Test Report Number: SHAH01304241

Applicant: LINHAI DUQIAO CIFU GLASSES TECHNOLOGY CO LTD
FENXI INDUSTRIAL PARK, DUQIAO TOWN,
LINHAI CITY,ZHEJIANG PROVINCE
Attn: LEE

Date: 28 Jan, 2021

Sample Description :

One (1) style of submitted samples said to be :

Item Name. : Sunglasses.

Item No. : CF58203.

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Tests Conducted:

As requested by the applicant, for details refer to attached page(s).

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Conclusion:

Tested sample:	Requirement:	Result:
Submitted samples	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 5.3.2.2 - Driving in twilight or at night - Clause 12 - Information and labelling	Pass (See Comment)

Comment:

CE marking is not specified in this standard but per (Regulation (EU) 2016/425, Article 16&17), the marking shall be affixed visibly, legibly and indelibly to the product. However, it was found that CE marking on the submitted sample was in a different font height.

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To be continued

Authorized By:
Intertek Testing Services Ltd. Zhejiang, Wenzhou Branch

Peter Chen
General Manager

Intertek Testing Services Ltd. Zhejiang, Wenzhou Branch
浙江天祥质量技术服务有限公司温州分公司

Room 8205, 4F, No.827, Wenzhou Avenue, Longwan District, Wenzhou City, Zhejiang Province, China. 325000
中国浙江省温州市龙湾区温州大道 827 号 4 楼 8205 室
325000

Tel: +86 577 8555 6055
www.intertek.com
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Tests Conducted

Requirements for Sunglasses (Uniformly Tinted Lenses)

Test standard: EN ISO 12312-1:2013+A1:2015 Eye and face protection – Sunglasses and related eyewear – Part 1: Sunglasses for general use.

Test method refers EN ISO 12311:2013 Personal protective equipment – Test methods for Sunglasses and related eyewear

Number of samples tested: Four (4) pairs of sunglasses.

Note:

(1) The submitted sunglasses were declared by applicant for adult use.

(2) Physiological compatibility
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.

Clause	Requirement	Result
4	Construction and materials	
4.1	Construction	P
4.2	Filter material and surface quality	P
4.3	Physiological compatibility	Note (2)
5	Transmittance	
5.2	Transmittance and filter categories	P
5.3	General transmittance requirements	
5.3.1	Uniformity of luminous transmittance	P
5.3.2	Requirements for road use and driving	
5.3.2.1	General	P
5.3.2.1a	Spectral transmittance	P
5.3.2.1b	Detection of signal lights	P
5.3.2.2	Driving in twilight or at night	#1
5.3.3	Wide angle scattering	P
5.3.4	Additional transmittance requirements for specific filter types	
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 prism 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 (optional specification)	NA (No claim)
7.4	Increased endurance of sunglasses (optional specification)	NA (No claim)

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Clause	Requirement	Result
7.5	Resistance to perspiration (optional specification)	NA (No claim)
7.6	Impact resistance of the filter, strength level 2 or 3 (optional specification)	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 requirements	
11.1	Coverage area	P
11.2	Temporal protective requirements	NA
12	Information and labelling	
12.1	Information to be supplied with each pair of sunglasses	#1
12.2	Additional information	#2

Abbreviation: P = Pass; NA = Not Applicable

Test data:

5.2 Transmittance and filter categories

Range	Left ocular (%)	Right ocular (%)	Filter category
380 - 780nm (τ_v)	15.26	14.88	3

Range	Maximum transmittance (%)		Requirement (%)	
	Left ocular	Right ocular	Left	Right
280 - 315nm (τ_{SUVB})	0.00	0.00	≤ 1.0	≤ 1.0
315 - 380nm (τ_{SUVA})	0.00	0.00	≤ 0.5 τ_v (7.63)	≤ 0.5 τ_v (7.44)

Requirement: (Table 1)

Consumer label	Technical label	Requirements		
Descriptive label	Filter category	Ultraviolet spectral range		Visible spectral range
		Maximum value of solar UV-B transmittance τ_{SUVB} 280 nm to 315 nm	Maximum value of solar UV-A transmittance τ_{SUVA} 315 nm to 380 nm	Range of luminous transmittance (τ_v) 380 nm to 780 nm
Light tint sunglasses	0	0.05 τ_v	τ_v	τ_v > 80%
	1	0.05 τ_v	τ_v	43% < τ_v ≤ 80%
General purpose sunglasses	2	1.0% absolute or 0.05 τ_v, whichever is greater	0.5 τ_v	18% < τ_v ≤ 43%
	3	1.0% absolute	0.5 τ_v	8% < τ_v ≤ 18%
Very dark special purpose sunglasses	4	1.0% absolute	1.0% absolute or 0.25 τ_v, whichever is greater	3% < τ_v ≤ 8%

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5.3.1 Uniformity of luminous transmittance

Uniformity	Left ocular (%)	Right ocular (%)	Requirement (%)
Variation within filter [relative to higher value]	6.86	5.46	≤ 10
Difference between filters [relative to lighter filter]	2.50		≤ 15

5.3.2.1a Spectral transmittance

Range	Minimum transmittance (%)		Requirement (%)	
	Left ocular	Right ocular	Left ocular	Right ocular
475 - 650nm	12.04	11.71	≥ 0.2 τ_v (3.05)	≥ 0.2 τ_v (2.98)

5.3.2.1b Detection of signal lights

Signal light	Relative visual attenuation quotient, Q		Requirement
	Left ocular	Right ocular	
Red	1.08	1.08	≥ 0.80
Yellow	0.98	0.98	≥ 0.60
Blue	1.13	1.14	≥ 0.60
Green	1.01	1.01	≥ 0.60

5.3.3 Wide angle scattering

Wide angle scattering	Left ocular (%)	Right ocular (%)	Requirement (%)
	1.7	1.6	≤ 3

6.1 Spherical and astigmatic power

Optical power	Left ocular	Right ocular	Requirement (m^{-1})
Spherical power (m^{-1})	-0.05	-0.06	± 0.12
Astigmatic power (m^{-1})	0.01	0.01	≤ 0.12
Difference of spherical power between left and right filters (m^{-1})	0.01		≤ 0.18

6.3 Prism imbalance (relative prism error)

Prismatic power difference (cm/m)			Requirement (cm/m)
Horizontal	Base out	0.12	≤ 1.00
	Base in	----	≤ 0.25
Vertical		0.04	≤ 0.25

7.1 Minimum robustness of filters

Assessment	Result
Filter fracture	Not found
Filter deformation	Not found

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7.2 Frame deformation and retention of filters

Assessment	Result	
Frame fracture or crack at any point	Not found	
Frame deformation (%)	0.21	Requirement: ≤ 2
Filter displace from the frame	Not found	

8 Resistance to radiation

(a) Relative change in the luminous transmittance after irradiation

Left ocular (%)	-1.9	Requirement ±10% for categories 3 & 4
Right ocular (%)	-1.6	

(b) Wide angle scattering after irradiation

Wide angle scattering	Left ocular (%)	Right ocular (%)	Requirement (%)
	1.6	1.8	≤ 3

(c) After the solar radiation process, the submitted sample also met the UV requirements for the initial τv as given by Table 1 of the standard.

Remarks:

#1 - 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.

a) Identification of model.
b) Name and address of the manufacturer.
c) Reference to this part of ISO 12312.
d) Type of filter, if photochromic and/or polarizing.
e) Number of the filter category (in both the faded and darkened states for photochromic filters) marked preferably on the frame or on the filter.
f) Description of the filter category in the form of a symbol and/or verbal description and explanation of these symbols. The minimum height of the symbols shall be 5 mm.
g) Restrictions of use, which shall include at least the following:
   1) Not for direct observation of the sun;
   2) Not for protection against artificial light sources e.g. solaria;
   3) Not for use as eye protection against mechanical impact hazards (for products not satisfying the requirements of 7.3 or 7.6);
   4) Any other restrictions deemed appropriate to be communicated by the manufacturer, e.g. increased or decreased transmittance of photochromic glasses due to high or low temperatures or to low light conditions.
h) When the filter does not meet the necessary requirements for driving and for filter category 4, the following warning: "Not suitable for driving and road use" in the form of either of the symbols shown in figure 2 and/or in writing. The minimum height of the symbol shall be 5 mm.

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i) When 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"

The same warning applies to photochromic filters for which the luminous transmittance in the faded conditions is less than 75%.

j) If relevant, instructions for care and cleaning if the wrong use of cleaning products might damage the sunglasses and a list of damaging products not suitable for cleaning.

#2 - 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.

Date sample received : Jan.15, 2021
Testing period : Jan.15, 2021 To Jan.22, 2021

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To be continued

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End of report

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