

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 QM5AU7T540 Quadramax 5 Module Type V 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: CITL0001255

Sample Arrival Date: 09/25/2015

Date of Test: 10/08/2015

Report Issue Date: 10/14/2015

Report Prepared By:



Franklin Navarro
Lab Technician

Report Approved By:



Juan Xiang
Lab Manager

Sample Number: 1186

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:	QM5AU7T540
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:	14,417Lm	Lm
Efficacy:	109.39Lm/W	Lm/W
Color Rendering Index *(CRI)	Ra: 73.5 R ₉ : 0	Ra: R ₉ :
Correlated Color Temperature (K):	3900	
Chromaticity Coordinate x:	0.3835	
Chromaticity Coordinate y:	0.3746	
Ambient Temperature (°C):	25°C	
Stabilization Time (Hours):	45 Mins	
Total Operation Time (Hours):	1 Hrs	
u/u':	0.2280	
V':	0.5011	
Duv:	1.88e-03	
Spacing Criteria (0-180)	2.30	
Spacing Criteria (90-270)	2.32	
Zonal Lumens in the 0°-60° Zone	6,933.6lm – 48.1%	
Zonal Lumens in the 60°-90° Zone	7,471.5lm – 51.8%	
Zonal Lumens in the 0°-90° Zone	14,405.2lm – 99.9%	
Zonal Lumens in the 90°-120° Zone	8.0lm – 0.1%	
Zonal Lumens in the 90°-180° Zone	12.5lm – 0.1%	
BUG (Back, Up, Glare) Report	B4 – 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

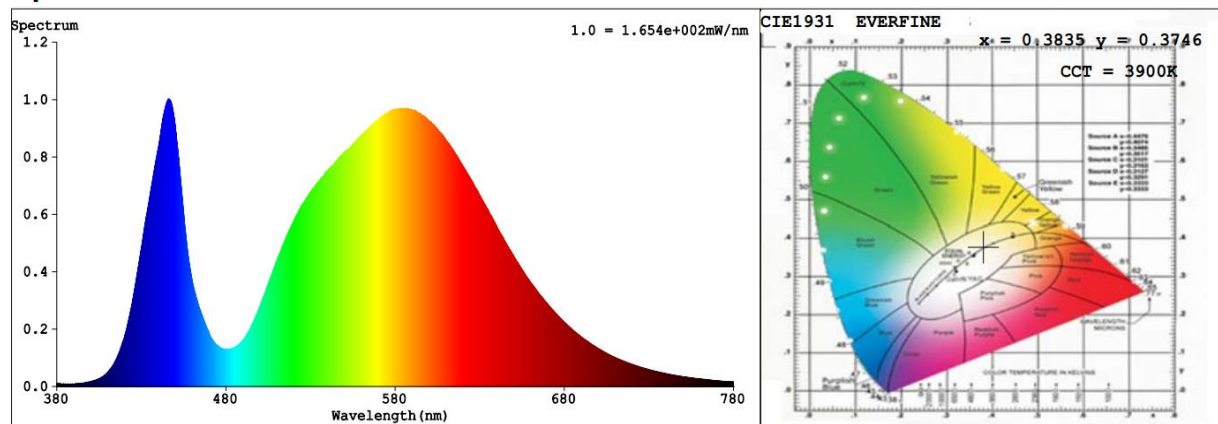
A sensing Spectrometer HASS-2000, in conjunction with Everfine 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature (CCT) and the color rendering index (CRI) for each sample. Test Geometry Configuration 4 π .

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.

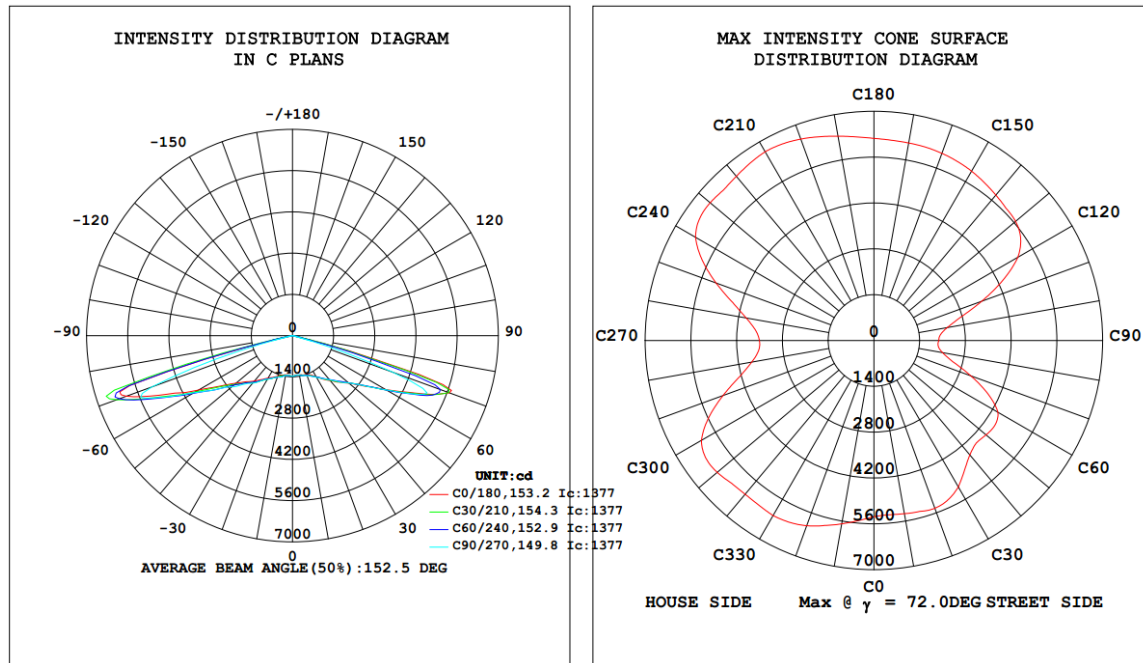
STREETLIGHT PHOTOMETRIC TEST REPORT:

Spectrum

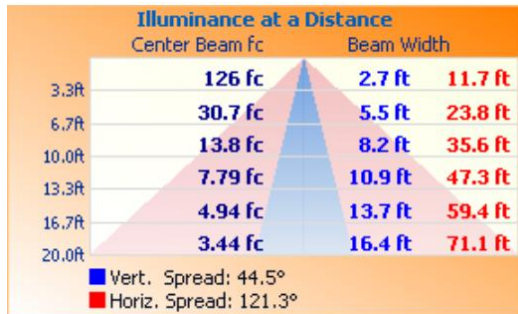


Spectral Distribution

CIE1931 Chromaticity Diagram

STREETLIGHT PHOTOMETRIC TEST REPORT:

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Φ lum, lamp
10	1355	1350	1366	1359	1349	1369	1376	1370	0- 10	129.6	129.6	0.90,0.90
20	1411	1430	1443	1468	1464	1501	1498	1471	10- 20	400.8	530.5	3.68,3.68
30	1605	1609	1635	1650	1667	1693	1707	1650	20- 30	719.5	1250	8.67,8.67
40	1989	1950	1949	1972	2010	2059	2103	2052	30- 40	1151	2401	16.7,16.7
50	2511	2418	2494	2486	2507	2570	2698	2674	40- 50	1758	4159	28.8,28.8
60	3668	3688	3682	3819	3690	3937	3873	3997	50- 60	2775	6934	48.1,48.1
70	5678	5472	3609	5926	6013	6300	5091	6335	60- 70	4785	11719	81.3,81.3
80	104.8	230.3	88.80	208.6	122.5	226.5	107.4	243.8	70- 80	2616	14335	99.4,99.4
90	0	0	0	0	3.581	6.677	2.562	1.166	80- 90	69.47	14405	99.9,99.9
100	1.668	2.762	0.2679	2.103	2.417	1.410	0.8162	2.093	90-100	0.5779	14406	99.9,99.9
110	3.955	4.371	3.646	4.330	4.292	3.294	3.716	4.054	100-110	3.353	14409	99.9,99.9
120	4.291	3.833	4.188	3.720	3.754	3.968	3.513	4.465	110-120	4.071	14413	100,100
130	1.882	1.211	2.500	1.150	1.268	1.687	1.552	1.962	120-130	2.513	14415	100,100
140	1.142	0.6052	1.351	0.5412	0.4694	0.8760	0.8093	1.083	130-140	0.9019	14416	100,100
150	0.7392	0.6052	0.9472	0.5412	0.4694	0.8070	0.7431	0.9471	140-150	0.5017	14417	100,100
160	0.5365	0.6052	0.7431	0.5412	0.4694	0.7397	0.7431	0.9480	150-160	0.3321	14417	100,100
170	0.5365	0.6052	0.6756	0.6765	0.4694	0.6725	0.7431	0.8118	160-170	0.1873	14417	100,100
180	0.5365	0.6052	0.6756	0.6765	0.4694	0.6725	0.7431	0.8118	170-180	0.0629	14417	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



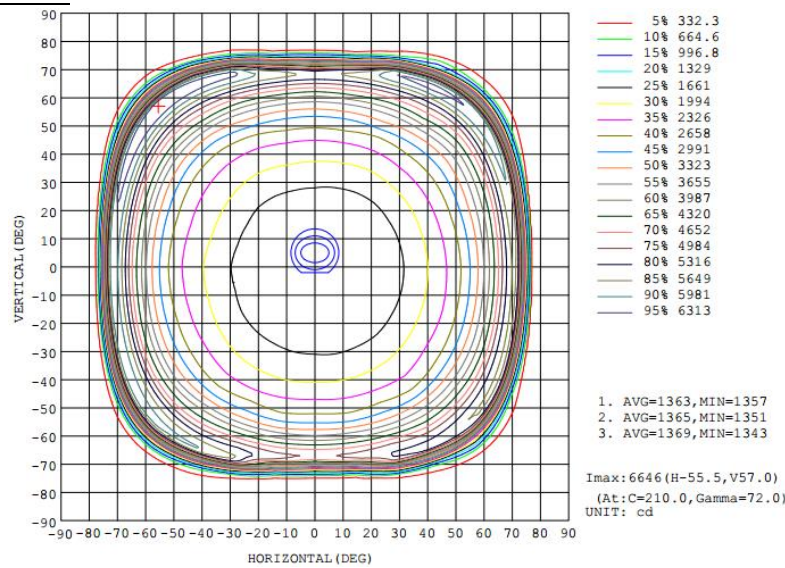
Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	1,250.0	8.7%
0-40	2,401.1	16.7%
0-60	6,933.6	48.1%
60-90	7,471.5	51.8%
70-100	2,686.4	18.6%
90-120	8.0	0.1%
0-90	14,405.2	99.9%
90-180	12.5	0.1%
0-180	14,417.7	100%

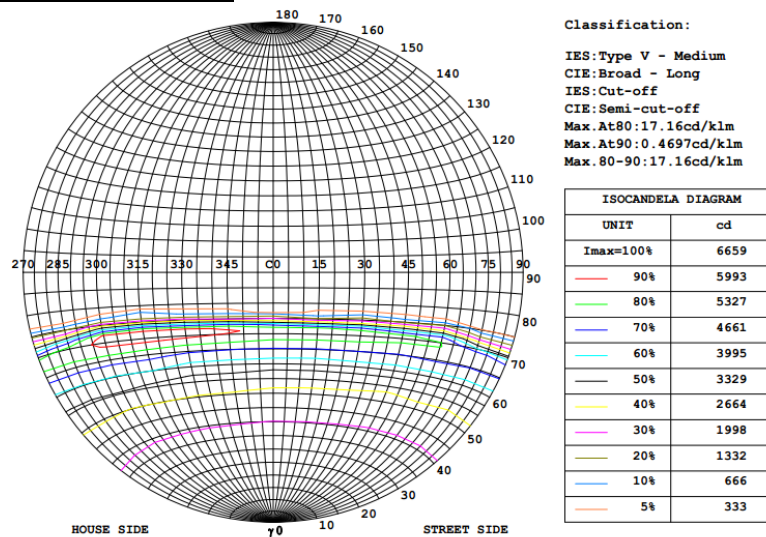
Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	129.6	0.9%	90-100	0.6	0%
10-20	400.9	2.8%	100-110	3.4	0%
20-30	719.5	5.0%	110-120	4.1	0%
30-40	1,151.1	8.0%	120-130	2.5	0%
40-50	1,757.3	12.2%	130-140	0.9	0%
50-60	2,775.2	19.2%	140-150	0.5	0%
60-70	4,785.8	33.2%	150-160	0.3	0%
70-80	2,616.3	18.1%	160-170	0.2	0%
80-90	69.5	0.5%	170-180	0.1	0%

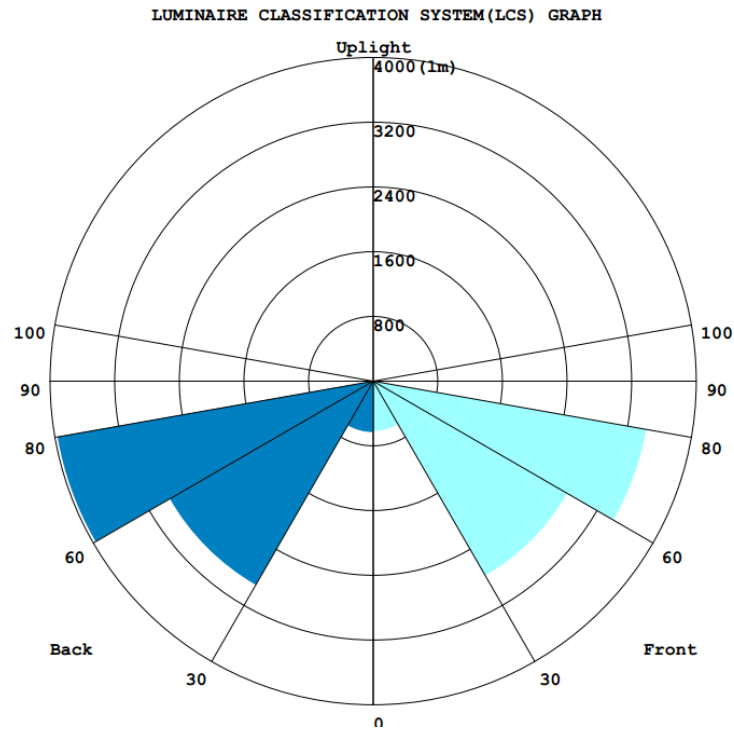
ISOCANDELA DIAGRAM:



STREETLIGHT ISOCANDELA DIAGRAM:



LCS REPORT:



End of Report