



# REPORT

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

Project No. G102171228

Date: April 10, 2017

REPORT NO. 102171228CHI-085

TEST OF ONE LED DOWNLIGHT

MODEL NO. E2SL-LO83060AI  
LED MODEL NO. CITIZEN CLU028-1203C4-303M2M2-F1  
DRIVER MODEL NO. LTF DA15W300C2042BF-00HE

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-LO83060AI. The sample was received by Intertek on April 4, 2017, in undamaged condition and one sample was tested as received. The sample designation was 40142017041733C.

DATES OF TESTS: April 10, 2017

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SUMMARY

Model No.:	E2SL-LO83060AI
Description:	LED Downlight

Criteria	Result
Total Lumen Output (Lumens)	1025
Total Power (W)	12.46
Luminaire Efficacy (LPW)	82.26
Power Factor	0.980

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	04/10/17
Omega Newport Thermometer	DPI8-C24	146920	10/07/16	10/07/17	04/10/17
LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU	04/10/17
Newport Thermohygrometer	iServer	146956	01/06/17	01/06/18	04/10/17
Pacific, AC power supply	118-ACX	CHI0358	VBU	VBU	04/10/17

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.

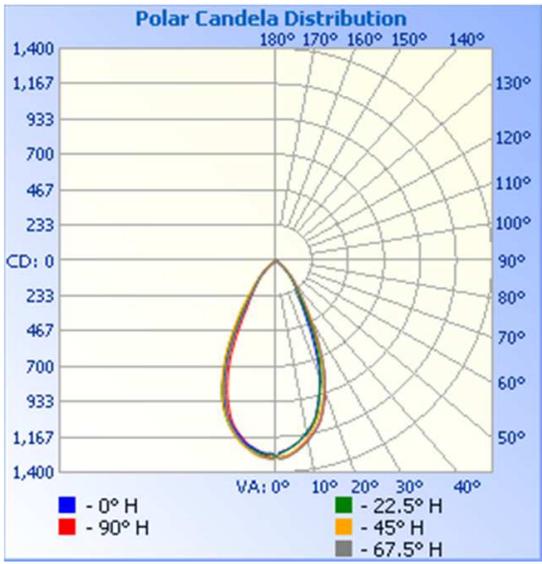
**RESULTS OF TEST**

**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)
40142017041733C	Up	120.0	105.9	12.46	0.980	1025	82.26

**Intensity (Candlepower) Summary at 25°C - Candelas**

Angle	0	22.5	45	67.5	90
0	1298	1298	1298	1298	1298
5	1232	1232	1268	1282	1274
10	1156	1149	1184	1207	1201
15	1024	1033	1063	1097	1101
20	829	839	908	920	926
25	557	613	682	698	692
30	334	364	468	450	419
35	231	238	279	278	270
40	158	156	172	182	184
45	72	89	99	110	103
50	1	8	50	31	20
55	1	1	4	0	0
60	0	0	0	0	0
65	0	0	0	0	0
70	0	0	0	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

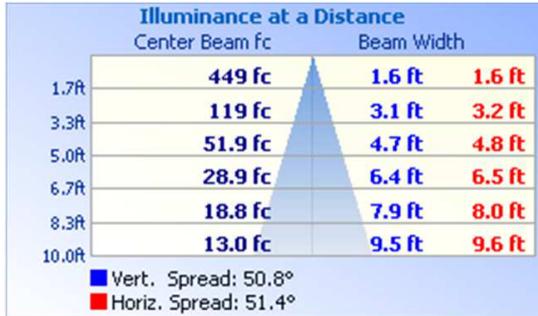


RESULTS OF TEST (cont'd)

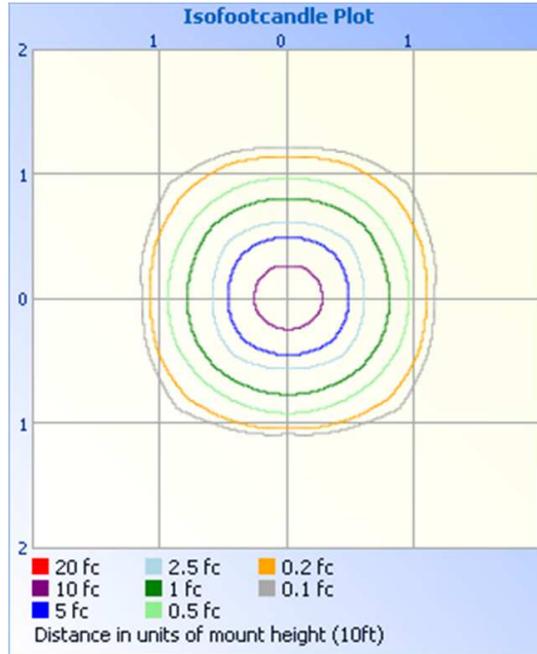
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



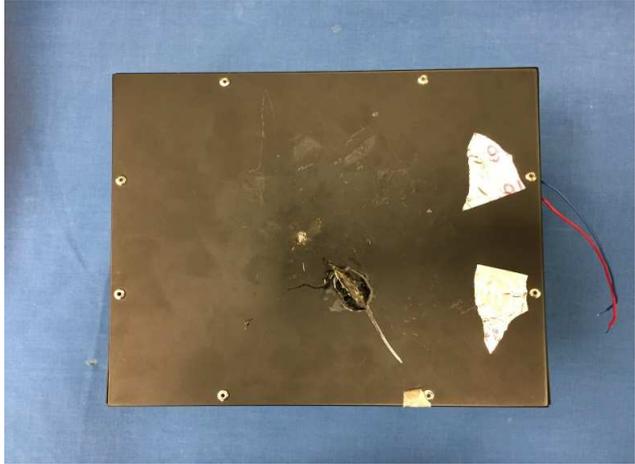
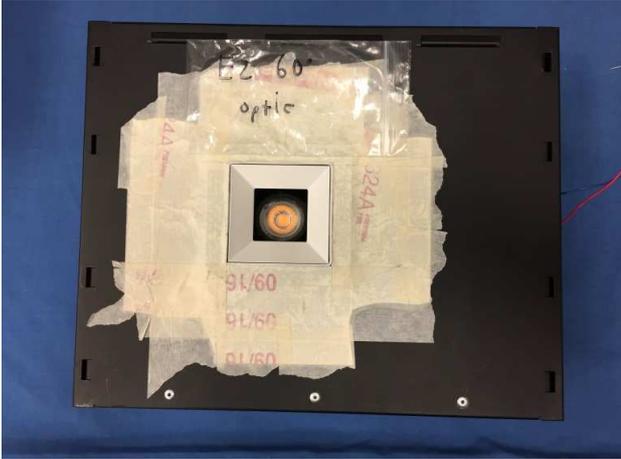
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	743.9	72.6
0-40	930.6	90.8
0-60	1024	99.9
60-90	1.0	0.1
0-90	1025	100.0
90-180	0.0	0.0
0-180	1025	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	119.1	11.6
10-20	303.6	29.6
20-30	321.3	31.3
30-40	186.7	18.2
40-50	84.9	8.3
50-60	8.7	0.9
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