ANSI Z87.1-2010 TEST REPORT

This Report Concerns:	Equipment Type:
☒ Original Report	Safety Glasses

Measurement:	GUANGZHOU CITY HUADU DISTRICT XIUQUAN LITUO OPTICAL GLASSES FACTORY
Address:	No.1-B,BaiXing Road, DaBu Industrial Zone,XIUQUAN Street, HuaDu District,Guangzhou
Model:	AL026,DK1,DK2,DK3,DK4,DK5,TOC006,ST010,TOC029,TOC040,TOC042, TOC043,TOC045,TOC012,TOC018,SP049,SP045,SP067, SP068 ,SP069
Test Engineer:	Calvin Chen
Report Number:	ACIC20180815056GBM
Test Date:	Aug. 15, 2018 - Aug. 22, 2018
Reviewed By:	Bophe Mo
Prepared By:	**Shenzhen A Commitment Inspection&Certificate Co.,LTD** No.164-165, Pengda Road, Longgang Street,Longgang District,Shenzhen ,China Tel: +86-755-6194 0502 Email:acic@acic-china.com Web:www.acic-china.com

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 A Commitment Inspection&Certificate Co.,LTD

TEST REPORT

ANSI Z87.1-2010

American National Standard for Occupational and Educational Personal Eye and Face Protection Devices

Reference No.	ACIC20180815056GMB
Compiled by (+ signature)	Calvin Chen / Project Engineer （See cover page）
Approved by (+ signature)	Bophe Mo / Manager （See cover page）
Date of issue	Aug. 22, 2018
Contents	12 pages include cover page

Testing laboratory

Name	Shenzhen A Commitment Inspection&Certificate Co.,LTD
Address	No.164-165, Pengda Road, Longgang Street,Longgang District,Shenzhen ,China
Testing location	Same as above

Client

Name	GUANGZHOU CITY HUADU DISTRICT XIUQUAN LITUO OPTICAL GLASSES FACTORY
Address	No.1-B,BaiXing Road, DaBu Industrial Zone,XIUQUAN Street, HuaDu District,Guangzhou

Test specification

Standard	ANSI Z87.1-2010
Test Item	See follow pages
Procedure deviation	N.A.
Non-standard test method	N.A.

Test item

Description	Safety Glasses
Trademark	**N/A**
Model and/or type reference	AL026,DK1,DK2,DK3,DK4,DK5,TOC006,ST010,TOC029,TOC040,TOC042,TOC043,TOC045,TOC012,TOC018,SP049,SP045,SP067, SP068 ,SP069
Manufacturer	GUANGZHOU CITY HUADU DISTRICT XIUQUAN LITUO OPTICAL GLASSES FACTORY
Address	No.1-B,BaiXing Road, DaBu Industrial Zone,XIUQUAN Street, HuaDu District,Guangzhou

Test case verdicts Test case does not apply to the test object..... : N(.A.) Test item does meet the requirement..... : P(ass) Test item does not meet the requirement.....: F(ail)
Testing Date of receipt of test item ……..: Aug. 15, 2018 Date(s) of performance of test ……...: From Aug. 15, 2018 to Aug. 22, 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 ANSI Z87.1-2010.

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Assessment Summary-Continued:

ANSI/ISEA Z87.1-2010 Requirements	Compliant	Non Compliant
5. General Requirements		
5.1 Optical Requirements		
5.1.1 Optical Quality	X	
5.1.2 Luminous Transmission (Clear Lenses)	Not applicable	
5.1.3 Haze	Not applicable	
5.1.4 Refractive Power, Astigmatism, Resolving Power, Prism and Prism Imbalance for Plano Protectors	X	
5.1.5 Refractive Power, Astigmatism, Prism and Prism Imbalance for Prescription Protectors	Not applicable	
5.2 Physical Requirements	X	
5.2.1 Drop Ball Impact Resistance	X	
5.2.2 Protector Acceptance Criteria		
5.2.3 Ignition	X	
5.2.4 Corrosion Resistance of Metal Components	Not applicable	
5.2.5 Minimum Coverage Area	X	
5.3 Minimum Lens Thickness	Not applicable	
5.4 Marking Requirements	Not assessed	
5.5 Other Requirements	Not applicable	
5.6 Replaceable Lenses	Not applicable	
5.7 Aftermarket Components	Not applicable	
6. Impact Protector Requirements		
6.1 General		
6.1.1 Impact Rated Protectors		
6.1.2 Frames and Shells	See 6.2.2 and 6.2.3	
6.1.3 Lateral (Side) Coverage	X	
6.2 Impact Requirements		
6.2.1 Protector Acceptance Criteria		
6.2.2 High Mass Impact	X	
6.2.3 High Velocity Impact	X	
6.2.4 Penetration Test (Lens Only)	X	
6.2.5 Prescription Lens Material Qualification	Not applicable	
6.2.6 Prescription Lens Mounting Qualification	Not applicable	
6.3 Additional Impact Requirements for Specific Protector Types	Not applicable	
7. Optical Radiation Protector Requirements		
7.1 Transmittance of Lenses		
7.1.1 Optional Transmittance Attributes (Markings)	Not assessed	
7.1.2 Clear and Filter Lenses	X	
7.1.3 Automatic Darkening Welding Filter Lenses	Not applicable	
7.1.4 Visible Light Filters	Not claimed	
7.1.5 Variation in Luminous Transmittance (Welding Filters)	X	
7.2 Transmittance of Housings	Not applicable	
8. Droplet and Splash, Dust, and Fine Dust Protector Requirements	Not applicable	

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TEST Results:

5.1.1 Optical Quality; Result: Pass

Lenses Are Free Of Striae, Bubbles, Waves And Other Visible Defects Which Would Impair Their Optical Quality.

5.1.4 Refractive Power, Astigmatism, Resolving Power, Prism and Prism Imbalance for Plano Protectors

Refractive Power & Astigmatism

Sample ID	Test result			Pass	Fail
	Refractive Power		Astigmatism		
A-1	0.05	0.03	0.02	X	
Requirement:	+/- 0.06		≤ 0.06		

Note: Tested in a simulated as worn position using a 19mm aperture.

Resolving Power

Sample ID	Test result	Pass	Fail
A-1	20	X	
Requirement:	≥Pattern 20		

Note: Tested in a simulated as worn position using a 19mm aperture.

Prism and Prism Imbalance

Sample ID	Prismatic Power (cm/m)	Vertical Imbalance(cm/m)	Horizontal Imbalance(cm/m)	Pass	Fail
A-1	0.13	0.02	0.24 Base In	X	
Requirement:	≤ 0.50	≤ 0.25	Base Out ≤ 0.50 Base In ≤ 0.25		

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5.2 Physical Requirements; Results: Pass

Protectors are free from projections, sharp edges or other defects which are likely to cause discomfort or injury during use.

5.2.1 Drop Ball Impact Resistance

Sample ID	Model	Observations	Pass	Fail
A-1	NK-1015	-	X	

(-) No Observations

5.2.2 Protector Acceptance Criteria

When each type test is conducted as indicated above, a complete device shall fail if any of the following occurs:

- piece fully detached from the inner surface
- fracture
- penetration of the rear surface
- lens not retained

5.2.3 Ignition; Result: Pass

Samples (Lens, Front and Temple) did not ignite or continue to glow after removal of the steel rod.

5.2.5 Minimum Coverage Area; Result:Pass

The eye wire and lens cover in plane view an area of not less than 40 mm (1.57 in.) in width and 33 mm (1.30 in.) in height (elliptical) in front of each eye, centered on the geometrical center of the lens 64mm (2.52 in.) PD.

6.1.3 Lateral (Side) Coverage; Result: Pass

When mounted on the medium headform protectors provide continuous lateral coverage (i.e. no openings greater than 1.5mm (0.06 in.) in diameter) from the vertical plane of the lenses tangential to a point not less than 10 mm (0.394 in.) posterior to the corneal plane and not less than 10 mm (0.394 in.) in height above and not less than 10 mm (0.394in.) in height below the horizontal plane centered on the eyes of the headform. The probe does not contact the headform within the defined coverage area.

6.2.1 Protector Acceptance Criteria

When each type test is conducted as indicated in Sections 6.2.2, 6.2.3 and 6.2.4 and, as applicable Section 6.2.6, a
complete device shall fail if any of the following occurs:

- piece fully detached from the inner surface
- fracture
- penetration of the rear surface
- lens not retained
- for the high-velocity test, the unaided eye observes any piece adhering to the contact paste, or observes contact paste on the projectile or complete device.

In the case of plano protectors with a prescription lens carrier, contact of the prescription lens carrier with the headform does not constitute a failure.

6.2.2 High Mass Impact

Sample ID	Model	Observations	Pass	Fail
A-1	NK-1015	-	X	

(-) No Observations

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6.2.3 High Velocity Impact

Sample	Location	Velocity (ft/sec)	Observations	Pass	Fail
A-1	0°	153	-	X	
A-2	30°	153	-	X	
A-3	90° ↑ 10mm	153	-	X	

(-) No Observations

6.2.4 Penetration Test (Lenses Only)

Sample ID	Observ	Pass	Fail
A-1	-	X	
A-1	-	X	

(-) No Observations

7.1.2 Transmittance of Lenses; Clear and Filter Lenses (Table 6)

Sample:	A-2L	A-2R	Requirement (Shade 3)	Pass	Fail
Luminous (TL)-ILLA	11.7	11.8	8.50 to 18.0%	X	
Far-Ultraviolet (200 to 315nm)	0.00002	0.00002	≤ 0.07%	X	
Near-Ultraviolet (315 to 380nm)	0.00004	0.00004	≤ 0.85%	X	
Infrared (780 to 2000nm)	5.2	5.3	≤ 9%	X	
Blue Light (400 to 700nm)	0.5	0.5	≤ TL	X	

7.1.5 Variations in Luminous Transmittance (Welding Filters)

Sample ID	Test result (%)	Left/Right	Pass	Fail
A-2	12.3	0.98	X	
Requirement:				
Shade 1.3 to 3.0:		1.11 ≥ L/R≥ 0.90		
Shade 4.0 to 14.0:		1.25 ≥ L/R≥0.80		

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Product Picture:

*** End of report ***

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