

# **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-WND040317-01**

- Results in this report only relate to the samples analyzed.
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- Unless otherwise requested, test samples will be discarded 21 days from the report date.

**COLTS Laboratories**

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**PRODUCT  
RESULTS  
SUMMARY**

A2LA Accredited Certificate # 1612.01

**Wendy's Pancake Welding Shields  
Z-WND040317-01-01**

<b>Project ID</b>	<b>Test/Models(s)</b>	<b>Results Pass / Fail</b>	<b>Reason</b>	<b>Page</b>
Z-WND040317-01-01	ANSI Z87.1-2015 Welding Helmet Shell Tests Z Model Black Front and Side Piece, 5/8" Lenseholder 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  
7865 Terry Road  
Terry, MS 39170

**Project**

of Model(s): Z Model  
Report of: ANSI Z87.1-2015 Welding Helmet Shell Tests  
Project ID(s): Z-WND040317-01-01



**Attn:** David Keup

**Date:** May 10, 2017

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

On April 03, 2017, COLTS Laboratories received Welding Helmets: Z Model from Wendy's Pancake Welding Shields. From April 11, 2017 through May 10, 2017 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" Lenseholder Wooden Lens Holder/Face Piece) do comply with ANSI Z87.1-2015 for the test(s) performed for ANSI Z87.1-2015 Welding Helmet Shell Tests.

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-WND040317-01-01



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

A2LA Accredited Certificate # 1612.01

Report Date: 5/11/2017

Lab Temp (C): 23  
 Lab Rh: 44

**Report of: ANSI Z87.1-2015 Welding Helmet Shell Tests**

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)	N/A	N/A
		Headgear/Adaptar	N/A	N/A
		Lens Housing	Acceptable	Pass
		Other	Acceptable	Pass
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

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Report To: Wendy's Pancake Welding Shields  
 Project No: Z-WND040317-01-01



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

A2LA Accredited Certificate # 1612.01

Report Date: 5/11/2017

Lab Temp (C): 23  
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## Report of: ANSI Z87.1-2015 Welding Helmet Shell Tests

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 as shown in Table 3. Markings for lens type and use applications shall be required only when claims for protection against the hazard or indicated use are made by the manufacturer.			
		Protector markings shall be placed in relatable proximity to each other on the product in the sequence specified below:			
		- Manufacturer's marks or logos			
		- Designation of standard (Z87 or Z87-2, for prescription devices)			
		- Individual claims of compliance			
		- impact-rated marking (+)			
		- lens type			
		- use applications			
		Manufacturer's marks or logos are exempt from the proximity requirement if they are clearly present elsewhere on the product.			
		Markings representative of other standards shall not interfere with or be intermixed with the markings required by this standard.		Acceptable	Pass
		Shell		Acceptable	Pass
		Sequence Correct		Acceptable	Pass
		Manufacturer's Mark or Logo		Acceptable	Pass
		Z87 Mark		Acceptable	Pass
		+ Mark		Acceptable	Pass
Lens housing or carrier		Acceptable	Pass		
Sequence Correct		Acceptable	Pass		
Manufacturer's Mark or Logo		Acceptable	Pass		
Z87 Mark		Acceptable	Pass		
+ Mark		Acceptable	Pass		
		Markings permanent, legible and in relatable proximity	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	0.000001%	Pass	
		U.V. Far	0.000003%	Pass	

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

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**Report of: ANSI Z87.1-2015 Welding Helmet Shell Tests**

Test/Property	Paragraph	Requirement	Test Results	Acceptance
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.		
		U.V. Near	0.000010%	Pass
		Infrared	0.000569%	Pass
		Blue light	0.000003%	Pass
				See chart
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	N/A	N/A
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

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Sample ID:  
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 Holder/Face Piece

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## Report of: ANSI Z87.1-2015 Welding Helmet Shell Tests

Test/Property	Paragraph	Requirement	Test Results	Acceptance
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
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 Left Eye Sample 2 Right Eye Sample 3 Right Eye Sample 4	Acceptable Acceptable Acceptable Acceptable	Pass Pass Pass 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 Left Eye 30° Right Eye Center Right Eye 30° One Side 90° at 10mm Above (H - 8mm) Opposite Side 90° at 10mm Below (H - 8mm)	147 fps 149 fps 153 fps 152 fps 153 fps 153 fps	Pass Pass Pass Pass Pass Pass

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 Holder/Face Piece

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Report Date: 5/11/2017

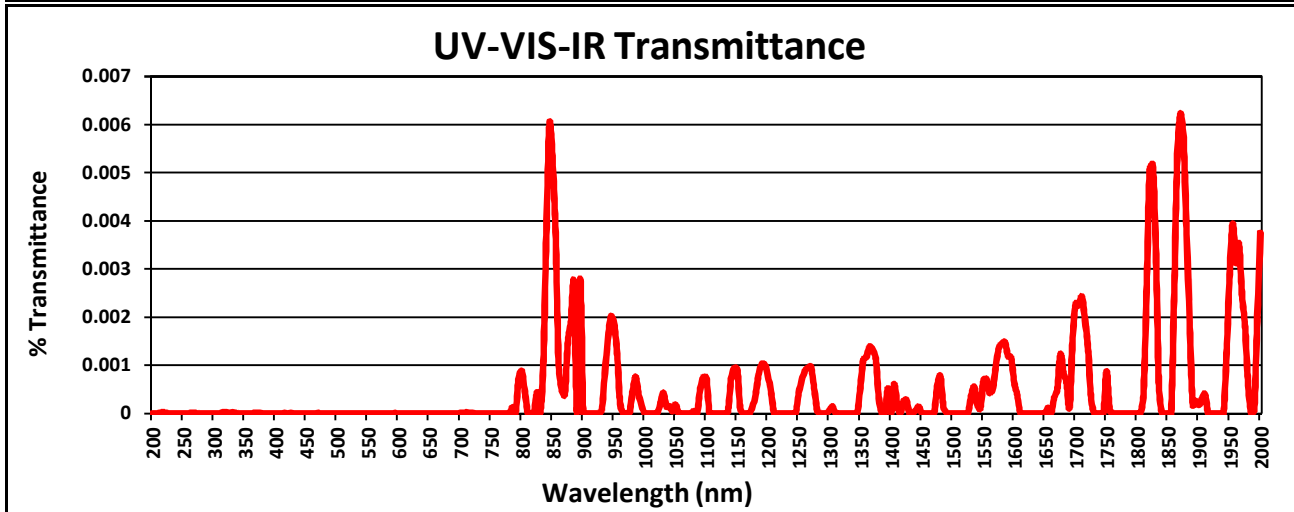
Lab Temp (C): 23  
 Lab Rh: 44

**Report of: ANSI Z87.1-2015 Welding Helmet Shell Tests**

Test/Property	Paragraph	Requirement	Test Results	Acceptance
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



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	0.00000	975	0.00000	1130	0.00000	1285	0.00000	1440	0.00006	1595	0.00116	1750	0.00087	1905	0.00030
205	0.00000	360	0.00000	515	0.00000	670	0.00000	825	0.00044	980	0.00044	1135	0.00003	1290	0.00000	1445	0.00014	1600	0.00064	1755	0.00007	1910	0.00040
210	0.00000	365	0.00001	520	0.00000	675	0.00000	830	0.00000	985	0.00076	1140	0.00072	1295	0.00000	1450	0.00000	1605	0.00037	1760	0.00000	1915	0.00000
215	0.00002	370	0.00001	525	0.00000	680	0.00000	835	0.00096	990	0.00039	1145	0.00094	1300	0.00006	1455	0.00000	1610	0.00000	1765	0.00000	1920	0.00000
220	0.00002	375	0.00001	530	0.00000	685	0.00000	840	0.00370	995	0.00016	1150	0.00093	1305	0.00014	1460	0.00000	1615	0.00000	1770	0.00000	1925	0.00000
225	0.00000	380	0.00001	535	0.00000	690	0.00000	845	0.00601	1000	0.00000	1155	0.00009	1310	0.00000	1465	0.00000	1620	0.00000	1775	0.00000	1930	0.00000
230	0.00000	385	0.00000	540	0.00000	695	0.00000	850	0.00529	1005	0.00000	1160	0.00000	1315	0.00000	1470	0.00000	1625	0.00000	1780	0.00000	1935	0.00000
235	0.00000	390	0.00000	545	0.00000	700	0.00001	855	0.00377	1010	0.00000	1165	0.00000	1320	0.00000	1475	0.00056	1630	0.00000	1785	0.00000	1940	0.00000
240	0.00000	395	0.00000	550	0.00000	705	0.00001	860	0.00102	1015	0.00000	1170	0.00000	1325	0.00000	1480	0.00078	1635	0.00000	1790	0.00000	1945	0.00126
245	0.00000	400	0.00000	555	0.00000	710	0.00002	865	0.00048	1020	0.00000	1175	0.00014	1330	0.00000	1485	0.00014	1640	0.00000	1795	0.00000	1950	0.00288
250	0.00000	405	0.00000	560	0.00000	715	0.00002	870	0.00038	1025	0.00019	1180	0.00039	1335	0.00000	1490	0.00002	1645	0.00000	1800	0.00000	1955	0.00394
255	0.00000	410	0.00000	565	0.00000	720	0.00001	875	0.00150	1030	0.00043	1185	0.00082	1340	0.00000	1495	0.00000	1650	0.00000	1805	0.00000	1960	0.00312
260	0.00000	415	0.00001	570	0.00000	725	0.00001	880	0.00190	1035	0.00015	1190	0.00102	1345	0.00000	1500	0.00000	1655	0.00011	1810	0.00040	1965	0.00352
265	0.00002	420	0.00001	575	0.00000	730	0.00000	885	0.00271	1040	0.00015	1195	0.00101	1350	0.00053	1505	0.00000	1660	0.00000	1815	0.00253	1970	0.00247
270	0.00001	425	0.00001	580	0.00000	735	0.00000	890	0.00000	1045	0.00004	1200	0.00078	1355	0.00112	1510	0.00000	1665	0.00033	1820	0.00507	1975	0.00180
275	0.00000	430	0.00000	585	0.00001	740	0.00000	895	0.00280	1050	0.00019	1205	0.00046	1360	0.00117	1515	0.00000	1670	0.00050	1825	0.00517	1980	0.00058
280	0.00000	435	0.00000	590	0.00001	745	0.00000	900	0.00000	1055	0.00000	1210	0.00000	1365	0.00138	1520	0.00000	1675	0.00123	1830	0.00347	1985	0.00000
285	0.00000	440	0.00000	595	0.00001	750	0.00000	905	0.00000	1060	0.00000	1215	0.00000	1370	0.00133	1525	0.00000	1680	0.00085	1835	0.00058	1990	0.00006
290	0.00000	445	0.00000	600	0.00000	755	0.00000	910	0.00000	1065	0.00000	1220	0.00000	1375	0.00114	1530	0.00035	1685	0.00064	1840	0.00000	1995	0.00203
295	0.00000	450	0.00000	605	0.00000	760	0.00000	915	0.00000	1070	0.00000	1225	0.00000	1380	0.00032	1535	0.00055	1690	0.00013	1845	0.00000	2000	0.00375
300	0.00000	455	0.00000	610	0.00000	765	0.00000	920	0.00000	1075	0.00000	1230	0.00000	1385	0.00000	1540	0.00020	1695	0.00157	1850	0.00000		
305	0.00000	460	0.00001	615	0.00000	770	0.00000	925	0.00000	1080	0.00004	1235	0.00000	1390	0.00000	1545	0.00010	1700	0.00229	1855	0.00000		
310	0.00001	465	0.00001	620	0.00000	775	0.00000	930	0.00006	1085	0.00000	1240	0.00000	1395	0.00052	1550	0.00069	1705	0.00224	1860	0.00251		
315	0.00003	470	0.00001	625	0.00000	780	0.00000	935	0.00084	1090	0.00052	1245	0.00000	1400	0.00000	1555	0.00072	1710	0.00243	1865	0.00539		
320	0.00002	475	0.00000	630	0.00000	785	0.00012	940	0.00152	1095	0.00075	1250	0.00043	1405	0.00061	1560	0.00043	1715	0.00194	1870	0.00624		
325	0.00002	480	0.00000	635	0.00000	790	0.00000	945	0.00202	1100	0.00074	1255	0.00069	1410	0.00016	1565	0.00050	1720	0.00134	1875	0.00573		
330	0.00002	485	0.00000	640	0.00000	795	0.00074	950	0.00187	1105	0.00000	1260	0.00088	1415	0.00000	1570	0.00097	1725	0.00029	1880	0.00372		
335	0.00001	490	0.00000	645	0.00000	800	0.00088	955	0.00125	1110	0.00000	1265	0.00095	1420	0.00025	1575	0.00136	1730	0.00000	1885	0.00190		
340	0.00000	495	0.00000	650	0.00000	805	0.00046	960	0.00019	1115	0.00000	1270	0.00097	1425	0.00028	1580	0.00145	1735	0.00000	1890	0.00017		
345	0.00000	500	0.00000	655	0.00000	810	0.00000	965	0.00000	1120	0.00000	1275	0.00053	1430	0.00000	1585	0.00148	1740	0.00000	1895	0.00026		
350	0.00000	505	0.00000	660	0.00000	815	0.00000	970	0.00000	1125	0.00000	1280	0.00006	1435	0.00000	1590	0.00119	1745	0.00000	1900	0.00017		



<b>GENERAL</b>	
Test Type: Non-lens Area	
Darkest Shade 14 @ 23C	
Spectrophotometer: Hitachi U-4100	
<b>RESULTS</b>	
Near UV [T(NUV)] = 0.000010	<b>Pass</b>
Far UV [T(EUV)] = 0.000003	<b>Pass</b>
Luminous Y(A) = 0.000001	<b>Pass</b>
Infrared [T(IR)] = 0.000569	<b>Pass</b>
Blue Light TB = 0.000003	<b>Pass</b>

**Z-WND040317-01-01 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