



REPORT

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

Project No. G102171228

Date: April 11, 2017

REPORT NO. 102171228CHI-087

TEST OF ONE LED DOWNLIGHT

MODEL NO. E2SL-LH83020AI
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-LH83020AI. The sample was received by Intertek on April 4, 2017, in undamaged condition and one sample was tested as received. The sample designation was 40142017041733E.

DATES OF TESTS: April 11, 2017

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SUMMARY

Model No.:	E2SL-LH83020AI
Description:	LED Downlight

Criteria	Result
Total Lumen Output (Lumens)	1206
Total Power (W)	18.70
Luminaire Efficacy (LPW)	64.49
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.

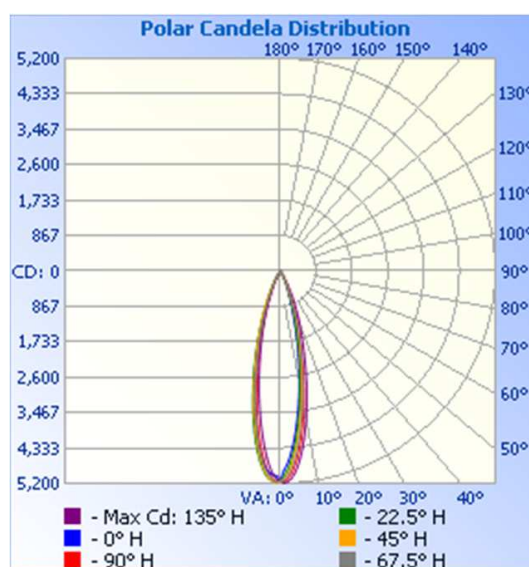
RESULTS OF TEST

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)
40142017041733E	Up	120.0	158.7	18.70	0.982	1206	64.49

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	5136	5136	5136	5136	5136
5	4054	4202	4347	4485	4616
10	2654	2762	2956	3119	3278
15	1383	1504	1756	1857	1896
20	627	713	878	924	924
25	249	304	326	411	393
30	81	116	128	166	151
35	24	38	65	62	50
40	6	8	30	18	12
45	3	4	6	4	4
50	1	2	2	2	2
55	1	1	1	1	1
60	0	1	1	0	0
65	0	1	1	0	0
70	0	1	1	0	0
75	0	0	1	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0

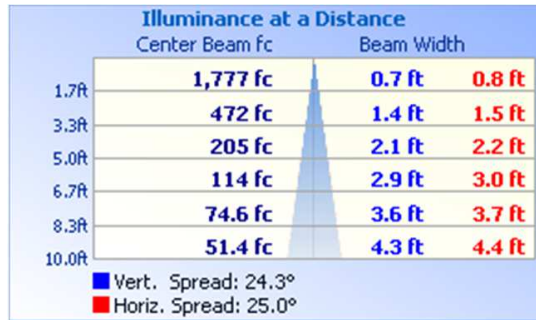


RESULTS OF TEST (cont'd)

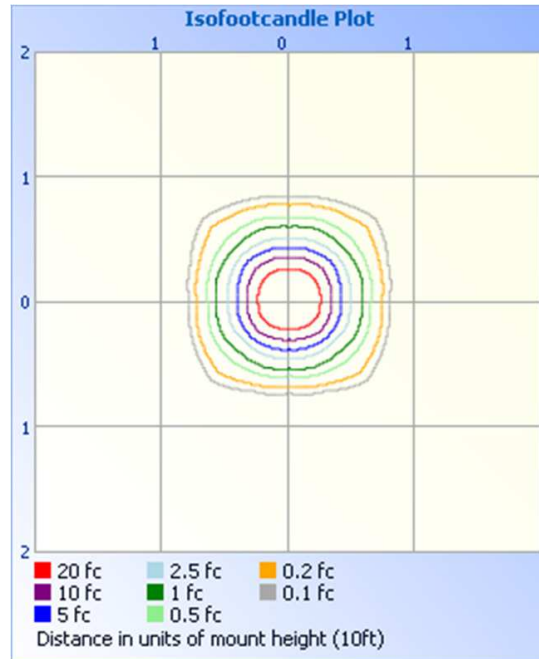
Illumination Plots

Mounting Height: 10 ft.

Illuminance - Cone of Light



Isoillumination Plot



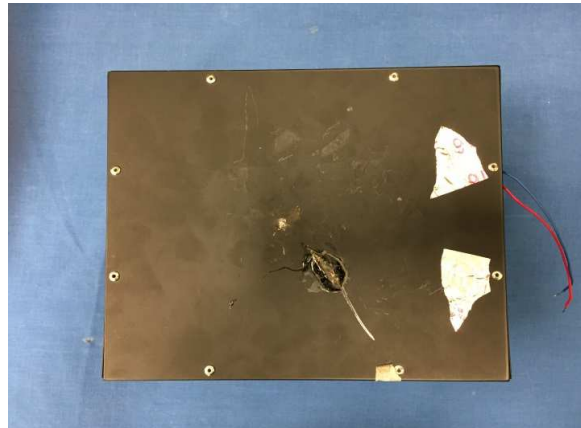
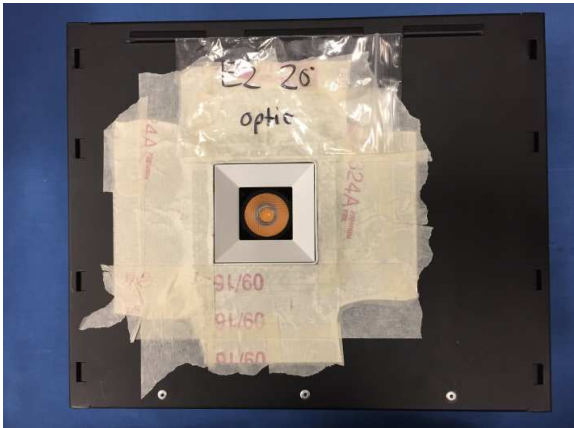
Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	1150	95.3
0-40	1197	99.2
0-60	1205	99.9
60-90	1.4	0.1
0-90	1206	100.0
90-180	0.0	0.0
0-180	1206	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	391.1	32.4
10-20	538.4	44.6
20-30	220.4	18.3
30-40	47.2	3.9
40-50	6.7	0.6
50-60	1.0	0.1
60-70	0.6	0.0
70-80	0.5	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