



REPORT

545 E. Algonquin Rd., Arlington Heights, IL 60005

Project No. G102171228

Date: April 11, 2017

REPORT NO. 102171228CHI-089

TEST OF ONE LED DOWNLIGHT

MODEL NO. E2SL-LH83060AI
LED MODEL NO. CITIZEN CLU028-1203C4-303M2M2-F1
DRIVER MODEL NO. LTF DA18W440C40BF-0000

RENDERED TO

GENERATION BRANDS
7400 LINDER AVE.
SKOKIE, IL 60077 USA

TEST: Electrical and Photometric tests as required to the IESNA test standard.

AUTHORIZATION: The testing performed was authorized by signed quote number 500606081.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

DESCRIPTION OF SAMPLE: The client submitted one prototype sample of model number E2SL-LH83060AI. The sample was received by Intertek on April 4, 2017, in undamaged condition and one sample was tested as received. The sample designation was 40142017041733G.

DATES OF TESTS: April 11, 2017

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SUMMARY

Model No.:	E2SL-LH83060AI
Description:	LED Downlight

Criteria	Result
Total Lumen Output (Lumens)	1382
Total Power (W)	18.74
Luminaire Efficacy (LPW)	73.75
Power Factor	0.982

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Yokogawa Power Meter	WT210	146919	07/11/16	07/11/17	04/11/17
Omega Newport Thermometer	DPI8-C24	146920	10/07/16	10/07/17	04/11/17
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	04/11/17
Newport Thermohygrometer	iServer	146956	01/06/17	01/06/18	04/11/17
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	04/11/17

TEST METHODS

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IESNA LM-79.

Photometric and Electrical Measurements – Distribution Method

A LSI Type C High Speed Model 6440 Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

Some graphics were created with Photometrics Plus software.

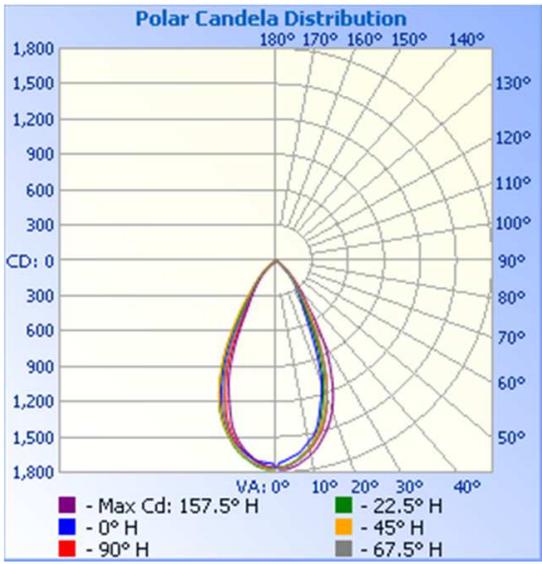
RESULTS OF TEST

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (LPW)
40142017041733G	Up	120.0	159.0	18.74	0.982	1382	73.75

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	1764	1764	1764	1764	1764
5	1667	1718	1724	1725	1721
10	1562	1607	1612	1623	1629
15	1380	1429	1445	1473	1483
20	1109	1153	1233	1237	1235
25	718	828	921	940	923
30	442	496	638	584	542
35	310	332	377	351	350
40	208	220	239	233	238
45	83	118	142	140	139
50	1	7	70	40	26
55	1	1	6	1	1
60	0	1	1	0	0
65	0	0	0	0	0
70	0	0	1	0	0
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0

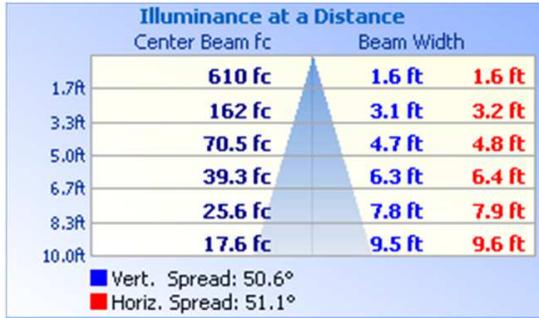


RESULTS OF TEST (cont'd)

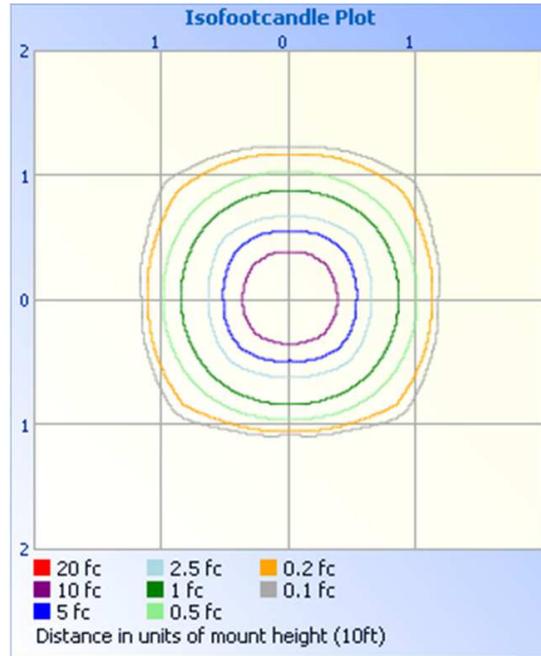
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



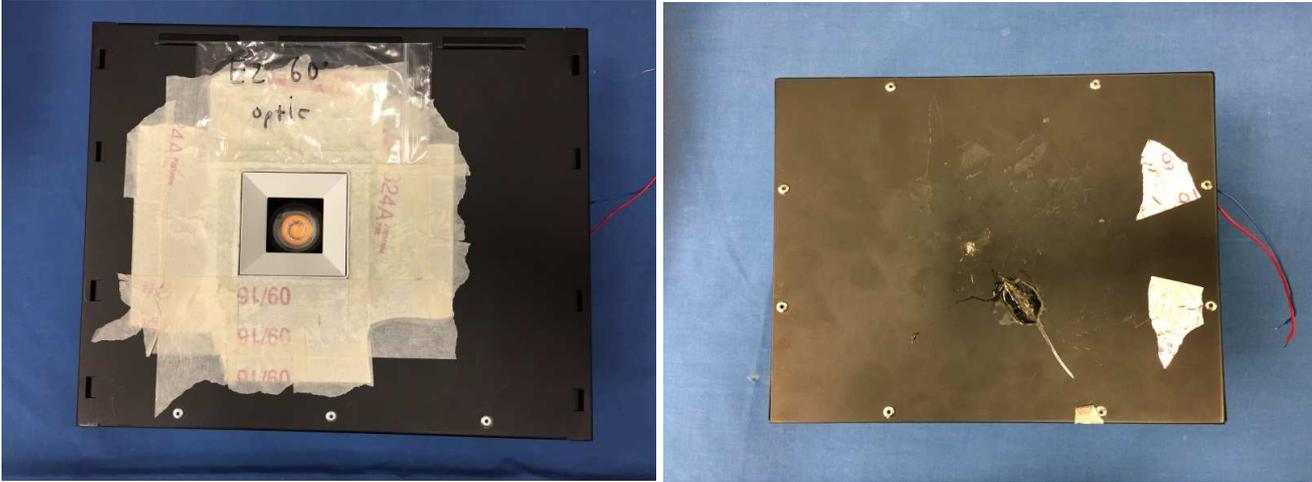
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	1005	72.7
0-40	1257	90.9
0-60	1381	99.9
60-90	1.1	0.1
0-90	1382	100.0
90-180	0.0	0.0
0-180	1382	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	161.8	11.7
10-20	410.7	29.7
20-30	432.6	31.3
30-40	251.7	18.2
40-50	113.0	8.2
50-60	11.1	0.8
60-70	0.5	0.0
70-80	0.4	0.0
80-90	0.2	0.0

PICTURES (not to scale)



CONCLUSION

The results tabulated in this report are representative of the actual test samples submitted for this report only. The data is provided to the client for further evaluation. Compliance to the referenced specification requirements was not determined in this report.

In Charge Of Tests:

Jehue Williams
Associate Engineer
Lighting Division

Attachment: None

Report Reviewed By:

Timothy Quigley
Engineer
Lighting Division