Report No.: CTG2509265982B-SR310AC-1

TEST REPORT
EN ISO 12312

Report Number.....: CTG2509265982B-SR310AC-1

Tested by (name + signature).....: Iverson Chen

Reviewed by (name + signature)..: Alan Li

Approved by (name + signature)..: Aaron Zhai

Testing Laboratory	
Name..... :	Shenzhen CTG testing co.,ltd
Address..... :	3/F, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, China
Testing location..... :	Shenzhen CTG testing co.,ltd
Date of issue	2025-09-29
Applicant	
name..... :	Longgang City Geelong Crafts Gifts Co., Ltd.
Address..... :	No. 165-167 Baihe Road, Longgang City, Wenzhou, Zhejiang, China
Test specification:	
Standard..... :	EN ISO 12312-1-2022 EN ISO 12312-2-2015
Test item	
Description..... :	Solar Eclipse Glasses
Model and/or type reference..... :	GL2025
Trademark ..... :	/
Additional model	/
Manufacturer ..... :	Longgang City Geelong Crafts Gifts Co., Ltd.
Address ..... :	No. 165-167 Baihe Road, Longgang City, Wenzhou, Zhejiang, China

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

Item	Observation result
EN ISO 12312-2-2015 Eye and face protection-Sunglasses and related eyewear-Part 2:Filters for direct observation of the sun	Pass
EN ISO 12312-1-2022 Eye and face protection -Sunglasses and related eyewear Part 1:sunglasses for general use	Pass

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

Clause	Requirement	Result
4	Construction and materials	
4.1	Construction	P
4.2	Filter material and surface quality	P
4.3	Physiological compatibility	P
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	P
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 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 Paper Solar eclipse glasses with Silver/black lens (optional specification)	NA(No claim)
7.5	Resistance to perspiration (optional specification)	NA(No claim)

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

Clause	Requirement	Result
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 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 Paper Solar eclipse glasses with Silver/black len s	P
12.2	Additional information	P

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

EN ISO 12312-2		
Clause	**Requirement**	**Result**
4.1	Transmittance	P
4.1.1	General	P
	The transmittance requirements of filters for the direct observation of the sun are given in Table 1.Transmittance values shall be measured or calculated at the boxed centre of the filter for normalincidence,as described in ISO 12311:2013,7.1.1,7.1.2,7.3.2,7.3.3,and 7.5.	P
4.1.2	Uniformity of luminous transmittance	P
	The relative difference in the luminous transmittance value between any two points of the filter shallnot be greater than 10%(relative to the higher value).This requirement shall apply within a circle40 mm in diameter around the boxed centre or to the edge of the filter less the marginal zone 5mmwide,whichever is greater.	P
4.2	Material and surface quality	P
4.2.1	Requirements	P
	Except in a marginal area 5 mm wide,filters shall be free from defects likely to impair vision in use,suchas bubbles,scratches,inclusions,dull	P
	spots,pitting,scouring,pocking,scaling,and undulations.Metalcoated filter materials shall not exhibit more than one pinhole defect not greater than 200 μm in averagediameter within any 5 mm diameter circular zone.	
4.2.2	Test method	NA

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

	A filter shall be illuminated from one side by an intense white light source(eg.projector beam or lighttable)and the opposite side viewed through a low power magnifying lens.Metal coated filters showingvisible pinhole defects shall be examined in a light microscope at 25×to 40x magnification.	NA
	NOTE A magnifying lens of 4×to 10×magnification can be used.	NA
4.3	Mounting	P
4.3.1	General	NA
	Filters may be made with or without a mounting.If mounted,a filter shall be held securely so that it cannotbe dislodged by normal handling or by gusts of wind.Mountings may be handheld or shaped in the form ofspectacles to be worn on the face in front of any corrective (spectacle or contact)lenses worn by the user.	NA
4.3.2	Dimensions	NA
	The filter or filters and mounting assembly shall be of a size sufficient to cover both eyes of the usersimultaneously and in no case shall have overall dimensions less than 115 mm in width and 35 mm indepth in the plane parallel to the facial plane.Spectacle shaped mountings may have a triangular cut-awayarea to accommodate the crest of the nose,not to exceed 15 mm in apical height and 35 mm width at thebase and may have separate filters,one for each eye,provided that the overall dimensions are satisfied.	NA
4.3.3	Material quality	P

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

	The filter and mounting shall be free from roughness,sharp edges,projections,or other defects whichcould cause discomfort or injury during use.No part of the filter or mounting which is in contact withthe wearer shall be made of materials which are known to cause any skin irritation.	P
5	Labelling	P
	The filter and/or its packaging shallshow the following information in the language(s)of the countrywhere the product is to be offered for sale:	P
	a)name and address of manufacturer of the product;	P
	b)instructions for use in looking at the sun or a solar eclipse;	P
	c)warnings that viewing the sun without an appropriate filter can result in permanent eye injury;EXAMPLE""Direct viewing of the sun is dangerous if the proper precautions are not taken.Adequate eyeprotection specifically designed for viewing the sun is essential and shall be worn so that no direct radiationfrom the sun can reach the eye other than that passing through the filter."	P
	d)warnings that filters that are damaged or separated from their mountings should be discarded;	P
	e)advice on storage,cleaning,and maintenance,as appropriate;	P
	f)obsolescence deadline or period of obsolescence,as appropriate.	P

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

Abbreviation:P=Pass;NA=Not Applicable

Table 1—Transmittance requirements for filters for the direct observation of the sun

Maximum luminous transmittance (ty)	0,0032%
Minimum luminous transmittance(rv)	0,000061%
Maximum solar UVB transmittance(rsuvB)	Iv
Maximum solar UVA transmittance(rsuvA)	Tv
Maximum solar infrared transmittance(rsir)	3%

Uncertainty of measurements of transmittance shall not be greater than 25%of the measured value.

The measurement of spectral transmittance offilters with high optical density can be best accomplished with the use of a dual-beam spectrophotometer and comparison beam attenuators.The comparison beam attenuator should be a physical barrier,such as a perforated mesh,equivalent to a known uniform level of absorption across the entire waveband of measurement.

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

Test data

5.2 Transmittance and filter categories

Range	Left ocular(%)	Right ocular(%)	Filter category
380-780nm(Tv)	0.0025	0.0026	5

Range	Maximum transmittance(%)		Limit(%)	
	Left ocular	Right ocular	Left	Right
280-315nm (TSUVB)	<0.10	<0.10	≤0.05Tv (0.83)	≤0.05Tv (0.84)
315-380nm(TsuvA)	<0.10	<0.10	≤0.5Tv (8.1)	≤0.5Tv (8.2)

Requirement:

Consumer label	Technica label	Requirements		
Descriptive label	Filter category	Ultraviolet spectral range		Visible spectral range
		Maximum value of solar UV-B transmittance TSUVB 280 nm to 315 nm	Maximum value of solar UV-A transmittance TSUVA 315 nm to 380 nm	Range of luminous transmittance (Tv) 380 nm to 780 nm
Light tint Paper Solar eclipse glasses with Silver/black lens	0	0.05 Tv	87%	Tv>80%
	1	0.05 Tv	65%	43%<Tv<80%
General purpose Paper Solar eclipse glasses with Silver/black lens	2	1.0%absolute or 0.05 Tv, whichever is greater	0.5 Tv	18%<Tv<43%
	3	1.0%absolute	0.5 Tv	8%<Tv<18%
Very dark special purpose Paper Solar eclipse glasses with Silver/black lens	4	1.0%absolute	1.0%absolute or 0.25 Tv, whichever is greater	3%<Tv<8%

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

5.3.1 Uniformity of luminous transmittance

Uniformity	Left ocular	Right ocular	Limit(%)
%variation within filter [relative to highervalue]	1.26	1.32	≤10
%difference between filters [relative to lighter filter]	6.08		≤15

5.3.2.2 Spectral transmittance

Range	Minimum transmittance(%)		Limit(%)	
	Left ocular	Right ocular	Left ocular	Right ocular
475-650nm	17.58	18.43	≥0.2 Tv(3.2)	≥0.2 Tv(3.31)

5.3.2.3 Recognition of signal lights

Signal light	Relative visual attenuation quotient		Limit
	Left ocular	Right ocular	
Red	0.93	0.93	≥0.80
Yellow	0.92	0.90	≥0.60
Blue	0.95	0.97	≥0.60
Green	1.02	1.3	≥0.60

5.3.3 Wide angle scattering

Wide angle scattering (%)	Left ocular	Right ocular	Requirement
	1.8	1.68	≤3

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

6.1 Optical power of oculars mounted in spectacles

Optical power	Left ocular	Right ocular	Limit
Spherical power(m-1)	-0.02	-0.04	≤ 0.12
Astigmatic power(m-1)	0	0	≤0.12
Difference of spherical power between left and right filters(m-1)	0.05		≤0.18

6.3 Prism imbalance(relative prism error)

Prismatic power difference(cm/m)			Limit(cm/m)
Horizontal	Base out	0.14	≤1.00
	Base in	0.18	≤0.25
Vertical		0.024	≤0.25

8 Resistance to radiation

(a)Relative change in the luminous transmittance after irradiation

Left ocular(%)	+1.48	Requirement <±3%for category 0 <±5%for category 1 <±8%for category 2 <±10%for categories 3&4
Right ocular(%)	+1.22	

(b)Wide angle scattering after solar radiation

Left ocular(%)	Right ocular(%)	Requirement(%)
1.46	1.48	≤3

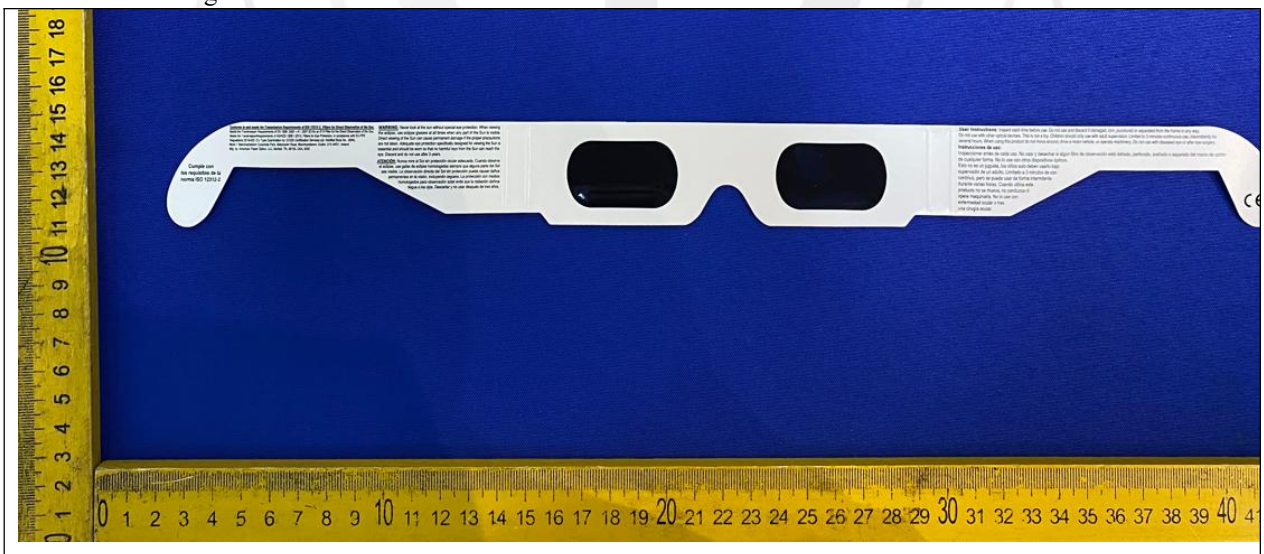
(c)After the solar radiation process,the submitted sample also met the requirement for the ultraviolet spectral range for Tv as given by table 1 of the standard.

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

Sample Photo

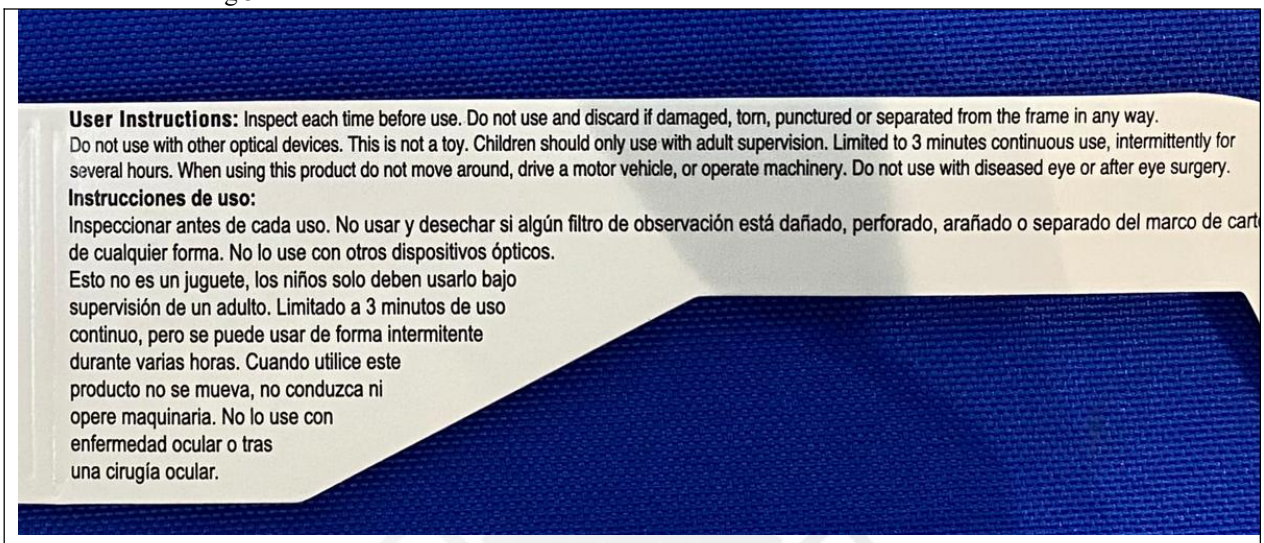
Details of: Fig.1- External view

Details of: Fig.2- External view

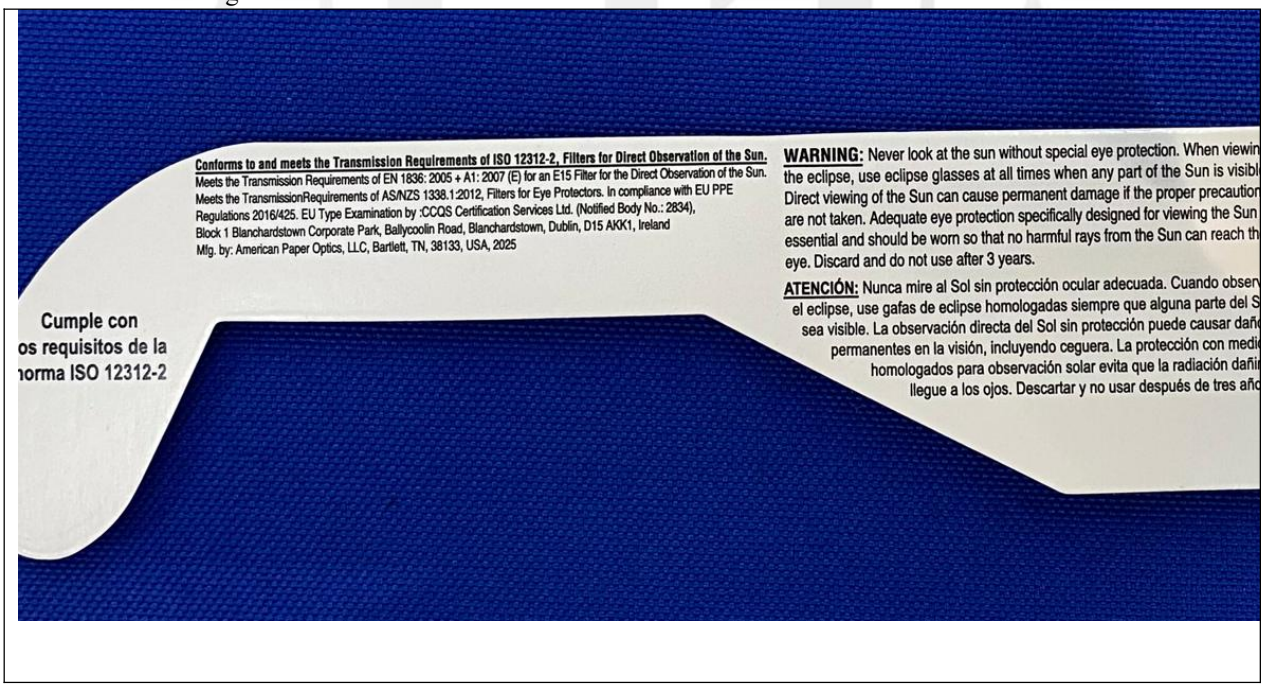


SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696

Details of: Fig.3- External view



Details of: Fig.4- External view



no5LjRC ln7JL40

SHENZHEN CTG TESTING CO.,LTD.
Add:3/f, Yongxing Plastic Plant, No.11. Waihuan Road, Shiyan Street, Bao'an District Shenzhen, Guangdong, china
Email:services@ctg-cert.com Tel:4001-898-696