

Report No: L111705103**Issue Date:** 11/21/2017**Report Prepared For:** Bartco Lighting
5761 Research Drive, Huntington Beach, CA 92649**Model Number:** BSS255-4-35-DIRECT-A LENS**Test:** Photometric/Colorimetric/Electrical Test

Standards Used: Appropriate part or all test guidelines were used for test performed:
IESNA LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products
ANSI C82.77:2002: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with direct side turned on only with flat lens.

Sample Arrival Date: 11/15/17

Date of Tests: 11/17/17 - 11/20/17

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S1	11/28/17
ITECH	IT6122	PS-DC03-S1	11/28/17
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/28/17
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Summary

Manufacturer:	Bartco Lighting
Model Number:	BSS255-4-35-DIRECT-A LENS
Driver Model Number:	PHILIPS ADVANCE XI040C110V054BST1
Total Lumens:	2278.78
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.22
Input Power (W):	26.68
Input Power Factor:	0.99
Current ATHD @ 120V(%):	9%
Current ATHD @ 277V(%):	N/A
Efficacy:	85
Color Rendering Index (CRI):	95
Correlated Color Temperature (K):	3388
Chromaticity Coordinate x:	0.4126
Chromaticity Coordinate y:	0.3960
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	2:10

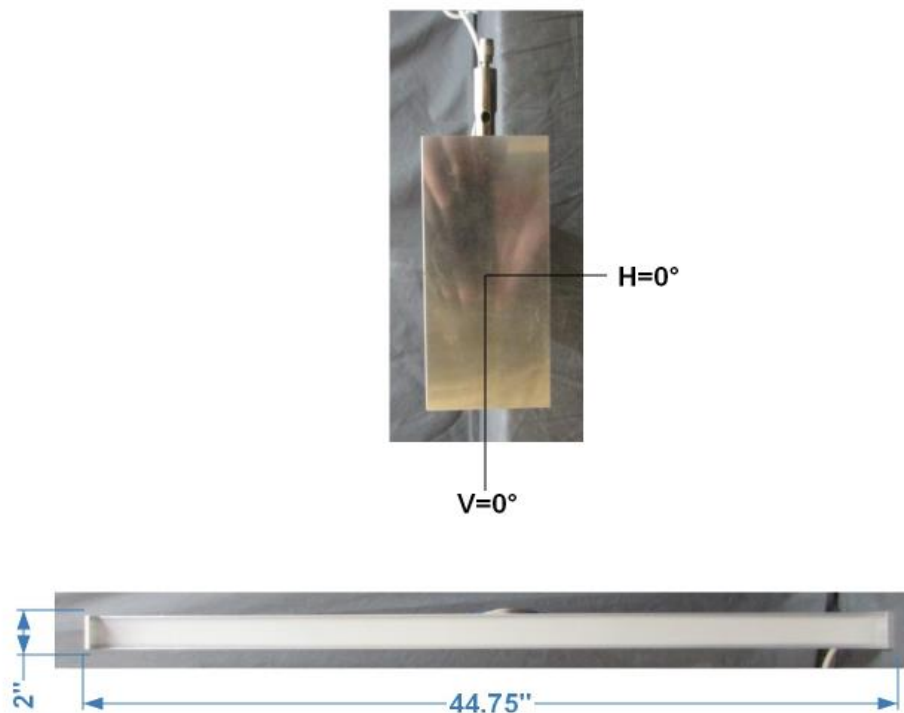
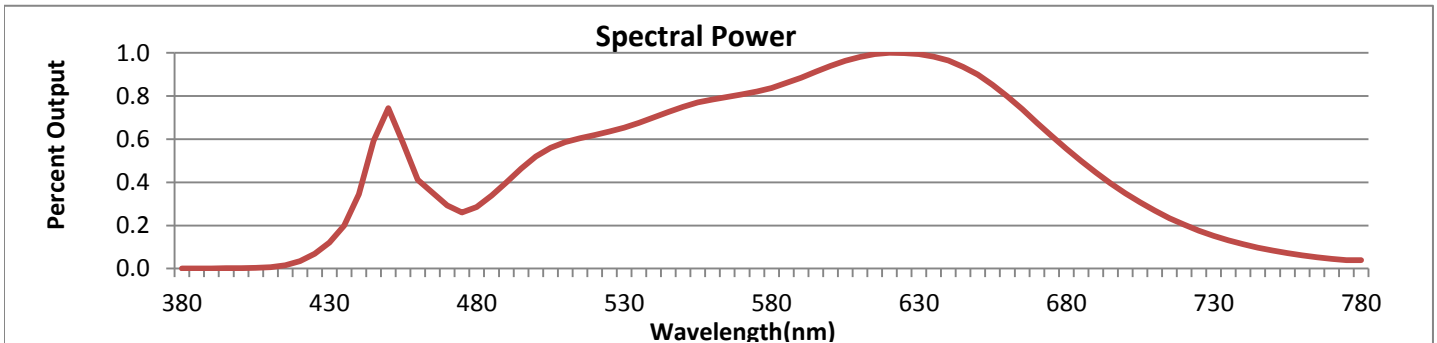


FIG. 1 LUMINAIRE

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.



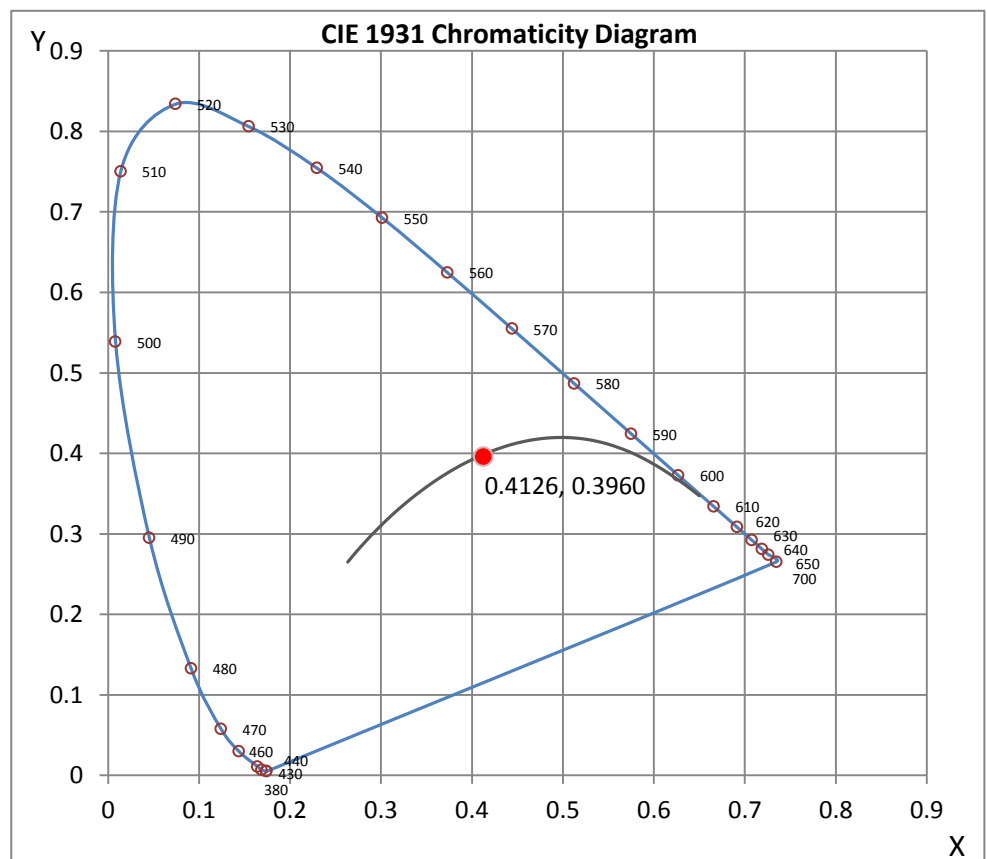
Wavelength	W/m ² nm	440	0.3451	510	0.5863	580	0.8381	650	0.8991	720	0.2032
380	0.0010	450	0.7435	520	0.6195	590	0.8857	660	0.7987	730	0.1517
390	0.0012	460	0.4117	530	0.6537	600	0.9404	670	0.6759	740	0.1128
400	0.0018	470	0.2927	540	0.7005	610	0.9814	680	0.5562	750	0.0837
410	0.0067	480	0.2851	550	0.7505	620	1.0000	690	0.4453	760	0.0617
420	0.0353	490	0.3998	560	0.7844	630	0.9949	700	0.3496	770	0.0455
430	0.1210	500	0.5194	570	0.8080	640	0.9644	710	0.2688	780	0.0392

CRI & CCT

x	0.4126
y	0.3960
u'	0.2383
v'	0.5145
CRI	94.60
CCT	3388
Duv	0.00075

R Values

R1	94.95
R2	96.24
R3	96.44
R4	95.68
R5	94.59
R6	94.72
R7	95.57
R8	88.82
R9	72.45
R10	90.67
R11	96.29
R12	81.43
R13	95.22
R14	97.47



*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : Keyur Patel

Test Report Released by:



Jeff Ahn
Engineering Manager

Test Report Reviewed by:



Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 9*



8165 E. Kaiser Blvd. Anaheim, CA 92808
www.lightlaboratory.com

Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111705103.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L11705103
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUE DATE] 11/21/2017
[MANUFAC] Bartco Lighting
[LUMCAT] BSS255-4-35-DIRECT-A LENS
[LUMINAIRE] LED Architectural Direct/indirect Rectangular Fixture
[BALLASTCAT] PHILIPS ADVANCE XI040C110V054BST1
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[TEST CONDITION] FIXTURE IS TESTED WITH DIRECT SIDE TURNED ON ONLY WITH FLAT LENS.
[INPUT] 120VAC, 26.68W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2279
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	85
Total Luminaire Watts	26.68
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.06
Spacing Criterion (90-270)	1.16
Spacing Criterion (Diagonal)	1.20
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.17 ft
Luminous Width (90-270)	3.67 ft
Luminous Height	0.38 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3504	4675	12348
55	2287	3155	10236
65	1415	1956	8143
75	756	1031	5908
85	216	308	2898

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111705103.IES**

CANDELA TABULATION

	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
5	1056	1055	1054	1054	1054	1053	1053	1053	1053	1053
10	1022	1021	1021	1021	1021	1022	1024	1023	1024	1025
15	969	967	968	969	971	971	972	975	979	982
20	898	897	898	901	901	904	908	912	917	921
25	817	815	818	819	822	826	831	838	842	848
30	728	727	729	732	736	741	747	753	760	767
35	637	637	639	643	646	652	658	665	672	680
40	549	549	551	554	559	564	570	578	585	594
45	465	466	468	471	475	479	486	494	501	509
50	388	389	391	394	397	401	407	414	420	427
55	319	319	321	324	326	330	334	339	345	353
60	257	257	259	259	258	261	264	270	276	283
65	201	201	200	196	196	197	201	206	211	218
70	150	149	143	142	144	146	148	151	155	160
75	106	99	99	100	100	101	102	104	108	111
80	67	61	62	62	62	62	63	64	66	69
85	29	29	29	29	29	29	28	29	30	31
90	0	0	0	0	0	0	0	0	0	0

Vert. Horizontal Angles

	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>
0	1067	1067	1067	1067	1067	1067	1067	1067	1067
5	1054	1054	1055	1055	1056	1057	1057	1058	1059
10	1027	1029	1031	1031	1032	1033	1034	1035	1037
15	984	986	988	991	995	996	996	998	1001
20	925	929	934	936	939	944	944	945	948
25	856	861	865	871	874	878	882	882	885
30	774	782	789	794	801	805	811	811	814
35	689	699	706	713	719	725	730	731	733
40	603	612	619	627	633	639	642	644	646
45	517	525	533	540	548	553	556	558	559
50	435	443	449	456	462	467	470	473	475
55	359	363	366	374	378	382	385	389	391
60	288	294	298	301	305	309	312	313	314
65	224	228	232	235	238	240	241	242	244
70	165	170	173	175	177	178	179	180	180
75	115	119	121	122	124	123	123	123	123
80	71	75	77	76	77	81	80	80	80
85	33	34	36	36	36	37	35	34	32
90	0	0	0	0	0	0	0	0	0

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	375.81	N.A.	16.50
0-30	766.08	N.A.	33.60
0-40	1193.04	N.A.	52.40
0-60	1904.55	N.A.	83.60
0-80	2242.33	N.A.	98.40
0-90	2278.78	N.A.	100.00
10-90	2178.95	N.A.	95.60
20-40	817.23	N.A.	35.90
20-50	1211.96	N.A.	53.20
40-70	929.40	N.A.	40.80
60-80	337.78	N.A.	14.80
70-80	119.89	N.A.	5.30
80-90	36.45	N.A.	1.60
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	2278.78	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	99.83
10-20	275.97
20-30	390.28
30-40	426.95
40-50	394.73
50-60	316.78
60-70	217.89
70-80	119.89
80-90	36.45
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

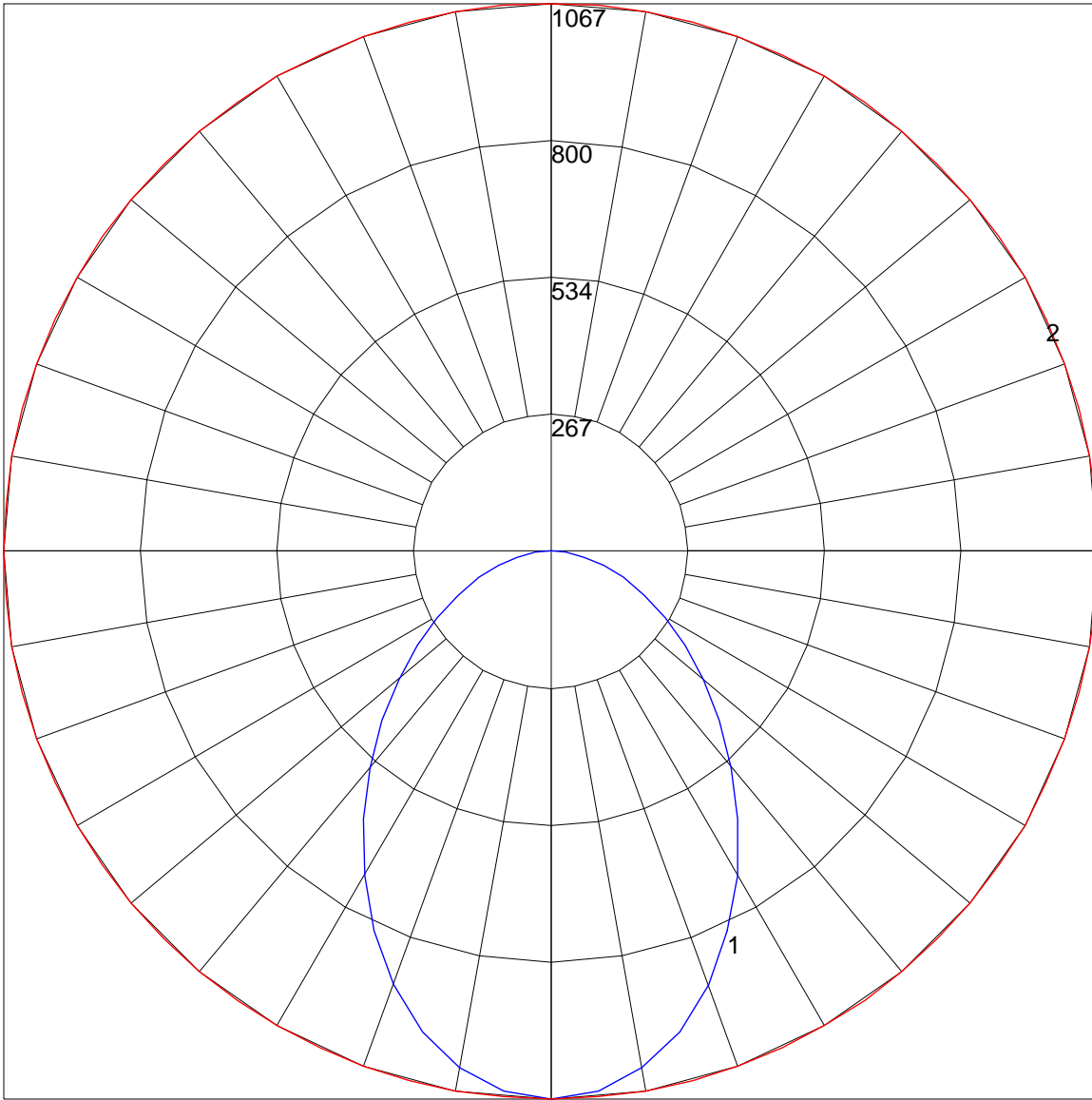
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0	
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	96	107	103	99	96	99	96	93	95	92	90	91	89	88	85
2	100	93	86	81	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73
3	92	82	75	69	69	90	81	74	68	78	72	67	75	70	66	73	68	65	63
4	85	74	65	59	59	83	72	65	59	70	63	58	68	62	57	66	61	56	54
5	79	66	58	52	52	77	65	57	51	63	56	51	61	55	50	59	54	50	48
6	73	60	52	46	46	71	59	51	45	58	50	45	56	50	45	54	49	44	42
7	68	55	47	41	41	66	54	46	41	53	46	40	51	45	40	50	44	40	38
8	63	50	42	37	37	62	50	42	37	48	41	36	47	41	36	46	40	36	34
9	59	47	39	33	33	58	46	38	33	45	38	33	44	37	33	43	37	33	31
10	56	43	36	30	30	55	43	35	30	42	35	30	41	35	30	40	34	30	28

POLAR GRAPH



Maximum Candela = 1067 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)