



8165 E Kaiser Blvd. Anaheim, CA 92808
 p. 714.282.2270
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Test #: L06122605R01

Date: 6/15/2012



NVLAP LAB CODE 200927-0

Test Report: L06122605R01

Model Number: MLRT22D4535

Report Prepared For: MAXLITE
 11810 Jersey Blvd. Rancho Cucamonga, CA 91730

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 one sample of 2X2 3500K LED ceiler troffer. Fixture catalog number is MLFP22DLCT35. Received in working and undamaged condition. No modifications were necessary.

Sample Arrival Date: 6/1/12

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

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.



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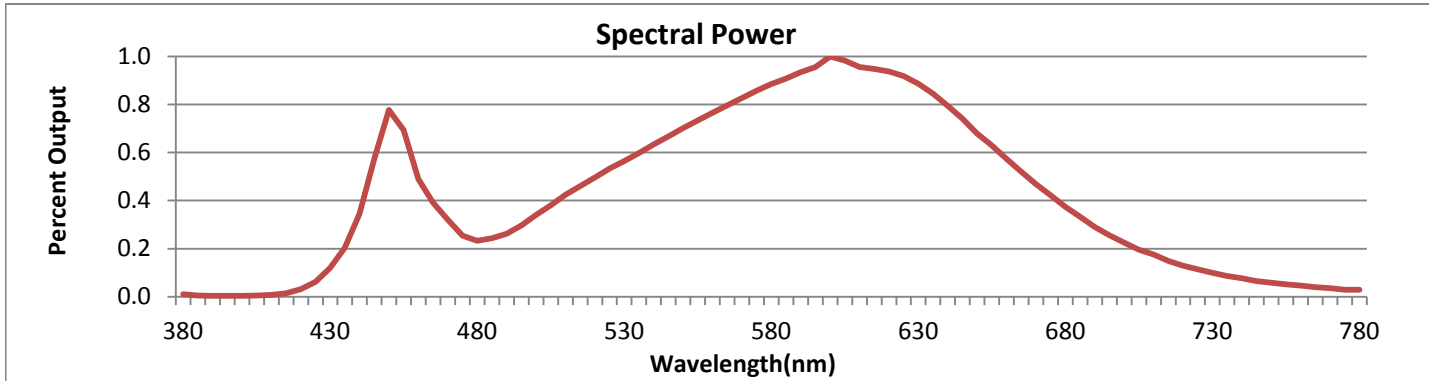


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LM-79 Test Summary

Manufacturer:	MAXLITE
Model Number:	MLRT22D4535
Total Lumens:	3597.02
Input Voltage (VAC):	120.00
Input Current (Amp):	0.40
Input Power (W):	45.63
Input Power Factor:	0.96
Efficacy:	78.84
Color Rendering Index (CRI):	85.59
Correlated Color Temperature (CCT):	3252
Chromaticity Coordinate x:	0.4147
Chromaticity Coordinate y:	0.3853
Ambient Temperature (°F):	77
Stabilization Time (Hours):	0:55
Total Operating Time (Hours):	1:25

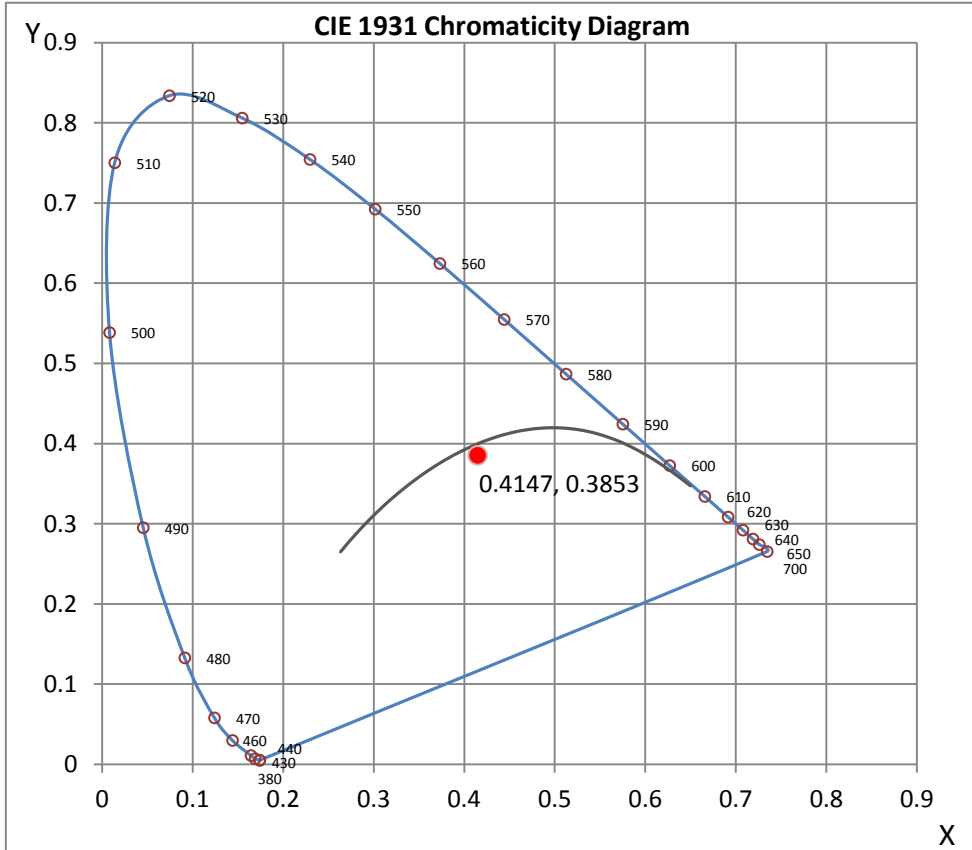
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Wavelength	W/m ² nm	440	0.3549	510	0.4374	580	0.9105	650	0.6985	720	0.1322
380	0.0104	450	0.8006	520	0.5103	590	0.9622	660	0.5901	730	0.1026
390	0.0037	460	0.5043	530	0.5808	600	1.0287	670	0.4824	740	0.0788
400	0.0033	470	0.3293	540	0.6525	610	0.9832	680	0.3845	750	0.0592
410	0.0074	480	0.2401	550	0.7217	620	0.9646	690	0.2977	760	0.0474
420	0.0318	490	0.2696	560	0.7880	630	0.9122	700	0.2307	770	0.0369
430	0.1235	500	0.3506	570	0.8508	640	0.8183	710	0.1800	780	0.0303

CRI & CCT

x	0.4147
y	0.3853
u'	0.2442
v'	0.5104
CRI	85.59
CCT	3252
Duv	-0.00430



R Values

R1	84.98
R2	92.03
R3	95.40
R4	83.26
R5	84.44
R6	88.09
R7	86.51
R8	70.02
R9	31.19
R10	79.84
R11	81.13
R12	70.34
R13	86.66
R14	97.35

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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*

*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 : L06122605R01.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L06122605R01
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 6/15/2012
 [MANUFAC] MAXLITE
 [LUMCAT] MLRT22D4535
 [LUMINAIRE] 23-3/4"L. X 23-3/4"W. X 3-1/4"H. 2X2 RECESSED CEILING TROFFER
 [MORE] 4 LED STRIPS, EACH STRIP HAS 33 3500K LEDS
 [MORE] WHITE REFELCTOR, PRISMATIC ACRYLIC LENS
 [BALLASTCAT] EPTRONICS LD40W-36-C1100-RD
 [BALLAST] INPUT: 90-305VAC, 50/60Hz OUTPUT: 12-36VDC, 110-1100mA
 [LAMPPOSITION] 0,0
 [LAMPCAT] 5000K LED
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 120VAC, 45.63W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3597
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	79
Total Luminaire Watts	45.63
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.16
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.22
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	1.75 ft
Luminous Width (90-270)	1.75 ft
Luminous Height	0.00 ft

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L06122605R01.IES

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	4156	4097	3918
55	3220	2957	2890
65	2659	2002	2368
75	2795	1913	2347
85	3183	2417	2579

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L06122605R01.IES

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	1688	1688	1688	1688	1688
5	1675	1673	1671	1682	1689
10	1647	1644	1643	1654	1663
15	1595	1595	1597	1609	1619
20	1520	1522	1529	1545	1554
25	1424	1427	1437	1455	1464
30	1306	1306	1314	1330	1338
35	1167	1160	1163	1173	1177
40	1007	997	997	987	979
45	837	832	825	796	789
50	674	672	649	620	622
55	526	518	483	462	472
60	415	396	353	349	370
65	320	288	241	255	285
70	255	220	177	195	222
75	206	171	141	152	173
80	153	130	110	112	123
85	79	74	60	63	64
90	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L06122605R01.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1271.48	N.A.	35.30
0-40	1997.88	N.A.	55.50
0-60	3075.68	N.A.	85.50
0-90	3597.02	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	3597.02	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	159.21
10-20	451.24
20-30	661.04
30-40	726.40
40-50	630.91
50-60	446.89
60-70	277.97
70-80	173.47
80-90	69.91
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

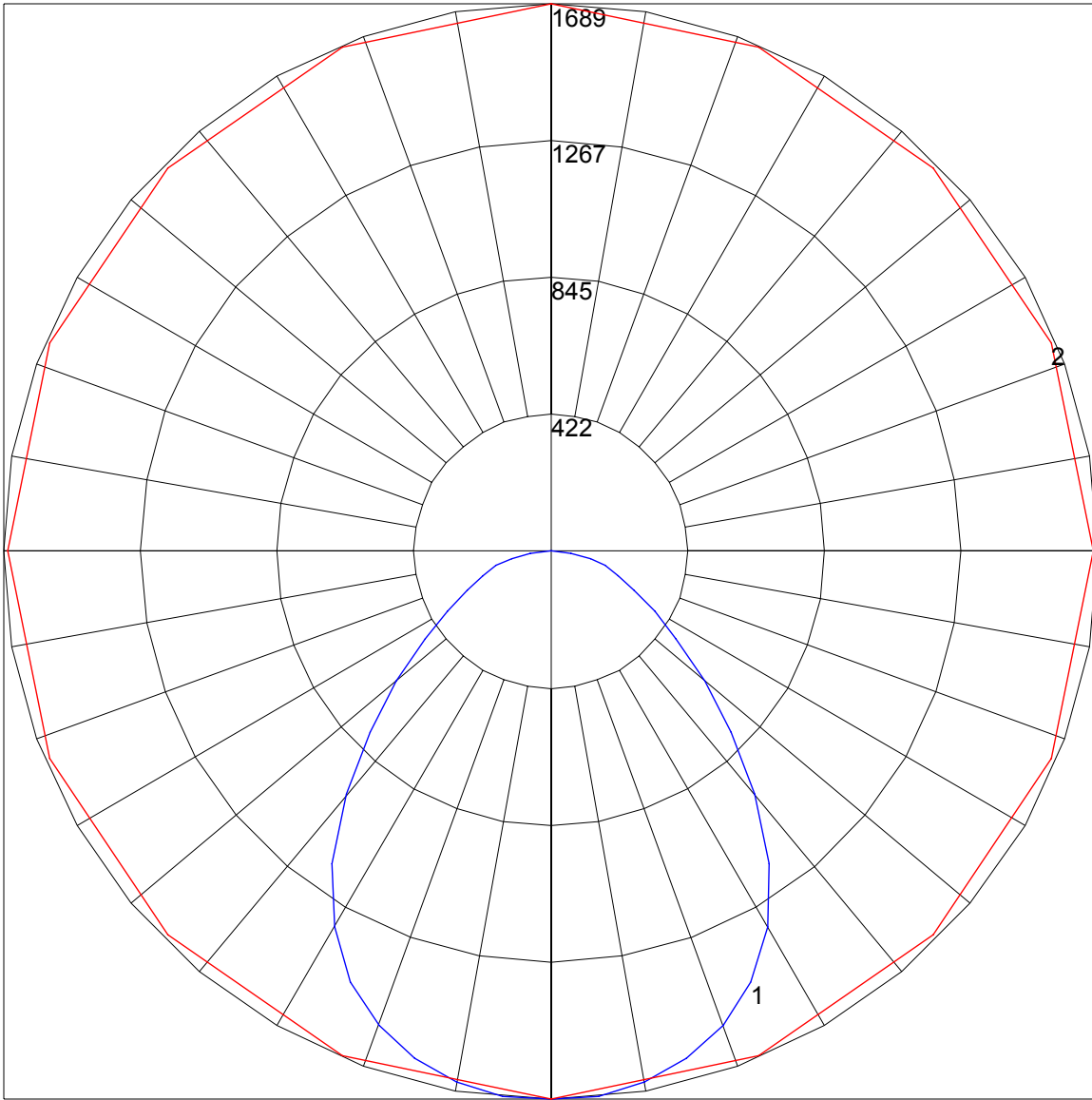
IES INDOOR REPORT
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	102	98	107	103	100	96	99	96	93	95	93	91	92	90	88	86
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	70	66	64
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56
5	80	68	59	53	78	67	59	53	65	58	52	63	57	52	61	56	51	49
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39
8	64	52	44	38	63	51	43	38	50	43	38	49	42	38	47	42	37	36
9	60	48	40	35	59	47	40	35	46	39	34	45	39	34	44	38	34	32
10	57	44	37	32	56	44	36	32	43	36	32	42	36	31	41	35	31	30

POLAR GRAPH



Maximum Candela = 1689 Located At Horizontal Angle = 90, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)