

IESNA LM79: 2008 Photometric Test Report

Photometric Testing and Evaluation in Accordance with LM 79-2008

Report Prepared For

Francisco Garza

Product Manager

MaxLite

Description of Sample: LED Roadway QM5AU7T440 Quadramax 5 Module Type IV optics. 20"x13.5"

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: CITL0001256

Sample Arrival Date: 09/25/2015

Date of Test: 10/09/2015

Report Issue Date: 10/14/2015

Report Prepared By:



Franklin Navarro
Lab Technician

Report Approved By:



Juan Xiang
Lab Manager

Sample Number: 1187

Manufacturer: MaxLite

Notes: Tested in intended orientation



Equipment Used:

Description	Model #	Serial #	Calibration Date	Calibration Due Date
Goniophotometer	GO-R5000	G116930CS1341112	09/03/2015	03/03/2016
EVERFINE AC POWER SUPPLY	DPS1060	G1174227A8341115	-	-
YOKOGAWA POWER ANALYZER	WT310	C2Q522012V	11/17/14	11/17/15
DC POWER SUPPLY	WY12010	G115909TM5341117	-	-
EVERFINE AC POWER SUPPLY	DSP1005	G119890CJ7341122	-	-
DC POWER SUPPLY	WY305	G115986TA8341112	-	-
INTERGRATING SPHERE	2 METER	CITL 0018	06/22/15	12/22/15
YOKOGAWA POWER ANALYZER	WT310	C2QJ22011V	11/17/14	11/17/15
FLUKE DIGITAL THERMOMETER	51II	29390172WS	04/09/15	04/09/16
TEMPERATURE AND HUMIDITY LOGGER	MX1101	10689441	03/20/15	03/20/16
TEMPERATURE AND HUMIDITY LOGGER	UX100-023	10683270	03/20/15	03/20/16

LM-79 Test Summary:

Manufacture:	MaxLite
Fixture Model Number:	QM5AU7T440
Driver Model Number:	OT180W/UNV/800C/2DIMLT2/P6
Lamp Model Number:	Luxeon TX

Electrical Measurement:

Input Voltage:	120VAC	277VAC
Input Current:	1.128 A	0.492 A
Input Frequency:	60 HZ	60 Hz
Input Power:	135.5 W	132.8W
Power Factor:	0.9972	0.9608
Total Harmonic Distortion:	3.3 ATHD	8.6 ATHD

Lumen Output:

Lumens:	13,960Lm	Lm
Efficacy:	106.01Lm/W	Lm/W
Color Rendering Index *(CRI)	Ra: 73.5 R ₉ : 0	Ra: R ₉ :
Correlated Color Temperature (K):	3888	
Chromaticity Coordinate x:	0.3843	
Chromaticity Coordinate y:	0.3758	
Ambient Temperature (°C):	25°C	
Stabilization Time (Hours):	45 Mins	
Total Operation Time (Hours):	1 Hrs	
u/u':	0.2280	
V':	0.5017	
Duv:	1.55e-03	
Spacing Criteria (0-180)	3.74	
Spacing Criteria (90-270)	2.14	
Zonal Lumens in the 0°-60° Zone	8,392.8lm – 60.1%	
Zonal Lumens in the 60°-90° Zone	5,555.3lm – 39.8%	
Zonal Lumens in the 0°-90° Zone	13,948lm – 99.9%	
Zonal Lumens in the 90°-120° Zone	6.2lm – 0%	
Zonal Lumens in the 90°-180° Zone	11.8lm – 0.1%	
BUG (Back, Up, Glare) Report	B2 – U2 – G2	

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

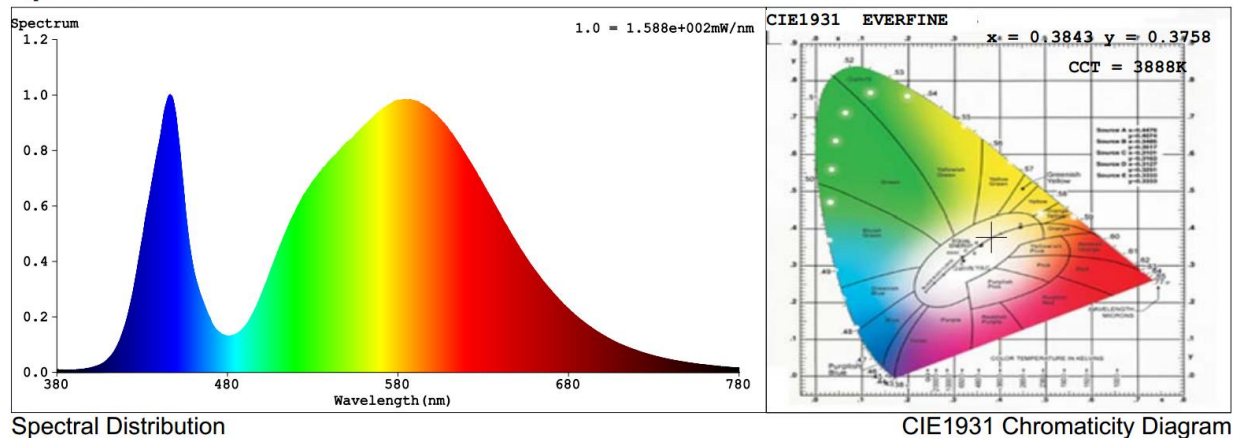
A sensing Spectrometer HASS-2000, in conjunction with Everfine 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature (CCT) and the color rendering index (CRI) for each sample. Test Geometry Configuration 4 π .

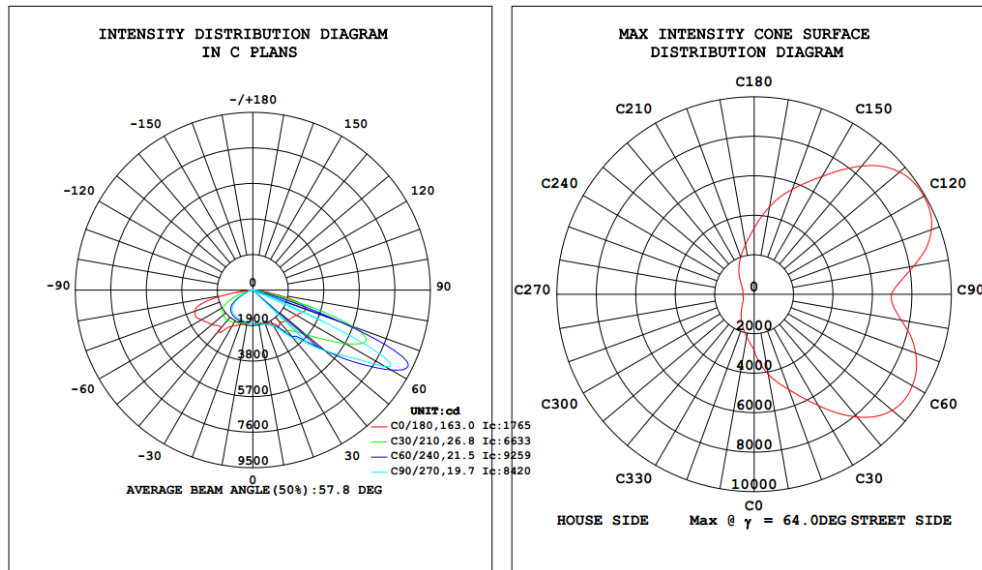
Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30 min and longer if necessary for the sample to achieve stabilization

Electrical measurements are measured using the listed equipment.

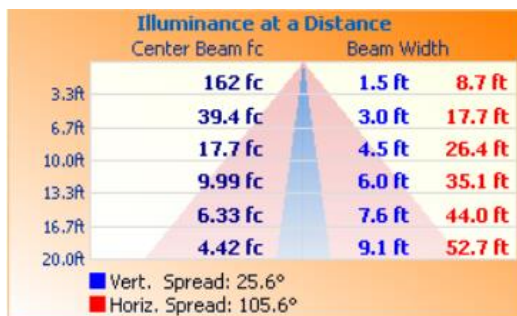
STREETLIGHT PHOTOMETRIC TEST REPORT:

Spectrum



STREETLIGHT PHOTOMETRIC TEST REPORT:

ZONAL FLUX DIAGRAM:

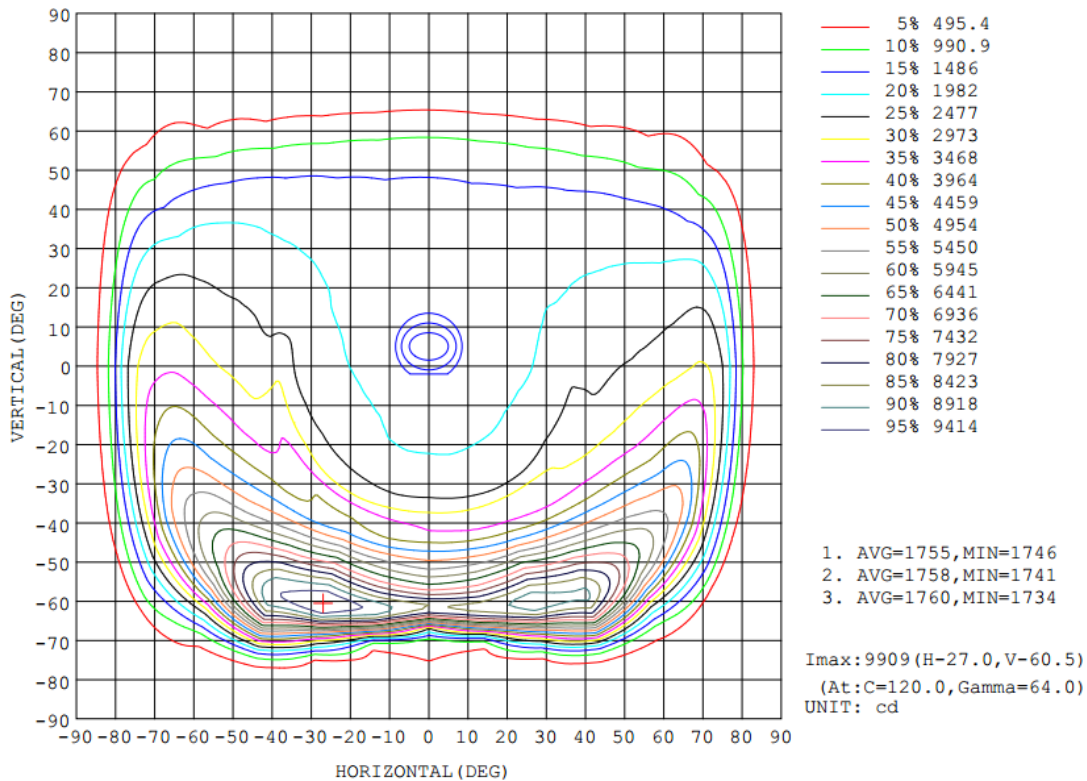
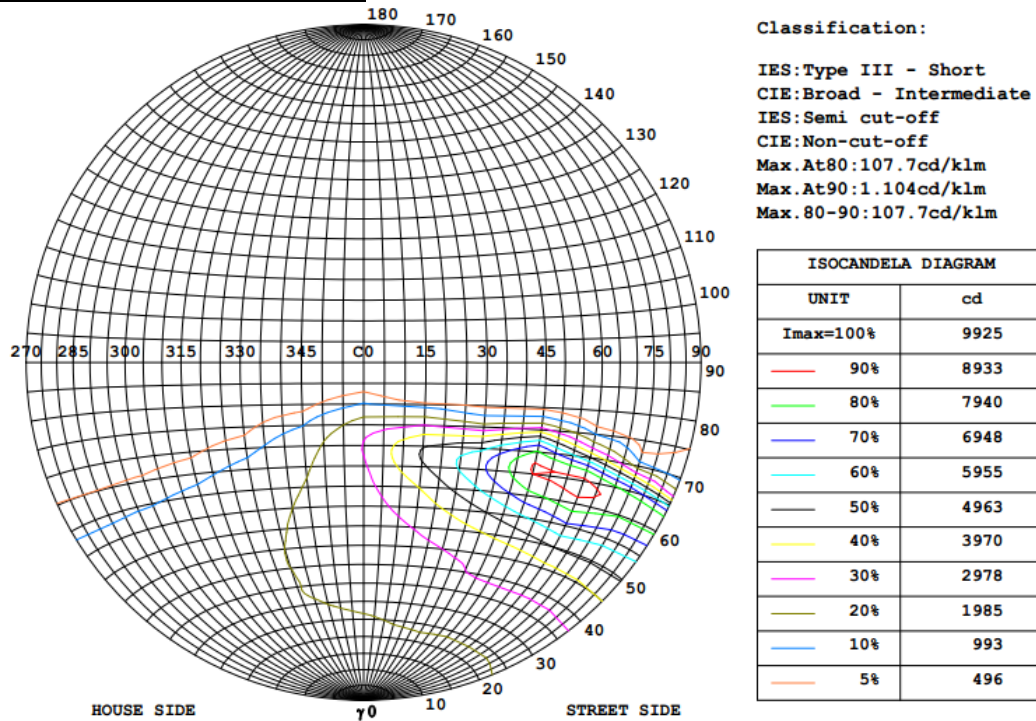
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	zone	total	lum, lamp
10	1784	1823	1843	1853	1810	1782	1743	1760	0- 10	170.2	170.2	1.22, 1.22
20	1856	1915	1943	2034	1973	1824	1710	1780	10- 20	521.9	692.1	4.96, 4.96
30	2064	2157	2226	2360	2242	1865	1689	1800	20- 30	908.5	1601	11.5, 11.5
40	2277	3140	3351	3637	2745	1873	1613	1752	30- 40	1431	3031	21.7, 21.7
50	2487	4373	5042	4887	2862	1745	1429	1619	40- 50	2135	5167	37.3, 37
60	2699	7528	8204	8129	3189	1334	869.8	1191	50- 60	3227	8393	60.1, 60.1
70	3003	8067	771.7	8346	3291	477.0	302.0	413.7	60- 70	3867	12261	87.8, 87.8
80	1037	406.7	253.1	599.9	1504	219.7	213.3	159.8	70- 80	1530	13791	98.8, 98.8
90	0	0	0.1798	6.854	14.40	3.286	0	0	80- 90	157.7	13948	99.9, 99.9
100	0.9360	0	0	0	1.879	2.995	0	3.775	90-100	0.6237	13949	99.9, 99.9
110	2.610	0	0	0	2.611	6.353	4.511	7.616	100-110	2.254	13951	99.9, 99.9
120	2.945	0.2675	0	0.2028	2.341	7.557	6.991	8.768	110-120	3.308	13954	100, 100
130	2.345	0.7349	0	0.6065	1.071	4.149	5.374	5.126	120-130	2.678	13957	100, 100
140	1.807	0.9352	0.0672	0.6744	0.9372	2.008	2.351	2.767	130-140	1.319	13958	100, 100
150	1.540	1.004	0.0672	0.8093	0.9372	1.739	1.277	1.957	140-150	0.7277	13959	100, 100
160	1.071	1.070	0.2017	0.8093	0.9372	1.472	1.277	1.552	150-160	0.4903	13960	100, 100
170	1.071	1.137	1.008	1.214	1.205	1.404	1.277	1.416	160-170	0.3118	13960	100, 100
180	1.205	1.137	1.143	1.214	1.205	1.404	1.277	1.416	170-180	0.1199	13960	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		


Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	1,600.8	11.5%
0-40	3,031.2	21.7%
0-60	8,392.8	60.1%
60-90	5,555.3	39.8%
70-100	1,688.2	12.1%
90-120	6.2	0%
0-90	13,948.1	99.9%
90-180	11.8	0.1%
0-180	13,960.0	100%

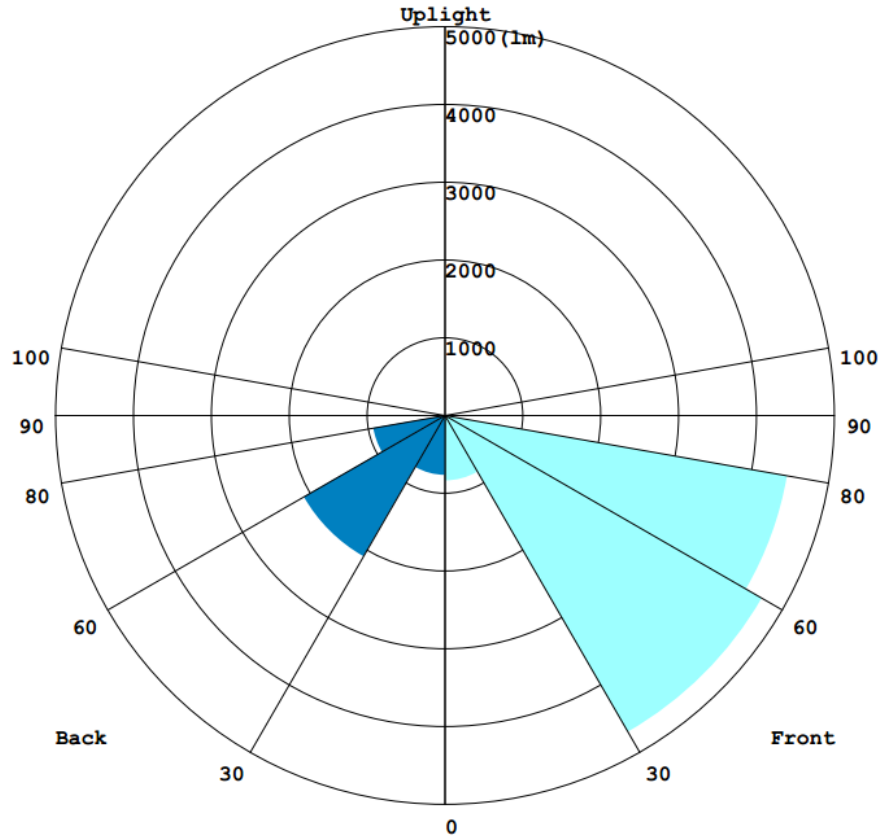
Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	170.2	1.2%	90-100	0.6	0%
10-20	521.9	3.7%	100-110	2.3	0%
20-30	908.6	6.5%	110-120	3.3	0%
30-40	1,430.5	10.2%	120-130	2.7	0%
40-50	2,135.0	15.3%	130-140	1.3	0%
50-60	3,226.6	23.1%	140-150	0.7	0%
60-70	3,867.7	27.7%	150-160	0.5	0%
70-80	1,529.9	11.0%	160-170	0.3	0%
80-90	157.7	1.1%	170-180	0.1	0%

ISOCANDELA DIAGRAM:

STREETLIGHT ISOCANDELA DIAGRAM:


LCS REPORT:

LUMINAIRE CLASSIFICATION SYSTEM(LCS) GRAPH



*****End of Report*****