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Report No: L051603203

Date: 5/18/2016



NVLAP LAB CODE 200927-0

Report No: L051603203

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: 5/17/16 - 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:	3635.70
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.44
Input Power (W):	49.19
Input Power Factor:	0.94
Current ATHD @ 120V(%):	10%
Current ATHD @ 277V(%):	N/A
Efficacy:	74
Color Rendering Index (CRI):	97
Correlated Color Temperature (K):	3041
Chromaticity Coordinate x:	0.4331
Chromaticity Coordinate y:	0.4011
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:55
Total Operating Time (Hours):	1:25
Off State Power(W):	0.00

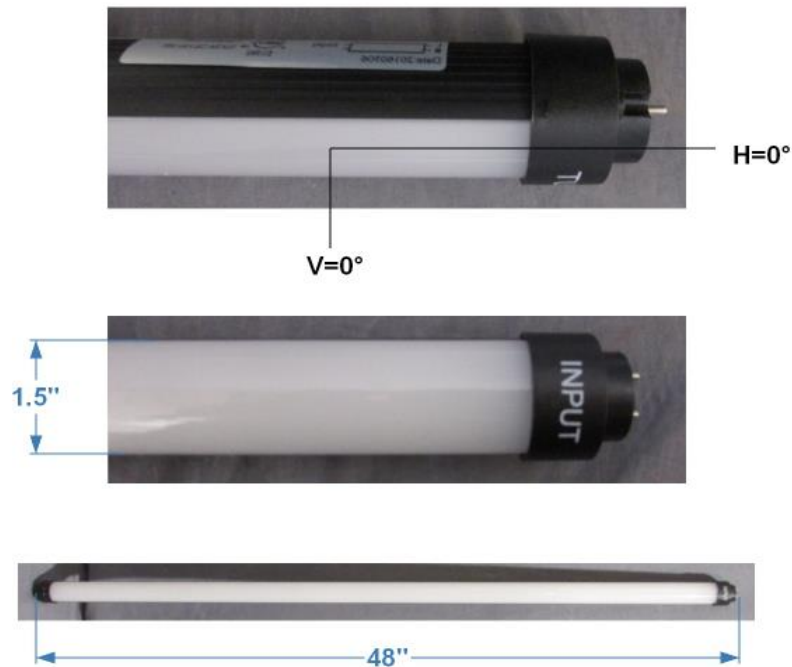
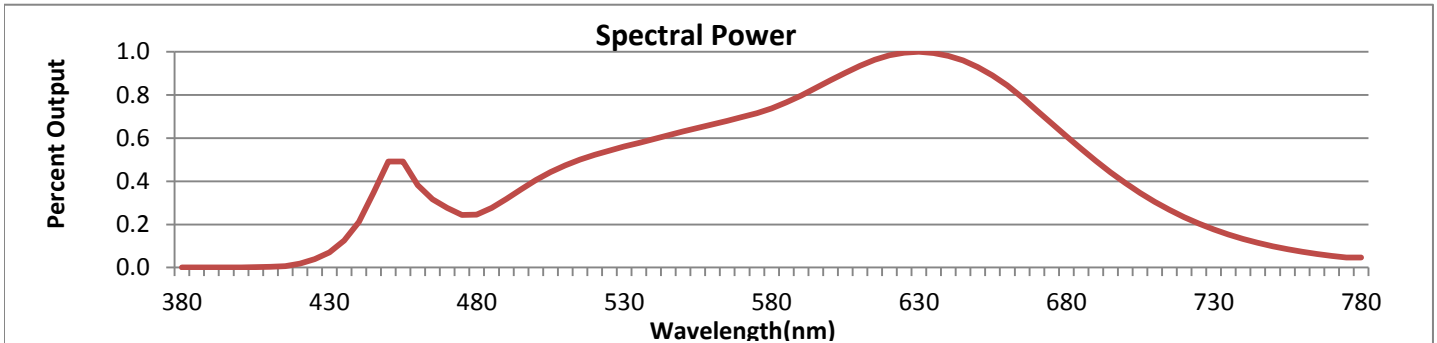


FIG. 1 LUMINAIRE

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



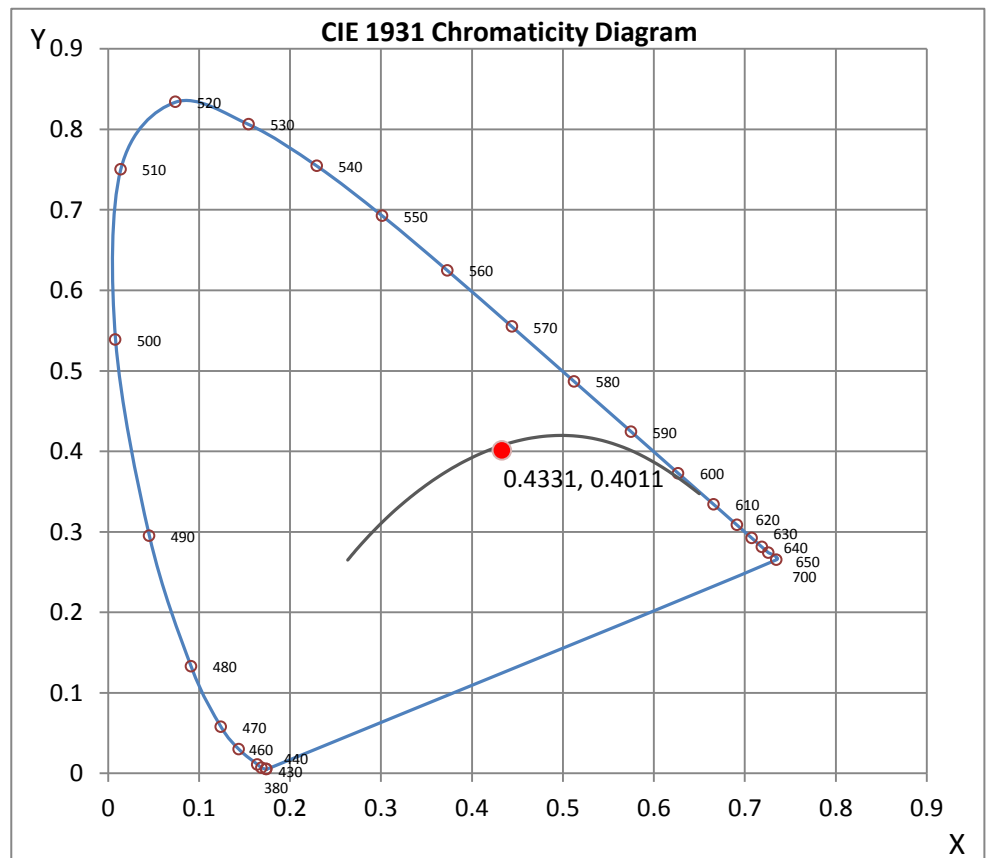
Wavelength	W/m ² nm	440	0.2117	510	0.4736	580	0.7387	650	0.9299	720	0.2334
380	0.0009	450	0.4909	520	0.5223	590	0.7971	660	0.8442	730	0.1765
390	0.0010	460	0.3822	530	0.5608	600	0.8692	670	0.7275	740	0.1321
400	0.0011	470	0.2764	540	0.5957	610	0.9356	680	0.6094	750	0.0984
410	0.0027	480	0.2455	550	0.6308	620	0.9845	690	0.4950	760	0.0729
420	0.0185	490	0.3173	560	0.6645	630	1.0000	700	0.3916	770	0.0535
430	0.0707	500	0.4050	570	0.6980	640	0.9821	710	0.3044	780	0.0463

CRI & CCT

x	0.4331
y	0.4011
u'	0.2494
v'	0.5196
CRI	97.40
CCT	3041
Duv	-0.00066

R Values

R1	98.69
R2	99.07
R3	97.78
R4	98.61
R5	98.42
R6	97.61
R7	96.45
R8	92.81
R9	83.60
R10	96.75
R11	97.47
R12	85.97
R13	99.14
R14	97.91



*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 : L051603203.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L051603203
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 5/18/2016
 [MANUFAC] COLT LED
 [LUMCAT] Bicolor GEN3-55W
 [LUMINAIRE] LED 4 FOOT LAMP - TUNGSTEN
 [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, 49.19W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3636
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	74
Total Luminaire Watts	49.19
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	19747	17578	17796
55	18491	16383	17068
65	16656	15441	16687
75	13333	15072	16882
85	6150	16034	18351

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L051603203.IES**

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	1007	1007	1007	1007	1007
5	1001	1002	1002	1002	1003
10	986	987	988	990	991
15	959	961	965	969	972
20	923	927	934	941	946
25	878	885	896	907	913
30	826	833	850	867	874
35	769	777	798	821	833
40	702	715	741	772	787
45	633	648	683	720	738
50	559	576	621	667	685
55	483	503	557	610	632
60	403	432	495	555	580
65	323	352	434	500	525
70	241	288	374	446	471
75	161	223	322	394	421
80	86	166	270	345	372
85	27	116	224	300	324
90	1	82	185	258	283
95	0	53	149	218	242
100	0	35	118	182	205
105	0	23	92	151	171
110	0	16	73	123	141
115	0	11	55	98	114
120	0	9	41	76	90
125	0	7	30	59	70
130	0	6	22	43	53
135	0	5	16	32	39
140	0	0	12	22	27
145	0	0	9	16	19
150	0	0	7	12	14
155	0	0	6	9	10
160	0	0	5	7	7
165	0	0	0	5	6
170	0	0	0	0	5
175	0	0	0	0	0
180	0	0	0	0	0

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	367.62	N.A.	10.10
0-30	780.50	N.A.	21.50
0-40	1280.7	N.A.	35.20
0-60	2307.76	N.A.	63.50
0-80	3058.43	N.A.	84.10
0-90	3283.92	N.A.	90.30
10-90	3188.7	N.A.	87.70
20-40	913.07	N.A.	25.10
20-50	1441.16	N.A.	39.60
40-70	1451.85	N.A.	39.90
60-80	750.67	N.A.	20.60
70-80	325.88	N.A.	9.00
80-90	225.49	N.A.	6.20
90-110	243.37	N.A.	6.70
90-120	299.06	N.A.	8.20
90-130	328.94	N.A.	9.00
90-150	348.73	N.A.	9.60
90-180	351.78	N.A.	9.70
110-180	108.41	N.A.	3.00
0-180	3635.7	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	95.22
10-20	272.41
20-30	412.88
30-40	500.20
40-50	528.09
50-60	498.98
60-70	424.79
70-80	325.88
80-90	225.49
90-100	149.16
100-110	94.21
110-120	55.70
120-130	29.87
130-140	14.14
140-150	5.65
150-160	2.39
160-170	0.64
170-180	0.02

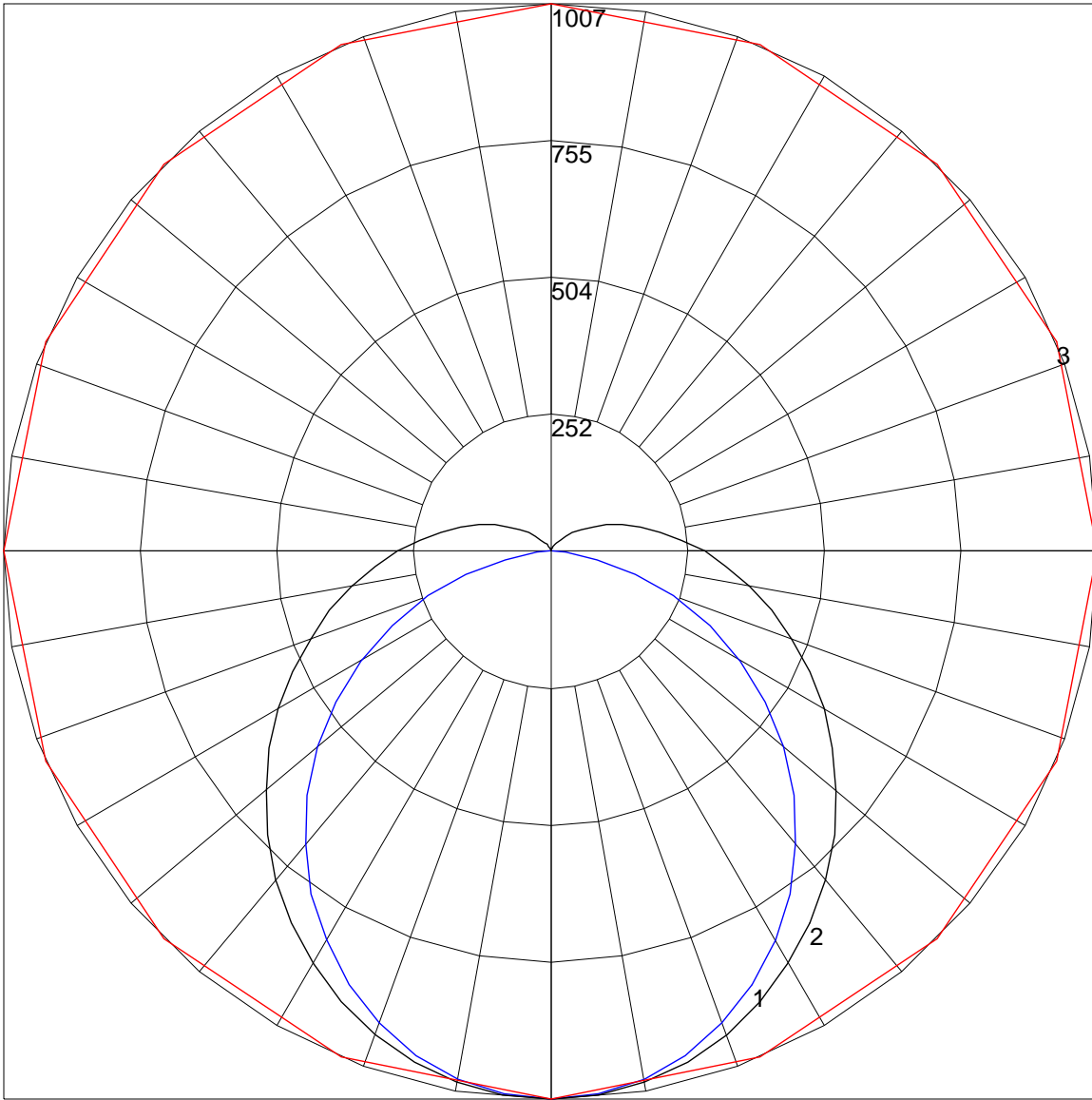
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	94	89	100	95	91	87	89	85	82	84	81	78	78	76	74	71
2	94	85	77	71	90	82	75	69	77	71	66	72	67	63	68	64	60	58
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	55	48	59	52	46	56	50	44	53	47	43	40
5	71	58	49	42	69	56	48	41	53	45	40	50	43	38	47	42	37	35
6	66	52	43	36	63	51	42	36	48	40	35	45	39	33	43	37	32	30
7	61	47	38	32	59	46	37	31	43	36	30	41	34	30	39	33	29	26
8	57	43	34	28	55	42	34	28	40	32	27	38	31	26	36	30	26	24
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 = 1007 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.)