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Report No: L051603201

Date: 5/18/2016



NVLAP LAB CODE 200927-0

Report No: L051603201

Report Prepared For: Colt LED

Model Number: Bicolor GEN3-55W

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. Catalog number is Bicolor GEN3-55W. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 5/16/16

Date of Tests: 5/16/16 - 5/18/16

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	11/18/16
Xitron Power Analyzer	2503AH	MT-EL01	11/30/16
ITECH DC Power Supply	IT6122	PSDC-03-S1	11/17/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/24/16
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:	Colt LED
Model Number:	Bicolor GEN3-55W
Driver Model Number:	N/A
Total Lumens:	3996.86
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.43
Input Power (W):	49.10
Input Power Factor:	0.95
Current ATHD @ 120V(%):	10%
Current ATHD @ 277V(%):	N/A
Efficacy:	81
Color Rendering Index (CRI):	97
Correlated Color Temperature (K):	5854
Chromaticity Coordinate x:	0.3251
Chromaticity Coordinate y:	0.3302
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:00
Off State Power(W):	0.00

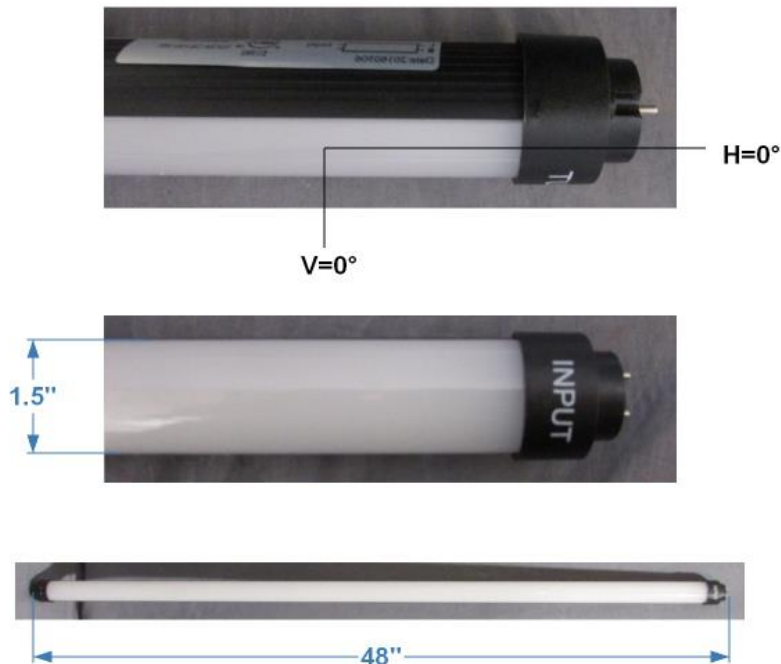
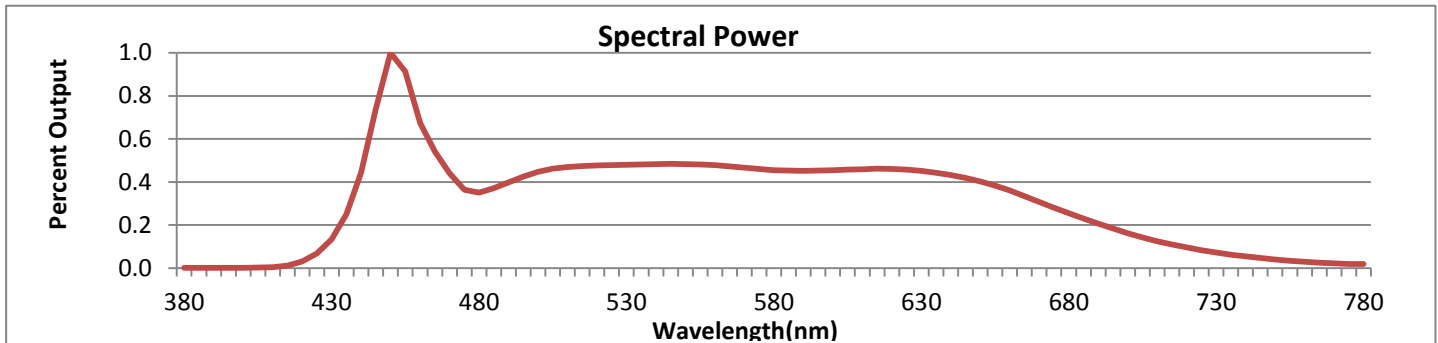


FIG. 1 LUMINAIRE

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



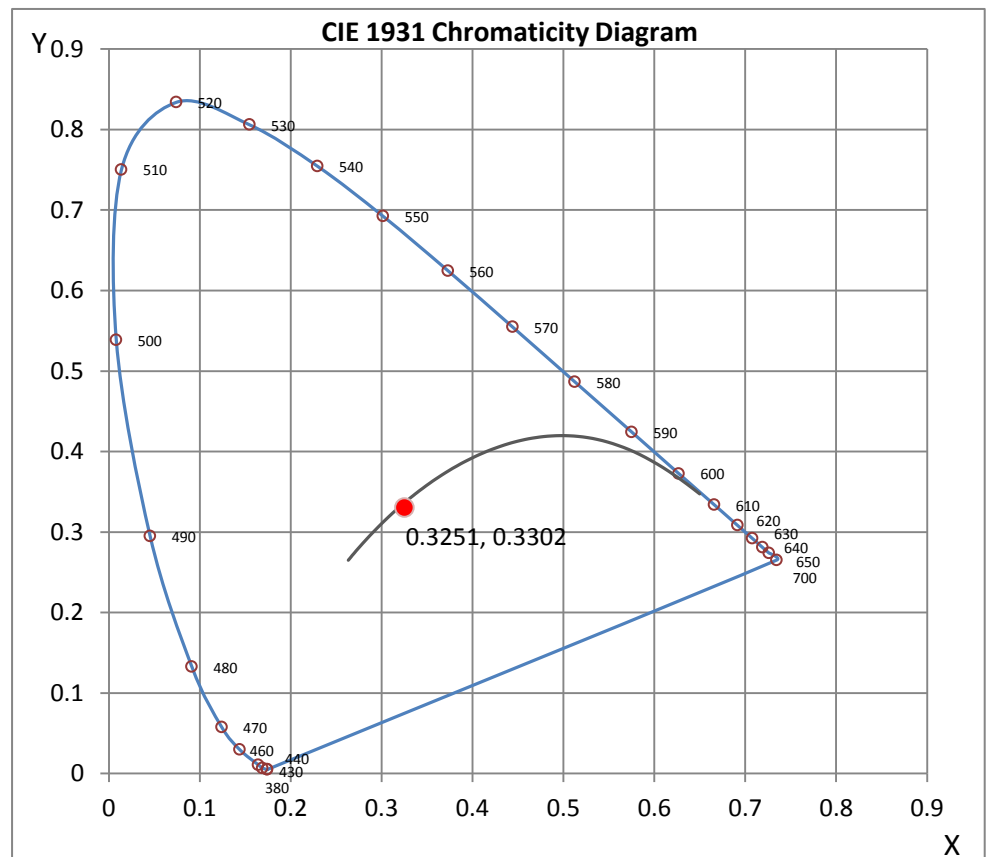
Wavelength	W/m ² nm	440	0.4431	510	0.4694	580	0.4550	650	0.4030	720	0.0960
380	0.0010	450	1.0000	520	0.4772	590	0.4516	660	0.3604	730	0.0726
390	0.0011	460	0.6737	530	0.4799	600	0.4551	670	0.3071	740	0.0542
400	0.0016	470	0.4391	540	0.4830	610	0.4598	680	0.2553	750	0.0404
410	0.0040	480	0.3509	550	0.4835	620	0.4609	690	0.2061	760	0.0298
420	0.0303	490	0.3976	560	0.4780	630	0.4518	700	0.1621	770	0.0221
430	0.1338	500	0.4471	570	0.4661	640	0.4327	710	0.1253	780	0.0189

CRI & CCT

x	0.3251
y	0.3302
u'	0.2060
v'	0.4708
CRI	97.30
CCT	5854
Duv	-0.00226

R Values

R1	96.76
R2	98.13
R3	96.26
R4	98.65
R5	97.12
R6	94.20
R7	98.37
R8	99.00
R9	97.10
R10	97.02
R11	95.95
R12	77.10
R13	97.54
R14	97.45



*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.

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Test Report Released by:



Jeff Ahn
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Test Report Reviewed by:



Steve Kang
Quality Assurance

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



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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L051603201.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L051603201
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 5/18/2016
 [MANUFAC] COLT LED
 [LUMCAT] Bicolor GEN3-55W
 [LUMINAIRE] LED 4 FOOT LAMP - DAYLIGHT
 [BALLASTCAT] N/A
 [LAMPPOSITION] 0,0
 [LAMPCAT] N/A
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 120VAC, 49.10W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3997
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	81
Total Luminaire Watts	49.1
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.24
Spacing Criterion (90-270)	1.30
Spacing Criterion (Diagonal)	1.40
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	3.71 ft
Luminous Width (90-270)	0.13 ft
Luminous Height	0.04 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	21713	19277	19508
55	20367	18001	18769
65	17894	17006	18404
75	14576	16570	18647
85	6377	17752	20446

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L051603201.IES**

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	1101	1101	1101	1101	1101
5	1095	1095	1095	1096	1098
10	1078	1078	1081	1083	1085
15	1049	1051	1056	1061	1065
20	1011	1013	1021	1031	1035
25	963	966	981	994	1000
30	905	912	930	949	958
35	842	850	874	900	912
40	772	781	812	848	862
45	696	708	749	792	809
50	613	632	681	731	753
55	532	552	612	671	695
60	445	472	544	612	637
65	347	393	478	550	579
70	262	318	414	490	521
75	176	246	354	435	465
80	95	182	298	379	411
85	28	130	248	329	361
90	1	90	204	285	315
95	0	59	165	242	269
100	0	39	131	202	229
105	0	26	103	167	191
110	0	18	80	136	158
115	0	13	61	109	127
120	0	10	45	85	101
125	0	8	34	65	79
130	0	7	25	49	59
135	0	6	18	35	42
140	0	5	14	25	31
145	0	0	10	18	21
150	0	0	8	13	15
155	0	0	7	10	11
160	0	0	6	7	8
165	0	0	5	6	6
170	0	0	0	5	6
175	0	0	0	0	0
180	0	0	0	0	0

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	402.17	N.A.	10.10
0-30	854.08	N.A.	21.40
0-40	1401.93	N.A.	35.10
0-60	2529.22	N.A.	63.30
0-80	3356.01	N.A.	84.00
0-90	3604.95	N.A.	90.20
10-90	3500.83	N.A.	87.60
20-40	999.76	N.A.	25.00
20-50	1578.89	N.A.	39.50
40-70	1595.01	N.A.	39.90
60-80	826.79	N.A.	20.70
70-80	359.07	N.A.	9.00
80-90	248.94	N.A.	6.20
90-110	270.16	N.A.	6.80
90-120	332.14	N.A.	8.30
90-130	365.58	N.A.	9.10
90-150	388.22	N.A.	9.70
90-180	391.90	N.A.	9.80
110-180	121.74	N.A.	3.00
0-180	3996.86	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	104.12
10-20	298.05
20-30	451.91
30-40	547.85
40-50	579.13
50-60	548.16
60-70	467.72
70-80	359.07
80-90	248.94
90-100	165.40
100-110	104.77
110-120	61.98
120-130	33.44
130-140	16.08
140-150	6.55
150-160	2.65
160-170	0.96
170-180	0.07

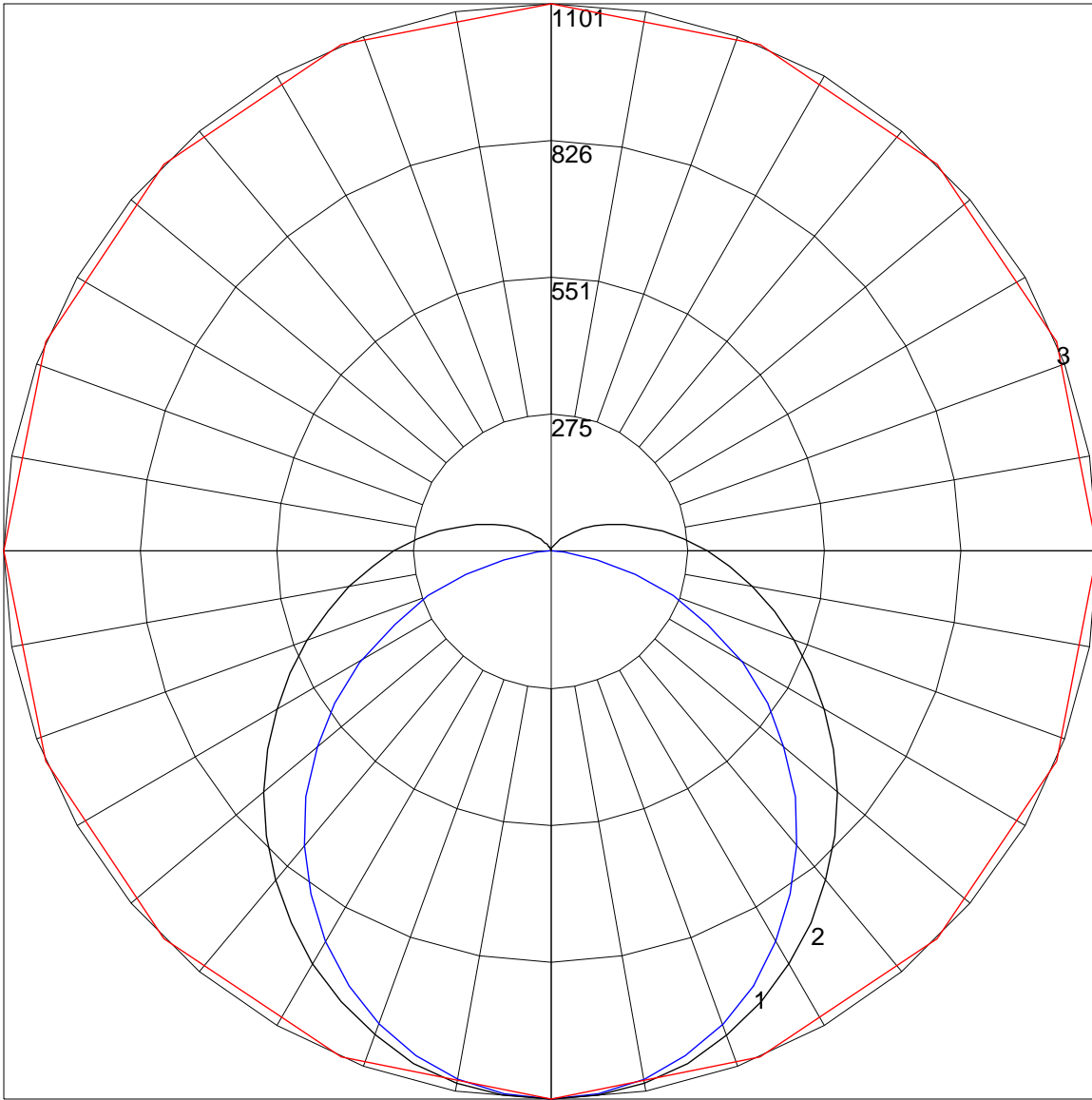
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	90
1	104	99	93	89	100	95	91	86	89	85	82	83	80	78	78	76	74	71
2	94	85	77	71	90	82	75	69	77	71	66	72	67	63	68	64	60	57
3	85	74	65	58	82	72	63	57	67	60	55	63	57	52	59	54	50	48
4	78	65	56	49	75	63	54	48	59	52	46	56	49	44	52	47	43	40
5	71	58	49	42	69	56	47	41	53	45	40	50	43	38	47	41	37	34
6	66	52	43	36	63	51	42	36	48	40	34	45	38	33	43	37	32	30
7	61	47	38	32	59	46	37	31	43	36	30	41	34	29	39	33	29	26
8	57	43	34	28	55	42	33	28	40	32	27	38	31	26	36	30	26	23
9	53	39	31	25	51	38	30	25	36	29	24	35	28	24	33	27	23	21
10	50	36	28	23	48	35	28	23	34	27	22	32	26	21	31	25	21	19

POLAR GRAPH



Maximum Candela = 1101 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.)