



# REPORT

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

Project No. G102171228

Date: April 11, 2017

REPORT NO. 102171228CHI-088

TEST OF ONE LED DOWNLIGHT

MODEL NO. E2SL-LH83030AI  
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-LH83030AI. The sample was received by Intertek on April 4, 2017, in undamaged condition and one sample was tested as received. The sample designation was 40142017041733F.

DATES OF TESTS: April 11, 2017

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SUMMARY

Model No.:	E2SL-LH83030AI
Description:	LED Downlight

Criteria	Result
Total Lumen Output (Lumens)	1414
Total Power (W)	18.73
Luminaire Efficacy (LPW)	75.49
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.

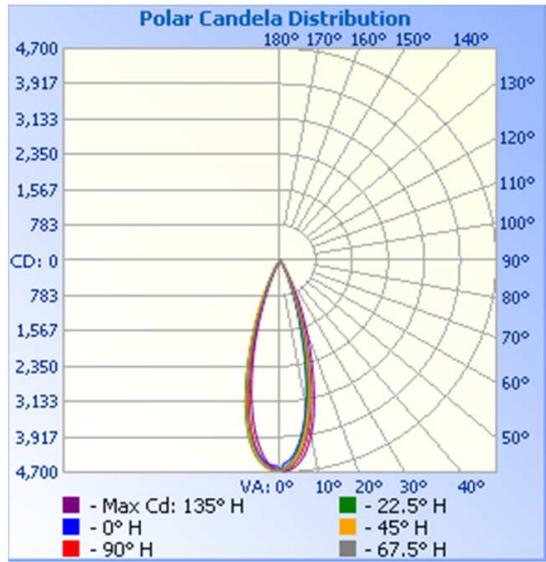
**RESULTS OF TEST**

**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)
40142017041733F	Up	120.0	158.9	18.73	0.982	1414	75.49

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

Angle	0	22.5	45	67.5	90
0	4644	4644	4644	4644	4644
5	4184	4256	4322	4380	4434
10	3249	3312	3454	3577	3698
15	1948	2030	2286	2392	2488
20	933	983	1178	1242	1304
25	342	392	428	531	544
30	87	126	161	198	176
35	27	38	68	62	52
40	7	8	27	17	12
45	2	3	5	4	4
50	1	1	2	2	1
55	0	0	1	0	0
60	0	0	1	0	0
65	0	0	1	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

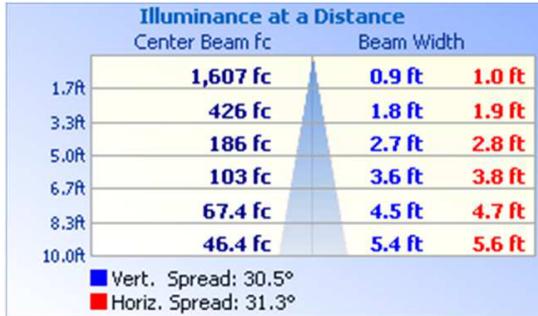


RESULTS OF TEST (cont'd)

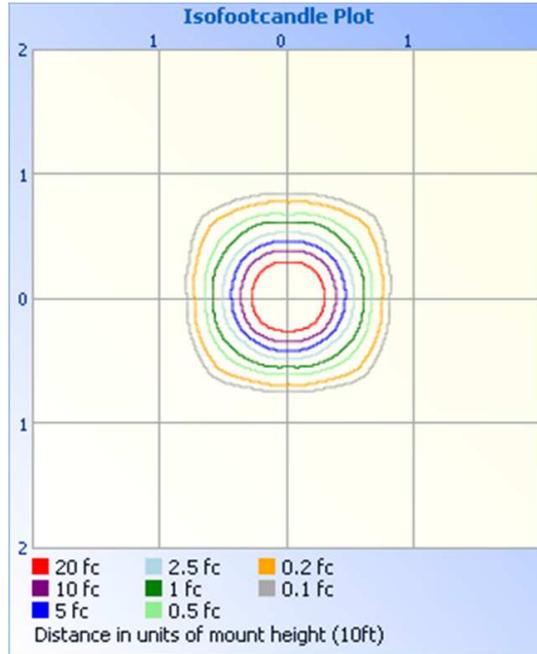
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



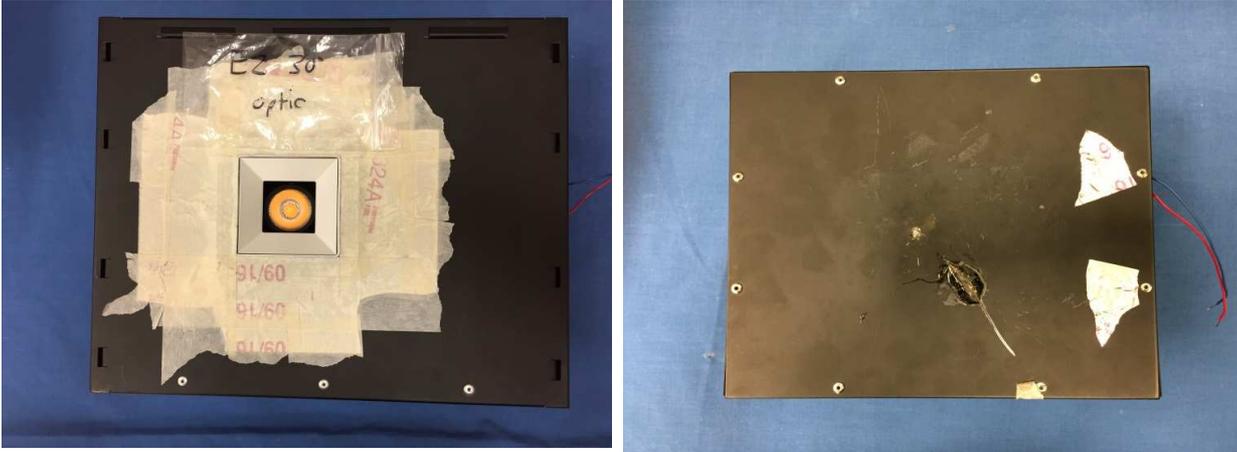
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	1354	95.7
0-40	1406	99.4
0-60	1413	99.9
60-90	1.2	0.1
0-90	1414	100.0
90-180	0.0	0.0
0-180	1414	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	396.4	28.0
10-20	670.7	47.4
20-30	286.4	20.3
30-40	52.3	3.7
40-50	6.4	0.5
50-60	0.8	0.1
60-70	0.5	0.0
70-80	0.4	0.0
80-90	0.3	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