



# REPORT

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

Project No. G102171228

Date: April 10, 2017

REPORT NO. 102171228CHI-083

TEST OF ONE LED DOWNLIGHT

MODEL NO. E2SL-LO83020AI  
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-LO83020AI. The sample was received by Intertek on April 4, 2017, in undamaged condition and one sample was tested as received. The sample designation was 4042017041733.

DATES OF TESTS: April 10, 2017

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## SUMMARY

Model No.:	E2SL-LO83020AI
Description:	LED Downlight

Criteria	Result
Total Lumen Output (Lumens)	901.2
Total Power (W)	12.46
Luminaire Efficacy (LPW)	72.33
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	VBV	VBV	04/10/17
Newport Thermohygrometer	iServer	146956	01/06/17	01/06/18	04/10/17
Pacific, AC power supply	118-ACX	CHI0358	VBV	VBV	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.

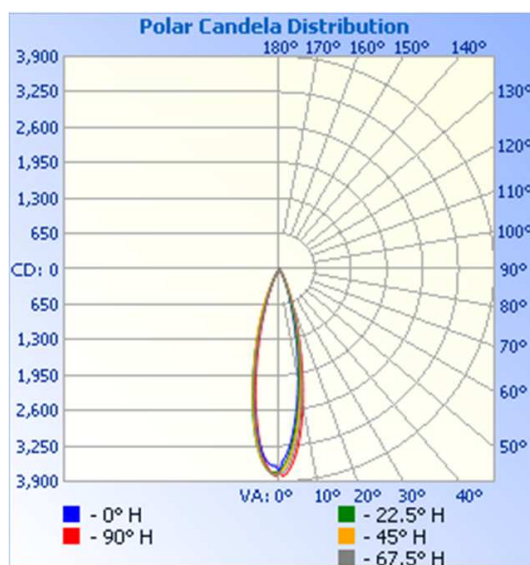
## RESULTS OF TEST

### 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)
4042017041733	Up	120.0	105.9	12.46	0.980	901.2	72.33

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

Angle	0	22.5	45	67.5	90
0	3730	3730	3730	3730	3730
5	2971	3068	3168	3294	3424
10	1978	2074	2190	2339	2468
15	1083	1158	1329	1393	1454
20	521	563	701	720	723
25	222	250	277	322	310
30	75	98	107	132	120
35	22	32	53	49	41
40	5	6	24	15	10
45	2	3	6	4	3
50	1	1	2	2	2
55	0	0	1	1	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

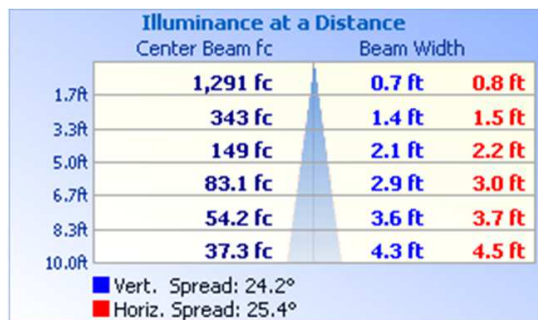


# RESULTS OF TEST (cont'd)

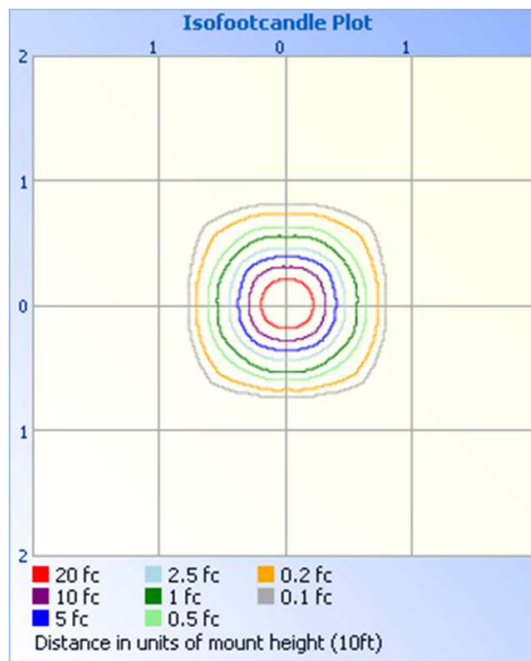
## Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



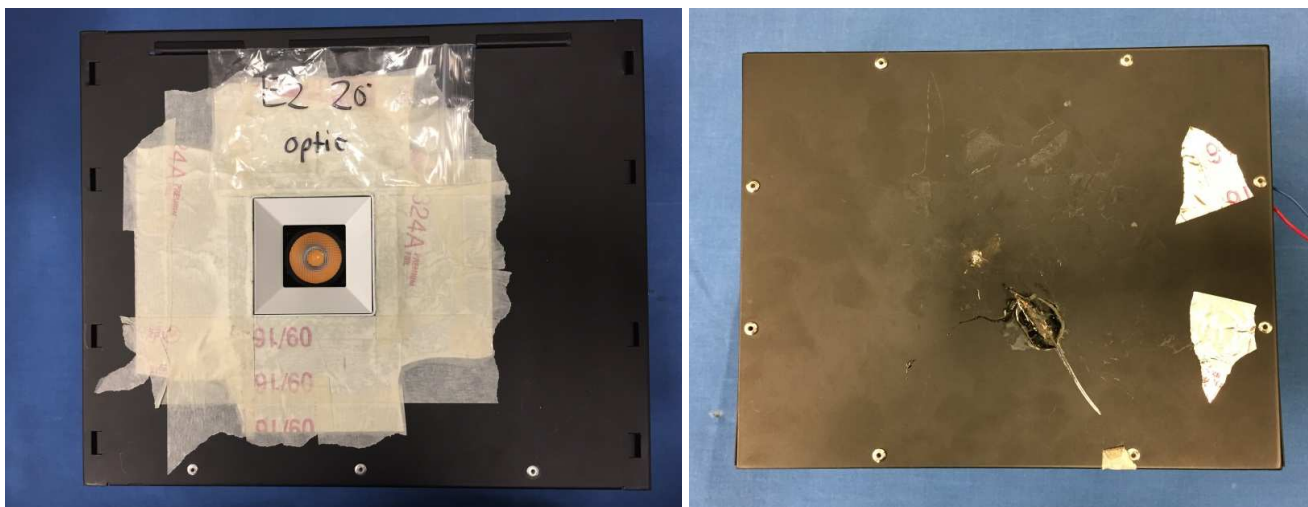
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	858.5	95.3
0-40	894.0	99.2
0-60	900.2	99.9
60-90	1.0	0.1
0-90	901.2	100.0
90-180	0.0	0.0
0-180	901.2	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	288.1	32.0
10-20	404.0	44.8
20-30	166.4	18.5
30-40	35.5	3.9
40-50	5.4	0.6
50-60	0.8	0.1
60-70	0.4	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.

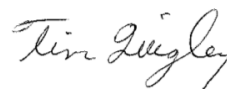
In Charge Of Tests:



Jehue Williams  
Associate Engineer  
Lighting Division

Attachment: None

Report Reviewed By:



Timothy Quigley  
Engineer  
Lighting Division