurement is calculated.
3. The separate UPF values are averaged to determine the mean UPF.
4. The standard deviation is calculated.
5. The standard error is calculated.
6. The standard error is subtracted from the mean UPF.
7. This value is rounded down to the nearest multiple of five to determine the reported UPF rating. The UPF rating also determines the Protection Category assigned to the material.

UPF rating - rounding down: The calculated UPF value (or the lowest measured value) is rounded down to the nearest multiple of five to give the reported UPF rating. One effect of this is that materials need to achieve a calculated UPF value of 55 or higher to be classified as UPF 50+.

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¹ ASTM D6603 Standard Specification for Labeling of UV-Protective Textiles