



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

Report No: L051706901



Report No: L051706901

Issue Date: 5/24/2017

Report Prepared For: Bartco Lighting
5761 Research Drive, Huntington Beach, CA. 92649

Model Number: BSS420

Test: Electrical and Photometric tests

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 no special conditions.

Sample Arrival Date: 5/22/17

Date of Tests: 5/23/17 - 5/24/17

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:	BSS420
Driver Model Number:	PHILIPS ADVANCE XI040C110V054BST1
Total Lumens:	3240.18
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.29
Input Power (W):	32.42
Input Power Factor:	1.00
Current ATHD @ 120V(%):	7%
Current ATHD @ 277V(%):	N/A
Efficacy:	100
Color Rendering Index (CRI):	86
Correlated Color Temperature (K):	3521
Chromaticity Coordinate x:	0.4031
Chromaticity Coordinate y:	0.3872
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:20

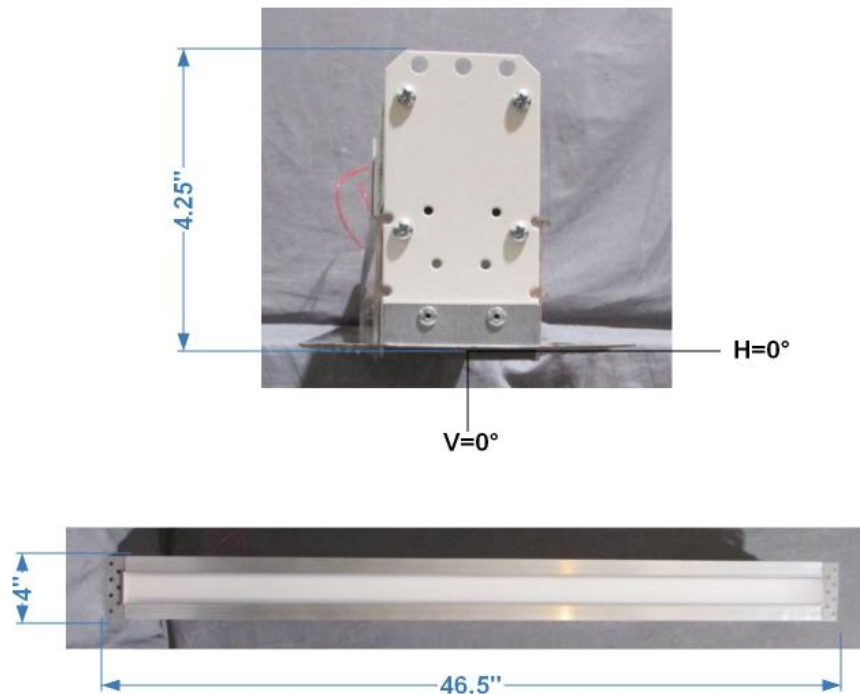
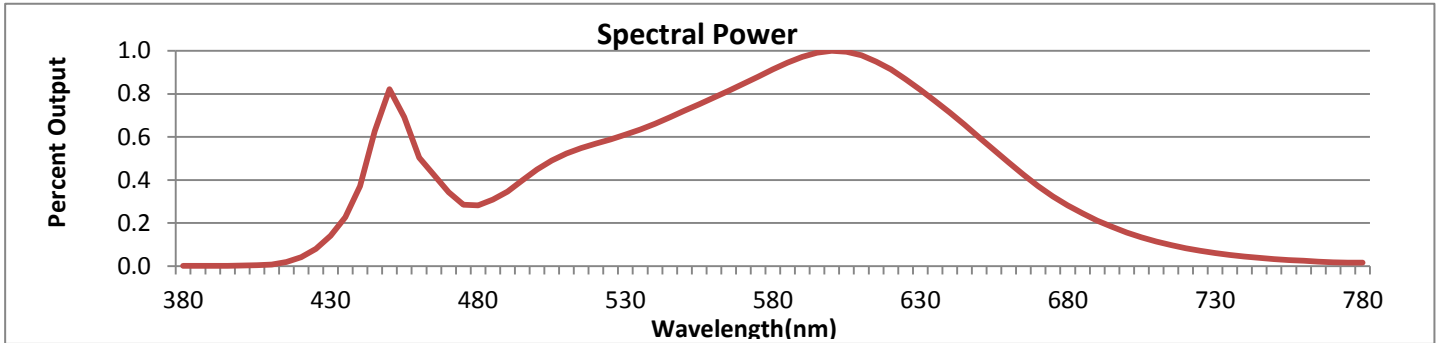


FIG. 1 LUMINAIRE

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



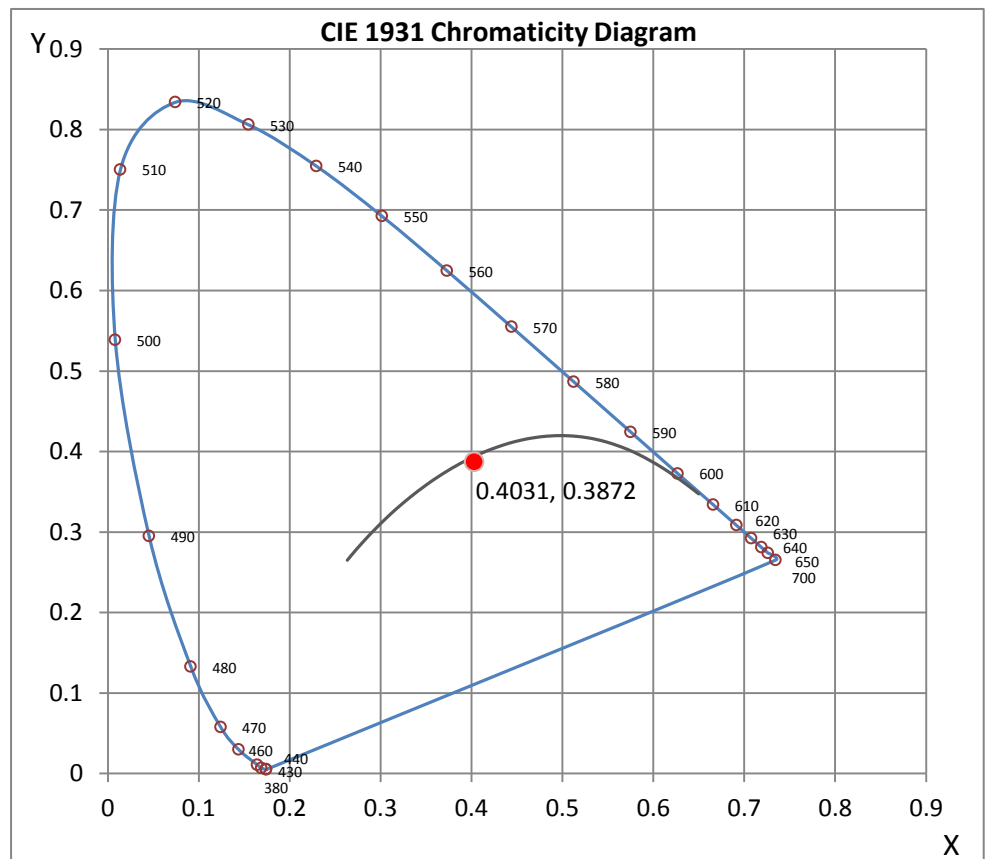
Wavelength	W/m ² nm	440	0.3713	510	0.5236	580	0.9134	650	0.5975	720	0.0835
380	0.0011	450	0.8220	520	0.5698	590	0.9724	660	0.4814	730	0.0610
390	0.0012	460	0.5030	530	0.6102	600	1.0000	670	0.3718	740	0.0445
400	0.0020	470	0.3437	540	0.6614	610	0.9789	680	0.2827	750	0.0329
410	0.0076	480	0.2822	550	0.7219	620	0.9135	690	0.2112	760	0.0243
420	0.0410	490	0.3468	560	0.7828	630	0.8188	700	0.1563	770	0.0182
430	0.1410	500	0.4481	570	0.8466	640	0.7131	710	0.1146	780	0.0158

CRI & CCT

x	0.4031
y	0.3872
u'	0.2357
v'	0.5095
CRI	85.50
CCT	3521
Duv	-0.00107

R Values

R1	84.34
R2	92.22
R3	96.71
R4	84.20
R5	84.58
R6	89.45
R7	86.00
R8	66.66
R9	20.43
R10	81.58
R11	83.75
R12	72.05
R13	86.36
R14	98.45



*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 : L051706901.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L051706901
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
 [ISSUE DATE] 5/24/2017
 [MANUFAC] Bartco Lighting
 [LUMCAT] BSS420
 [LUMINAIRE] Recessed Slot Light
 [BALLASTCAT] PHILIPS ADVANCE XI040C110V054BST1
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 120VAC, 32.42W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3240
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	100
Total Luminaire Watts	32.42
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.10
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.24
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.15 ft
Luminous Width (90-270)	3.71 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	18447	19813	21289
55	15969	17283	18799
65	13900	15089	16415
75	12170	13290	14410
85	11086	12416	13968

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L051706901.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	1416	1416	1416	1416	1416	1416	1416	1416	1416	1416
5	1407	1407	1407	1407	1407	1407	1407	1407	1407	1408
10	1371	1371	1371	1371	1372	1373	1373	1374	1375	1376
15	1310	1311	1311	1312	1313	1315	1317	1319	1321	1323
20	1228	1228	1229	1231	1233	1236	1240	1243	1248	1252
25	1129	1129	1131	1133	1137	1141	1146	1152	1157	1163
30	1018	1019	1021	1024	1028	1034	1040	1046	1053	1060
35	903	903	905	909	913	920	926	934	942	951
40	787	788	790	793	798	805	812	820	828	838
45	675	676	678	682	686	692	699	707	716	725
50	570	571	573	576	580	586	592	600	608	616
55	474	474	476	478	482	487	493	499	506	513
60	385	385	386	389	392	396	400	406	412	418
65	304	304	306	307	310	313	317	321	325	330
70	230	230	231	233	235	237	240	243	247	250
75	163	163	164	165	166	168	170	173	175	178
80	103	103	104	104	105	107	108	110	111	113
85	50	50	51	51	52	53	53	54	55	56
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	1416	1416	1416	1416	1416	1416	1416	1416	1416
5	1408	1408	1408	1408	1408	1408	1408	1408	1408
10	1377	1378	1379	1380	1381	1381	1382	1382	1382
15	1326	1328	1331	1333	1335	1337	1338	1339	1339
20	1257	1260	1263	1267	1269	1272	1274	1275	1275
25	1168	1174	1179	1184	1188	1192	1194	1196	1197
30	1068	1076	1083	1089	1094	1099	1102	1104	1104
35	960	969	977	984	990	995	999	1001	1002
40	847	857	865	873	880	885	889	891	892
45	734	743	752	761	767	773	776	779	779
50	625	634	642	650	656	661	665	667	667
55	521	529	536	543	548	553	556	558	558
60	424	430	437	442	447	451	454	455	455
65	335	340	345	349	353	356	358	359	359
70	254	257	261	264	267	269	271	272	272
75	181	183	185	188	189	191	192	193	193
80	115	117	118	120	121	122	123	123	123
85	57	58	59	60	61	62	63	63	63
90	0	0	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L051706901.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	505.79	N.A.	15.60
0-30	1040.42	N.A.	32.10
0-40	1635.56	N.A.	50.50
0-60	2659.11	N.A.	82.10
0-80	3178.69	N.A.	98.10
0-90	3240.18	N.A.	100.00
10-90	3106.84	N.A.	95.90
20-40	1129.76	N.A.	34.90
20-50	1691.14	N.A.	52.20
40-70	1353.23	N.A.	41.80
60-80	519.57	N.A.	16.00
70-80	189.90	N.A.	5.90
80-90	61.50	N.A.	1.90
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	3240.18	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	133.34
10-20	372.45
20-30	534.63
30-40	595.14
40-50	561.38
50-60	462.18
60-70	329.68
70-80	189.90
80-90	61.50
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

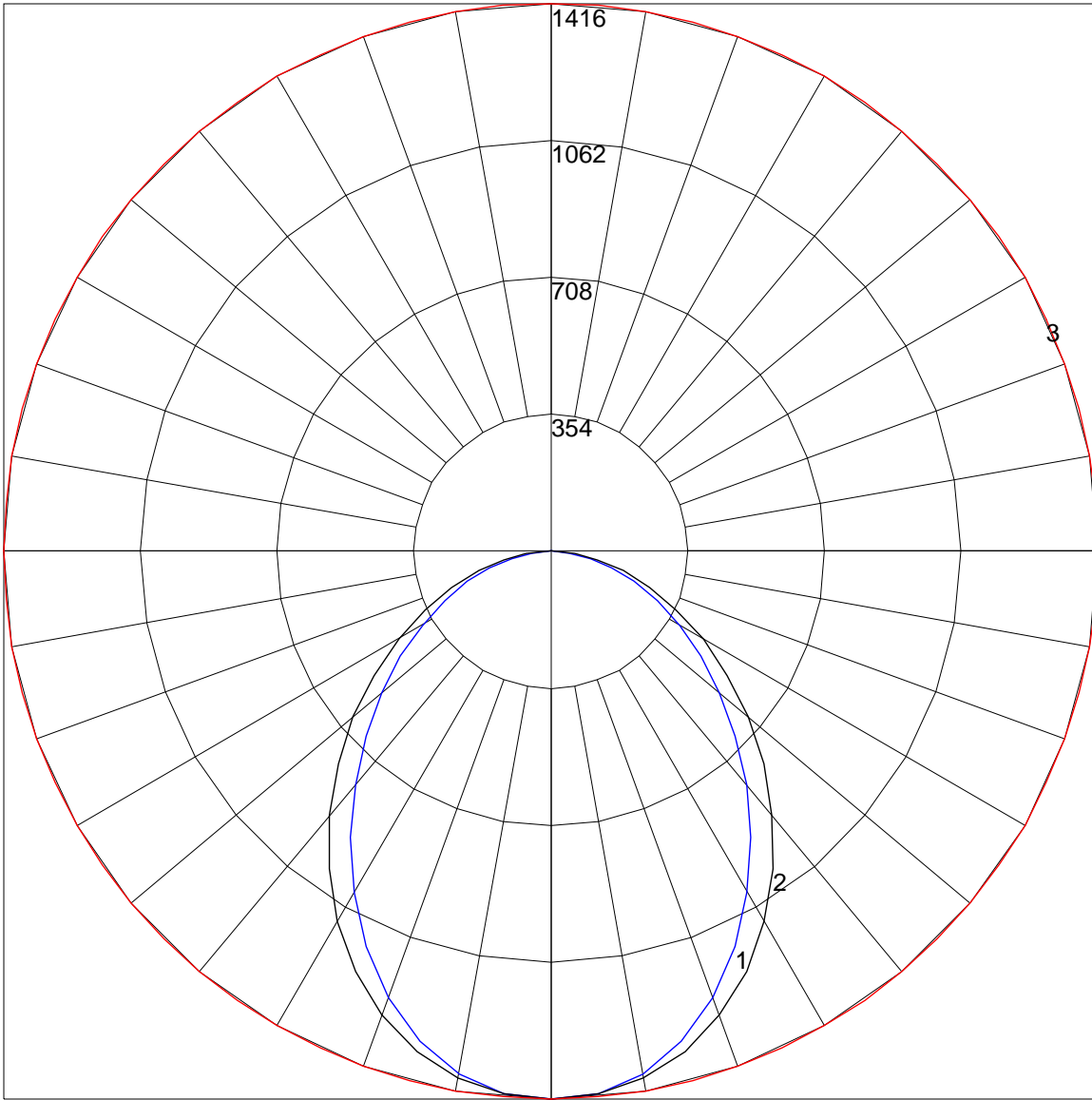
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L051706901.IES

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	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	101	97	107	102	99	95	98	95	92	94	92	90	91	89	87	85
2	100	92	86	80	97	90	84	79	87	82	77	83	79	76	80	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	63	61
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	50	60	54	49	58	53	49	46
6	72	59	51	44	70	58	50	44	57	49	44	55	48	43	53	48	43	41
7	67	54	46	40	65	53	45	39	52	44	39	50	44	39	49	43	39	37
8	63	49	41	36	61	49	41	35	48	40	35	46	40	35	45	39	35	33
9	59	46	38	32	57	45	37	32	44	37	32	43	36	32	42	36	32	30
10	55	42	35	29	54	42	34	29	41	34	29	40	34	29	39	33	29	27

POLAR GRAPH



Maximum Candela = 1416 Located At Horizontal Angle = 0, Vertical Angle = 0

1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

2 - Vertical Plane Through Horizontal Angles (90 - 270)

3 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)