



Test Report T3635-01-3 Issue 1  
ANSI Z87.1-2003  
Ever Young Optical Hi-tec. Co., Ltd.  
TP015 with Safety Spectacles with Polycarbonate Lenses  
29 January 2008



Certificate 1722.01

Approved by:

Prepared by:

A handwritten signature in blue ink that reads 'Keith E. Whitten'.

Keith E. Whitten  
Laboratory Manager

A handwritten signature in blue ink that reads 'Cathy Woloszyn'.

Cathy Woloszyn  
Laboratory Assistant

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

Issued to: Ever Young Optical Hi-tec.Co., Ltd.  
No. 782, Wengjiao Road  
Xinyang Industrial Area  
Haicang, Xiamen  
China

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**Objective:**

Contract testing to ANSI Z87.1-2003 "Practice for Occupational and Educational Eye and Face Protection."  
Section 7 Spectacles.

**Samples:**

TP015 with Safety Spectacles with Polycarbonate Lenses

Lens Color	Frame Color	Quantity	Received	ICS ID
Clear	Black	30	10 July 2007	4A-x
		3	21 January 2008	4A-3xx

**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.

Testing procedures as specified within Section 14 of ANSI Z87.1-2003 were followed.

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

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**Assessment Summary:**

Dates tested: 12 through 13 July 2007, and 24 through 25 January 2008

7.	Spectacle Requirements	Compliant	Non-Compliant
7.1	Introduction		
7.2	Spectacle Frame Test		
7.3	Basic Impact Lens Requirements	Not applicable, assessed to 7.4.2	
7.4	Plano Spectacle Lens Requirements		
7.4.1	Basic Impact Testing Requirements		
7.4.2	High Impact Testing Requirements		
7.4.2.1	Spectacle Product Test		
7.4.2.1.1	High Mass Impact	X	
7.4.2.1.2	High Velocity Impact	X	
7.4.2.1.3	Penetration Test	X	
7.4.2.2	Thickness (Non-Plano Frames Only)	Not applicable	
7.4.3	Optical Requirements		
7.4.3.1	Optical Qualities	X	
7.4.3.2	Prismatic Power	X	
7.4.3.3	Refractive Power	X	
7.4.3.4	Resolving Power	X	
7.4.3.5	Haze	X	
7.4.3.6	Transmittance	X	
7.5	Non-Plano Spectacle Lens Requirements	Not applicable	
7.6	Flammability	X	
7.7	Corrosion Resistance	Not applicable	
7.8	Cleanability	X	
7.9	Replacement Spectacle Lenses	Not applicable	
7.10	Marking	Not assessed	

Samples as assessed meet the requirements of ANSI Z87.1-2003 for spectacles with protection.

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**Results:**

**7.4.2.1.1 High Mass Impact**

Sample ID	Location	Pass	Fail
4A-1	Right Ocular	X	
4A-2	Left Ocular	X	
4A-3	Right Ocular	X	
4A-4	Left Ocular	X	

**7.4.2.1.2 High Velocity Impact**

Sample ID	Location	Velocity (ft/sec)	Pass	Fail
4A-5	Right Ocular 15° Nasal	150	X	
4A-6	Right Ocular 0°	150	X	
4A-7	Right Ocular 15° Temporal	150	X	
4A-8	Right Ocular 30° Temporal	151	X	
4A-9	Right Ocular 45° Temporal	151	X	
4A-10	Right Ocular 60° Temporal	151	X	
4A-11	Right Ocular 75° Temporal	151	X	
4A-12	Right Ocular 90° Temporal	151	X	
4A-13	Right Ocular 90° Temporal +10 mm	151	X	
4A-14	Right Ocular 90° Temporal -10 mm	151	X	
4A-15	Left Ocular 15° Nasal	151	X	
4A-16	Left Ocular 0°	151	X	
4A-17	Left Ocular 15° Temporal	151	X	
4A-18	Left Ocular 30° Temporal	151	X	
4A-19	Left Ocular 45° Temporal	151	X	
4A-20	Left Ocular 60° Temporal	151	X	
4A-21	Left Ocular 75° Temporal	151	X	
4A-22	Left Ocular 90° Temporal	151	X	
4A-23	Left Ocular 90° Temporal +10 mm	151	X	
4A-24	Left Ocular 90° Temporal -10 mm	151	X	

**Side Protection Coverage**

Sample ID	Above Center	Below Center	Pass	Fail
4A-25	26	16	X	
Specification:	≥ 10mm			

Note: "The function and coverage of side protection are defined by the high velocity impact test (Section 14.2)". Due to asymmetries of the Alderson 50<sup>th</sup> percentile headform the left eye is used for this assessment as it provides better correlation to published specifications and the standard fitting practices.

**7.4.2.1.3 Penetration**

Sample ID	Location	Pass	Fail
4A-1	Left Ocular	X	
4A-2	Right Ocular	X	
4A-3	Left Ocular	X	
4A-4	Right Ocular	X	

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**7.4.3.1 Optical Qualities; Result: Pass**

Samples are free of striae, bubbles, waves and other visible defects and flaws.

**7.4.3.2 Prismatic Power**

Sample ID	Prismatic Power ( $\Delta$ )		Vertical Imbalance ( $\Delta$ )	Horizontal Imbalance ( $\Delta$ )	Pass	Fail
	Left Ocular	Right Ocular				
4A-301	0.05	0.06	0.08	0.23 Base Out	X	
4A-302	0.05	0.08	0.10	0.27 Base Out	X	
4A-303	0.06	0.07	0.13	0.25 Base Out	X	
Specification:	$\leq 0.50$		$\leq 0.25$	$\leq 0.50$ Base Out $\leq 0.25$ Base In		

**7.4.3.3 Refractive Power**

Sample ID	Left Ocular (D)			Right Ocular (D)			Pass	Fail
	Refractive Power		Astigmatism	Refractive Power		Astigmatism		
4A-301	0.02	-0.01	0.03	0.01	-0.03	0.04	X	
4A-302	0.03	0.00	0.03	0.01	-0.02	0.03	X	
4A-303	0.02	-0.01	0.03	0.02	-0.01	0.03	X	
Specification:	$\leq \pm 0.06$		$\leq 0.06$	$\leq \pm 0.06$		$\leq 0.06$		

Note: Tested in a simulated as worn position.

**7.4.3.4 Resolving Power**

Sample ID	Pattern Resolved		Pass	Fail
	Left Ocular	Right Ocular		
4A-301	>20	>20	X	
4A-302	>20	>20	X	
4A-303	>20	>20	X	
Specification:	$\geq$ Pattern 20			

Note: Tested in a simulated as worn position.

**7.4.3.5 Haze (Clear Lenses Only)**

Sample ID	Location	Measured Value (%)	Pass	Fail
4A-28	Left Ocular	0.46	X	
4A-29	Right Ocular	0.65	X	
4A-30	Left Ocular	0.33	X	
Specification:		$\leq 3$		

**7.4.3.6 Transmittance**

Sample ID	Left (%)	Right (%)	Left/Right	Pass	Fail
4A-25	87.8	87.8	1.00	X	
4A-26	87.4	87.8	1.00	X	
4A-27	87.7	87.5	1.00	X	
Specification:	Clear:	$100 \geq T(L) \geq 85$	$1.10 \geq L/R \geq 0.90$		

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**7.6 Flammability**

Sample ID	Component	Measured Value (mm/min)	Pass	Fail
4A-1	Lens	0	X	
	Front	0	X	
	Temple	0	X	
4A-2	Lens	0	X	
	Front	0	X	
	Temple	0	X	
4A-3	Lens	0	X	
	Front	0	X	
	Temple	0	X	
Specification:		≤ 76		

**7.8 Cleanability; Result: Pass**

The function and markings are not impaired by the cleaning procedure.

**Sample Photograph:**



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