

TEST REPORT

Applicant: KWIAT
ZLATOWRYH 51B/19
1164 SOFIA
BULGARIA

Number: HKGH0303285102

Date: Aug 07, 2023

Attn: EDYTA CWETKOW

Sample and Information provided by customer :
Item Name : **Sunglasses**
Quantity : 4 pairs
Country of Origin : China

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



Cindy I.K. Chan
Vice President



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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 :

| <u>Requirement</u> | <u>Result</u> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| (1) 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 5.3.2.2 - Driving in twilight or at night - Clause 12 - Information and labelling | Pass |

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 inlined 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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(1) Requirements for Sunglasses (Gradient 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

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 |
| 5.3.1 | 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 | #1 |
| 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 | P |
| 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 |



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| Clause | Requirement | Result |
|--------|---------------------------------------------------------------------------------|---------------|
| 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 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 | #2 (Note 3) |
| 12.2 | Additional information | #3 |

Abbreviation: P = Pass; NA = Not Applicable



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Test data:

5.2 Transmittance and filter categories

Note : Per Clause 5.3.4.3.1, all gradient filters should meet the transmittance requirements within a 10 mm radius circle around the reference point. Thus, two measuring points from the darker and lighter region were selected for the transmittance measurement :

- (I) = Reference point
- (II) = 10mm above the reference point
- (III) = 10mm below the reference point

| Range | Measuring point | Left ocular (%) | Right ocular (%) | Filter category |
|------------------|-----------------|-----------------|------------------|-----------------|
| 380 - 780nm (Tv) | (I) | 12.99 | 12.61 | 3 |
| | (II) | 8.41 | 7.83 | |
| | (III) | 25.49 | 24.34 | |

| Range | Measuring point | Maximum transmittance (%) | | Limit (%) | |
|----------------------------------|-----------------|---------------------------|--------------|--------------------|--------------------|
| | | Left ocular | Right ocular | Left | Right |
| 280 - 315nm (T _{SUVB}) | (I) | < 0.10 | < 0.10 | ≤ 1.0 | ≤ 1.0 |
| | (II) | < 0.10 | < 0.10 | ≤ 1.0 | ≤ 1.0 |
| | (III) | < 0.10 | < 0.10 | ≤ 1.0 | ≤ 1.0 |
| 315 - 380nm (T _{SUVA}) | (I) | < 0.10 | < 0.10 | ≤ 0.5Tv (6.50) | ≤ 0.5Tv (6.30) |
| | (II) | < 0.10 | < 0.10 | ≤ 0.5Tv (4.20) | ≤ 0.5Tv (3.92) |
| | (III) | < 0.10 | < 0.10 | ≤ 0.5Tv (12.75) | ≤ 0.5Tv (12.17) |

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% |



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5.3.1 Uniformity of luminous transmittance

| Uniformity | Left ocular | Right ocular | Limit (%) |
|-----------------------------------------------------------|-------------|--------------|-----------|
| % variation within filter [relative to higher value] | 7.65 | 9.03 | ≤ 10 |
| % difference between filters [relative to lighter filter] | 2.93 | | ≤ 15 |

5.3.2.1a Spectral transmittance

| Range | Measuring point | Minimum transmittance (%) | | Limit (%) | |
|-------------|-----------------|---------------------------|--------------|--------------------|--------------------|
| | | Left ocular | Right ocular | Left ocular | Right ocular |
| 475 - 650nm | (I) | 7.14 | 6.89 | ≥ 0.2 Tv (2.60) | ≥ 0.2 Tv (2.52) |
| | (II) | 3.82 | 3.59 | ≥ 0.2 Tv (1.68) | ≥ 0.2 Tv (1.57) |
| | (III) | 17.31 | 16.39 | ≥ 0.2 Tv (5.10) | ≥ 0.2 Tv (4.87) |

5.3.2.1b Detection of signal lights

| Signal light | Measuring point | Relative visual attenuation quotient, Q | | Limit |
|--------------|-----------------|-----------------------------------------|--------------|--------|
| | | Left ocular | Right ocular | |
| Red | (I) | 1.65 | 1.65 | ≥ 0.80 |
| | (II) | 1.89 | 1.93 | |
| | (III) | 1.38 | 1.39 | |
| Yellow | (I) | 1.17 | 1.17 | ≥ 0.60 |
| | (II) | 1.23 | 1.24 | |
| | (III) | 1.10 | 1.10 | |
| Blue | (I) | 1.09 | 1.09 | ≥ 0.60 |
| | (II) | 1.15 | 1.15 | |
| | (III) | 1.03 | 1.04 | |
| Green | (I) | 0.86 | 0.87 | ≥ 0.60 |
| | (II) | 0.83 | 0.82 | |
| | (III) | 0.91 | 0.91 | |



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5.3.3 Wide angle scattering

| | | | |
|---------------------------|-------------|--------------|-------------|
| Wide angle scattering (%) | Left ocular | Right ocular | Requirement |
| | 0.5 | 0.5 | ≤ 3 |

6.1 Optical power of oculars mounted in spectacles

| Optical power | Left ocular | Right ocular | Limit |
|---------------------------------------------------------------------------------|-------------|--------------|--------|
| Spherical power (m ⁻¹) | -0.03 | -0.04 | ± 0.12 |
| Astigmatic power (m ⁻¹) | 0.01 | 0.03 | ≤ 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 | 0.15 | ≤ 1.00 |
| | Base in | -- | ≤ 0.25 |
| Vertical | | 0.025 | ≤ 0.25 |

8 Resistance to radiation

(a) Relative change in the luminous transmittance after irradiation

| | | |
|------------------|-------|------------------------------------------------------------------------------------------------------------------------|
| Left ocular (%) | -0.09 | Requirement < ± 3% for category 0 < ± 5% for category 1 < ± 8% for category 2 < ± 10% for categories 3 & 4 |
| Right ocular (%) | +0.60 | |

(b) Wide angle scattering after solar radiation

| | | |
|-----------------|------------------|-----------------|
| Left ocular (%) | Right ocular (%) | Requirement (%) |
| 0.5 | 0.5 | ≤ 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.



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Remarks:

- #1 - The applicant declared that 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"
- #2 - 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 as given in Table 5. 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 of EN ISO 12312-1:2013+A1:2015 and/or in writing. The minimum height of the symbol shall be 5 mm.
 - 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.



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#3 - 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 : Jul 07, 2023; Jul 27, 2023

Testing period : Jul 07, 2023 to Aug 04, 2023

End of report

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