



Test Report T14790-01-2 Issue 1  
ANSI/ISEA Z87.1-2020  
Shanghai Langfeng Industrial Co., Ltd.  
SG010FM Spectacles  
30 June 2020



Approved by:

Keith E. Whitten  
Laboratory Manager

Prepared by:

Cathy Wołoszyn  
Lab Administrator

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**ICS Laboratories, Inc. • 1072 Industrial Parkway North • Brunswick, Ohio 44212 USA**  
**Phone: 330.220.0515 Fax: 330.220.0516**

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Room 910, Building 6  
Luxiang Road 111, Shanghai  
China

Date: 30 June 2020  
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**Objective:**

Contract testing to ANSI/ISEA Z87.1-2020 “American National Standard for Occupational and Educational Personal Eye and Face Protection Devices”.

Clause(s): 5. Fundamental Design Requirements for All Protectors  
-excluding Markings

**Samples:**

SG010FM Spectacles

Lens	Quantity	Sample ID
Clear	6	0A

Date(s) submitted: 26 May 2020

**Procedures:**

Testing protocols in accord with good laboratory practice were employed for all tests.

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 Z87.1-2020 were followed unless noted in results.

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

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**Assessment Summary:**

Date(s) tested: 05 through 08 June 2020

ANSI/ISEA Z87.1-2020 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 (Clear Lenses)	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	

Samples as assessed meet the requirements of ANSI/ISEA Z87.1-2020 for Standard (Non-Impact Rated) Spectacles.

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**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.

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

Sample ID	Left (%)	Right (%)	Left/Right	Pass	Fail
0A-2	87.9	87.9	1.000	X	
Requirement:	$100 \geq T_L \geq 85$		N/A		

**5.1.3 Haze - Clear Lens Only**

Sample ID	Left (%)	Right (%)	Pass	Fail
0A-2	0.20	0.21	X	
Requirement:	$\leq 3$			

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	0.00	0.02	0.01	0.03	X	
Requirement:	+/- 0.06	$\leq 0.06$	+/- 0.06	$\leq 0.06$		

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	0.13	0.15	<0.05	<0.05 Base Out	X	
Requirement:	$\leq 0.50$		$\leq 0.25$	Base Out $\leq 0.50$ Base In $\leq 0.25$		

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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	Location	Pass	Fail
0A-3	Left	X	
0A-4	Right	X	
0A-5	Left	X	
0A-6	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**

Components tested (Lens, Gasket (Frame, Foam), Outrigger, Strap Adjuster, Temple (Plastic and Rubber), Nosepad) did not ignite or continue to glow once the rod is removed.

**5.2.4 Minimum Coverage Area; Result: Pass**

The frames, lens housings or carriers and lens(es) 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 geometrical center of the lens.

**Sample Photograph:**



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19. It is agreed that if ICS should be found liable for any losses or damages attributable to the services hereunder in any respect, its liability shall not exceed the amount of the fee paid by Client for services rendered and Client's sole remedy at law or in equity shall be the right to recover that sum.
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21. ICS hereby objects to any conflicting terms contained in any order, acceptance or other subsequent correspondence submitted by Client.
22. In the event that payment is not received within 15 days of invoice date, Client agrees to pay a late payment charge on the unpaid balance equal to 1-1/2% per month or the maximum charge allowed by law, whichever is less, and all costs and expenses, including attorney's fees where recovery of the same is not prohibited by law, incurred by ICS in collecting such invoices.
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