



## Test Report

No.: NBHL1706008379SD

Date: Sep. 19, 2019

Page: 1 of 5

The following sample(s) was/were submitted and identified by the client as:

Sample Description : Wheat Straw fiber frame with bamboo fiber sunglass  
Sample Quantity : 6 PCS  
Sample Receiving Date : SEP. 06, 2019  
Testing Period : SEP. 06, 2019 TO SEP. 19, 2019

### Test Requested

1. BS EN ISO 12312-1:2013+A1:2015 Eye and face protection – Sunglasses and related eyewear part 1 : Sunglasses for general use (excluding clause 4.3 Physiological compatibility & Clause 7.2 Frame deformation and retention of filters & clause 12 Information and labeling As per client's requirement)
2. UV 400 Claim Verification (The transmittance between 280nm and 400nm)

### Test method

1. According to BS EN ISO 12312-1:2013+A1:2015 and BS EN ISO 12311:2013
2. With reference to clause 7.1.1 of BS EN ISO 12311:2013 (the calculation of mean of the weighted spectral transmittance between 280nm and 400nm is referring to clause 7.1.2 and 7.3.1 of BS EN ISO 12311:2013)

### Test Results

--- Please refer to following pages ---

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd. Ningbo Branch

*Sarah Li*

Sarah Li  
Technology supervisor



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## Test Report

No.: NBHL1706008379SD

Date: Sep. 19, 2019

Page: 2 of 5

### Test Conducted:

#### 1. **BS EN ISO 12312-1:2013+A1:2015 Eye and face protection — Sunglasses and related eyewear.**

**Scope** : This part of BS EN ISO 12312 is applicable to all afocal (plano power) sunglasses and clip-ons for general use, including road use and driving, intended for protection against solar radiation.  
This part of BS EN ISO 12312 is not applicable to related eyewear, such as:  
a) eyewear for protection against radiation from artificial light sources, such as those used in solariums;  
b) eye protectors intended for specific sports (e.g. ski goggles or other types);  
c) sunglasses that have been medically prescribed for attenuating solar radiation;  
d) products intended for direct observation of the sun, such as for viewing a partial or annular solar eclipse.  
e) products intended for occupational eye protection.

**Filter Type** : Uniform filters  
**Conditioning before tests** :  $23 \pm 5^{\circ}\text{C}$ , 4 hours  
**Test Condition** :  $16^{\circ}\text{C} - 32^{\circ}\text{C}$ ,  $50 \pm 20\%$  RH  
**Test Result** : Details shown as following table:-  
**Remark** : Transmittance and Optical Properties are measured at reference point (visual centre)

Test Item	Result	Note
<b>Clause 4 Construction and materials:</b>		
Clause 4.1 Construction	PASS	--
Clause 4.2 Filter material and surface quality	PASS	--
Clause 4.3 Physiological compatibility	N/C	See Note 4
<b>Clause 5 Transmittance</b>		
Clause 5.2 Transmittance and filter categories	Category 3	See Note 1 & Table I
Clause 5.3 General transmittance requirements	--	--
Clause 5.3.1 Uniformity of luminous transmittance	PASS	See Note 1
Clause 5.3.2 Requirements for road use and driving	--	--
Clause 5.3.2.1 General	PASS	--
Clause 5.3.2.2 Driving in twilight or at night	--	See Note 2
Clause 5.3.3 Wide angle scattering	PASS	--
Clause 5.3.4 Additional transmittance requirements for specific filter types	--	--
Clause 5.3.4.1 Photochromic filters	N/A	See Note 3
Clause 5.3.4.2 Polarizing filters	N/A	See Note 3
Clause 5.3.4.3 Gradient filters	N/A	See Note 3
Clause 5.3.5 Claimed transmittance properties	--	--
Clause 5.3.5.1 Blue-light absorption/transmittance	N/A	No claims, See Note 3
Clause 5.3.5.1.1 Blue-light absorption	N/A	No claims, See Note 3



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## Test Report

No.: NBHL1706008379SD

Date: Sep. 19, 2019

Page: 3 of 5

Clause 5.3.5.1.2 Blue-light transmittance	N/A	No claims, See Note 3
<b>Clause 5 Transmittance</b>		
Clause 5.3.5.2 UV absorption/transmittance	---	---
Clause 5.3.5.2.1 General	---	---
Clause 5.3.5.2.2 Solar UV absorption	N/A	No claims, See Note 3
Clause 5.3.5.2.3 Solar UV transmittance	N/A	No claims, See Note 3
Clause 5.3.5.2.4 Solar UV-A absorption	N/A	No claims, See Note 3
Clause 5.3.5.2.5 Solar UV-A transmittance	N/A	No claims, See Note 3
Clause 5.3.5.2.6 Solar UV-B absorption	N/A	No claims, See Note 3
Clause 5.3.5.2.7 Solar UV-B transmittance	N/A	No claims, See Note 3
Clause 5.3.5.3 Antireflective coated sunglasses	N/A	No claims, See Note 3
Clause 5.3.5.4 Enhanced infrared absorption	N/A	No claims, See Note 3
<b>Clause 6 Refractive power</b>		
Clause 6.1 Spherical and astigmatic power	PASS	--
Clause 6.2 Local variations in refractive power	N/A	See Note 3
Clause 6.3 Prism imbalance (relative prism error)	PASS	--
<b>Clause 7 Robustness</b>		
Clause 7.1 Minimum robustness of filters	PASS	--
Clause 7.2 Frame deformation and retention of filters	PASS	--
Clause 7.3 Impact resistance of the filter, strength level 1 (optional specification)	N/C	Optional Specification, See Note 4
Clause 7.4 Increased endurance of sunglasses (optional specification)	N/C	Optional Specification, See Note 4
Clause 7.5 Resistance to perspiration (optional specification)	N/C	Optional Specification, See Note 4
Clause 7.6 Impact resistance of the filter, strength level 2 or 3 (optional specification)	N/C	Optional Specification, See Note 4
<b>Clause 8 Resistance to solar radiation</b>	PASS	--
<b>Clause 9 Resistance to ignition</b>	PASS	--
<b>Clause 10 Resistance to abrasion (optional specification)</b>	N/C	Optional Specification, See Note 4
<b>Clause 11 Protective requirements</b>		
Clause 11.1 Coverage area	PASS	--
Clause 11.2 Temporal protective requirements	N/A	See Note 3
<b>Clause 12 Information and labelling</b>	N/C	See Note 4

Note(s) : # 1 No claim information of category was provided with the sample.  
 Luminous transmittance,  $\tau_v$  (%):  
 Left Filter 15.75%  
 Right Filter 16.56%



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## Test Report

No.: NBHL1706008379SD

Date: Sep. 19, 2019

Page: 4 of 5

- # 2 The filter has a luminous transmittance of less than 75 % and higher than 8 %, the following warning: "Not suitable for driving in twilight or at night" or "Not suitable for driving at night or under condition of dull light" should be provided.
- # 3 "N/A" means not applicable for the submitted sample.
- # 4 "N/C" means not conducted on this report as client requested.

**Table I. Category requirements for sunglasses filters for general use**

Description label	Filter category	Requirements			
		Ultraviolet spectral range		Visible spectral range	
		Maximum value of solar UV-B transmittance, SUV <sub>B</sub>	Maximum value of solar UVA transmittance, SUV <sub>A</sub>	Range of luminous transmittance, v	
		280-315 nm	315-380 nm	From over %	To and include%
Light tint sunglasses	0	0.05 x v	v	80.0	100
	1			43.0	80.0
General purpose sunglasses	2	1.0% or 0.05x v (whichever is greater)	0.5 x v	18.0	43.0
	3	1.0%		8.00	18.0
Very dark Special Purpose sunglasses	4	1.0%	1.0% or 0.25x v (whichever is greater)	3.00	8.00

## 2. UV 400 Claim Verification

Performance Parameter	Value (%) (Left Filter)	Value (%) (Right Filter)	Requirements	Result
Solar UV Transmittance, $\tau_{SUV}$ (280nm – 400nm)	0.13	0.15	$\leq 0.5\%$	PASS
Solar UVA Transmittance, $\tau_{SUA}$ (315nm – 400nm)	0.15	0.17	$\leq 0.5\%$	PASS
Solar UVB Transmittance, $\tau_{SUVB}$ (280nm – 315nm)	0.1	0.1	$\leq 0.5\%$	PASS



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## Test Report

No.: NBHL1706008379SD

Date: Sep. 19, 2019

Page: 5 of 5

### Sample Photo:



Test sample (Front)



Test sample (Back)

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\*\*\*End of Report\*\*\*



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