



Test Report T21020-01-2 Issue 1
ANSI/ISEA Z87.1-2025
Shanghai Langfeng Industrial Co., Ltd.
SG037 Safety Spectacles
10 September 2026



Approved by:

A handwritten signature in blue ink, reading "Keith E. Whitten".

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Objective:

Contract testing to ANSI/ISEA Z87.1-2025 “American National Standard for Occupational and Educational Personal Eye and Face Protection Devices”.

- Clause(s):
- 5. Fundamental Design Requirements for All Protectors
-excluding Markings
 - 6. Optional Design Characteristics
 - 6.2 Anti-Fog Properties (X)
 - 7. Optional Hazard-Specific Protector Requirements
 - 7.2 Optical Radiation Protector Requirements
-Special Purpose Lenses; Table 11 (S)

Samples:

SG037 Safety Spectacles with Straps

Part Number	Lens	Temple	Quantity	Sample ID
SG037 GR	Clear	Black/Grey	15	0A
SG037 BK	Smoke	Black/Grey	7	0B
SG037 RD	Clear	Black/Red	1	0C

Date(s) submitted: 03 August 2026

Procedures:

All tests were conducted in a standard laboratory atmosphere unless otherwise specified.

Samples were randomly selected from the quantity provided and tested in the as-received condition unless otherwise stated.

Testing procedures as specified within Section 9 of ANSI/ISEA Z87.1-2025 were followed unless noted in results.

When applicable, samples were assessed on medium headform (64mm PD).

Prismatic Power, Refractive Power, and Resolving Power are a function of lens geometry, not tint, therefore these tests were performed only on one tint variant of each lens type.

Straps installed by ICS prior to testing.

Samples reused as requested by client.

Assessment Summary:

Date(s) tested: 11 through 14 August 2026 and 10 September 2026

Samples as assessed meet the requirements of ANSI/ISEA Z87.1-2025 for Standard (Non-Impact Rated) Spectacles.

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Assessment Summary (Continued):

ANSI/ISEA Z87.1-2025 Requirements	Compliant	Non-Compliant
5. Fundamental Design Requirements for All Protectors		
5.1 Optical Requirements		
5.1.1 Optical Quality	X	
5.1.2 Luminous Transmission	X	
5.1.3 Haze - Clear Lenses Only	X	
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 and Magnifiers	Not applicable	
5.2 Physical Requirements	X	
5.2.1 Drop Ball Impact Resistance	X	
5.2.2 Ignition	X	
5.2.3 Corrosion Resistance of Metal Components	Not applicable	
5.2.4 Minimum Coverage Area	X	
5.3 Markings	Excluded	
5.4 Other Requirements	Not applicable	
5.5 Replaceable Lenses	Not applicable	
5.6 Aftermarket Components and Accessories	Not applicable	
7. Optional Hazard-Specific Protector Requirements		
7.2 Optical Radiation Protector Requirements		
7.2.1 Protectors with Clear Lenses	See 5.1.2	
7.2.2 Protectors providing Filtration of Optical Radiation		
7.2.2.1 Filter Lenses		
7.2.2.1.1 Transmission Requirements	X	
7.2.2.1.2 Visible Light Filters (ANSI Z80.3-2018 (R2023))	Not applicable	
7.2.2.1.3 Variations in Luminous Transmittance	Not applicable	

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Results:

5.1.1 Optical Quality; Result: Pass

Sample ID(s): Clear (0A-1)

Requirement: Lenses shall be free of striae, bubbles, waves and other visible defects which would impair the wearer's vision.

5.1.2 Luminous Transmittance (Tv) - ILLA (Clear Lenses)

Sample ID	Left (%)	Right (%)	Left/Right	Pass	Fail
0A-2	87.3	87.5	0.998	X	
Requirement:	≥ 85		N/A		

5.1.3 Haze - Clear Lens Only

Sample ID	Left (%)	Right (%)	Pass	Fail
0A-2	1.09	1.35	X	
Requirement:	≤ 3			

Measured relative to Illuminate A.

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

Refractive Power & Astigmatism

Sample ID	Left (m^{-1})		Right (m^{-1})		Pass	Fail
	Refractive Power	Astigmatism	Refractive Power	Astigmatism		
0A-1	0.02	0.05	0.03	0.03	X	
Requirement:	± 0.06	≤ 0.06	± 0.06	≤ 0.06		

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

Resolving Power

Sample ID	Pattern Resolved (Yes/No)		Pass	Fail
	Left	Right		
0A-1	Yes	Yes	X	
Requirement:	Resolve Pattern 20			

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
	Left	Right				
0A-1	0.08	0.07	0.06	0.07 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

Sample ID(s): Clear (0A-1)

Requirement: 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	Location	Pass	Fail
Clear			
0A-7	Left	X	
0A-8	Right	X	
0A-9	Left	X	
0A-10	Right	X	
Smoke			
0B-4	Left	X	
0B-5	Right	X	
Protector shall fail if any of the following occur:			
- lens (lens only) fractures - piece fully detached from the inner surface - projectile penetrates the inner surface - lens not retained			

5.2.2 Ignition; Results: Pass

Sample ID(s): Clear (0A-3); Lens, Nosepiece, Gasket (Plastic, Foam), Temple (Plastic, Rubber), Retaining Strap Connector, Retaining Strap Slide)

Requirement: Protectors shall not ignite or continue to glow once the rod is removed. Each externally exposed material (exclusive of textiles or elastic bands) shall be tested.

5.2.4 Minimum Coverage Area; Result: Pass

Sample ID(s): Clear (0A-1)

Requirement: The frames, lens housings or carriers and lens(es) shall cover in plain 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 pupil centers of test headform.

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6.2 Anti-fog properties

Sample ID	Time free of fogging (s)	Pass	Fail
Clear			
0A-13L	>45	X	
0A-14R	12	X	
Smoke			
0B-6L	>45	X	
0B-7R	13	X	
Requirement:	≥ 8		

After conditioning in water, samples were dried with filtered compressed air instead of being dabbed dry then conditioned in air for at least 12hr at $23 \pm 5^\circ\text{C}$ and $50 \pm 5\%\text{RH}$.

7.2.2.1.1 Transmission Requirements -Special Purpose Lenses (Table 11)

Sample ID	Left (%)	Right (%)	Left/Right	Pass	Fail
Smoke					
0B-1	15.5	16.0	0.969	X	
Requirement:	Tinted $100 > T_L \geq 8$		$1.10 \geq L/R \geq 0.90$		

Sample Photograph(s):

