

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 QM4AU7T340 Quadramax 4 Module Type III optics.
18"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: CITL0001260

Sample Arrival Date: 09/22/2015

Date of Test: 10/07/2015

Report Issue Date: 10/15/2015

Report Prepared By:



Franklin Navarro
Lab Technician

Report Approved By:



Juan Xiang
Lab Manager

Sample Number: 1191

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:	QM4AU7T340
Driver Model Number:	OT180W/UNV/800C/2DIMLT2/P6
Lamp Model Number:	Luxeon TX

Electrical Measurement:

Input Voltage:	120VAC	277VAC
Input Current:	0.911 A	0.409 A
Input Frequency:	60 HZ	60 Hz
Input Power:	107.6 W	107.06W
Power Factor:	0.9954	0.9464
Total Harmonic Distortion:	3.6 ATHD	10.0 ATHD

Lumen Output:

Lumens:	11,865Lm	Lm
Efficacy:	107.97Lm/W	Lm/W
Color Rendering Index *(CRI)	Ra: 73.6 R ₉ : 0	Ra: R ₉ :
Correlated Color Temperature (K):	3910	
Chromaticity Coordinate x:	0.3830	
Chromaticity Coordinate y:	0.3740	
Ambient Temperature (°C):	25°C	
Stabilization Time (Hours):	45 Mins	
Total Operation Time (Hours):	1 Hrs	
u/u':	0.2279	
V':	0.5007	
Duv:	2.03e-03	
Spacing Criteria (0-180)	2.94	
Spacing Criteria (90-270)	3.90	
Zonal Lumens in the 0°-60° Zone	8,210lm – 69.2%	
Zonal Lumens in the 60°-90° Zone	3,644.0lm – 30.7%	
Zonal Lumens in the 0°-90° Zone	11,854.7lm – 99.9%	
Zonal Lumens in the 90°-120° Zone	3.6lm – 0.0%	
Zonal Lumens in the 90°-180° Zone	8.3lm – 0.1%	
Bug (Back, Up, Glare) Rating	B2-U1-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

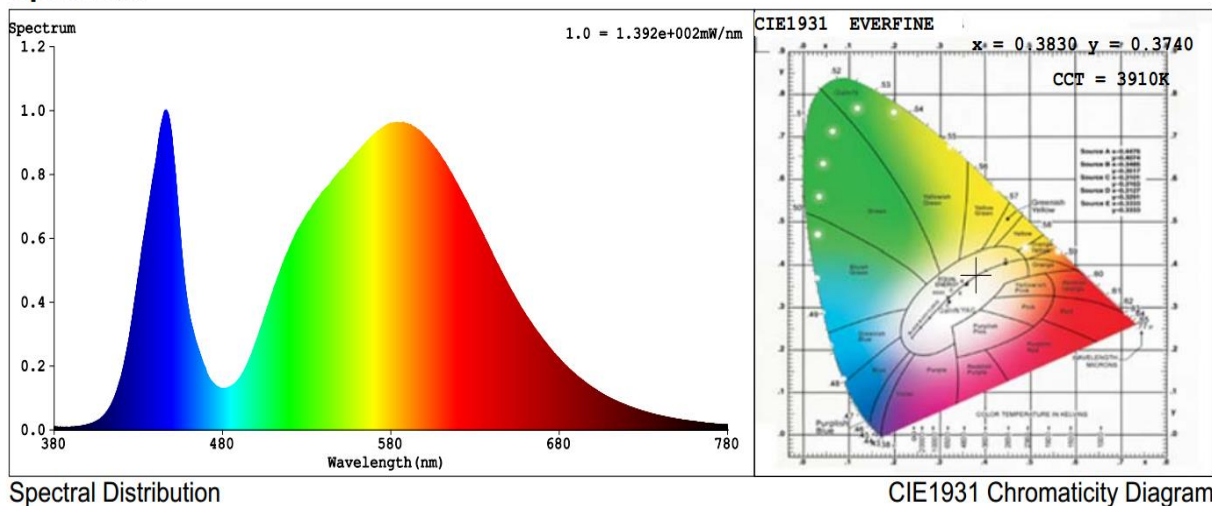
A sensing Spectrometer HASS-2000, in conjunction with Everfine 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature (CCT) and the color rendering index (CRI) for each sample. Test Geometry Configuration 4 π .

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

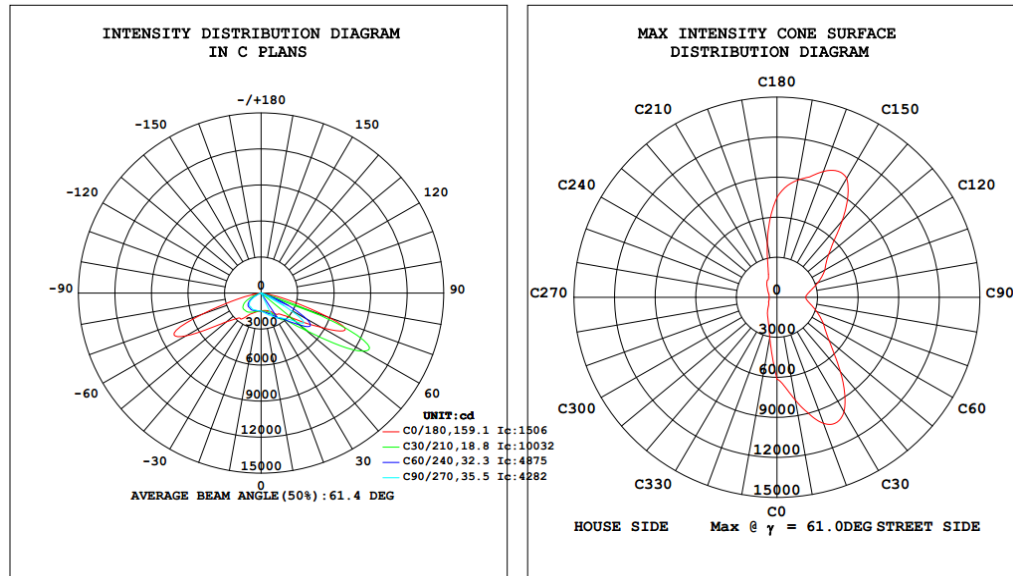
Electrical measurements are measured using the listed equipment.

STREETLIGHT PHOTOMETRIC TEST REPORT:

Spectrum

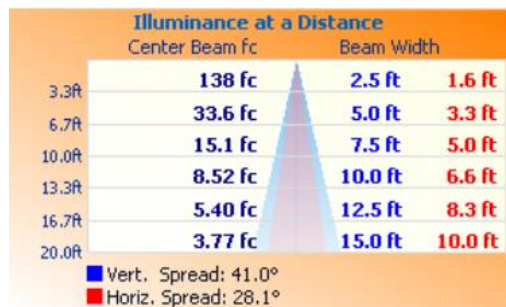


STREETLIGHT PHOTOMETRIC TEST REPORT:



ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	zone	total	lum, lamp
10	147.4	156.1	166.9	162.4	155.0	152.3	149.5	146.6	0- 10	145.5	145.5	1.23, 1.23
20	156.6	177.0	194.5	188.0	175.0	161.7	150.1	149.7	10- 20	457.6	603.1	5.08, 5.08
30	186.7	215.0	237.5	229.5	216.0	172.2	150.7	156.4	20- 30	838.7	1442	12.2, 12.2
40	227.2	293.0	273.7	332.4	271.6	170.7	143.7	153.8	30- 40	1367	2809	23.7, 23.7
50	317.0	472.1	369.9	526.4	374.9	164.0	124.5	145.2	40- 50	2074	4883	41.2, 41.2
60	574.3	621.6	252.3	627.1	713.5	111.5	66.82	97.21	50- 60	3329	8211	69.2, 69.2
70	586.3	170.0	31.73	134.3	513.3	29.89	20.46	32.02	60- 70	2952	11164	94.1, 94.1
80	70.76	12.54	6.808	11.60	58.80	9.677	10.83	10.05	70- 80	628.6	11792	99.4, 99.4
90	0.0003	0.3436	0.3393	0.2141	0.0740	0	0	0	80- 90	64.81	11857	99.9, 99.9
100	0.0605	0	0	0	0.2563	0	0	0	90-100	0.1604	11857	99.9, 99.9
110	0.4169	0	0	0	0.5247	0.2579	0.0340	0.2579	100-110	1.078	11858	99.9, 99.9
120	0.5383	0.0135	0	0.0066	0.5381	0.4416	0.2508	0.4884	110-120	2.330	11860	100, 100
130	0.3977	0.0408	0	0.0340	0.2615	0.3676	0.2507	0.4751	120-130	2.273	11863	100, 100
140	0.2087	0.0746	0.0203	0.0475	0.0937	0.1903	0.1623	0.2578	130-140	1.224	11864	100, 100
150	0.1346	0.0747	0.0203	0.0475	0.0605	0.1494	0.1152	0.1628	140-150	0.5951	11865	100, 100
160	0.0875	0.0747	0.0203	0.0475	0.0605	0.0951	0.1085	0.1155	150-160	0.3700	11865	100, 100
170	0.0874	0.0747	0.0407	0.0475	0.0605	0.0815	0.1085	0.1018	160-170	0.1966	11865	100, 100
180	0.0942	0.0747	0.0407	0.0475	0.0605	0.0815	0.1085	0.1018	170-180	0.0723	11865	100, 100
DEG	LUMINOUS INTENSITY: μ A10cd									UNIT: lm		



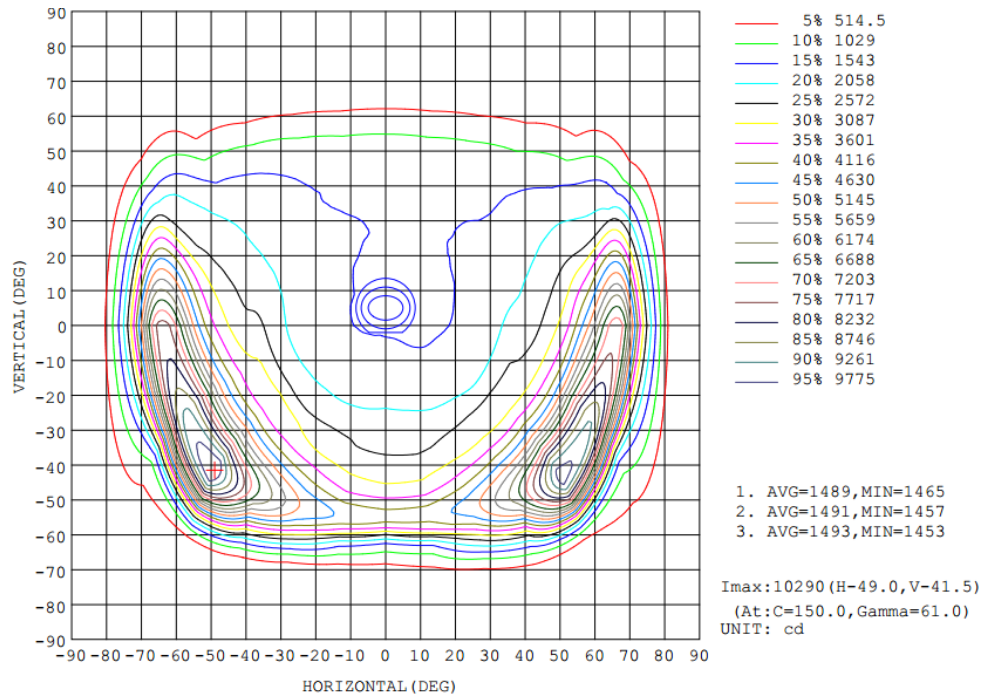
Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	1,442.0	12.2%
0-40	2,808.9	23.7%
0-60	8,210.6	69.2%
60-90	3,644.0	30.7%
70-100	693.2	5.8%
90-120	3.6	0%
0-90	11,854.7	99.9%
90-180	8.3	0.1%
0-180	11,863.0	100%

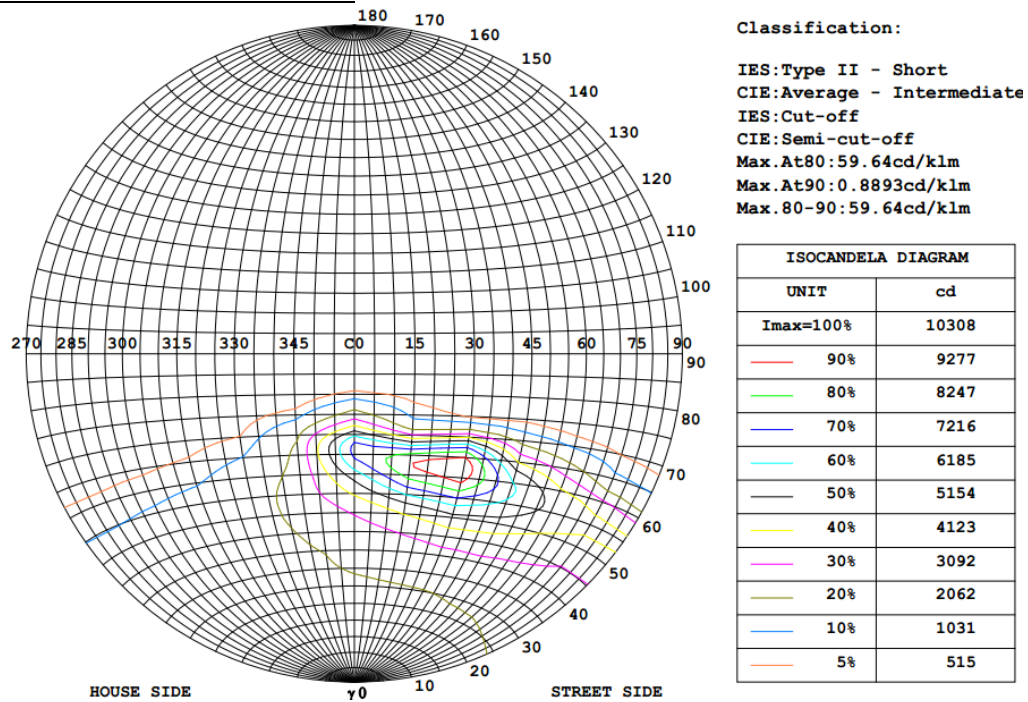
Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	145.5	1.2%	90-100	0.2	0%
10-20	457.6	3.9%	100-110	1.1	0%
20-30	838.8	7.1%	110-120	2.3	0%
30-40	1,367.0	11.5%	120-130	2.3	0%
40-50	2,073.6	17.5%	130-140	1.2	0%
50-60	3,328.1	28.1%	140-150	0.6	0%
60-70	2,951.0	24.9%	150-160	0.4	0%
70-80	628.2	5.3%	160-170	0.2	0%
80-90	64.8	0.5%	170-180	0.1	0%

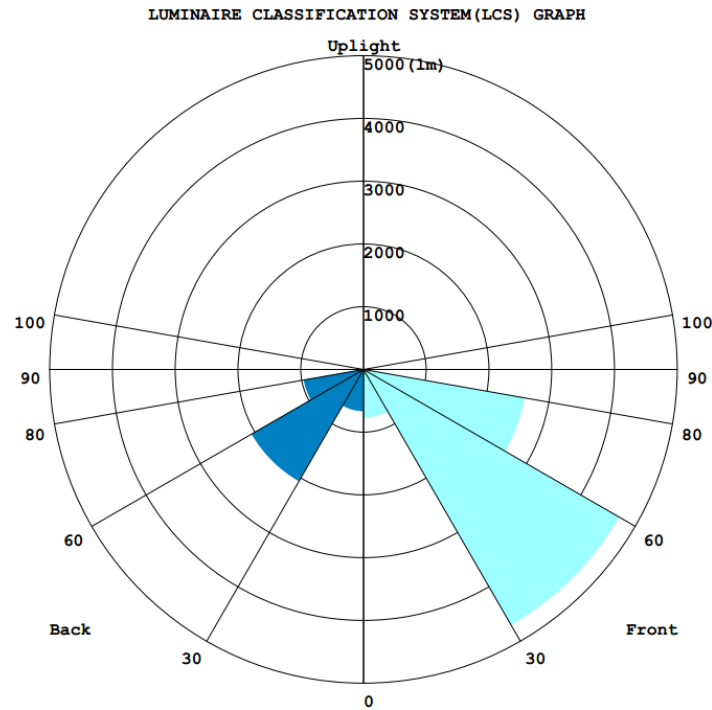
ISOCANDELA DIAGRAM:



STREETLIGHT ISOCANDELA DIAGRAM:



LCS REPORT:



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