TEST REPORT

APPLICANT	:	Xindao B.V.
ADDRESS	:	P.O. Box 3082, 2280 GB, Rijswijk, The Netherlands
SAMPLE DESCRIPTION	:	Wheat straw fiber sunglasses
ITEM NO.	:	P453.915
COUNTRY OF ORIGIN	:	China
COUNTRY OF DESTINATION	:	Europe
SAMPLE RECEIVED DATE	:	05-Dec-2019
TURN AROUND TIME	:	05-Dec-2019 to 26-Dec-2019

The following test item(s) was/were performed on submitted sample(s) and/or component(s) confirmed by applicant

TEST REQUESTED	TEST METHOD/REGULATION	RESULT
Eye and face protection – Sunglasses and related eyewear– Part 1: Sunglasses for general use Excluding Clause 4.3 - Physiological compatibility, Clause 5.3.2.2 - Driving in twilight or at night and Clause 12 - Information and labelling	EN ISO 12312-1:2013+A1: 2015	Pass

Eurofins（Shanghai）contact information
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********** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) **********

Signed for and on behalf of
Eurofins Product Testing Service (Shanghai) Co., Ltd

Joyce Liu
Lab Manager

SAMPLE PHOTO

EFSH19120514-CG-01

TO BE CONTINUED

TEST RESULT

Test standard: EN ISO 12312-1:2013 +A1 2015 Eye and Face Protection – Sunglasses and Related Eyewear Part 1: Sunglasses for General Use and ISO 12311:2013 Personal protective requirement – Test methods for sunglasses and related eyewear.

Test samples: A Blue sunglasses

Section	Test	Result
4	Construction and materials	
4.1	Construction	P
4.2	Filter material and surface quality	P
4.3	Physiological compatibility	#1
5	Transmittance	
5.2	Transmittance and filter categories	P
5.3.1	Uniformity of luminous transmittance	P
5.3.2.2	Spectral transmittance	P
5.3.2.3	Detection of signal lights	P
5.3.2.4	Driving in twilight or at night	#2
5.3.3	Wide angle scattering	P
5.3.4.1	Photochromic filters	NA
5.3.4.2	Polarizing filters	NA
5.3.4.3	Gradient filters	NA
5.3.5	Claimed transmittance properties	NA (No claim)
6	Refractive power	
6.1	Spherical and astigmatic power	P
6.2	Local variations in refractive power	NA
6.3	Prism imbalance (relative prim error)	P
7	Robustness	
7.1	Minimum robustness of filters	P
7.2	Frame deformation and retention of filters	P
7.3	Impact resistance of the filter, strength level 1	NA (No claim)
7.4	Increased endurance of sunglasses	NA (No claim)
7.5	Resistance to perspiration	NA (No claim)
7.6	Impact resistance of the filter strength level 2 or 3	NA (No claim)
8	Resistance to solar radiation	P
9	Resistance to ignition	P
10	Resistance to abrasion (optional specification)	NA (No claim)
11	Protective requirement	
11.1	Coverage area	P
11.2	Temporal protective requirements	NA
12	Information and labeling	
12.1	Information to be supplied with each pair of sunglasses	#3
12.2	Additional information	#4

Note: P=PASS; NA=Not applicable, M=Meet

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5.2: Transmittance and Filter Categories

Luminous Transmittance (τV) (380 nm to 780 nm), %	Left ocular	Right ocular
	8.60	8.71
Determined Filter Category	3	

Parameter	Requirement (%)		Result	
	Left ocular	Right ocular	Left ocular	Right ocular
Solar UVA Transmittance(315 nm to 380 nm)	≤ 0.5τV (4.30)	≤ 0.5τV (4.36)	0.00	0.00
Solar UVB Transmittance(280 nm to 315 nm)	1	1	0.00	0.00

Requirement(s) :					
Type (Claimed Filter Category, If Applicable)	0	1	2	3	4
Param	Limit				
Luminous Transmittance (τV) (%) (380 nm to 780 nm)	> 80	> 43 and ≤ 80	> 18 and ≤ 43	> 8 and ≤ 18	> 3 and ≤ 8
Determined Filter Category	0	1	2	3	4
Maximum Solar Ultraviolet A (UVA) Transmittance (τSUVA) (%) (315 nm to 380 nm)	τV	τV	0.5 τV	0.5 τV	1 or 0.25 τV
Maximum Solar Ultraviolet B (UVB) Transmittance (τSUVB) (%) (280 nm to 315 nm)	0.05 τV	0.05 τV	1 or 0.05 τV	1	1

Lens Category: 0&1= Light tint sunglasses, 2&3= General purpose sunglasses, 4= Very dark special purpose sunglasses

5.3.1: Uniformity of luminous transmittance

Parameter	Results		Requirement
Relative Difference in Luminous Transmittance within filter, %	Left Ocular	Right Ocular	< 10%(Category0,1,2,3) < 20%(Category 4)
	1.83	5.62	≤ 10%
Relative Difference in Luminous Transmittance between filter, %	1.28		< 15%

5.3.2.1a Spectral transmittance

	Limit (%)		Minimum transmittance (%)	
Spectral Transmittance (%) (475-650 nm)	Left ocular	Right ocular	Left ocular	Right ocular
	≥ 0.2τV (1.72)	≥0.2τV (1.74)	5.78	5.88

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5.3.2.1b Detection of signal lights

Signal Light	Limit	Left ocular	Right ocular
Relative Visual Attenuation Quotient - Red, Q	≥ 0.80	1.04	1.03
Relative Visual Attenuation Quotient - Yellow, Q	≥ 0.60	0.92	0.92
Relative Visual Attenuation Quotient - Blue, Q	≥ 0.60	1.32	1.32
Relative Visual Attenuation Quotient - Green,Q	≥ 0.60	1.03	1.03

5.3.3 Wide angle scattering

Requirement(s) :	Results	
Wide angle scattering of filters in the condition as supplied by the manufacturer shall not exceed the valve of 3 %	Left Ocular	Right Ocular
	1.52	1.5

6.1: Spherical and Astigmatic Power

Optical Power	Right Ocular	Left Ocular	Requirement
Spherical Power	-0.02	-0.03	±0.12
Difference of spherical power between left and right filters (m^{-1})	0.01		≤ 0.18
Astigmatic Power	0.00	0.01	≤ 0.12

6.3: Prism Imbalance (Relative Prism Error)

Optical Power			Result	Requirement
Prismatic Power Difference	Horizontal	Base out cm/m	0.07	≤ 1.00
		Base in cm/m	-	≤ 0.25
	Vertical cm/m		0.06	≤ 0.25

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7.1 Minimum robustness of filters

Evaluation	Criteria	Result
For complete sunglasses, including the filter portion of those where the sunglass frame and filter are integral parts of each other, when tested as specified in ISO 12311:2013, 9.1, none of the following defects shall appear.		M
Note: 1) Filter fracture. A filter is considered to have fractured when - it cracks through its entire thickness and across a complete diameter into two or more sseparate pieces, or - a person with a visual acuity of at least 1,0 (6/6 or 20/20) can see, when viewing without magnification but wearing the appropriate correction, if any, for near vision, either a piece of material that has become detached from the filter surface or a corresponding surface defect. 2) Filter deformation. A filter is considered to have been deformed if a mark appears on the white paper on the opposite side to that contacted by the ball.		

7.2 Frame Deformation and Retention of Filters

Evaluation	Criteria	Result
Frame Deformation	The frame shall not permanent distortion of ±2 % of the distance between the boxed centers.	M Distortion: 0.01%
	It shall not be fracture or crack at any point	M
	Neither filter shall not be displaced from the frame.	M

8: Resistance to radiation

Parameter	Left Ocular	Right Ocular	Requirement
Wide Angle Scattering %	1.53	1.61	≤ 3%
Relative Change in the Luminous Transmittance (τv), % (380-780nm)	0.23	0.11	≤ ±3% (Category 0) ≤±5% (Category 1) ≤±8% (Category 2) ≤±10% (Category 3,4)
Solar UVA transmittance, % (315 – 380nm)	0.00	0.00	It shall be complied with the requirement of the table in clause 5.2.
Solar UVB transmittance, % (280 – 315nm)	0.00	0.00	

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9: Resistance to ignition

Evaluation	Criteria	Result
Resistance to ignition	When sunglasses are tested in accordance with ISO 12311:2013, 9.9, they shall not ignite or continue to glow after withdrawal of the test rod.	M

11.1 Coverage area

Requirement(s) :	Results
The sunglasses shall cover two ellipses with a horizontal diameter of 40 mm and a vertical diameter of 28 mm, the centres of which are separated by 64 mm and symmetrically placed on either side of the centre of the bridge of the frame. For sunglasses intended to be worn by children, the sunglasses shall cover two ellipses with a horizontal diameter of 34 mm and a vertical diameter of 24 mm, the centres of which are separated by 54 mm and symmetrically placed on either side of the centre of the bridge of the frame.	PASS

Note:

1 = Physiological compatibility

Note: Sunglasses shall be designed and manufactured in such a way that when used under the conditions and for the purposes intended, they will not compromise the health (and safety) of the wearer. The risks posed by substances leaking from the device that may come into prolonged contact with the skin shall be reduced by the manufacturer to below any regulatory limit. Special attention shall be given to substances which are allergenic, carcinogenic, mutagenic or toxic to reproduction.

#2 = The applicant is drawn attention to include the following warning will be printed on the labels, packaging, etc that accompanies the sunglasses at the point of the sale:

- "Not suitable for driving in twilight or at night" or
- "Not suitable for driving at night or under condition of dull light"

#3 = The manufacturer shall provide information for the user with each pair of sunglasses. This information shall be in the form of markings on the frame or separate information on labels, packaging, etc., that accompanies the sunglasses at the point of sale. Where pictograms are used, an explanation of the significance of these pictograms shall also be available.

#4 = The following information shall be available from the manufacturer on request.

a) An explanation of the trademarks that are not universally recognized or foreseen by the users of this part of ISO 12312.
b) The position of the reference point when different from the one defined in this part of ISO 12312.
c) The country of origin (e.g. “made in …….”).
d) The nominal value of luminous transmittance.
e) Transmission requirements applicable to this product.
f) Polarization efficiency in cases of polarizing filters.
g) The base material of filters and frame.

*** END OF THE REPORT***