

ILLUMADYNE, INC

TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

4CB-UNV-43-M-3500-[OPTIONS]

PROJECT NUMBER

G104427113

REPORT NUMBER

104427113CRT-002

ISSUE DATE

8/26/2020

REVISED DATE

None

TEST DATES

8/24/2020

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104427113CRT-002

MODEL NUMBER(s)

4CB-UNV-43-M-3500-[OPTIONS]

REPORT RENDERED TO:

ILLUMADYNE, INC
3840 HOPKINS STREET
PENSACOLA, FL 32505

STATEMENT OF LIMITATION

NVLAP Lab Code 100402-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-01101681-0.

TEST STANDARDS

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

In Charge of Testing:



Melanie Brittain
Senior Associate Engineer
Lighting Division

Reviewer:



Jeff Davis
Technical Lead
Lighting Division

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SAMPLE INFORMATION

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ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	CRT2008201255-001B	4CB-UNV-43-M-3500- [OPTIONS]	High Bay	Production	8/20/2020

*options do not impact
performance

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	4CB-UNV-43-M-3500-[OPTIONS]
Product Description:	High Bay
LED Model No.:	Seoul Semiconductor 3528 Series
Driver Model No.:	Sosen SS-100VP-56BH
Light Source:	LED

Criteria	Results
Light Output (lumens)	15925.8
Input Power (W) @ 120 (Vac)	99.88
Lumen Efficacy (lm/W)	159.4
Input Power Factor (I) @ 120 (Vac)	0.999

TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

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

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

A Type C Mirror Goniophotometer system was used to measure the luminous intensity (candela) at each angle of distribution for the EUT. Electrical measurements of the unit were measured using a power analyzer. Each EUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature was measured at a position near the EUT at equal height and stabilization procedures to LM-79 were followed.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

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PHOTOMETRIC AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

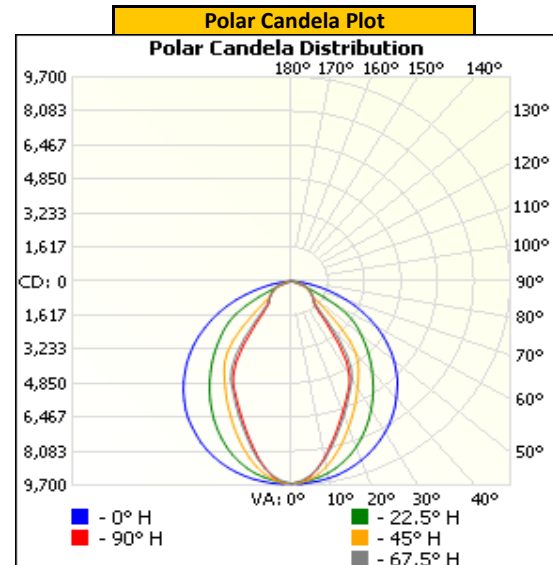
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.00	832.7	99.88	0.999

Light Output (lm)	Lumen Efficacy (lm/W)
15925.8	159.4

INTENSITY SUMMARY - CANDELA

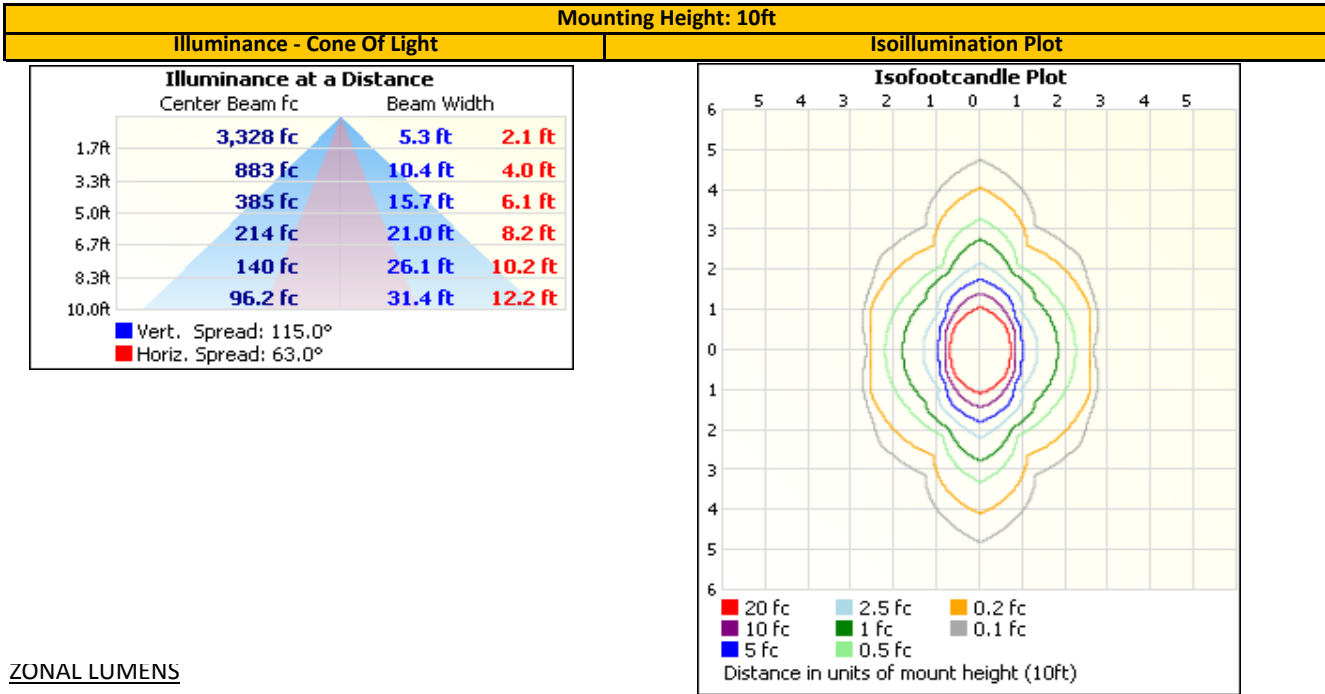
Angle	0	22.5	45	67.5	90
0	9617	9617	9617	9617	9617
5	9606	9499	9452	9284	9338
10	9508	9270	8949	8582	8513
15	9327	8890	8223	7652	7522
20	9054	8393	7410	6796	6638
25	8712	7768	6617	6010	5894
30	8302	7066	5859	5366	5151
35	7808	6317	5197	4284	3687
40	7234	5568	4419	2457	1932
45	6652	4826	3046	1429	1420
50	5954	4076	1555	1261	1265
55	5179	3374	1106	1097	1105
60	4375	2329	931	935	928
65	3490	975	753	757	750
70	2568	576	568	540	70
75	1688	379	233	13	13
80	884	197	5	5	7
85	259	0	0	0	0
90	0	0	0	0	0
95	0	0	0	0	0
100	0	0	0	0	0
105	0	0	0	0	0
110	0	0	0	0	0
115	0	0	0	0	0
120	0	0	0	0	0
125	0	0	0	0	0
130	0	0	0	0	0
135	0	0	0	0	0
140	0	0	0	0	0
145	0	0	0	0	0
150	0	0	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
175	0	0	0	0	0
180	0	0	0	0	0

Entire luminous intensity matrix found in .IES file



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ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary								
Zone	Lumens	Luminaire	Zone	Lumens	Total	Zone	Lumens	Total
0-30	6,405.7	40.2%	0-10	884.0	5.6%	90-100	0.0	0.0%
0-40	9,735.4	61.1%	10-20	2330.4	14.6%	100-110	0.0	0.0%
0-60	14,280.3	89.7%	20-30	3191.3	20.0%	110-120	0.0	0.0%
60-90	1,645.6	10.3%	30-40	3329.7	20.9%	120-130	0.0	0.0%
70-100	464.1	2.9%	40-50	2596.3	16.3%	130-140	0.0	0.0%
90-120	0.0	0.0%	50-60	1948.6	12.2%	140-150	0.0	0.0%
0-90	15,925.8	100.0%	60-70	1181.5	7.4%	150-160	0.0	0.0%
90-180	0.0	0.0%	70-80	414.0	2.6%	160-170	0.0	0.0%
0-180	15,925.8	100.0%	80-90	50.1	0.3%	170-180	0.0	0.0%

EQUIPMENT LIST

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#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	LSI High Speed Mirror Goniometer	6440	---	8/21/2020	9/21/2020
2	Elgar AC Power Supply	CW1251	---	VBV	VBV
3	Yokogawa Power Analyzer	WT210	E464	5/11/2020	5/11/2021
4	Traceable Hygrothermometer	4800	L203	2/17/2020	2/17/2021
5	M-D Building Products Digital Level	Smart Tool	307-L112	5/14/2020	5/14/2021
6	NIST Luminous Intensity Standard Source	NBS10322	N1427	2/11/2019	2/11/2021
7	NIST Luminous Intensity Standard Source	NBS10332	N1435	2/11/2019	2/11/2021
8	NIST Luminous Intensity Standard Source	NBS10265	N1437	2/11/2019	2/11/2021
9	NIST Luminous Flux Standard Source	NBS10428	N1424	1/3/2019	1/3/2021
10	Sorenson DC Power Supply	XG 150-10	---	VBV	VBV
11	Omega Thermometer	DPI8-C24	M263	2/27/2020	2/27/2021
12	Multi Channel Spectroradiometer	OL 770	O230	7/21/2020	7/21/2021

Note: Standard sources listed above are traceable to NIST: National Institute of Standards and Technology

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
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