COLTS | Laboratories™

Test Report: IEI-01622-04, Issue: 1

ANSI Z87.1-2020

Innovative Eyewear, Inc.

Lucyd Armor Smart Safety Glasses

July 01, 2024

ACCREDITED
Test Laboratory
Certificate # 1612.01

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e. Decision Rule – COLTS makes all statements of conformity (pass/fail) based on actual values reported, unless otherwise stated.

Authorized By:

Jacob Gary
Director of Operations

Reviewed By:

Jason Fawell
Technical Engineer

Issued to: Innovative Eyewear, Inc.
11900 Biscayne Bl
Suite 630
Miami, FL 33181

Requested by: Harrison Gross

Report Summary

Product Description: IEI-01622-04/Lucyd Armor Smart Safety Glasses: Black Frame, Photochromic Lenses (S, U6)
Date Received: June 05, 2024
Date(s) Tested: June 25, 2024 to July 01, 2024
Standard: ANSI Z87.1-2020
Laboratory Conditions: 23°C, 48% RH

Final Conclusion:

The Spectacle Sample: Lucyd Armor Smart Safety Glasses (Black Frame, Photochromic Lenses (S, U6)) does comply with ANSI Z87.1-2020 for the test(s) included in this report.

Test Name	Result
ANSI Z87.1-2020 Base Model General Requirements	
5.1.1 Optical Quality	**Pass**
5.1.4 Prism/Prism Imbalance (Spectacle)	**Pass**
5.1.4 Refractive/Resolving Power, Astigmatism	**Pass**
5.2 Physical Requirements	**Pass**
5.2.1 Drop Ball Impact Resistance	**Pass**
5.2.2 Ignition	**Pass**
5.2.3 Corrosion Resistance of Metal Components	**Pass**
5.2.4 Minimum Coverage Area	**Pass**
5.3.2 Placement of Markings	**Pass**
7.2.2.1.1 Special Purpose Filter Lenses - Transmission Requirements	**Pass**
ANSI Z87.1-2020 Optional Claim (U)	
7.2.2.1.1 Ultraviolet Filter Lenses - Transmission Requirements	**Pass**

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Test Results - IEI-01622-04/Lucyd Armor Smart Safety Glasses Black Frame, Photochromic Lenses (S, U6)

ANSI Z87.1-2020 Base Model General Requirements

5.1.1 Optical Quality

Test	Specification	Pass
Free of visible defects that impair vision		Pass

5.1.4 Prism/Prism Imbalance (Spectacle)

Test	Specification	Pass
Complete Prism		Pass
Left Eye	Max: 0.50	0.141 (Diopters)
Right Eye	Max: 0.50	0.050 (Diopters)
Prismatic Imbalance		Pass
Vertical	Max: 0.25	0.10 (Diopters)
Horizontal Base Out	Max: 0.50	0.15 (Diopters)

5.1.4 Refractive/Resolving Power, Astigmatism

Test	Specification	Pass
Refractive Power		Pass
Left Eye	-0.06/0.06	0.000 (Diopters)
Right Eye	-0.06/0.06	0.000 (Diopters)
Astigmatism		Pass
Left Eye	0.00/0.06	0.060 (Diopters)
Right Eye	0.00/0.06	0.060 (Diopters)
Resolving Power		Pass
Left Eye		Pass
Right Eye		Pass

5.2 Physical Requirements

Test	Specification	Pass
Free of defects which may cause discomfort or injury		Pass

5.2.1 Drop Ball Impact Resistance

Test	Specification	Pass
Sample 1 - Left Eye		Pass
Sample 2 - Left Eye		Pass
Sample 3 - Right Eye		Pass
Sample 4 - Right Eye		Pass

5.2.2 Ignition

Test	Specification	Pass
Lens		Pass
Front		Pass
Other		N/A

5.2.3 Corrosion Resistance of Metal Components

Test	Specification	Pass

Test Results - IEI-01622-04/Lucyd Armor Smart Safety Glasses Black Frame, Photochromic Lenses (S, U6)

Function of protector not impaired		Pass

5.2.4 Minimum Coverage Area

Test	Specification	**Pass**
40 x 33 mm (34 x 28 mm - H)		Pass

5.3.2 Placement of Markings

Test	Specification	**Pass**
Markings		Pass

7.2.2.1.1 Special Purpose Filter Lenses - Transmission Requirements

Test	Specification	**Pass**
Tinted Lenses		Pass
Left Eye	8.00/99.99	84.6 (%)
Right Eye	8.00/99.99	84.6 (%)
Ratio	0.900/1.100	1.000

ANSI Z87.1-2020 Optional Claim (U)

7.2.2.1.1 Ultraviolet Filter Lenses - Transmission Requirements

Test	Specification	**Pass**
Near UV		Pass
Left Eye		0.000 (%)
Left Eye Edge		0.000 (%)
Right Eye		0.000 (%)
Right Eye Edge		0.000 (%)
Far UV		Pass
Left Eye		0.000 (%)
Left Eye Edge		0.000 (%)
Right Eye		0.000 (%)
Right Eye Edge		0.000 (%)

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Observations:

Test Name		Observation
5.3.2 Placement of Markings	Markings	Assessed using artwork

APPENDIX 1

ANSI Z87.1 - 2020 Measurement Uncertainty Values

Section	Requirement	Uncertainty
5.1.2	Luminous Transmittance	0.19%
5.1.3	Haze	0.08%
5.1.4	Refractive Power	0.018D
	Astigmatism	0.018D
	Prism	0.048Δ
5.4.5	Minimum Lens Thickness	0.012 mm
5.5.1	Replaceable Lenses – Goggles	0.17 mm
5.5.2	Replaceable Lenses – Welding Helmets and Handshields	0.17 mm
6.1	Relaxed Optics Level	See 5.1.4
6.2	Anti-Fog Properties	1.79%
7.2.1	Optical Radiation - Clear Lenses	See 5.1.2
7.2.2.1.1	Transmission Requirements	
	Table 7 (Welding Filters)	
	W1.3 – W3.0	See 5.1.2
	W4	0.0018287%
	W5	0.0003283%
	W6	0.0003605%
	W7	0.0000961%
	W8	0.0001944%
	W9	0.0000459%
	W10	0.0000707%
	W11	0.0000163%
	W12	0.0000055%
	W13	0.0000029%
	W14	0.0000017%
	EFUV	0.0000551%
	NUV	0.0000576%
	IR	0.010395%
	Table 8 (UV Filters)	
	EFUV	0.0000551%
	NUV	0.0000576%
	Table 9 (IR Filters)	0.010395%
	Table 10 (VIS Filters)	See 7.2.2.1.1 W1.3 – W10
	Table 11 Tinted	See 5.1.2
	Extra Dark	See 5.1.2
7.2.2.1.2	Visible Light Filters	
	Visible Light (L1.3 - L3)	See 5.1.2
	UVA	See Table 7 NUV
	UVB	See Table 7 EFUV
7.2.2.2	Transmittance of Non-lens Components	See 7.2.2.1.1 Table 7, 8 & 9
7.2.3.1	Automatic Darkening Welding Filter Lenses - Luminous Transmittance	See 7.2.2.1.1 Table 7
7.2.3.2	Automatic Darkening Welding Filter Lenses - UV/IR Transmittance	See 7.2.2.1.1 Table 7
7.2.3.3	Switching Index	0.0192 mSec
7.2.3.5	Angular dependence of luminous transmittance	See 7.2.2.1.1 Table 7