APPLICATION FOR PPE TEST REPORT

On Behalf of

Prepared For	:	**GUANGZHOU USOM GLASSES CO., LTD** Rm. 508 Lotus Commercial Plaza, No. 195 Shangye Avenue, Huadu District, Guangzhou, P.R. China 510800
Product Name	:	Sunglasses
Model	:	US004, US001, US002, US003, US017, US005, US006, US008, US013, US018, US021, US022, UY001, UY014, UY022, UY026, UY028, UY033, UY034, UY048, UY058
Prepared By	:	**SHENZHEN POCE TECHNOLOGY CO., LTD.** H Building, Hongfa Science And Technology Park, Tangtou, Shiyan, Bao'An District, Shenzhen, China
Test Date	:	Oct. 16, 2018 – Oct. 19, 2018
Date of Report	:	Oct. 19, 2018
Report No.	:	POCE18101707HRS

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of Shenzhen POCE Technology Co., Ltd.

TEST REPORT

EN ISO 12312-1:2013+A1:2015
Personal eye-equipment — Sunglasses and sunglare filters for general use and filters for direct observation of the sun

Report Reference No. :	POCE18101707HRS
Tested by (name and signature) ..... :	Calvin Chen
Approved by (name and signature).. :	Machael Mo
Date of issue ..... :	Oct. 19, 2018
Testing Laboratory..... :	Shenzhen POCE Technology Co., Ltd
Address ..... :	H Building, Hongfa Science And Technology Park, Tangtou, Shiyan, Bao'an District, Shenzhen, China
Applicant's name ..... :	GUANGZHOU USOM GLASSES CO., LTD
Address ..... :	Rm. 508 Lotus Commercial Plaza, No. 195 Shangye Avenue, Huadu District, Guangzhou, P.R. China 510800
Test standard ..... :	EN ISO 12312-1:2013+A1:2015
Test item description ..... :	Sunglasses
Trademark ..... :	N/A
Manufacturer..... :	GUANGZHOU USOM GLASSES CO., LTD
Address..... :	Rm. 508 Lotus Commercial Plaza, No. 195 Shangye Avenue, Huadu District, Guangzhou, P.R. China 510800
Model(s) ..... :	US004, US001, US002, US003, US017, US005, US006, US008, US013, US018, US021, US022, UY001, UY014, UY022, UY026, UY028, UY033, UY034, UY048, UY058

Test case verdicts: Test case does not apply to the test object…..: N(A) Test object does meet the requirement……: P(ass) Test object does not meet the requirement….: F(ail)
Testing: Date of receipt of test item……..: Oct. 16, 2018 Date (s) of performance of tests……: Oct. 16, 2018 – Oct. 19, 2018

General remarks

This test report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item tested.

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

Remark :

- The EUT complies with the requirement of standard EN ISO 12312-1:2013+A1:2015.
- All the model are identical except for the model name and appearance. If no otherwise special instructions, all the test are performed on US004.

Copy of marking plate:

Sunglasses
Model: US004
Filter Category: 3

GUANGZHOU USOM GLASSES CO., LTD
Made in China

EN ISO 12312-1:2013			
Clause	Requirement - Test	Result - Remark	Verdict
4	**Construction and materials**		**---**
	Construction		P
	Filter material and surface quality		P
	Physiological compatibility		P
5	Transmittance		---
5.2	Transmittance and filter categories	Filter categoriy: 3	P
5.3	General transmittance requirements		---
5.3.1	Uniformity of luminous transmittance		P
	The relative difference in the luminous transmittance value between any two points of the filter within a circle 40 mm in diameter around the reference point or to the edge of the filter less the marginal zone 5 mm wide, whichever is less, shall not be greater than 10 % (relative to the higher value),		P
	Except for category 4 where it shall not be greater than 20 %.		N/A
5.3.2	Requirements for road use and driving		---
5.3.2.1	General		N/A
5.3.2.2	Spectral transmittance		N/A
	For wavelengths between 475 nm and 650 nm, the spectral transmittance of filters suitable for road use and driving shall be not less than 0,2 τ_V.		N/A
5.3.2.3	Detection of signal lights		N/A
	The relative visual attenuation quotient Q of filters of categories 0, 1, 2 and 3 suitable for road use and driving shall be not less than 0,80 for red signal light,		N/A
	not less than 0,60 for yellow, green and blue signal lights.		N/A
5.3.2.4	Driving in twilight or at night		N/A
5.3.3	Wide angle scattering		P
	at the reference point, the wide angle scattering of the filters in the condition as supplied by the manufacturer shall not exceed the value of 3 %.	Not exceed the value of 3 %.	P
5.3.4	Additional transmittance requirements for specific filter types		---
5.3.4.1	Photochromic filters		P

EN ISO 12312-1:2013			
Clause	Requirement - Test	Result - Remark	Verdict
5.3.4.2	Polarizing filters		P
5.3.4.3	Gradient filters		P
5.3.4.3.1	General		P
5.3.4.3.2	Determination of the filter category		P
5.3.5	Claimed transmittance properties		---
5.3.5.1	Blue-light absorption/transmittance		P
5.3.5.1.1	Blue-light absorption		P
5.3.5.1.2	Blue-light transmittance		P
5.3.5.2	UV absorption/transmittance		P
5.3.5.2.1	General		P
5.3.5.2.2	Solar UV absorption		P
5.3.5.2.3	Solar UV transmittance		P
5.3.5.2.4	Solar UV-A absorption		P
5.3.5.2.5	Solar UV-A transmittance		P
5.3.5.2.6	Solar UV-B absorption		P
5.3.5.2.7	Solar UV-B transmittance		P
5.3.5.3	Antireflective coated sunglasses		P
5.3.5.4	Enhanced infrared absorption		P
6	**Refractive power**		**---**
6.1	Spherical and astigmatic power		P
6.2	Local variations in refractive power		P
6.3	Prism imbalance (relative prism error)		P
7	**Robustness**		**---**
7.1	Minimum robustness of filters		P
	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.		P
	a)Filter fracture. A filter is considered to have fractured when		P

EN ISO 12312-1:2013			
Clause	Requirement - Test	Result - Remark	Verdict
	b)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.		P
7.2	Frame deformation and retention of filters		P
	When tested in accordance with ISO 12311:2013, 9.6, the frame fitted with filters shall not:		P
	a) fracture or crack at any point;		P
	b)be permanently deformed from its original configuration by more than 2 % of the distance, c, between the boxed centres of the sunglass frame, that is the residual deformation x shall not exceed 0,02c (see Figure 18 in ISO 12311:2013);		P
	c) neither filter shall be displaced from the frame.		P
7.3	Impact resistance of the filter, strength level 1 (optional specification)		---
7.4	Increased endurance of sunglasses (optional specification)		---
7.5	Resistance to perspiration (optional specification)		---
7.6	Impact resistance of the filter, strength level 2 or 3 (optional specification)		---
8	**Resistance to solar radiation**		**---**
	Following irradiation as specified in ISO 12311:2013, 9.8, the relative change in the luminous transmittance of the filters referred to the initial τ_V (for photochromic filters, in the faded state when according to the method described in ISO 12311:2013) shall be less than or equal to the values shown in Table 4.		P
	In addition, the following shall be met:		P
	a) the wide angle scattering shall not exceed the value of 3 %;		P
	b) for photochromic filters, $\tau 0/\tau 1$ shall be ≥ 1,25;		P
	c) the UV requirements for the initial τ_V shall continue to be satisfied;		P
	d) all claimed transmittance requirements shall be met.		P
9	**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.		P

EN ISO 12312-1:2013			
Clause	Requirement - Test	Result - Remark	Verdict
10	**Resistance to abrasion (optional specification)**		**---**
11	**Protective requirements**		**---**
11.1	Coverage area		P
	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,		P
11.2	Temporal protective requirements		P
	a)in the line of intersection of the frontal plane (tangent to the apex of the cornea) with the inner surface of the sunglass structure, to elevations of 11 mm above and below the horizontal plane through the reference point; and		P
	b)in a vertical line in the inner structure of the sunglass that is 30° back from the frontal plane and relative to the apex of the cornea, and to elevations of 6 mm above and below the horizontal plane through the reference point.		P
12	**Information and labelling**		**---**
12.1	Information to be supplied with each pair of sunglasses		---
	a) Identification of model.		P
	b) Name and address of the manufacturer.	GUANGZHOU USOM GLASSES CO., LTD	P
	d) Type of filter, if photochromic and/or polarizing.		P
	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.	Category 3	P
	f) Description of the filter category in the form of a symbol and/or verbal description as given in Ta ble 5. The minimum height of the symbols shall be 5 mm.	>5mm	P
	g)Restrictions of use, which shall include at least the following:		N/A
	not for direct observation of the sun;		N/A
	not for protection against artificial light sources, e.g. solaria;		N/A
	not for use as eye protection against mechanical impact hazards (for products not satisfying the requirements of 7. 3 or 7. 5);		N/A
	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 the symbols shown in		P

EN ISO 12312-1:2013			
Clause	Requirement - Test	Result - Remark	Verdict
	Figure 2 and/or in writing. The minimum height of the symbol shall be 5 mm.		
	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 %.		P
	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.		P
12.2	Additional information		---
	The following information shall be available from the manufacturer on request.		P
	a)An explanation of the trademarks that are not universally recognized or foreseen by the users of this part of ISO 12312.		P
	b)The position of the reference point when different from the one defined in this part of ISO 12312.		P
	c)The country of origin (e.g. “made in …….”).	Made in China	P
	d) The nominal value of luminous transmittance.		P
	e) Transmission requirements applicable to this product.		P
	f) Polarization efficiency in cases of polarizing filters.		P
	g)The base material of filters and frame.		P
13	Selection of test samples		---
13.1	General		P
13.2	Preparation and conditioning of test samples		P
	Immediately before starting the series of tests, the test samples shall be conditioned for at least 4 h at an ambient temperature of 23 °C ± 5 °C, in the as-received condition from the manufacturer or supplier, without prior realignment, adjustment or lubrication.		P

TEST RESULTS SUMMARY:
At the request of the client, the following tests were conducted:

CONCLUSION	TEST(S) CONDUCTED
PASS	EN ISO 12312.1-2013 +A1: 2015 (ISO12312.1-2013, BS EN ISO 12312.1:2013 +A1:2015) Eye and face protection – Sunglasses and related eyewear. Part 1: Sunglasses for general use Including: Mechanical strength level 1 and UV Protection Excluding: -Clause 4.3 Physiological compatibility -Clause 12 Marking and information -All other unclaimed and optional items.
N/A	REACH Regulation (EC) No. 1907/2006, Annex XVII Item 27 and Amendment No. 552/2009 (form directive number 94/7/EC Nickel Directive) -Nickel Release content requirement, refers to EN16128-2011

Note: N/A = not applicable; NR = not required; L = left, R = right. - = no information given.

Transmittance properties and refractive properties measured at Visual centers (VC) in as-worn position.

DETAILED RESULTS:

Test Sequence and Name	Reference to ISO12312.1 EN ISO12312.1	Requirements	Findings		Result
1.Construction of the Sunglasses	Clause 4.1	Areas contact with wearer shall be smooth, without sharp protuberances, all edges shall be rounded.	No projection and sharp edges detected		PASS
2.Material and Surface Quality	Clause 4.2	no defects found within 30mm diameter range from reference point	Reference point: Visual center		PASS
			L	No defect impair vision	
			R	No defect impair vision	
3.Transmittance and Filter categories	Clause 5.2 and Table 1	Luminous transmittance (Details refers Table 1) Filter Category 4 3% to 8% 3 8% to 18% 2 18% to 43% 1 43% to 80%	Luminous transmittance (Tv) 380-780nm (in %)		PASS
			L	8.69	
			R	8.67	
		Overlapping allowed: 2% solid tint 4% gradient tint Excluding Cat. 3-4	Cat	Should be category 3	PASS
		UV-Range on Cat.2-3 requirements:	Tmax UVB (280-315nm):		PASS
		Maximum value of solar UV-B transmittance τSUVB (280 nm to 315nm) = 1.0% absolute	L	0.22%	
			R	0.21%	
		Maximum value of solar UV-A transmittance τSUVA (315 nm to 380nm) = 0.5Tv	Tmax UVA (315-380nm):		PASS
			L	0.86%	
			R	0.87%	
		Enhanced infrared transmittance	L	--	N/A
			R	--	
4. Variation of transmittance between two eyes	Clause 5.3.1	shall not exceed 15% (of pair lenses)	Relative difference % between L/R		PASS
			L	8.93	
			R	8.91	
5. Uniformity of transmittance	Clause 5.3.1	RELATIVE difference of luminous transmittance shall not exceed	Relative difference (%)		PASS
			L:		

		10% (or not exceed 20% for category 4 lens)	Tv Max	8.72	
			Tv Min	7.96	
			R:		
			Tv Max	8.57	
			Tv Min	8.13	
		Variation due to thickness issue	Not applied		
6. Requirements for road use and driving	Clause 5.3.2.1	for filters of Category 0, 1, 2, 3 (WARNING required if not suitable for driving use)	Filters suitable for road use and driving shall be of categories 0, 1, 2 or 3 and shall additionally meet the following three requirements.		N/A
	Clause.5.3.2.1(a)	Spectral transmittance not less than 0.2 Tv	Spectral transmittance (475-650nm) Tv		N/A
			L	--	
			R	--	
	Clause.5.3.2.1(b)	Detection of signal lights NOT less than 0.80 for Red (R), and NOT less than 0.60 for Yellow (Y), Green(G) and Blue (B)	Relative visual attenuation Quotient Q		N/A
			L:	--	
			R:	--	
	Clause 5.3.2.2	Driving in twilight or at night: luminous transmittance not less than 75%	A Warning refer to clause 12.1 (i) is required on Information and Labelling		N/A
7. Wide Angle Scattering	Clause 5.3.3	Haze shall not exceed 3%	Wide angle scattering (haze, %)		PASS
			L:	2.42	
			R:	2.40	
8. Polarizing filters	Clause 5.3.4.2 (optional) specification)	Do not deviate more than +/-5□ (degrees)	Planeof polarization axis (degree)		N/A
			L	-	
			R	-	
		Misalignment shall not greater than 6	Misalignment between L/R (degree):		N/A
		shall be > 78% for filter categories 2, 3, 4 and > 60% for filter category 1.	Polarization efficiency: Tp-max / Tp-min:		N/A
			L	Tpmax:- Tpmin:-	
			R	Tpmax:- Tpmin:-	
9.Gradient filters	Clause 5.3.4.3	Gradient filters shall meet the transmittance requirements within a 10 mm radius circle, around the reference point.	Requirement applied if gradient filters are used		N/A
10. Blue-light absorption	Clause 5.3.5.1 (Optional spec)	Blue-light transmittance shall not exceed (x+0.5)% transmittance, on claimed protection value.	Blue-light transmittance (380-500nm): %		Optional, NR
			L	--	
			R	--	
11. Ultra-violet absorption	Clause 5.3.5.2 (Optional	UV transmittance shall not exceed (X+0.5)% transmittance, on claimed protection value.	Claimed UV (280-380nm) transmittance: %		PASS
			L	2.00%	

	Spec)	UV blocking = 0% UV transmittance	R	2.00%	
12. Anti-reflective coated sunglasses	Clause 5.3.5.3 (optional specification)	Luminous reflectance shall not less than 2,5% on eye-side (AR coated surface)	Luminous reflectance Pv (%)		Optional, NR
			L	-	
			R	-	
13. Resistance to Solar Radiation	Clause 8	Change shall be less than or equal to the limits below	Relative change in the luminous transmittance after Irradiation (%)		PASS
		Filter category / Relative change in luminous transmittance	Relevant lens category No.	3 (relative change 10% allowed)	
		Category 0 ±3% Category 1 ±5% Category 2 ±8% Category 3 or 4 ±10%	L	Before: 8.62 After:8.33	
			Change:	3.5%	
			R:	Before: 8.71 After: 8.46	
			Change:	2.9%	
		haze for the wide angle scattering shall not exceed 3%	Wide angle scattering (%) after radiation		PASS
			L	2.22	
			R	2.26	
		Other parameters shall be less than or equal to the limits set in table 1	The ultraviolet (UV) spectral range for Tv:		PASS
			Tmax UVB:	L: 0.00% R: 0.00%	
			Tmax UVA:	L: 0.00% R: 0.00%	
		Any claimed transmittance requirement and reflection property shall be remained satisfactory (requirements met).	After irradiation, other claimed transmittance properties:		
			UV blocking:	L: 5.00% R: 5.00%	PASS
			Blue-light blocking:	L: R:	Optional, NR
			AR coated:	L: R:	Optional, NR
			Infrared:	L: R:	Optional, NR
14. Spherical and astigmatic power	Clause 6.1	Spherical Power shall not exceed ± 0.12 Dioptres (D)	Spherical power		PASS
			L	-0.04	
			R	-0.04	
		Difference between two lenses shall not exceed 0.18 Dioptres (D)	0.00		
		Astigmatic Power shall not exceed 0.12 Dioptres (D)	Astigmatic Power		PASS
			L	0.06	

			R	0.05	
15. Prismatic Power or Prismatic Imbalance	Clause 6.3	Horizontal Prismatic Imbalance (H) shall not exceed: 1.00 base out / 0.25 base in cm/m Vertical prismatic Difference (V), shall not exceed: 0.25 cm/m	Prismatic difference (cm/m)		PASS
			H	0.07	
			Base	0.16	
			V	0.13	
16. Minimum Robustness	Clause 7.1	the tested filter has NO a) FRACTURE and b) DEFORMATION	L	No fracture, No deformation	PASS
			R	No fracture, No deformation	
17. Impact resistance of filter, strength 1	Clause 7.3 (Optional specification)	The tested filters shall NOT fracture	--	--	NA
18.Impact resistance of filter, strength level 2 or 3	Clause 7.6 (Optional specification)	If an increased level of impact resistance strength is claimed, the tested filter shall NOT fracture.	Level:		Optional, NR
			L:	--	
			R:	--	
19. Resistance to Ignition	Clause 9	Shall be no continued combustion after withdrawal of the test rod	Frame: no continued to glow		PASS
			Lenses: no continued to glow		
20. Frame deformation and retention of filters	Clause 7.2	a) completed sunglass shall NOT a) fracture or crack at any point,	No fracture or crack at any point		PASS
		b) permanently deformed more than +/-2%,	Change 1.13%		
		c) Neither filter shall be displaced from the frame	No filter displaced from the frame		
21. Increased Endurance	Clause 7.4 (optional test)	After test, shall be: a) No fracture			NR
		b) No permanently deformed > 5mm	Change -mm		
		c) open/close sides by light finger pressure (non-spring hinges)	-		
		d) Not close under its own weight (normal hinge);	-		
		e) side shall support its weight when open (sprung hinge)	-		
22. Resistance to perspiration	Clause 7.5 (optional test)	a) After 8 hours: No spotting or color change on frame	-		NR
		b) After total 24 hours: surface degradation or separation of any coating layer on the parts that contact with the skin (inside frame)	-		
23. Resistance to abrasion	Clause 10 (optional specification)	Shall meet the requirement specified in ISO8980-5 (no significant abrasion marks)	L:	--	Optional, NR
			R:	--	
24. Protective requirements	Clause 11.1 Eye coverage	a) Shall cover two ellipses: adult- 40mmx28mm, PD 64mm child:34mmx24mm, PD 54mm	Eye-coverage (L): Covered the ellipse		PASS
			Eye-coverage (R): Covered the ellipse		

	Clause 11.2 Temporal protection (for Category 4 only)	b) For filter Category 4, temporal protective requirements refer to Figure 1, P-P min height 22mm, T-T min height 12mm	P- P	Height (mm)	NA
			T- T	Height (mm):	
25. Information and Labelling	Clause 12.1	Information to be supplied with each pair of sunglasses.	Not provided		NR
	Clause 12.2	Additional information	Not provided		

DETAILED RESULTS

Item Name	Reference to ISO12312.1 EN ISO 12312.1	Requirements	Remarks
Physiological Compatibility	Clause 4.3	The manufacturer shall exclude from contact with the skin, any material that, amongst a significant proportion of users, during wear are known to cause irritation, allergic or toxic reaction to skin in a normal state of health.	see Note (A)
Note (A): The applicant's attention as drawn that the manufacturer should not use the frame materials which are known to cause irritation, allergic or toxic reaction during wear in a normal stage of health against significant proportion of users.			

NICKEL RELEASE TEST:

Test Sequence and Test Name		Reference to ISO 12312.1 EN ISO 12312.1	Requirements			
26. Nickel Release test on sunglasses with metal parts prolonged contact with skin		Clause 4.3 note 2 Refer ISO 12870-2012 EN ISO 12870-2014 Clause 4.2.3 and 8.8.1, 8.8.2 and 8.8.4	Released Nickel Release content after test according to ISO/TS 24348 (EN12472 + EN1618-2011 alternative method), analysis by GFAAS. Nickel release by metal parts in prolonged contact with skin shall be less than 0.5 µg/cm²/week (microgram per centimeter square per week)			
Test from		Completion on:	EN12472: 2005 +A1:2009		Analysis by:	Analysis method:
			Simulation of corrosion and wear: tested		GFAAS	Separate parts
Test Parts (description)		Test area (cm²)	Solution (ml)	Trial No.	Nickel content ug/cm²/week	adjusted value in ug/cm²/week
Color code:	Metal Rims	-	-	Trial 1	-	-
		-	-	Trial 2	-	-
	Metal Bridge	-	-	Trial 1:	-	-
		-	-	Trial 2:	-	-
	Brace Bar	-	-	Trial 1:	-	-
		-	-	Trial 2:	-	-
	Metal temples	-	-	Trial 1:	-	-
				Trial 2:		
Test conclusion in Nickel Release test refer to REACH Directive 1907/2006 Annex XVII, entry 27						NA

Note: detection limit: 0.01

Definition for prolonged contact with skin for nickel release is defined by The European chemical Agency (ECHA) which is referring to contact with the skin of nickel of potentially more than:

-10 minutes on three or more occasions within two weeks, or

-30 minutes on one or more occasions within two weeks.

Attachment I Photos of Product

Photo 1	
Photo 2	

***** THE END *****