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NVLAP LAB CODE 201064-0

IESNA LM79: 2008 Photometric Test Report

Photometric Testing and Evaluation in Accordance with LM 79-2008

Report Prepared For

Alex Truong

Product Manager

MaxLite

Description of Sample: Baymax High/Low Bay Retrofit Lamp 2700k Model BLHR43UN27.

The Sample (s) was (were) tested in accordance with the following applied standards/regulations:

IESNA LM79: 2008 Approved 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 Emissions Limits – Related Power Quality Requirement for Light Equipment.

CITL Test Number: CITL0001688

Sample Arrival Date: 7/12/2016

Date of Test: 7/14/2016

Report Issue Date: 07/18/2016

Report Prepared By:	Report Reviewed By:	Report Approved By:
		
Johnathan Taddei	**Franklin Navarro**	**Jun Xiang**
Lab Assistant	**Lab Technician**	**Lab Manager**

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Sample Number: 1628
Manufacturer: MaxLite
Notes: Tested in intended orientation

Equipment Used:

Description	Model #	Serial #	Calibration Date	Calibration Due Date
Goniophotometer	GO-R5000	G116930CS1341112	03/03/16	09/03/16
EVERFINE AC POWER SUPPLY	DPS1060	G1174227A8341115	-	-
YOKOGAWA POWER ANALYZER	WT310	C2QJ09027V	10/24/15	10/24/16
DC POWER SUPPLY	WY12010	G115909TM5341117	-	-
EVERFINE AC POWER SUPPLY	DSP1005	G119890CJ7341122	-	-
DC POWER SUPPLY	WY305	G115986TA8341112	-	-
INTERGRATING SPHERE	2 METER	CITL 0018	06/07/16	12/07/16
YOKOGAWA POWER ANALYZER	WT310	C2QJ22012V	11/09/15	11/09/16
FLUKE DIGITAL THERMOMETER	51II	29390172WS	03/04/16	03/31/17
TEMPERATURE AND HUMIDITY LOGGER	UX100-023	10683270	03/22/16	03/31/17

LM-79 Test Summary:

Manufacture:	MaxLite
Fixture Model Number:	BLHR43UN27
Driver Model Number:	No Driver Model Information Available
LED Model Number:	No LED Model Information Available

Electrical Measurement:

Input Voltage:	120VAC	277VAC
Input Current:	0.354A	0.163 A
Input Frequency:	60 HZ	60 Hz
Input Power:	41.73W	39.8W
Power Factor:	0.9806	0.8791
Total Harmonic Distortion:	14.7 ATHD	10.6 ATHD

Lumen Output:

Lumens:	3548Lm
Efficacy:	85Lm/W
Color Rendering Index *(CRI)	Ra: 83.7 R_9: 21.0
Correlated Color Temperature (K):	2690K
Chromaticity Coordinate x:	0.4575
Chromaticity Coordinate y:	0.4051
Ambient Temperature (°C):	25°C
Stabilization Time (Hours):	60 Mins
Total Operation Time (Hours):	3 Hrs.
u/u':	0.2635
V':	0.5249
Duv:	-1.85e-03
Max Candela:	2,663.5 at Horizontal: 150°, Vertical: 2.5°
Spacing Criteria (0-180)	1.00
Spacing Criteria (90-270)	1.02
Zonal Lumens in the 0°-60° Zone	3,135.7Lm – 88.5%
Zonal Lumens in the 60°-90° Zone	306.6Lm – 8.6%
Zonal Lumens in the 0°-90° Zone	3,442.2Lm – 97.1%
Zonal Lumens in the 90°-120° Zone	88.1Lm – 2.5%
Zonal Lumens in the 90°-180° Zone	102.8Lm – 2.9%

Test Methods:

Photometric Measurements – Goniophotometer:

An Everfine 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 60 minutes and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measure using the listed equipment.

Spectral Measurements – Integrating Sphere

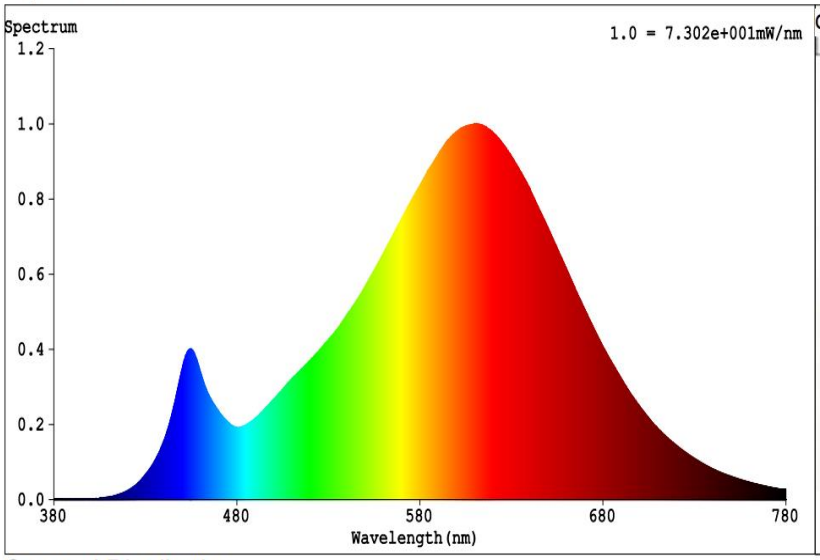
A sensing Spectrometer HASS-2000, in conjunction with Everfine 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature (CCT) and the color rendering index (CRI) for each sample. Test Geometry Configuration 4 π.

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 30 min and longer if necessary for the sample to achieve stabilization

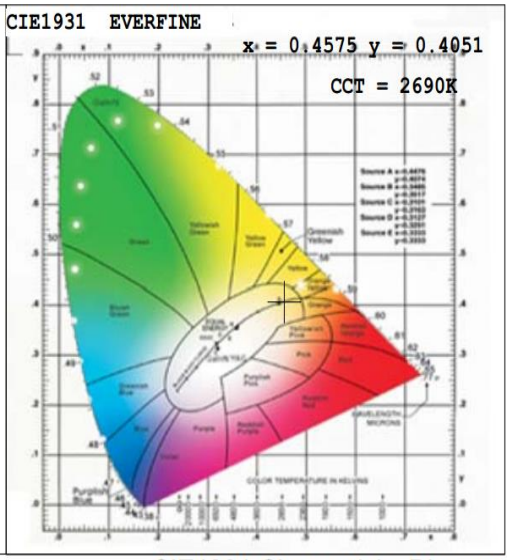
Electrical measurements are measured using the listed equipment.

LUMINAIRE PHOTOMETRIC TEST REPORT:

Spectrum



Spectral Distribution



CIE1931 Chromaticity Diagram

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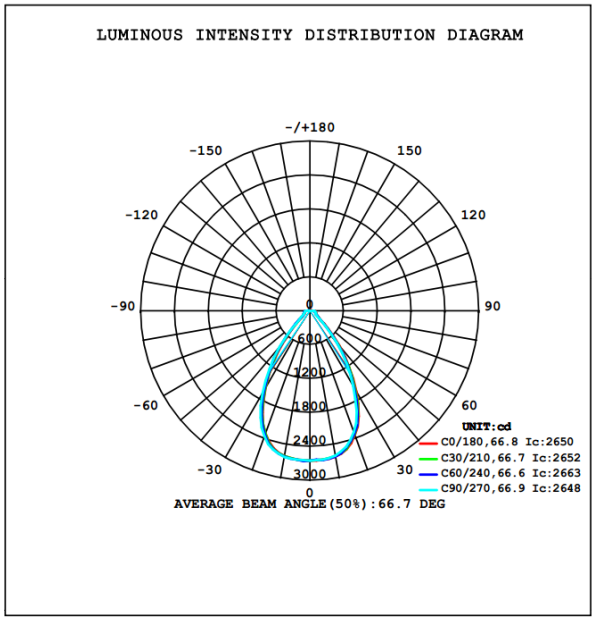
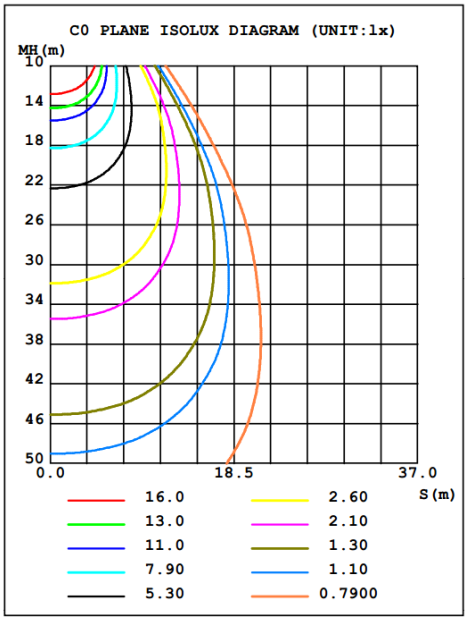
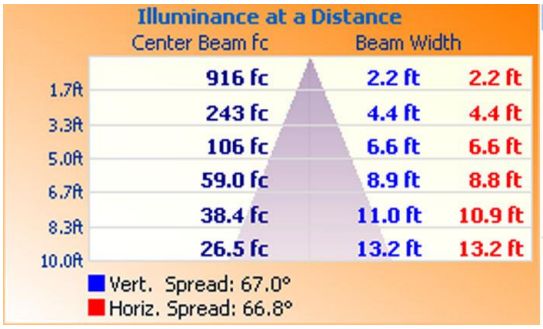




ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	2621	2612	2604	2605	2612	2612	2625	2623	0- 10	251.4	251.4	7.09,7.09
20	2345	2327	2286	2286	2314	2330	2368	2367	10- 20	705.3	956.7	27,27
30	1646	1614	1544	1543	1573	1604	1684	1676	20- 30	917.2	1874	52.8,52.8
40	828.0	781.9	744.5	737.0	761.8	807.2	863.4	858.6	30- 40	745.8	2620	73.8,73.8
50	263.1	256.0	239.5	228.3	237.8	251.1	263.0	268.1	40- 50	367.3	2987	84.2,84.2
60	133.3	124.3	131.5	126.1	121.3	135.3	125.0	127.8	50- 60	151.7	3139	88.5,88.5
70	120.5	99.98	111.4	108.4	98.76	115.5	99.76	108.5	60- 70	117.4	3256	91.8,91.8
80	97.93	92.27	96.01	84.60	89.69	98.15	89.54	91.03	70- 80	107.1	3363	94.8,94.8
90	64.20	58.53	58.96	54.03	53.14	62.29	58.38	60.55	80- 90	82.09	3445	97.1,97.1
100	33.21	23.78	28.31	27.77	25.18	34.21	26.65	31.30	90-100	49.46	3495	98.5,98.5
110	30.90	20.25	25.60	22.91	20.17	40.09	20.13	21.15	100-110	26.07	3521	99.2,99.2
120	6.637	3.623	5.814	6.618	3.866	3.761	3.557	3.501	110-120	12.59	3533	99.6,99.6
130	6.503	7.332	4.279	6.086	9.216	4.292	8.490	8.487	120-130	4.966	3538	99.7,99.7
140	5.046	6.099	5.082	5.474	4.305	3.286	5.598	5.887	130-140	4.509	3543	99.9,99.9
150	3.915	3.219	4.148	3.212	3.118	3.621	3.142	4.015	140-150	2.600	3546	99.9,99.9
160	2.723	2.683	2.675	2.744	2.787	2.750	2.674	2.811	150-160	1.506	3547	100,100
170	3.251	3.353	3.409	3.346	3.185	2.750	3.276	2.743	160-170	0.8138	3548	100,100
180	3.185	3.219	3.209	3.212	3.185	3.286	3.209	3.212	170-180	0.3107	3548	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



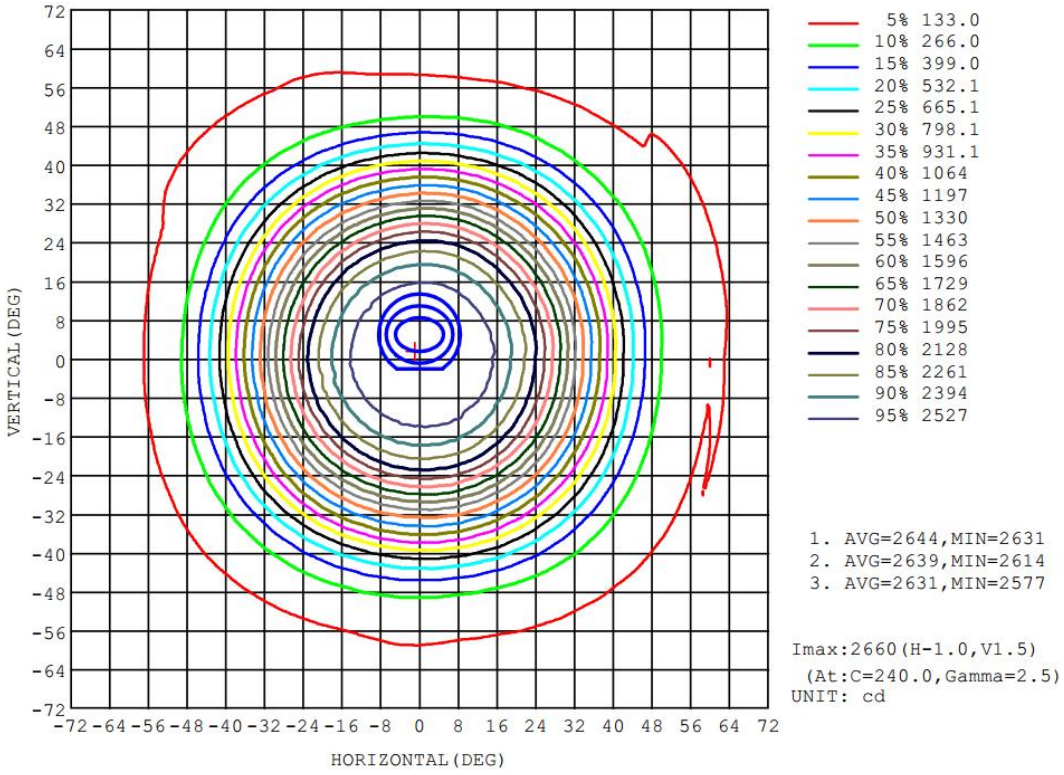
Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	1,872.5	52.8%
0-40	2,617.3	73.8%
0-60	3,135.7	88.5%
60-90	306.6	8.6%
70-100	238.6	6.7%
90-120	88.1	2.5%
0-90	3,442.2	97.1%
90-180	102.8	2.9%
0-180	3,545.1	100%

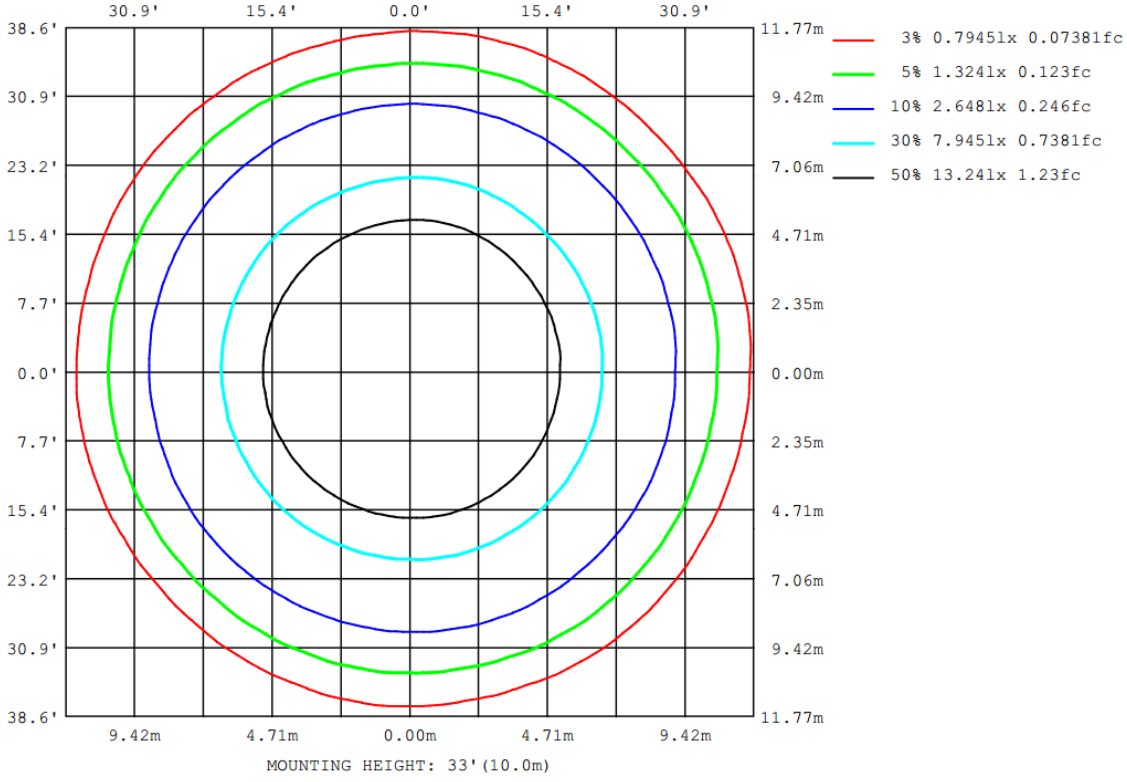
Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	251.4	7.1%	90-100	49.5	1.4%
10-20	704.9	19.9%	100-110	26.1	0.7%
20-30	916.3	25.8%	110-120	12.6	0.4%
30-40	744.8	21.0%	120-130	5.0	0.1%
40-50	366.8	10.3%	130-140	4.5	0.1%
50-60	151.6	4.3%	140-150	2.6	0.1%
60-70	117.4	3.3%	150-160	1.5	0%
70-80	107.1	3.0%	160-170	0.8	0%
80-90	82.1	2.3%	170-180	0.3	0%

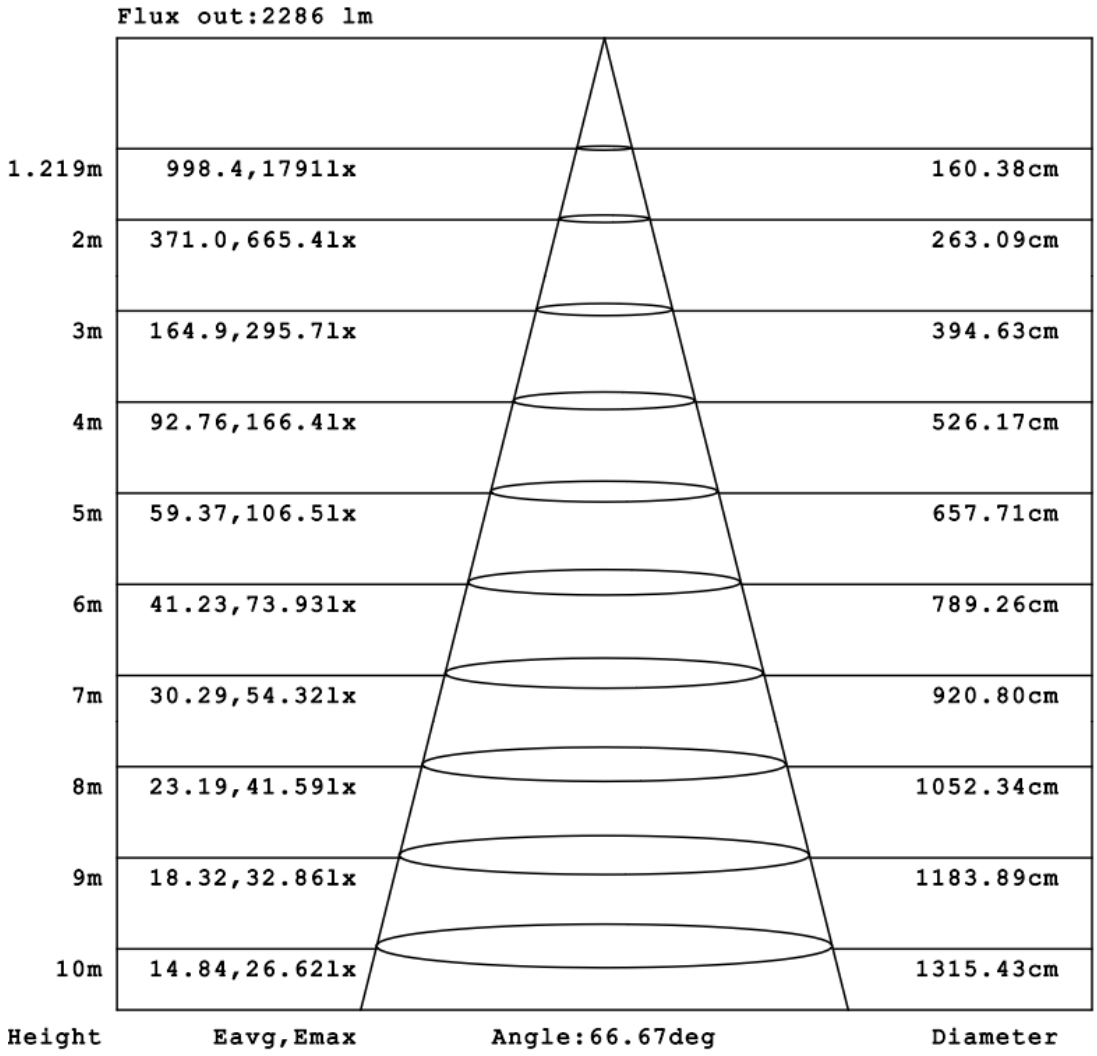
ISOCANDELA DIAGRAM:



ISOLUX DIAGRAM:



AAI DIAGRAM:



Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

End of Report