TEST REPORT

Applicant: MID OCEAN BRANDS B.V.
UNIT 711-716 7/F TOWER A
83 KING LAM STREET
CHEUNG SHA WAN KOWLOON
HONG KONG
Attn: DEREK HUI

Number: HKGH03310814 S1

Date: Jan 08, 2026

Sample and Information provided by customer :

Item Name	:	**Stylish sunglasses**
Item No.	:	**MO2992**
Quantity	:	20 pairs
Vendor	:	116003
Country of Origin	:	China
Date sample received	:	Nov 28, 2025, Dec 30, 2025
Testing period	:	Nov 28, 2025 to Jan 07, 2026

****

For and on behalf of :
Intertek Testing Services HK Ltd.

Dorothy M.Y. Lau
Vice President

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576 Castle Peak Road
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Conclusion:
The submitted sample was tested under the following requirements requested by the applicant, subject to the information stated in the remark and attached page(s) for details :

	Requirement	Result
(1)	UV-400	Pass
(2)	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 12.2 - Additional information	Pass

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Decision Rule(s):
When a statement of conformity to a specification or standard is provided on test report, the decision rule shall be applied. For details, please refer to Intertek's "Decision Rule Document" and is available on Intertek's website. https://intertekhk.grd.by/decision-rule-doc..
If decision rule already inhered in the requested specification or standard, Intertek's "Decision Rule Document" is not applicable and indication of "∞" was shown as above table.
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Note : This is to supersede Report No. HKGH03310814 dated Dec 10, 2025 due to Retest
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(1) UV-400

Test Method : Assessment was made against a level of 100% UV protection, in which the spectral transmittance was examined within a range of 280nm - 400nm to ensure that a transmittance value of 0.5% was not exceeded.

Number of samples tested: One (1) pair per style; total two (4) styles.

Sample	Style
(A)	Black
(B)	Yellow
(C)	Blue
(D)	Silver

Result :

Wavelength (nm)	Transmittance (%)							
	Sample (A)		Sample (B)		Sample (C)		Sample (D)	
	Left ocular	Right ocular	Left ocular	Right ocular	Left ocular	Right ocular	Left ocular	Right ocular
280	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
285	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
290	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
295	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
300	<0.10	<0.10	<0.10	<0.10	<0.10	0.13	<0.10	<0.10
305	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
310	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
315	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	<0.10	<0.10
320	<0.10	<0.10	0.14	<0.10	<0.10	0.19	0.19	<0.10
325	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.16	<0.10
330	<0.10	<0.10	<0.10	0.10	0.16	<0.10	<0.10	<0.10
335	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
340	<0.10	<0.10	<0.10	0.11	<0.10	0.10	<0.10	<0.10
345	<0.10	<0.10	<0.10	<0.10	<0.10	0.14	<0.10	<0.10
350	<0.10	<0.10	<0.10	<0.10	<0.10	0.24	<0.10	<0.10
355	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
360	<0.10	<0.10	<0.10	<0.10	<0.10	0.19	0.14	<0.10
365	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	<0.10	<0.10
370	<0.10	<0.10	0.24	<0.10	0.12	0.19	0.11	<0.10
375	<0.10	<0.10	<0.10	<0.10	<0.10	0.12	<0.10	<0.10
380	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
385	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
390	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
395	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
400	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

Comment :The submitted sample were considered acceptable to make a claim of "UV 400" protection, the criteria of which was mentioned above.

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(2) Requirements for Sunglasses (Uniformly Tinted Lenses)

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

Test method refers ISO 12311:2013 Personal protective equipment - Test methods for sunglasses and related eyewear.

Number of samples tested: Four (4) pairs (Black)

Note :

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

(2) 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.

(3) CE marking or UKCA marking is not specified in BS EN ISO 12312-1:2013+A1:2015. However, per Regulation (EU) 2016/425 or UK2019 SI696 Schedule 35 Regulation 38, the CE marking or UKCA marking shall be affixed visibly, legibly and indelibly to the sunglasses frame respectively.

It was found that only CE marking was provided on the sunglasses frame.

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
5.3.2.1a	Spectral transmittance	P
5.3.2.1b	Detection of signal lights	P
5.3.2.2	Driving in twilight or at night	P
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	

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Clause	Requirement	Result
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)
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 labeling	
12.1	Information to be supplied with each pair of sunglasses	P (Note 3)
12.2	Additional information	#1

Abbreviation: P = Pass; NA = Not Applicable

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Test data:

5.2 Transmittance and filter categories

Range	Left ocular (%)	Right ocular (%)	Filter category
380 - 780nm (Tv)	13.56	12.91	3

Range	Maximum transmittance (%)		Limit (%)	
	Left ocular	Right ocular	Left	Right
280 - 315nm (T_{SUVB})	< 0.10	< 0.10	≤ 1.0	≤ 1.0
315 - 380nm (T_{SUVA})	< 0.10	< 0.10	≤ 0.5Tv (6.78)	≤ 0.5Tv (6.45)

Requirement:

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

5.3.1 Uniformity of luminous transmittance

Uniformity	Left ocular	Right ocular	Limit (%)
% variation within filter [relative to higher value]	1.85	2.69	≤ 10
% difference between filters [relative to lighter filter]	4.83		≤ 15

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5.3.2.1a Spectral transmittance

Range	Minimum transmittance (%)		Limit (%)	
	Left ocular	Right ocular	Left ocular	Right ocular
475 - 650nm	10.82	10.02	≥ 0.2 Tv (2.71)	≥ 0.2 Tv (2.58)

5.3.2.1b Detection of signal lights

Signal light	Relative visual attenuation quotient, Q		Limit
	Left ocular	Right ocular	
Red	1.01	1.01	≥ 0.80
Yellow	0.96	0.96	≥ 0.60
Blue	1.13	1.14	≥ 0.60
Green	1.02	1.03	≥ 0.60

5.3.3 Wide angle scattering

Wide angle scattering (%)	Left ocular	Right ocular	Requirement
	0.9	0.9	≤ 3

6.1 Optical power of oculars mounted in spectacles

Optical power	Left ocular	Right ocular	Limit
Spherical power (m^{-1})	-0.05	-0.06	± 0.12
Astigmatic power (m^{-1})	0.05	0.05	≤ 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)			Limit (cm/m)
Horizontal	Base out	0.125	≤ 1.00
	Base in	- -	≤ 0.25
Vertical		0.025	≤ 0.25

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8 Resistance to radiation

(a) Relative change in the luminous transmittance after irradiation

Left ocular (%)	+0.08	Requirement ± 3% for category 0 ± 5% for category 1 ± 8% for category 2 ± 10% for categories 3 & 4
Right ocular (%)	+0.20	

(b) Wide angle scattering after solar radiation

Left ocular (%)	Right ocular(%)	Requirement (%)
1.0	1.0	≤ 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.

Remark:

#1 - 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.

∞ - Decision rule required by the standard

If the measurement result plus or minus the uncertainty of measurement overlap the limit value of the test, the result shall be deemed to be a failure.

Date sample received : Nov 28, 2025
Testing period : Nov 28, 2025 to Dec 09, 2025

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

Test method refers ISO 12311:2013 Personal protective equipment - Test methods for sunglasses and related eyewear.

Number of samples tested: Four (4) pairs (Yellow)

Note :

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

(2) 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.

(3) CE marking or UKCA marking is not specified in BS EN ISO 12312-1:2013+A1:2015. However, per Regulation (EU) 2016/425 or UK2019 SI696 Schedule 35 Regulation 38, the CE marking or UKCA marking shall be affixed visibly, legibly and indelibly to the sunglasses frame respectively.

It was found that only CE marking was provided on the sunglasses frame.

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
5.3.2.1a	Spectral transmittance	P
5.3.2.1b	Detection of signal lights	P
5.3.2.2	Driving in twilight or at night	P
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	

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Clause	Requirement	Result
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)
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/ **F,∞**
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 labeling	
12.1	Information to be supplied with each pair of sunglasses	P (Note 3)
12.2	Additional information	#1

Abbreviation: P = Pass; NA = Not Applicable

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Test data:

5.2 Transmittance and filter categories

Range	Left ocular (%)	Right ocular (%)	Filter category
380 - 780nm (Tv)	10.04	9.85	3

Range	Maximum transmittance (%)		Limit (%)	
	Left ocular	Right ocular	Left	Right
280 - 315nm (T_{SUVB})	< 0.10	< 0.10	≤ 1.0	≤ 1.0
315 - 380nm (T_{SUVA})	< 0.10	< 0.10	≤ 0.5Tv (5.02)	≤ 0.5Tv (4.93)

Requirement:

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

5.3.1 Uniformity of luminous transmittance

Uniformity	Left ocular	Right ocular	Limit (%)
% variation within filter [relative to higher value]	2.57	4.93	≤ 10
% difference between filters [relative to lighter filter]	1.92		≤ 15

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5.3.2.1a Spectral transmittance

Range	Minimum transmittance (%)		Limit (%)	
	Left ocular	Right ocular	Left ocular	Right ocular
475 - 650nm	7.84	7.93	≥ 0.2 Tv (2.01)	≥ 0.2 Tv (1.97)

5.3.2.1b Detection of signal lights

Signal light	Relative visual attenuation quotient, Q		Limit
	Left ocular	Right ocular	
Red	0.96	0.98	≥ 0.80
Yellow	0.93	0.93	≥ 0.60
Blue	1.24	1.25	≥ 0.60
Green	1.01	1.01	≥ 0.60

5.3.3 Wide angle scattering

Wide angle scattering (%)	Left ocular	Right ocular	Requirement
	1.3	1.4	≤ 3

6.1 Optical power of oculars mounted in spectacles

Optical power	Left ocular	Right ocular	Limit
Spherical power (m^{-1})	-0.05	-0.04	± 0.12
Astigmatic power (m^{-1})	0.04	0	≤ 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)			Limit (cm/m)
Horizontal	Base out	0.025	≤ 1.00
	Base in	- -	≤ 0.25
Vertical		0.025	≤ 0.25

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8 Resistance to radiation

(a) Relative change in the luminous transmittance after irradiation

Left ocular (%)	-1.77	Requirement ± 3% for category 0 ± 5% for category 1 ± 8% for category 2 ± 10% for categories 3 & 4
Right ocular (%)	-2.33	

(b) Wide angle scattering after solar radiation

Left ocular (%)	Right ocular(%)	Requirement (%)
1.5	1.4	≤ 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.

Remark:

#1 - The following information shall be available from the manufacturer on request.

h) An explanation of the trademarks that are not universally recognized or foreseen by the users of this part of ISO 12312.
i) The position of the reference point when different from the one defined in this part of ISO 12312.
j) The country of origin (e.g. "made in .. .. ").
k) The nominal value of luminous transmittance.
l) Transmission requirements applicable to this product.
m) Polarization efficiency in cases of polarizing filters.
n) The base material of filters and frame.

∞ - Decision rule required by the standard

If the measurement result plus or minus the uncertainty of measurement overlap the limit value of the test, the result shall be deemed to be a failure.

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Requirements for Sunglasses (Uniformly Tinted Lenses)

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

Test method refers ISO 12311:2013 Personal protective equipment - Test methods for sunglasses and related eyewear.

Number of samples tested: Four (4) pairs (Blue)

Note :

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

(2) 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.

(3) CE marking or UKCA marking is not specified in BS EN ISO 12312-1:2013+A1:2015. However, per Regulation (EU) 2016/425 or UK2019 SI696 Schedule 35 Regulation 38, the CE marking or UKCA marking shall be affixed visibly, legibly and indelibly to the sunglasses frame respectively.

It was found that only CE marking was provided on the sunglasses frame.

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
5.3.2.1a	Spectral transmittance	P
5.3.2.1b	Detection of signal lights	P
5.3.2.2	Driving in twilight or at night	P
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	

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Clause	Requirement	Result
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)
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 labeling	
12.1	Information to be supplied with each pair of sunglasses	P (Note 3)
12.2	Additional information	#1

Abbreviation: P = Pass; NA = Not Applicable

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Test data:

5.2 Transmittance and filter categories

Range	Left ocular (%)	Right ocular (%)	Filter category
380 - 780nm (Tv)	14.41	14.02	3

Range	Maximum transmittance (%)		Limit (%)	
	Left ocular	Right ocular	Left	Right
280 - 315nm (T_{SUVB})	< 0.10	< 0.10	≤ 1.0	≤ 1.0
315 - 380nm (T_{SUVA})	< 0.10	< 0.10	≤ 0.5Tv (7.20)	≤ 0.5Tv (7.01)

Requirement:

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

5.3.1 Uniformity of luminous transmittance

Uniformity	Left ocular	Right ocular	Limit (%)
% variation within filter [relative to higher value]	3.40	2.58	≤ 10
% difference between filters [relative to lighter filter]	2.68		≤ 15

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5.3.2.1a Spectral transmittance

Range	Minimum transmittance (%)		Limit (%)	
	Left ocular	Right ocular	Left ocular	Right ocular
475 - 650nm	12.00	11.71	≥ 0.2 Tv (2.88)	≥ 0.2 Tv (2.80)

5.3.2.1b Detection of signal lights

Signal light	Relative visual attenuation quotient, Q		Limit
	Left ocular	Right ocular	
Red	1.48	1.47	≥ 0.80
Yellow	1.13	1.13	≥ 0.60
Blue	0.98	0.99	≥ 0.60
Green	0.91	0.91	≥ 0.60

5.3.3 Wide angle scattering

Wide angle scattering (%)	Left ocular	Right ocular	Requirement
	1.4	1.3	≤ 3

6.1 Optical power of oculars mounted in spectacles

Optical power	Left ocular	Right ocular	Limit
Spherical power (m^{-1})	-0.06	-0.04	± 0.12
Astigmatic power (m^{-1})	0.01	0.02	≤ 0.12
Difference of spherical power between left and right filters (m^{-1})	0.02		≤ 0.18

6.3 Prism imbalance (relative prism error)

Prismatic power difference (cm/m)			Limit (cm/m)
Horizontal	Base out	0.15	≤ 1.00
	Base in	- -	≤ 0.25
Vertical		0.05	≤ 0.25

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8 Resistance to radiation

(a) Relative change in the luminous transmittance after irradiation

Left ocular (%)	-1.40	Requirement ± 3% for category 0 ± 5% for category 1 ± 8% for category 2 ± 10% for categories 3 & 4
Right ocular (%)	-1.38	

(b) Wide angle scattering after solar radiation

Left ocular (%)	Right ocular(%)	Requirement (%)
1.3	1.4	≤ 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.

Remark:

#1 - The following information shall be available from the manufacturer on request.

o) An explanation of the trademarks that are not universally recognized or foreseen by the users of this part of ISO 12312.
p) The position of the reference point when different from the one defined in this part of ISO 12312.
q) The country of origin (e.g. "made in .. .. ").
r) The nominal value of luminous transmittance.
s) Transmission requirements applicable to this product.
t) Polarization efficiency in cases of polarizing filters.
u) The base material of filters and frame.

∞ - Decision rule required by the standard

If the measurement result plus or minus the uncertainty of measurement overlap the limit value of the test, the result shall be deemed to be a failure.

Date sample received : Nov 28, 2025, Dec 30, 2025
Testing period : Nov 28, 2025 to Jan 07, 2026

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Requirements for Sunglasses (Uniformly Tinted Lenses)

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

Test method refers ISO 12311:2013 Personal protective equipment - Test methods for sunglasses and related eyewear.

Number of samples tested: Four (4) pairs (Silver)

Note :

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

(2) 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.

(3) CE marking or UKCA marking is not specified in BS EN ISO 12312-1:2013+A1:2015. However, per Regulation (EU) 2016/425 or UK2019 SI696 Schedule 35 Regulation 38, the CE marking or UKCA marking shall be affixed visibly, legibly and indelibly to the sunglasses frame respectively.

It was found that only CE marking was provided on the sunglasses frame.

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
5.3.2.1a	Spectral transmittance	P
5.3.2.1b	Detection of signal lights	P
5.3.2.2	Driving in twilight or at night	P
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	

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Clause	Requirement	Result
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)
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 labeling	
12.1	Information to be supplied with each pair of sunglasses	P (Note 3)
12.2	Additional information	#1

Abbreviation: P = Pass; NA = Not Applicable

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Test data:

5.2 Transmittance and filter categories

Range	Left ocular (%)	Right ocular (%)	Filter category
380 - 780nm (Tv)	13.78	13.84	3

Range	Maximum transmittance (%)		Limit (%)	
	Left ocular	Right ocular	Left	Right
280 - 315nm (T_{SUVB})	< 0.10	< 0.10	≤ 1.0	≤ 1.0
315 - 380nm (T_{SUVA})	< 0.10	< 0.10	≤ 0.5Tv (6.89)	≤ 0.5Tv (6.92)

Requirement:

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

5.3.1 Uniformity of luminous transmittance

Uniformity	Left ocular	Right ocular	Limit (%)
% variation within filter [relative to higher value]	4.08	2.22	≤ 10
% difference between filters [relative to lighter filter]	0.44		≤ 15

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5.3.2.1a Spectral transmittance

Range	Minimum transmittance (%)		Limit (%)	
	Left ocular	Right ocular	Left ocular	Right ocular
475 - 650nm	12.38	12.06	≥ 0.2 Tv (2.76)	≥ 0.2 Tv (2.77)

5.3.2.1b Detection of signal lights

Signal light	Relative visual attenuation quotient, Q		Limit
	Left ocular	Right ocular	
Red	1.12	1.12	≥ 0.80
Yellow	1.01	1.01	≥ 0.60
Blue	1.07	1.07	≥ 0.60
Green	0.99	0.99	≥ 0.60

5.3.3 Wide angle scattering

Wide angle scattering (%)	Left ocular	Right ocular	Requirement
	1.0	0.9	≤ 3

6.1 Optical power of oculars mounted in spectacles

Optical power	Left ocular	Right ocular	Limit
Spherical power (m^{-1})	-0.06	-0.03	± 0.12
Astigmatic power (m^{-1})	0.03	0.01	≤ 0.12
Difference of spherical power between left and right filters (m^{-1})	0.03		≤ 0.18

6.3 Prism imbalance (relative prism error)

Prismatic power difference (cm/m)			Limit (cm/m)
Horizontal	Base out	0.05	≤ 1.00
	Base in	- -	≤ 0.25
Vertical		0.05	≤ 0.25

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8 Resistance to radiation

(a) Relative change in the luminous transmittance after irradiation

Left ocular (%)	+0.36	Requirement ± 3% for category 0 ± 5% for category 1 ± 8% for category 2 ± 10% for categories 3 & 4
Right ocular (%)	+0.10	

(b) Wide angle scattering after solar radiation

Left ocular (%)	Right ocular(%)	Requirement (%)
0.9	0.9	≤ 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.

Remark:

#1 - The following information shall be available from the manufacturer on request.

v) An explanation of the trademarks that are not universally recognized or foreseen by the users of this part of ISO 12312.
w) The position of the reference point when different from the one defined in this part of ISO 12312.
x) The country of origin (e.g. "made in .. .. ").
y) The nominal value of luminous transmittance.
z) Transmission requirements applicable to this product.
aa) Polarization efficiency in cases of polarizing filters.
bb) The base material of filters and frame.

∞ - Decision rule required by the standard

If the measurement result plus or minus the uncertainty of measurement overlap the limit value of the test, the result shall be deemed to be a failure.

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End of report

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