



## Test Report

Report No.: PL1712052

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Applicant:

Address of Applicant:

Date of Receiving Samples: Dec 06, 2017

Testing Period: Dec 07, 2017 to Dec 11, 2017

### Samples Description:

The submitted sample and sample information was/were submitted and identified by/on behalf of client;

Sample Name: WIRELESS SPEAKER Sunglasses

Model No.: P326.981

Quantity: 3 PCS

Material: Plastic

Age Grading: Adults

Cat. No.: Not provided

Filter Type: Uniform Lenses

Frame Color: Black

Lenses Color: Solid Smoke

P.O. No.: Not provided

Supplier / Brand: Not provided

Buyer: Not provided

Goods exported to: Not provided

Country of Origin: China

To be continued

Issued by stamp



Date of Issued: Dec 12, 2017

For and on behalf of:

Shenzhen Precision Eyewear

Testing & Inspection Services Co., Ltd.

Manager: WenHua Li

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\*\*\*\*\*  
**Tests Conducted:**

As requested by the applicant, refer to attached pages for details.

\*\*\*\*\*  
**Conclusion:**

**Tested Samples**

**Submitted Samples**

**Standard/ Item(s)**

**EN ISO 12312-1:2013+A1:2015, excluding:**

**- Clause 12 Information and labeling**

**Result**

**Pass**

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### Tests Conducted Summary

#### 1 Requirements for Sunglasses

Test standard: - EN ISO 12312-1:2013+A1:2015 Eye and face protection — Sunglasses and related eyewear — Part 1: Sunglasses for general use  
- EN ISO 12311:2013 Personal protective equipment — Test methods for Sunglasses and related eyewear

**Note:** The applicant's attention was 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 state of health against significant proportion of users.

| CLAUSES | REQUIREMENTS  |  | RESULTS            |
|---------|---|--|--------------------|
| 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  | Cat.3              |
|         |   | UV requirements  | P                  |
|         |   | IR requirements(Claimed by the manufacturer)<br>(Remark: No claim provided by the applicant) | NA<br>(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  | NA                 |
| 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                 |

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| CLAUSES            | REQUIREMENTS  |  | RESULTS                   |
|--------------------|---|--|---------------------------|
| 5.3.5              | Claimed transmittance<br><b>(Remark: No claim provided by the applicant)</b>  | 5.3.5.1 Blue-light-absorption/ transmittance | NA<br><b>(See Remark)</b> |
|                    |   | 5.3.5.2 UV absorption/transmittance          |                           |
|                    |   | 5.3.5.3 Antireflective coated sunglasses     |                           |
|                    |   | 5.3.5.4 Enhanced infrared absorption         |                           |
| 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                         |
| 7.2                | Frame deformation and retention of filters  |  | P                         |
| 7.3                | Impact resistance of the filter, strength level 1 (optional specification)<br><b>(Remark: No claim provided by the applicant )</b>      |  | NA<br><b>(See Remark)</b> |
| 7.4                | Increased endurance of sunglasses (optional specification)<br><b>(Remark: No claim provided by the applicant )</b>                      |  | NA<br><b>(See Remark)</b> |
| 7.5                | Resistance to perspiration (optional specification)<br><b>(Remark: No claim provided by the applicant )</b>                             |  | NA<br><b>(See Remark)</b> |
| 7.6                | Impact resistance of the filter, strength level 2 or 3 (optional specification)<br><b>(Remark: No claim provided by the applicant )</b> |  | NA<br><b>(See Remark)</b> |

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**Tests Conducted**

| CLAUSES | REQUIREMENTS   | RESULTS            |
|---------|--|--------------------|
| 8       | Resistance to solar radiation  | P                  |
| 9       | Resistance to ignition   | P                  |
| 10      | Resistance to abrasion (optional specification)<br>(Remark: No claim provided by the applicant ) | NA<br>(See Remark) |
| 11      | Protective requirements  |                    |
| 11.1    | Coverage area  | P                  |
| 11.2    | Temporal protective requirements(Filter category 4)  | NA                 |
| 12      | Information and labelling  |                    |
| 12.1    | Information to be supplied with each pair of sunglasses  | NR                 |
| 12.2    | Additional information   | NR                 |

Remark: P = Pass; F = Fail; NA = Not Applicable; NR=Not require; X=Checked; Cat.=Category

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### Test Results

#### Construction—Clause 4.1 and Filter material and surface quality —Clause 4.2

| Sample No.  | Defects      |        |                                     |        | Comment | Result(s) |
|---|--------------|--------|-------------------------------------|--------|---------|-----------|
|   | Construction |        | Filter material and surface quality |        |         |           |
|   | Observed     | Absent | Observed                            | Absent |         |           |
| 1712052-02  |              | X      |                                     | X      | --      | P         |
| Requirements:   |              |        |                                     |        |         |           |
| 1. Construction: shall be smooth and without sharp projections;   |              |        |                                     |        |         |           |
| 2. Filter material and surface quality :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

| Sample No.: 1712052-01                         |  |      |       |           |
|--|--|------|-------|-----------|
| Test Items                                     | Requirements   | Left | Right | Result(s) |
| Luminous transmittance $\tau_v$ (380~780)nm(%) | For Cat. 0: 80.0~100   | 17.8 | 16.4  | Cat.3     |
|  | For Cat. 1: 43.0~80.0  |      |       |           |
|  | For Cat. 2: 18.0~43.0  |      |       |           |
|  | For Cat. 3: 8.0~18.0   |      |       |           |
|  | For Cat. 4: 3.0~8.0  |      |       |           |
| Filter categories                              | Claimed Cat.: Not Provided   |      |       |           |
| $\tau_{SUVB}$ (280~315) nm (%)                 | For Cat. 0,1: $\leq 0.05 \tau_v$<br>For Cat. 2: 1.0 % absolute or $0.05 \tau_v$ whichever is greater;<br>For Cat. 3,4: 1.0 % absolute# | 0.3  | 0.3   | P         |
| $\tau_{SUVA}$ (315~380)nm (%)                  | For Cat.0,1: $\leq \tau_v$<br>For Cat. 2, 3: $\leq 0.5 \tau_v$<br>For Cat. 4: 1.0 % absolute or $0.25 \tau_v$ whichever is greater     | 2.3  | 1.9   | P         |
| $\tau_{sb}$ (380~500)nm (%)                    | ---  | 18.4 | 17.1  | Only Ref. |

Measurement Uncertainty (if necessary):



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### Test Results

#### Uniformity of luminous transmittance — Clause 5.3.1

| Sample No.: 1712052-01                                     |  |      |       |           |
|--|--|------|-------|-----------|
| Test Items   | Requirements   | Left | Right | Result(s) |
| Difference within filter (%)<br>(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% | 2.2  | 7.1   | P         |
| 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%                  | 7.9  |       | P         |

Measurement Uncertainty (if necessary):

#### Requirements for road use and driving — Clause 5.3.2

| Sample No.: 1712052-01                    |   |                              |                              |           |
|---|---|------------------------------|------------------------------|-----------|
| Test Items                                | Requirements  | Left                         | Right                        | Result(s) |
| Categories                                | Filters suitable for road use and driving shall be of categories 0, 1, 2 or 3 | Cat.3                        | Cat.3                        | P         |
| Spectral transmittance<br>(475~650)nm (%) | $\geq 0.2 \tau_v$   | 15.0<br>( $0.2 \tau_v=3.6$ ) | 13.8<br>( $0.2 \tau_v=3.3$ ) | P         |
| Red Signal                                | $\geq 0.80$   | 1.024                        | 1.024                        | P         |
| Yellow Signal                             | $\geq 0.60$   | 0.960                        | 0.960                        |           |
| Green Signal                              | $\geq 0.60$   | 1.019                        | 1.018                        |           |
| Blue Signal                               | $\geq 0.60$   | 1.139                        | 1.146                        |           |

Measurement Uncertainty (if necessary):

#### Wide angle scattering — Clause 5.3.3

| Sample No.  | Wide angle scattering (%) |       | Result(s) |
|---|---------------------------|-------|-----------|
|   | Left                      | Right |           |
| 1712052-01  | 1.8                       | 1.9   | P         |
| Requirements:<br>The wide angle scattering of the filters in the condition as supplied by the manufacturer shall not exceed the value of 3 %. |                           |       |           |

Measurement Uncertainty (if necessary):

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### Test Results

#### Refractive power—Clause 6

| Sample No.: 1712052-01                  |                  |  |                 |       |       |           |
|---|------------------|--|-----------------|-------|-------|-----------|
| Test Items                              |                  | Requirements   |                 | Left  | Right | Result(s) |
| Spherical Power (D)                     |                  | ± 0.12D  |                 | 0.02  | 0.00  | P         |
|   |                  | The difference between the spherical powers shall not exceed 0.18 D; |                 | 0.02  |       | P         |
| Astigmatic Power (D)                    |                  | ≅ 0.12D  |                 | 0.00  | 0.00  | P         |
| Local variations in refractive power(D) | Spherical Power  | ± 0.12D  | 1*              | 0.01  | -0.02 | P         |
|   |                  |  | 2*              | -0.02 | -0.01 |           |
|   |                  |  | 3*              | 0.02  | -0.02 |           |
|   |                  |  | 4*              | 0.01  | -0.02 |           |
|   | Astigmatic Power | ≅ 0.12D  | 1*              | 0.00  | 0.01  | P         |
|   |                  |  | 2*              | 0.02  | 0.00  |           |
|   |                  |  | 3*              | 0.01  | 0.02  |           |
|   |                  |  | 4*              | 0.01  | 0.01  |           |
| Prism imbalance (cm/m)                  |                  | Horizontal   | Base Out: <1.00 | 0.17  |       | P         |
|   |                  |  | Base In: <0.25  | --    |       |           |
|   |                  | Vertical   | <0.25           | 0.04  |       |           |

Measurement Uncertainty (if necessary):

Note: \* See figure:

Key: A =Reference points  
X = Measure point

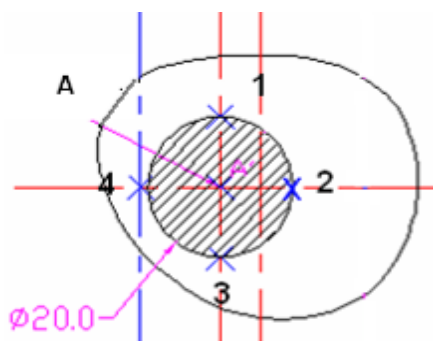


Figure: Measuring Location of refractive power



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### Test Results

#### Minimum robustness of filters — Clause 7.1

| Sample No.  | Defects  |        | Comment | Result(s) |
|---|----------|--------|---------|-----------|
|   | Observed | Absent |         |           |
| 1712052-02  |          | X      | --      | P         |
| Requirements:<br>None of the following defects shall appear on filters :<br>1. Filter fracture;<br>2. Filter deformation; |          |        |         |           |

#### Frame deformation and retention of filters — Clause 7.2

| Sample No.  | Boxed center<br>distance C<br>(mm) | Residual<br>deformation<br>X (mm) | Deformation<br>Percentage<br>$\Phi$ (%) | Structure |      | Lens Retention |      | Result(s) |
|---|------------------------------------|-----------------------------------|---|-----------|------|----------------|------|-----------|
|   |                                    |                                   |   | Pass      | Fail | Pass           | Fail |           |
| 1712052-02  | 70.48                              | 0.05                              | 0.1                                     | X         |      | X              |      | P         |
| Requirements:<br>1. Be permanently deformed from its original configuration by not more than 2% of the distance C,<br>Deformation percentage $\Phi$ ;<br>Calculation: $\Phi (\%) = X/C \times 100$<br>2. No fracture or crack at any point ;<br>3. No filter shall be displaced from the frame. |                                    |                                   |   |           |      |                |      |           |

Measurement Uncertainty (if necessary):

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### Test Results

#### Resistance to Radiation — Clause 8

| Sample No.: 1712052-01                          |   |  |                 |      |       |           |
|---|---|--|-----------------|------|-------|-----------|
| Test Items                                      |   | Requirements   |                 | Left | Right | Result(s) |
| The relative change of luminous transmittance   |   | <input type="checkbox"/> For Cat. 0: $< \pm 3\%$   | Before Exposure | 17.8 | 16.4  | P         |
|   |   | <input type="checkbox"/> For Cat. 1: $< \pm 5\%$   | After Exposure  | 17.8 | 16.5  |           |
|   |   | <input type="checkbox"/> For Cat. 2: $< \pm 8\%$   |                 |      |       |           |
|   |   | <input checked="" type="checkbox"/> For Cat. 3&4: $< \pm 10\%$   | Difference      | 0.0  | 0.6   |           |
| Wide angle scattering                           |   | After Exposure , the value of wide angle scattering shall not exceed the limit value of 3%;  |                 | 1.8  | 1.9   | P         |
| Requirements for the ultraviolet spectral range | $\tau_{\text{SUVB}}$<br>(280~315)<br>nm (%) | <input type="checkbox"/> For Cat. 0,1: $\leq 0.05 \tau_v$<br><input type="checkbox"/> For Cat. 2: 1.0 % absolute or $0.05 \tau_v$ whichever is greater;<br><input checked="" type="checkbox"/> For Cat. 3,4: 1.0 % absolute  |                 | 0.5  | 0.3   | P         |
|   | $\tau_{\text{SUVA}}$<br>(315~380)<br>nm (%) | <input type="checkbox"/> For Cat. 0,1: $\leq \tau_v$ ;<br><input checked="" type="checkbox"/> For Cat. 2, 3: $\leq 0.5 \tau_v$<br><input type="checkbox"/> For Cat. 4: 1.0 % absolute or $0.25 \tau_v$ whichever is greater; |                 | 2.5  | 1.9   | P         |

Measurement Uncertainty (if necessary):

#### Ignition—Clause 9

| Sample No.  | Continued combustion |    | Comment | Result(s) |
|---|----------------------|----|---------|-----------|
|   | Yes                  | No |         |           |
| 1712052-02  |                      | X  | --      | P         |
| Requirements:<br>The filters and frame shall be no continued combustion after withdrawal of the test rod. |                      |    |         |           |

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### Test Results

#### Coverage area — Clause 11.1

| Sample No. | Type<br>(Adults/Children) | Test Position | Coverage area |      | Comment | Result(s) |
|------------|---------------------------|---------------|---------------|------|---------|-----------|
|            |                           |               | Pass          | Fail |         |           |
| 1712052-02 | Adults                    | Left filter   | X             |      | --      | P         |
|            |                           | Right filter  | X             |      | --      | P         |

#### Requirements:

- Adults' 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.
- 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.

----- End of Report -----

This report is effective only with both signature and designated stamp. Unless otherwise stated the result(s) shown in this report refer only to the sample(s) tested. This report shall not be altered, increased or deleted, without prior approval of PEL.