



# TEST REPORT

<b>NAME OF SAMPLE</b>	<b>Sunglasses</b>
<b>TRADE MARK &amp; TYPE</b>	<b>N.A.</b>
<b>APPLICANT</b>	<b>GOYA IMPORTACIONES Y DISTRBUIONES S.L.</b>
<b>ADDRESS</b>	<b>PLATAFORMA LOGOISTICA DE ZARAGOZA C/TRAPANI 27 EDIFICIO 50197 SPAIN</b>
<b>TEST SORT</b>	<b>N.A.</b>
<b>TEST ITEM</b>	<b>Entrusted Test</b>

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**Shenzhen GSI Technology Co., Ltd**

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TEST REPORE

<b>SAMPLE NAME</b>	Sunglasses	<b>TRADE MARK</b>	N.A.
<b>MANUFACTURER</b>	---	<b>SPECIFICATION</b>	---
<b>ADDRESS</b>	---	<b>SAMPLE CLASS</b>	Passed
<b>BUYER</b>	---	<b>MATERIAL</b>	---
<b>SAMPLE ORGANISATION</b>	---	<b>SAMPLE AMOUNT</b>	6 Pairs
<b>TEST DATE</b>	May 18, 2015~ May 22, 2015	<b>SAMPLE RECEIVED DATE</b>	May 18, 2015
<b>SAMPLE DESCRIPTION:</b>			
Good			
<b>Reference:</b>			
<ul style="list-style-type: none"> <li>- EN ISO 12312-1:2013 Eye and face protection - Sunglasses and related eyewear</li> <li>- Part 1: Sunglasses for general use</li> <li>- EN ISO 12311:2013 Personal protective equipment - Test methods for Sunglasses and related eyewear</li> </ul>			
<b>Conclusions:</b>			
Please refer to the following page(s)			
<b>Remark:</b>			
_____			

Tested: Vincent

Checked: Smith

Approved: Normie

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**Tests Conducted**

CLAUSES	REQUIREMENTS	Result	
4 Construction and materials			
4.1	Construction	P	
4.2	Filter material and surface quality	P	
4.3	Physiological compatibility (Only test Nickel Release)	NA	
5 Transmittance			
5.2	Transmittance and filter categories	Filter categories	Category: 3
		UV requirements	P
		I R requirements ( Claimed by the manufacture (Remark: No claim provided by the applicant )	NA (See Remark)
5.3 General transmittance requirements			
5.3.1	Uniformity of luminous transmittance	P	
5.3.2	Requirements for road use and driving	5.3.2.2 Spectral transmittance	P
		5.3.2.3 Detection of signal lights	P
		5.3.2.4 Driving in twilight or at night (Remark: No claim provided by the applicant )	NA (See Remark)
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	5.3.5.1 Blue-light-absorption / transmittance (Remark: No claim provided by the applicant)	NA (See Remark)
		5.3.5.2 UV absorption/transmittance (Remark: 100% UV protection claimed by the applicant)	NA (See Remark)
		5.3.5.3 Antireflective coated sunglasses (Remark: No claim provided by the applicant )	NA (See Remark)
		5.3.5.4 Enhanced infrared absorption (Remark: No claim provided by the applicant )	NA (See Remark)
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	

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CLAUSES	REQUIREMENTS	Result
<b>7 Robustness</b>		
7.1	Minimum robustness of filters	P
7.2	Frame deformation and retention of filters	P
7.3	Impact resistance of the filter, strength level1 (optional specification) (Remark: No claim provided by the applicant)	NA (See Remark)
7.4	Increased endurance of sunglasses (optional specification) (Remark: No claim provided by the applicant)	NA (See Remark)
7.5	Resistance to perspiration (optional specification) (Remark: No claim provided by the applicant)	NA (See Remark)
7.6	Impact resistance of the filter, strength level 2 or 3 (optional specification) (Remark: No claim provided by the applicant)	NA (See Remark)
8	Resistance to solar radiation	P
9	Resistance to ignition	P
10	Resistance to abrasion (optional specification) (Remark: No claim provided by the applicant )	NA (See Remark)
<b>11 Protective requirements</b>		
11.1	Coverage area	P
11.2	Temporal protective requirements(filter category 4)	NA
<b>12 Information and labelling</b>		
12.1	Information to be supplied with each pair of sunglasses	NA
12.2	Additional information	NA

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**Test Results**

**Construction-Clause 4.1 and Filter material and surface quality -Clause 4.2**

Sample	Defects				Comment	Result
	Construction		Filter material and surface quality			
	Observed	Absent	Observed	Absent		
Sunglasses		X		X		P
Requirements: 1. Construction: shall be smooth and without sharp projections; 2. Except in a marginal area 5 mm wide, sunglass filters shall have no material or machining defects within an area of 30mm diameter around the reference point that may impair vision, e.g., bubbles, scratches, inclusions, dull spots, pitting, mould marks, notches, reinforced points, specks, beads, water specks, pocking, gas inclusions, splintering, cracks, polishing defects or undulations						

**Transmittance and filter categories - Clause 5.2**

Test Items	Requirements	Left	Right	Result
Luminous transmittance $\tau_v$ (%)	$\tau_v$ (380~780nm): 8.0-18.0% Claimed Category: ( Cat. 3 )	9.9	10.2	Cat. 3
$\tau_{SUVB}$ (280~315 nm) (%)	For category 0,1 : $\leq 0.05 \tau_v$ For category 2 : 1.0% absolute or $0.05 \tau_v$ whichever is greater; For category 3,4: 1.0% absolute Left: $\leq 1.0$ Right: $\leq 1.0$	0.0	0.0	P
$\tau_{SUVA}$ (315~380nm) (%)	For category 0,1: $\leq \tau_v$ ; For category 2,3: $\leq 0.05 \tau_v$ For category 4 : 1.0% absolute or $0.25 \tau_v$ whichever is greater Left: $0.5 \tau_v=7.4$ Right: $0.5 \tau_v=6.6$	0.0	0.0	P
$\tau_{sb}$ (380~500nm) (%)	---	11.3	11.7	

**Uniformity of luminous transmittance - Clause 5.3.1**

Test Items	Requirements	Left	Right	Result	
Difference within filter (%) (relative to higher value)	The relative difference in the luminous transmittance value shall not be greater than 10%, except for Cat.4 where it shall not be greater than 20%.	$\tau_v$ (min)	9.9	10.2	P
		$\tau_v$ (max)	10.8	11.2	
		Relative difference	8.3	8.9	
Difference with mounted filters (relative to higher value)	The relative difference between the luminous transmittance value of the visual center for right and left eye shall not exceed 15%.	2.9		P	

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**Requirements for road use and driving- Clause 5.3.2**

Test Items	Requirements	Left	Right	Result
Category	Filters suitable for road use and driving shall be categories 0, 1, 2 or 3	Cat.3	Cat.3	P
Spectral transmittance (475~650nm) (%)	$\geq 0.2 \tau_v$	8.2	8.4	P
	Left: $0.2 \tau_v=1.8$ Right: $0.2 \tau_v=2.0$			
Red Signal	$\geq 0.80$	1.398	1.409	
Yellow Signal	$\geq 0.60$	1.085	1.098	
Green Signal	$\geq 0.60$	0.905	0.901	
Blue Signal	$\geq 0.60$	1.113	1.079	

**Wide angle scattering - Clause 5.3.3**

Sample	Wide angle scattered light (%)		Result
	Left	Right	
Sunglasses	0.1	0.4	P
Requirements: The wide angle scattering of the filters in the condition as supplied by the manufacturer shall not exceed the value of 3 %.			

**Refractive power- Clause 6**

Test Items	Requirements	Left	Right	Result		
Spherical Power (D)	$\pm 0.12D$	0.01	0.01	P		
	The difference between the spherical powers shall not exceed 0.18 D;	0.01		P		
Astigmatic Power (D)	$\leq 0.12D$	0.00	0.00	P		
Local variations in refractive power( D)	Spherical Power	$\pm 0.12D$	1*	-0.01	0.00	P
			2*	0.00	-0.01	
			3*	+0.02	0.01	
			4*	0.00	0.00	
	Astigmatic Power	$\leq 0.12D$	1*	0.01	0.00	
			2*	0.00	-0.02	
			3*	0.00	0.00	
			4*	0.00	0.00	
Prism Imbalance (cm/m)	Horizontal	Base Out:<1.00	0.18		P	
		Base In:<0.25	--			
	Vertical	<0.25	0.08			

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**Minimum robustness of filters-Clause 7.1 and Frame deformation and retention of filters**

**Clause 7.1**

Sample	Defects				Comment	Result
	Construction		Filter material and surface quality			
	Observed	Absent	Observed	Absent		
Sunglasses		X		X		P
Requirements: None of the following defects shall appear on filters: 1. Filter fracture; 2. Filter deformation;						

**Clause 7.2**

Sample	Boxed center distance C (mm)	Deformation X(mm)	Deformation Percentage $\Phi$ (%)	Structure		Lens Retention		Results
				Pass	Fail	Pass	Fail	
Sunglasses	73.12	0.11	0.2	X		X		P
Requirements: Calculation: $\Phi(\%) = X/C*100$ 1. Deformation percentage $\Phi \leq 2\%$ ; 2. No fracture or crack at any point ; 3. No filter shall be displaced from the frame.								

**Resistance to Radiation -Clause 8**

Test Items		Requirements	Left	Right	Result	
The relative change of luminous transmittance		For category 0: $< \pm 3\%$	Before Expose	7.9	10.3	P
		For category 1: $< \pm 5\%$	After Expose	7.9	10.3	
		For category 2: $< \pm 8\%$	Difference	0.0	0.0	
Wide angle scattering		Shall not exceed the limit value of 3%;	0.5	0.5	P	
Requirements for the ultraviolet spectral range for $\tau_v(\%)$	$\tau_{SUVB}$ (280~315 nm) (%)	For category 0,1: $\leq 0.05 \tau_v$ For category 2: 1.0% absolute or $0.05 \tau_v$ whichever is greater; For category 3,4: 1.0% absolute Left: $\leq 1.0$ Right: $\leq 1.0$	0.0	0.0	P	
	$\tau_{SUVA}$ (315~380nm) (%)	For category 0,1: $\leq \tau_v$ ; For category 2,3: $\leq 0.05 \tau_v$ For category 4: 1.0% absolute or $0.25 \tau_v$ whichever is greater Left: $0.5 \tau_v = 4.5$ Right: $0.5 \tau_v = 5.1$	0.0	0.0	P	

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**Ignition- Clause 9**

Sample	Component	Continued combustion		Comment	Result
		Yes	No		
Sunglasses	Filters		X	--	P
	Filters		X		P
<b>Requirements:</b> The filters and Fame shall be no continued combustion after withdrawal of the test rod.					

**Coverage area - Clause 11.1**

Sample	Sunglasses Type	Test position	Coverage area		Comment	Result
			Pass	Fail		
Sunglasses	Adult's	Left	X			P
		Right	X			P
<b>Requirements:</b> 1. Adult's sunglasses: shall cover two ellipses of horizontal diameter of 40mm and a vertical diameter of 28mm, the centres of which are separated 64mm and symmetrically placed on either side of the centre of the nose bridge of the frame. 2. Children's sunglasses: shall cover two ellipses of horizontal diameter of 34mm and a vertical diameter of 24mm, the centres of which are separated 54mm and symmetrically placed on either side of the centre of the nose bridge of the frame.						

**Information and labelling - Clause 12**






- 12.1 Information to be supplied with each pair of sunglasses.  
 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. Where pictograms are used, an explanation of the significance of these pictograms shall also be available.  
 The use information shall contain following items:
- a) Identification of model;
  - b) Name and address of the manufacturer;
  - c) Information of reference to EN ISO 12312;
  - d) Type of filter, if photochromic and/or polarizing;
  - e) Number of 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 below table 5. ((Minimum height of the symbols shall be 5mm)

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Table 5 — Description of filter categories and assigned symbols

Filter category	Description	Usage	Symbol
0	Light tint sunglasses	Very limited reduction of sunglare	 IEC 60417-5955
1		Limited protection against sunglare	 ISO 7000-2948
2	General purpose sunglasses	Good protection against sunglare	 ISO 7000-2949
3		High protection against sunglare	 ISO 7000-2950
4	Very dark special purpose sunglasses, very high sunglare reduction	Very high protection against extreme sunglare, e.g. at sea, over snowfields, on high mountains, or in desert	 ISO 7000-2951

NOTE The wording and/or the pictograms may be used.

- g) Following restrictions of uses are not provided
  - Not for direct observation of the sun;
  - Not for protection against artificial light sources, e.g. solaria;
  - Not for use as eye protection against mechanical impact hazards (for products not satisfying the requirements of 7.3 or 7.5);
  - Any other restrictions deemed appropriate by the manufacturer, eg. 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 the symbols shown in figure 2 and/or in writing was provided. The minimum height of the symbol shall be 5 mm.



Figure 2 — Symbol: “Not suitable for driving and road use”

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

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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12.2 Additional information.

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.

**Note:**

- Remark: P = Pass; F = Fail; NA = Not Applicable; X=Checked;
- Photo is included.



\*\*\* End of Report \*\*\*

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