

TEST RESULTS and REPORT

for

Wendy's Pancake Welding Shields

Z Model

by



COLTS | Laboratories™

Precision Testing. Definitive Results.

COLTS Laboratories maintains A2LA accreditation to ISO/IEC 17025 for the tests listed on Certificate # 1612.01. Any tests not included on this certificate have been identified on the appropriate test result page.

Also Certified for testing by the Safety Equipment Institute

Z-WND042618-01

- Where appropriate, results in this report apply only to the samples tested and are not to lots from which they were taken.
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- Unless otherwise requested, test samples will be discarded 21 days from the report date.

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**PRODUCT
RESULTS
SUMMARY**

A2LA Accredited Certificate # 1612.01

**Wendy's Pancake Welding Shields
Z-WND042618-01-01**

Project ID	Test/Models(s)	Results Pass / Fail	Reason	Page
Z-WND042618-01-01	ANSI Z87.1-2015 Z Model Black Front and Side Piece, 5/8" Lens Holder Wooden Lens Holder/Face Piece	Pass		1

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**Report
Summary**

A2LA Accredited Certificate # 1612.01

Report To:

Wendy's Pancake Welding Shields
500 Countryside Place
Madison, MS 39110

Project

of Model(s): Z Model
Report of: ANSI Z87.1-2015
Project ID(s): Z-WND042618-01-01



Attn: David Keup

Date: May 24, 2018

Product Description: Black Front and Side Piece, 5/8" Lens Holder Wooden Lens Holder/Face Piece

On April 26, 2018, COLTS Laboratories received Welding Helmets: Z Model from Wendy's Pancake Welding Shields. From April 26, 2018 through May 24, 2018 COLTS Laboratories tested these Welding Helmets in accordance with ANSI Z87.1-2015.

Final Conclusion:

The Welding Helmets: Z Model (Black Front and Side Piece, 5/8" Lens Holder Wooden Lens Holder/Face Piece) do comply with ANSI Z87.1-2015 for the test(s) included in this report.

Please contact us should you have any questions concerning this report.

Respectfully submitted,

COLTS Laboratories

Daryl Neely
Vice-President & COO

Dale Payne
Technical Services Manager

Report To: Wendy's Pancake Welding Shields
 Project No: Z-WND042618-01-01



Sample ID:
 Z Model
 Black Front and Side Piece, 5/8" Lens Holder Wooden Lens
 Holder/Face Piece

A2LA Accredited Certificate # 1612.01

Report Date: 5/24/2018

Lab Temp (C): 23
 Lab Rh: 50

Report of: ANSI Z87.1-2015

Test/Property	Paragraph	Requirement	Test Results	Acceptance
Physical Requirements	5.2	Protectors shall be free from: projections, sharp edges or other defects which are likely to cause discomfort or injury during use.	Acceptable	Pass
Ignition (Welding Helmet)	5.2.2	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.		
		Shell	Acceptable	Pass
		Lens (Safety Plate)	Acceptable	Pass
		Headgear/Adaptar	N/A	N/A
		Lens Housing	Acceptable	Pass
		Other	N/A	N/A
Corrosion Resistance of Metal Components	5.2.3	Metal components used in protectors shall be corrosion resistant to the degree that the function of the protector shall not be impaired by the corrosion and the protector can be worn as intended. Lenses and electrical components are excluded from these requirements. Corrosion Resistant	N/A	N/A
Minimum Coverage Area	5.2.4	The frames, lens housings or carriers and lens(es) shall cover an area of not less than 40 mm (34 mm for small head sizes) in width and 33 mm (28 mm for small head sizes) in height (elliptical) in front of each eye, centered on the geometrical center of the lens.		
		Minimum Coverage Area	Acceptable	Pass
Required Protector Markings (Welding Protectors)	5.3	All protectors shall bear the permanent and legible markings in specified locations. Protector markings shall be placed in relatable proximity to each other on the product.		
		Manufacturer's marks or logos are exempt from the proximity requirement if they are clearly present elsewhere on the product.		
		Markings permanent, legible and in relatable proximity	Acceptable	Pass
		Markings representative of other standards shall not interfere with or be intermixed with the markings required by this standard.	Acceptable	Pass
		Replaceable Lens Markings	N/A	N/A
		Safety Plate (Manufacturer's mark, Z87, impact rating if necessary)	N/A	N/A

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Report To: Wendy's Pancake Welding Shields
 Project No: Z-WND042618-01-01



Sample ID:
 Z Model
 Black Front and Side Piece, 5/8" Lens Holder Wooden Lens
 Holder/Face Piece

A2LA Accredited Certificate # 1612.01

Report Date: 5/24/2018

Lab Temp (C): 23
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Report of: ANSI Z87.1-2015

Test/Property	Paragraph	Requirement	Test Results	Acceptance
Required Protector Markings (Welding Protectors)	5.3	All protectors shall bear the permanent and legible markings in specified locations. Protector markings shall be placed in relatable proximity to each other on the product.		
		Manufacturer's marks or logos are exempt from the proximity requirement if they are clearly present elsewhere on the product.		
		Shell	Acceptable	Pass
		In relatable proximity	Acceptable	Pass
		Manufacturer's Mark or Logo	Acceptable	Pass
		Z87 Mark	Acceptable	Pass
		+ Mark	Acceptable	Pass
		Lens housing or carrier	Acceptable	Pass
		In relatable proximity	Acceptable	Pass
		Manufacturer's Mark or Logo	Acceptable	Pass
		Z87 Mark	Acceptable	Pass
		+ Mark	Acceptable	Pass
Transmittance of Non-Lens Areas for Welding Helmets	5.4.3.1	The non-lens area of welding helmets with removable lenses shall transmit no more optical radiation than that permitted by Table 6 for shade number 14.		
		Non-lens areas of welding helmets with non-removable lenses shall transmit no more optical radiation than that of the lens.		
		Luminous Transmittance	0.000002%	Pass
		U.V. Far	0.000008%	Pass
		U.V. Near	0.000009%	Pass
		Infrared	0.000894%	Pass
		Blue light	0.000005%	Pass
				See charts
Light Tightness	5.4.3.2	When tested in accordance with Section 9.9, there shall be no penetration of direct visible light in all non-lens areas including the space between the lens and lens housing or carrier.		
		No direct light visible	Acceptable	Pass
Cover lenses	5.4.3.3	Cover lenses are exempt from all requirements of this standard. Cover lenses do not provide protection from optical radiation or impact. Cover lenses shall not be marked "Z87."		
		Not marked Z87	Acceptable	Pass

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Report To: Wendy's Pancake Welding Shields

Project No: Z-WND042618-01-01



Sample ID:

Z Model

Black Front and Side Piece, 5/8" Lens Holder Wooden Lens Holder/Face Piece

A2LA Accredited Certificate # 1612.01

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Test/Property	Paragraph	Requirement	Test Results	Acceptance
Information Provided with Welding Protectors	5.4.3.4	A welding protector shall, as sold, be accompanied by lens and retention information. The information shall include, at a minimum:		
		A list of all lens and retention components, plus the shell model.	Acceptable	Pass
		Information sufficient to allow the user to install the lenses in the correct order.	Acceptable	Pass
		A clear statement that the protection marked in accordance with this standard is only provided when all lens and retention components are installed according to the list or other manufacturer's instructions.	Acceptable	Pass
		The nominal thickness and material type of unmarked cover lenses.	Acceptable	Pass
Aftermarket Components and Accessories	5.6	All original equipment manufacturers (OEM) and non-OEM aftermarket components not sold with the original device shall be tested.		
		Aftermarket Components and Accessories	Manufacturer requirement	Not testable
Protectors Marked for Impact Protection	6.1.1	Protectors and replaceable components marked for impact protection in accordance with Table 3 shall meet applicable requirements of Section 6.		
		Impact requirements	Acceptable	Pass
		Marking requirements	Acceptable	Pass
Frames and Shells	6.1.2	Frames and shells shall meet the requirements for high mass impact and high velocity impact in order to be impact-rated. These components shall be tested as a complete device. For frames and shells to be used with prescription lenses, they shall be fitted with representative test lenses having a nominal plano power and the minimum lens thickness to be used by the manufacturer, in no case less than 2.0 mm (0.079 in.). Frames and shells are exempt from the penetration requirement		
		Frames and Shells	Acceptable	Pass
Lateral (Side) Coverage	6.1.3	Impact rated protectors shall provide continuous lateral coverage (i.e. no openings greater than 1.5mm in diameter) from the vertical plane of the lenses tangential to a point not less than 10 mm posterior to the corneal plane and not less than 10 mm in height (or 8 mm for the smaller headform) above and not less than 10 mm in height (or 8 mm for the smaller headform) below the horizontal plane centered on the eyes of the headform.		
		Lateral (Side) Coverage	Acceptable	Pass

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Sample ID:
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 Black Front and Side Piece, 5/8" Lens Holder Wooden Lens
 Holder/Face Piece

A2LA Accredited Certificate # 1612.01

Report Date: 5/24/2018

Lab Temp (C): 23
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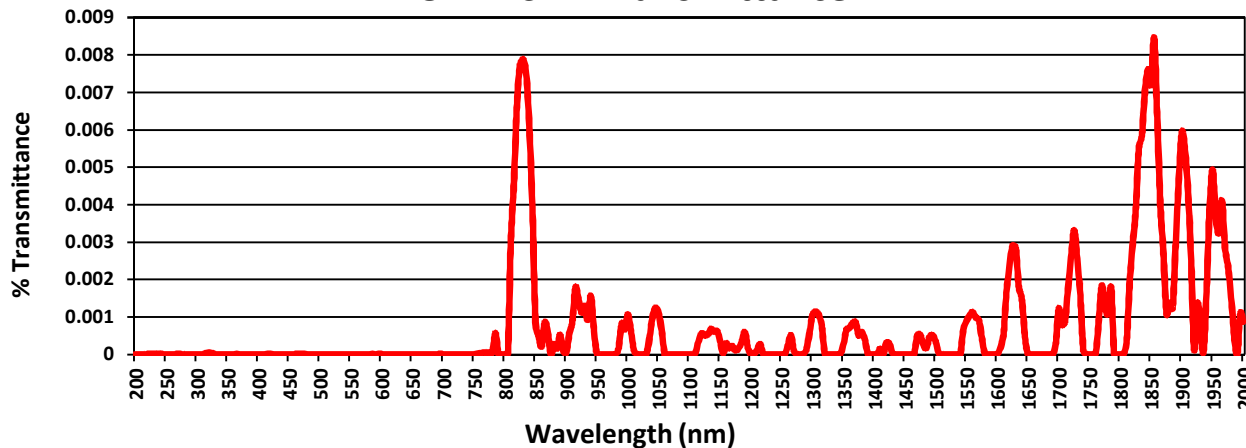
Report of: ANSI Z87.1-2015

Test/Property	Paragraph	Requirement	Test Results	Acceptance
High Mass Impact	6.2.2	When tested in accordance with Section 9.11, the complete device shall meet the protector acceptance criteria when impacted by a pointed projectile weighing a minimum of 500 g (17.6 oz) dropped from a height of at least 127 cm (50.0 in.).		
		Left Eye Sample 1	Acceptable	Pass
		Left Eye Sample 2	Acceptable	Pass
		Right Eye Sample 3	Acceptable	Pass
		Right Eye Sample 4	Acceptable	Pass
High Velocity Impact (Welding Helmet)	6.2.3	When tested in accordance with Section 9.12, the complete device shall meet the protector acceptance criteria when impacted by a 6.35 mm (0.25 in) diameter steel ball traveling at 150 feet per second.		
		Left Eye Center	153 fps	Pass
		Left Eye 30°	152 fps	Pass
		Right Eye Center	154 fps	Pass
		Right Eye 30°	153 fps	Pass
		One Side 90° at 10mm Above (H - 8mm)	154 fps	Pass
		Opposite Side 90° at 10mm Below (H - 8mm)	152 fps	Pass
Penetration Test (lenses only)	6.2.4	Lenses for all complete devices shall meet the protector acceptance criteria when penetrated by a weighted needle with a minimum total weight of 44.2 g (1.56 oz) dropped from a height of at least 127 cm (50.0 in.).		
		Left Eye Sample 1	Acceptable	Pass
		Left Eye Sample 2	Acceptable	Pass
		Right Eye Sample 3	Acceptable	Pass
		Right Eye Sample 4	Acceptable	Pass
Devices with Lift Fronts	6.2.7	Complete devices with lift fronts shall meet the applicable requirements of Section 6 with the lift front in the "up" position.		
		Lift front in "up" position	N/A	N/A

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nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T	nm	%T		
200	0.00000	355	0.00000	510	0.00000	665	0.00000	820	0.00670	975	0.00000	1130	0.00053	1285	0.00000	1440	0.00000	1595	0.00000	1750	0.00000	1905	0.00546
205	0.00000	360	0.00001	515	0.00000	670	0.00000	825	0.00776	980	0.00000	1135	0.00068	1290	0.00013	1445	0.00000	1600	0.00000	1755	0.00000	1910	0.00433
210	0.00000	365	0.00001	520	0.00000	675	0.00000	830	0.00789	985	0.00014	1140	0.00060	1295	0.00056	1450	0.00000	1605	0.00018	1760	0.00000	1915	0.00251
215	0.00000	370	0.00001	525	0.00000	680	0.00001	835	0.00750	990	0.00082	1145	0.00063	1300	0.00106	1455	0.00000	1610	0.00049	1765	0.00092	1920	0.00012
220	0.00002	375	0.00000	530	0.00000	685	0.00000	840	0.00609	995	0.00066	1150	0.00035	1305	0.00114	1460	0.00000	1615	0.00165	1770	0.00184	1925	0.00136
225	0.00001	380	0.00000	535	0.00000	690	0.00001	845	0.00393	1000	0.00106	1155	0.00002	1310	0.00106	1465	0.00000	1620	0.00237	1775	0.00127	1930	0.00085
230	0.00002	385	0.00000	540	0.00000	695	0.00001	850	0.00086	1005	0.00064	1160	0.00030	1315	0.00076	1470	0.00051	1625	0.00291	1780	0.00108	1935	0.00004
235	0.00002	390	0.00000	545	0.00000	700	0.00000	855	0.00047	1010	0.00010	1165	0.00017	1320	0.00000	1475	0.00053	1630	0.00285	1785	0.00179	1940	0.00167
240	0.00003	395	0.00000	550	0.00000	705	0.00000	860	0.00021	1015	0.00000	1170	0.00022	1325	0.00000	1480	0.00026	1635	0.00182	1790	0.00000	1945	0.00387
245	0.00000	400	0.00000	555	0.00000	710	0.00000	865	0.00086	1020	0.00000	1175	0.00010	1330	0.00000	1485	0.00016	1640	0.00149	1795	0.00000	1950	0.00493
250	0.00000	405	0.00000	560	0.00000	715	0.00000	870	0.00058	1025	0.00000	1180	0.00017	1335	0.00000	1490	0.00046	1645	0.00048	1800	0.00000	1955	0.00364
255	0.00000	410	0.00001	565	0.00000	720	0.00000	875	0.00000	1030	0.00000	1185	0.00033	1340	0.00000	1495	0.00051	1650	0.00000	1805	0.00000	1960	0.00323
260	0.00000	415	0.00002	570	0.00000	725	0.00000	880	0.00027	1035	0.00042	1190	0.00060	1345	0.00000	1500	0.00035	1655	0.00000	1810	0.00031	1965	0.00411
265	0.00001	420	0.00001	575	0.00000	730	0.00000	885	0.00015	1040	0.00099	1195	0.00018	1350	0.00024	1505	0.00004	1660	0.00000	1815	0.00187	1970	0.00286
270	0.00002	425	0.00000	580	0.00001	735	0.00000	890	0.00052	1045	0.00125	1200	0.00000	1355	0.00066	1510	0.00000	1665	0.00000	1820	0.00294	1975	0.00235
275	0.00000	430	0.00000	585	0.00001	740	0.00000	895	0.00010	1050	0.00110	1205	0.00000	1360	0.00070	1515	0.00000	1670	0.00000	1825	0.00384	1980	0.00152
280	0.00001	435	0.00000	590	0.00001	745	0.00000	900	0.00004	1055	0.00063	1210	0.00012	1365	0.00084	1520	0.00000	1675	0.00000	1830	0.00550	1985	0.00049
285	0.00000	440	0.00000	595	0.00001	750	0.00000	905	0.00057	1060	0.00000	1215	0.00027	1370	0.00086	1525	0.00000	1680	0.00000	1835	0.00584	1990	0.00000
290	0.00000	445	0.00000	600	0.00001	755	0.00001	910	0.00088	1065	0.00000	1220	0.00000	1375	0.00050	1530	0.00000	1685	0.00000	1840	0.00703	1995	0.00110
295	0.00000	450	0.00000	605	0.00000	760	0.00003	915	0.00179	1070	0.00000	1225	0.00000	1380	0.00060	1535	0.00000	1690	0.00000	1845	0.00761	2000	0.00087
300	0.00000	455	0.00000	610	0.00000	765	0.00005	920	0.00145	1075	0.00000	1230	0.00000	1385	0.00040	1540	0.00000	1695	0.00025	1850	0.00720		
305	0.00000	460	0.00001	615	0.00000	770	0.00004	925	0.00111	1080	0.00000	1235	0.00000	1390	0.00002	1545	0.00067	1700	0.00122	1855	0.00845		
310	0.00000	465	0.00001	620	0.00000	775	0.00006	930	0.00129	1085	0.00000	1240	0.00000	1395	0.00000	1550	0.00088	1705	0.00077	1860	0.00632		
315	0.00003	470	0.00001	625	0.00000	780	0.00004	935	0.00092	1090	0.00000	1245	0.00000	1400	0.00000	1555	0.00104	1710	0.00086	1865	0.00400		
320	0.00004	475	0.00001	630	0.00000	785	0.00057	940	0.00157	1095	0.00000	1250	0.00000	1405	0.00000	1560	0.00113	1715	0.00175	1870	0.00268		
325	0.00003	480	0.00001	635	0.00000	790	0.00000	945	0.00062	1100	0.00000	1255	0.00000	1410	0.00015	1565	0.00099	1720	0.00259	1875	0.00108		
330	0.00000	485	0.00000	640	0.00000	795	0.00000	950	0.00000	1105	0.00000	1260	0.00025	1415	0.00000	1570	0.00093	1725	0.00332	1880	0.00138		
335	0.00000	490	0.00000	645	0.00000	800	0.00000	955	0.00000	1110	0.00004	1265	0.00051	1420	0.00031	1575	0.00046	1730	0.00256	1885	0.00123		
340	0.00000	495	0.00000	650	0.00000	805	0.00000	960	0.00000	1115	0.00037	1270	0.00009	1425	0.00028	1580	0.00000	1735	0.00158	1890	0.00300		
345	0.00000	500	0.00000	655	0.00000	810	0.00303	965	0.00000	1120	0.00056	1275	0.00000	1430	0.00003	1585	0.00000	1740	0.00009	1895	0.00469		
350	0.00000	505	0.00000	660	0.00000	815	0.00460	970	0.00000	1125	0.00051	1280	0.00000	1435	0.00000	1590	0.00000	1745	0.00000	1900	0.00595		

UV-VIS-IR Transmittance



GENERAL

Test Type: Non-lens Area

Darkest Shade 14 @ 23C

Spectrophotometer: Hitachi U-4100

RESULTS

Near UV [T(NUV)] = 0.000009 **Pass**

Far UV [T(EUV)] = 0.000008 **Pass**

Luminous Y(A) = 0.000002 **Pass**

Infrared [T(IR)] = 0.000894 **Pass**

Blue Light TB = 0.000005 **Pass**

Results

Z-WND042618-01-01 Non-Lens Area 23C

APPENDIX 1
ANSI Z87.1 - 2015 Measurement Uncertainty Values

Section	Requirement	Uncertainty
5.1.2	Luminous Transmittance	0.41%
5.1.3	Haze	0.41%
5.1.4	Refractive Power & Astigmatism	0.007D
5.1.4	Prism	0.01Δ
5.4.3.1	Welding Protectors – Transmittance of Non-Lens Area	0.000017%
5.1.5	Refractive Power & Astigmatism and Prism for Rx Protectors and Mganifiers	See 5.1.4
5.4.5	Minimum Lens Thickness	0.1 mm
5.5.1	Replaceable Lenses – Goggles	0.1 mm
5.5.2	Replaceable Lenses – Welding Helmets and Handshields	0.1 mm
7.2.1.1	Transmission Requirements	Table 6 (Welding Filters) See 7.3 Table 7 EFUV 0.0000551% NUV 0.0000576% Table 8 (IR) 0.010395% Table 9 (VIS) See 7.1.3 W1.3 – W10 Table 10 Tinted 0.41% Extra Dark 0.0001944%
7.2.1.2	Visible Light Filters	Visible Light 0.41% UVA 0.0000576% UVB 0.0000551%
7.2.2	Transmittance of Non-lens Components	0.000017%
7.3	Automatic Darkening Welding Filter Lenses	W1.3 – W3.0 0.41% W4 0.0018287% W5 0.0003283% W6 0.0003605% W7 0.0000961% W8 0.0001944% W9 0.0000459% W10 0.0000706% W11 0.0000068% W12 0.0000055% W13 0.0000028% W14 0.0000017% EFUV 0.0000551% NUV 0.0000576% IR 0.010395%
7.3.3	Switching Index	0.0192 mSec