REPORT

545 E. Algonquin Rd., Arlington Heights, IL 60005

Project No. G102748333 Date: January 25, 2017

REPORT NO. 102748333CHI-017

TEST OF ONE LED EXPLOSION PROOF LIGHT

MODEL NO. EPL-NW100
LED MODEL NO. GENESIS PHOTONICS KXTP-3535
DRIVER MODEL NO. MEANWELL HLG-100H-42A

RENDERED TO

SUPER BRIGHT LEDS, INC.
4400 EARTH CITY EXPRESSWAY
SAINT LOUIS, MO 63045

TEST: Electrical and Photometric tests as required to the IESNA test standard.

AUTHORIZATION: The testing performed was authorized by signed quote number Qu-00723537-3.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

ANSI NEMA ANSLG C78.377: 2012: Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one production sample of model number EPL-NW100. The sample was received by Intertek on January 20, 2017, in undamaged condition and one sample was tested as received. The sample designation was AH01202017035722A.

DATES OF TESTS: January 23, 2017 through January 25, 2017.

SUMMARY

Model No.:	EPL-NW100
Description:	LED Explosion Proof Light

	Result	
Criteria	Sphere	Goniometer
Total Lumen Output (Lumens)	9024	8569
Total Power (W)	99.44	99.21
Luminaire Efficacy (LPW)	90.75	86.37

Criteria	Result
Power Factor at 120Vac	0.993
Power Factor at 277Vac	0.934
Current ATHD % at 120Vac	9.45
Current ATHD % at 277Vac	16.74
Correlated Color Temperature (CCT - K)	4126
Color Rendering Index (CRI - Ra)	68.4
Color Rendering Index (CRI - R9)	-51.3
DUV	0.006
Chromaticity Coordinate (x)	0.379
Chromaticity Coordinate (y)	0.389
Chromaticity Coordinate (u')	0.219
Chromaticity Coordinate (v')	0.506

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Yokogawa Power Meter	WT210	146919	07/11/16	07/11/17	01/25/17
Omega Newport Thermometer	DPI8-C24	146920	10/07/16	10/07/17	01/25/17
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	01/25/17
Newport Thermohygrometer	iServer	146956	01/06/17	01/06/18	01/25/17
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	01/25/17
Labsphere Spectroradiometer	CDS1100	CHI0091	VBU	VBU	01/23/17
3 Meter Sphere	SPR600	CHI0088	VBU	VBU	01/23/17
Elgar AC Power Supply	CW1251M	146112	VBU	VBU	01/23/17
Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU	01/23/17
Newport Humidity Recorder	iTHX-SD	146382	06/27/16	06/27/17	01/23/17
Yokogawa Power Meter	WT1600	146768	01/10/17	01/10/18	01/23/17
Fluke K/J Thermometer	52	146004	01/10/17	01/10/18	01/23/17

TEST METHODS

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IESNA LM-79.

Photometric and Electrical Measurements – Integrating Sphere Method

A Labsphere Model CDS 1100 CCD Array Spectroradiometer and Two Meter or Ten Foot Sphere was used to measure correlated color temperature, chromaticity coordinates, and the color rendering index for each SSL unit.

Ambient temperature was measured at a position inside the sphere. Each SSL unit was operated on the client provided driver at the rated input voltage in its designated orientation. Each SSL unit was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

The calibration of the sphere photometer-spectroradiometer system is traceable to the National Institute of Standards and Technology.

Photometric and Electrical Measurements – Distribution Method

A LSI Type C High Speed Model 6440 Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

Some graphics were created with Photometrics Plus software.

RESULTS OF TEST

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) - Integrating Sphere Method

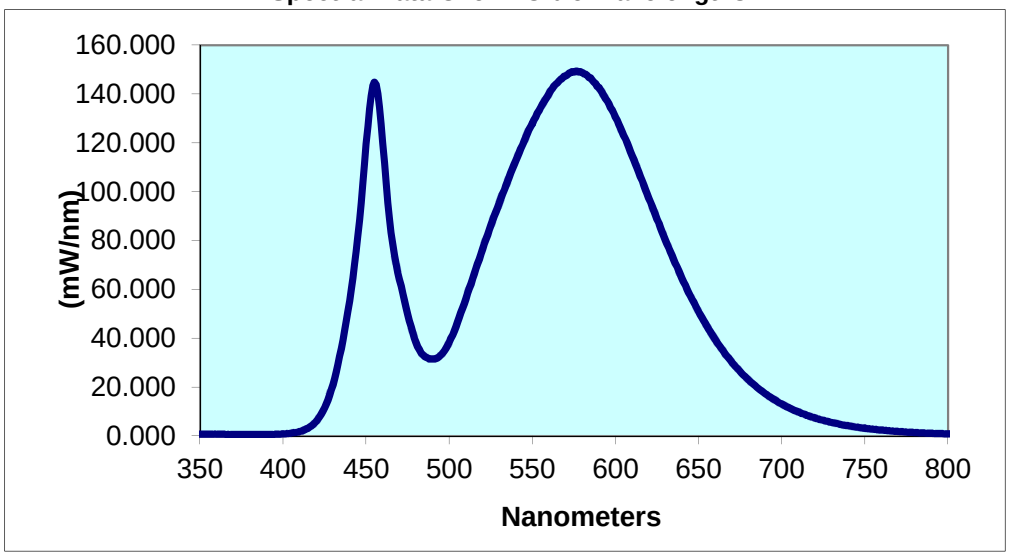
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH01202017035722A	Up	120.0	834.7	99.44	0.993	9.45	9024	90.75
		277.0	383.3	99.17	0.934	16.74		

Correlated Color Temperature (K)	CRI -Ra	CRI -R9	DUV	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
4126	68.4	-51.3	0.006	0.379	0.389	0.219	0.506

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.656	440	55.33	530	95.33	620	97.41	710	9.802
355	0.639	445	81.48	535	104.2	625	88.81	715	8.472
360	0.640	450	119.5	540	112.6	630	80.29	720	7.368
365	0.623	455	144.8	545	120.8	635	72.22	725	6.390
370	0.569	460	119.9	550	128.0	640	64.59	730	5.534
375	0.556	465	83.24	555	134.6	645	57.44	735	4.800
380	0.501	470	64.06	560	140.2	650	50.82	740	4.171
385	0.498	475	49.79	565	144.6	655	44.94	745	3.605
390	0.524	480	38.30	570	147.5	660	39.53	750	3.125
395	0.618	485	32.66	575	149.0	665	34.61	755	2.717
400	0.794	490	31.45	580	148.8	670	30.21	760	2.375
405	1.152	495	33.15	585	146.6	675	26.39	765	2.064
410	1.837	500	38.40	590	142.6	680	22.99	770	1.801
415	3.228	505	46.66	595	137.1	685	20.00	775	1.568
420	5.988	510	56.14	600	130.6	690	17.38	780	1.359
425	11.49	515	66.36	605	123.1	695	15.08		
430	20.96	520	76.47	610	114.9	700	13.08		
435	35.84	525	86.21	615	106.2	705	11.33		

Spectral Data Over Visible Wavelengths



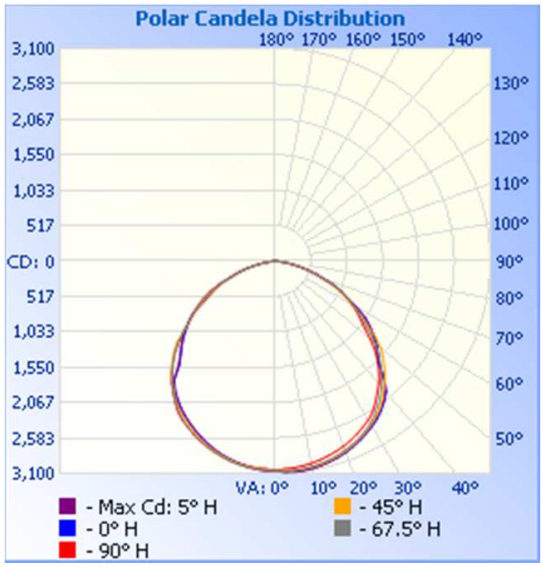
RESULTS OF TEST (cont'd)

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (LPW)
AH01202017035722A	Up	120.0	831.7	99.21	0.994	8569	86.37

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	3059	3059	3059	3059	3059
5	3079	3089	3078	3067	3069
10	3068	3075	3068	3058	3059
15	3031	3031	3033	3026	3023
20	2973	2966	2970	2969	2967
25	2889	2878	2884	2889	2885
30	2790	2773	2779	2782	2768
35	2660	2648	2643	2638	2631
40	2486	2471	2470	2466	2454
45	2118	2102	2138	2224	2239
50	1913	1893	1899	1892	1911
55	1668	1659	1667	1658	1638
60	1362	1355	1389	1385	1365
65	1052	1050	1055	1034	1023
70	729	728	733	758	714
75	465	459	452	439	453
80	218	219	205	206	207
85	20	20	21	24	29
90	0	0	0	0	0

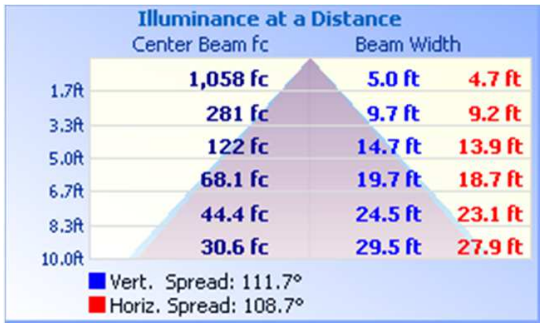


RESULTS OF TEST (cont'd)

Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



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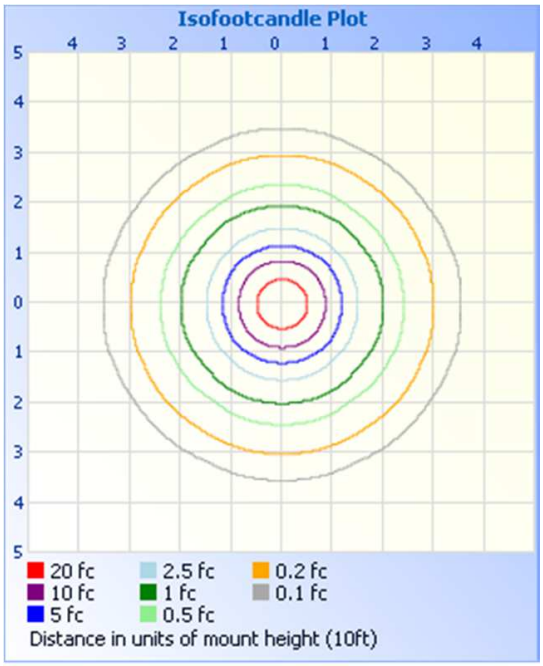


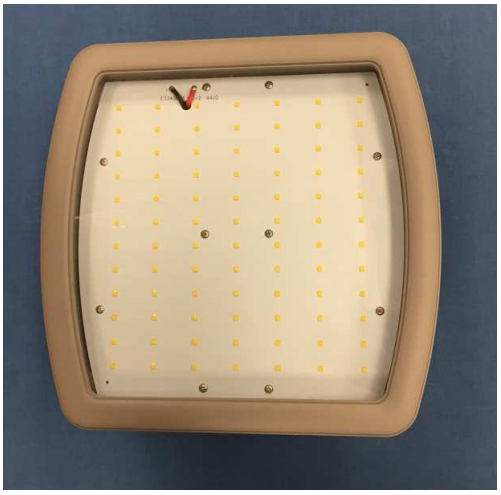
Zonal Lumen Summary and Percentages at 25°C

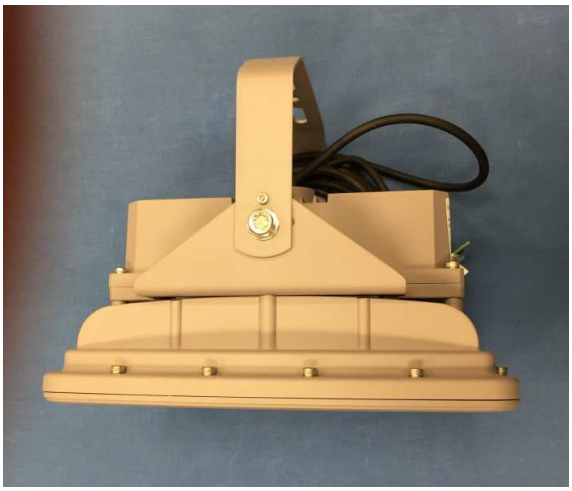
Zone	Lumens	% Luminaire
0-30	2429	28.3
0-40	4022	46.9
0-60	7048	82.2
60-90	1522	17.8
0-90	8569	100.0
90-180	0.0	0.0
0-180	8569	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	290.7	3.4
10-20	841.2	9.8
20-30	1297	15.1
30-40	1592	18.6
40-50	1625	19.0
50-60	1400	16.3
60-70	989.2	11.5
70-80	468.8	5.5
80-90	63.8	0.7

PICTURES (not to scale)





CONCLUSION

The results tabulated in this report are representative of the actual test samples submitted for this report only. The data is provided to the client for further evaluation. Compliance to the referenced specification requirements was not determined in this report.

In Charge Of Tests:

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Lighting Division

Report Reviewed By:

Timothy Quigley
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Attachment: None