



8165 E Kaiser Blvd. Anaheim, CA 92808  
 p. 714.282.2270  
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Test #: L06122608

Date: 6/15/2012



NVLAP LAB CODE 200927-0

**Test Report:** L06122608

**Model Number:** MLRT24D5541

**Report Prepared For:** MAXLITE  
 12 YORK AVE. WEST CALDWELL, NEW JERSEY 07006

**Test:** Electrical and Photometric tests as required by the IESNA test standards.

**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

**Description of Sample:** Client submitted 1 sample of 2X4 4100K LED ceiling troffer. Fixture catalog number is MLRT24D5541. Received in working and undamaged condition. No modifications were necessary.

**Sample Arrival Date:** 6/1/12

**Date of Tests:** 6/11/12 - 5/15/12

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

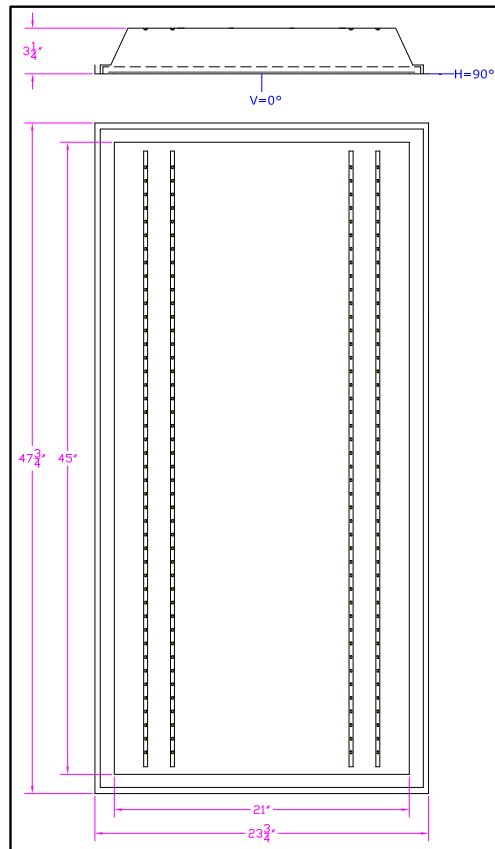
**Equipment List**

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S1	01/04/13
Xitron Power Analysis System	2503AH	MT-EL01	01/09/13
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/04/13
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

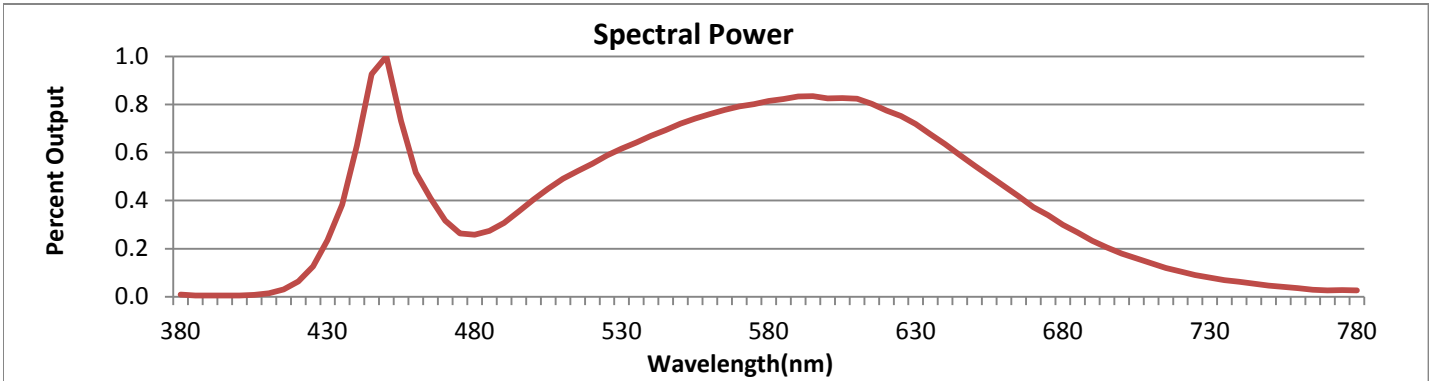
\*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

**LM-79 Test Summary**

<b>Manufacturer:</b>	MAXLITE
<b>Model Number:</b>	MLRT24D5541
<b>Total Lumens:</b>	4498.31
<b>Input Voltage (VAC):</b>	120.00
<b>Input Current (Amp):</b>	0.46
<b>Input Power (W):</b>	54.86
<b>Input Power Factor:</b>	0.99
<b>Efficacy:</b>	81.99
<b>Color Rendering Index (CRI):</b>	85.64
<b>Correlated Color Temperature (CCT):</b>	4001
<b>Chromaticity Coordinate x:</b>	0.3776
<b>Chromaticity Coordinate y:</b>	0.3665
<b>Ambient Temperature (°F):</b>	77
<b>Stabilization Time (Hours):</b>	6:00
<b>Total Operating Time (Hours):</b>	6:40



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



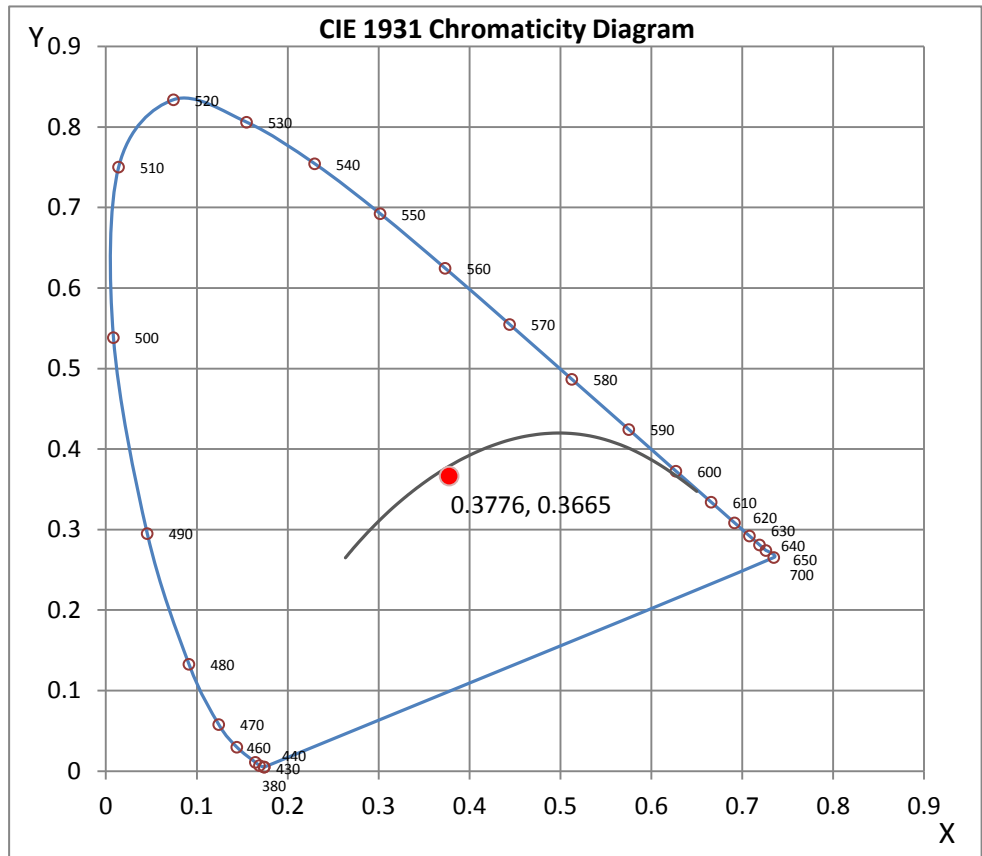
Wavelength	W/m <sup>2</sup> nm	440	0.5830	510	0.4550	580	0.7546	650	0.5053	720	0.0968
380	0.0077	450	0.9258	520	0.5128	590	0.7715	660	0.4259	730	0.0742
390	0.0041	460	0.4786	530	0.5708	600	0.7641	670	0.3453	740	0.0571
400	0.0046	470	0.2930	540	0.6206	610	0.7628	680	0.2770	750	0.0422
410	0.0130	480	0.2384	550	0.6668	620	0.7175	690	0.2158	760	0.0330
420	0.0582	490	0.2847	560	0.7041	630	0.6655	700	0.1660	770	0.0247
430	0.2179	500	0.3751	570	0.7337	640	0.5878	710	0.1287	780	0.0237

**CRI & CCT**

x	0.3776
y	0.3665
u'	0.2274
v'	0.4965
CRI	85.64
CCT	4001
Duv	-0.00405

**R Values**

R1	85.36
R2	89.89
R3	91.72
R4	85.33
R5	85.04
R6	84.77
R7	88.49
R8	74.55
R9	34.31
R10	74.74
R11	83.82
R12	67.17
R13	86.19
R14	95.11



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## 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.

Test Report Released by:

Test Report Reviewed by:

Joseph Shin  
Engineering Manager

Steve Kang  
Quality Assurance

*\*Attached are photometric data reports. Total number of pages: 10*

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



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# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L06122608.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
 [TEST] L06122608  
 [TESTLAB] LIGHT LABORATORY, INC.  
 [ISSUEDATE] 6/15/2012  
 [MANUFAC] MAXLITE  
 [LUMCAT] MLRT24D5541  
 [LUMINAIRE] 47-3/4"L. X 23-3/4"W. X 3-1/4"H. 2X4 RECESSED CEILING TROFFER  
 [MORE] 4 LED STRIPS, EACH STRIP HAS 44 4100K LEDS WITH 31/32" SPACING,  
 [MORE] 176 LEDS TOTAL, WHITE REFLECTOR, PRISMATIC ACRYLIC LENS  
 [BALLASTCAT] INVENTRONICS EUC-052S140DT  
 [BALLAST] INPUT: 100-240VAC 50/60Hz, 0.8A OUTPUT: 19-37VDC, 1.40A  
 [LAMPPOSITION] 0,0  
 [LAMPCAT] 4100K LED  
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
 [INPUT] 120VAC, 54.86W  
 [TEST PROCEDURE] IESNA:LM-79-08

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4498
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	82
Total Luminaire Watts	54.86
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.28
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	3.75 ft
Luminous Width (90-270)	1.75 ft
Luminous Height	0.00 ft

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L06122608.IES**

**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	2496	2459	2366
55	1988	1851	1746
65	1578	1276	1431
75	1437	1095	1520
85	1711	1561	1937

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
<b>0</b>	1982	1982	1982	1982	1982
<b>5</b>	1957	1962	1973	1972	1998
<b>10</b>	1931	1935	1943	1945	1967
<b>15</b>	1886	1889	1895	1895	1913
<b>20</b>	1821	1823	1825	1821	1834
<b>25</b>	1727	1730	1729	1721	1726
<b>30</b>	1608	1608	1606	1598	1600
<b>35</b>	1459	1458	1448	1441	1443
<b>40</b>	1280	1275	1261	1248	1247
<b>45</b>	1077	1071	1061	1035	1021
<b>50</b>	874	867	856	816	802
<b>55</b>	696	673	648	623	611
<b>60</b>	548	514	482	483	480
<b>65</b>	407	366	329	361	369
<b>70</b>	301	265	227	274	294
<b>75</b>	227	200	173	213	240
<b>80</b>	168	146	138	161	182
<b>85</b>	91	87	83	96	103
<b>90</b>	0	0	0	0	0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L06122608.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-30	1515.3	N.A.	33.70
0-40	2417.32	N.A.	53.70
0-60	3819.73	N.A.	84.90
0-90	4498.31	N.A.	100.00
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
0-180	4498.31	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	187.28
10-20	534.12
20-30	793.90
30-40	902.02
40-50	812.37
50-60	590.03
60-70	367.61
70-80	219.34
80-90	91.62
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

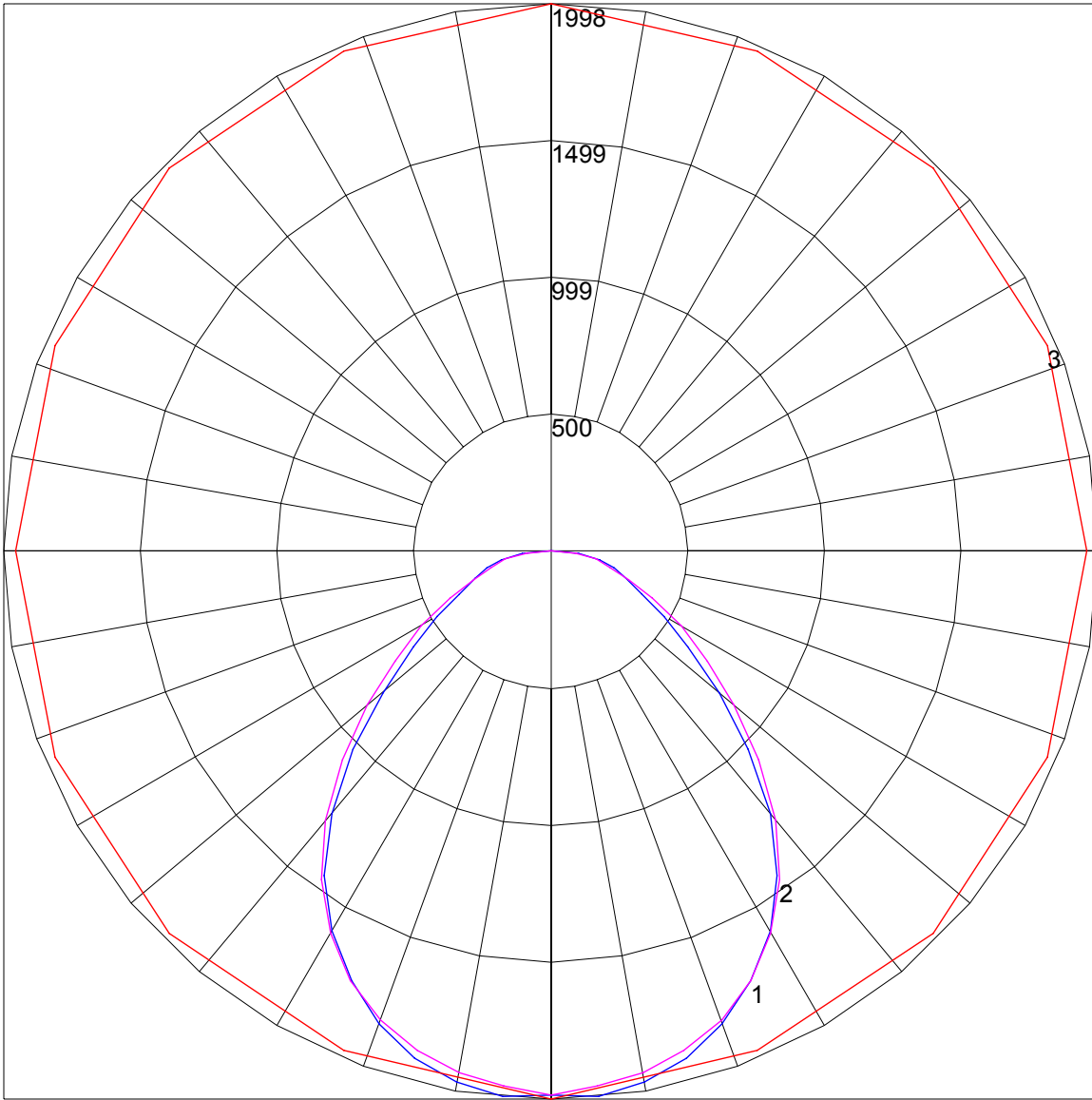


COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	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	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	88	86
2	101	93	87	82	98	91	85	81	88	83	79	85	80	77	82	78	75	73
3	93	83	75	69	90	81	74	69	78	72	67	76	71	66	73	69	65	63
4	85	74	66	60	83	73	65	59	70	64	59	68	62	58	66	61	57	55
5	79	67	59	52	77	66	58	52	64	57	51	62	56	51	60	55	50	48
6	73	61	52	46	71	60	52	46	58	51	46	56	50	45	55	49	45	43
7	68	55	47	41	67	55	47	41	53	46	41	52	45	41	50	45	40	38
8	64	51	43	37	62	50	42	37	49	42	37	48	41	37	46	41	36	35
9	60	47	39	34	58	46	39	34	45	38	33	44	38	33	43	37	33	31
10	56	43	36	31	55	43	36	31	42	35	31	41	35	30	40	34	30	29

POLAR GRAPH



Maximum Candela = 1998 Located At Horizontal Angle = 90, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.): BLUE  
# 2 - Vertical Plane Through Horizontal Angles (0 - 180): MAGENTA  
# 3 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.): RED