

SONNEMAN - A WAY OF LIGHT TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

3831

PROJECT NUMBER

G104119984

REPORT NUMBER

104119984CRT-022

ISSUE DATE

5/11/2020

REVISED DATE

None

TEST DATES

5/6/2020

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104119984CRT-022

MODEL NUMBER(s)

3831

REPORT RENDERED TO:

SONNEMAN - A WAY OF LIGHT
151 AIRPORT DRIVE
WAPPINGERS FALLS, NY 12590
USA

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-01007713-2.

TEST STANDARDS

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

In Charge of Testing:

Reviewer:



Gerald Gray
Associate Engineer
Lighting Division



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SAMPLE INFORMATION

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ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	CRT2004291221-002	3831	Keel 22" LED Bath Bar	Production	4/29/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	3831	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	3831
Product Description:	Keel 22" LED Bath Bar
LED Model No.:	Not Provided
Driver Model No.:	ERP EBR010U-0250-42
Light Source:	LED

Criteria	Results
Light Output (lumens)	947.0
Input Power (W) @ 120 (Vac)	9.49
Lumen Efficacy (lm/W)	99.8
Input Power Factor () @ 120 (Vac)	0.988

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 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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Test Configuration	Tested Model No.	Pass/Fail/NA
1	3831	NA

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

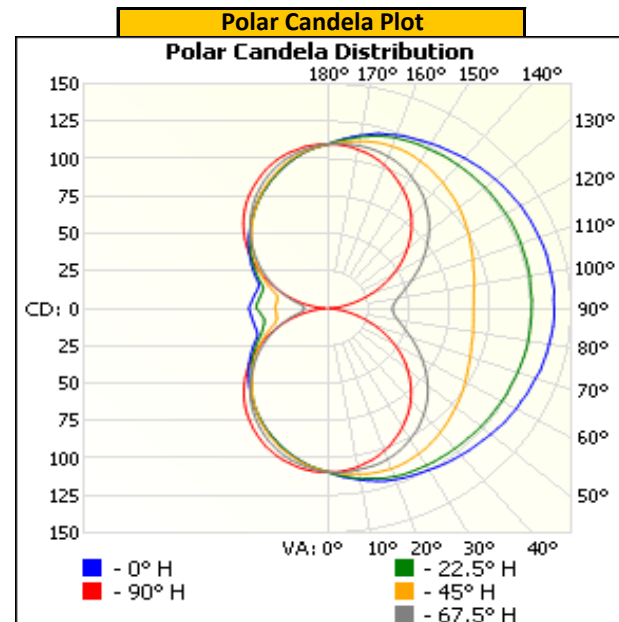
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor (I)
Up	120.07	80.0	9.49	0.988

Light Output (lm)	Lumen Efficacy (lm/W)
947.0	99.8

INTENSITY SUMMARY - CANDELA

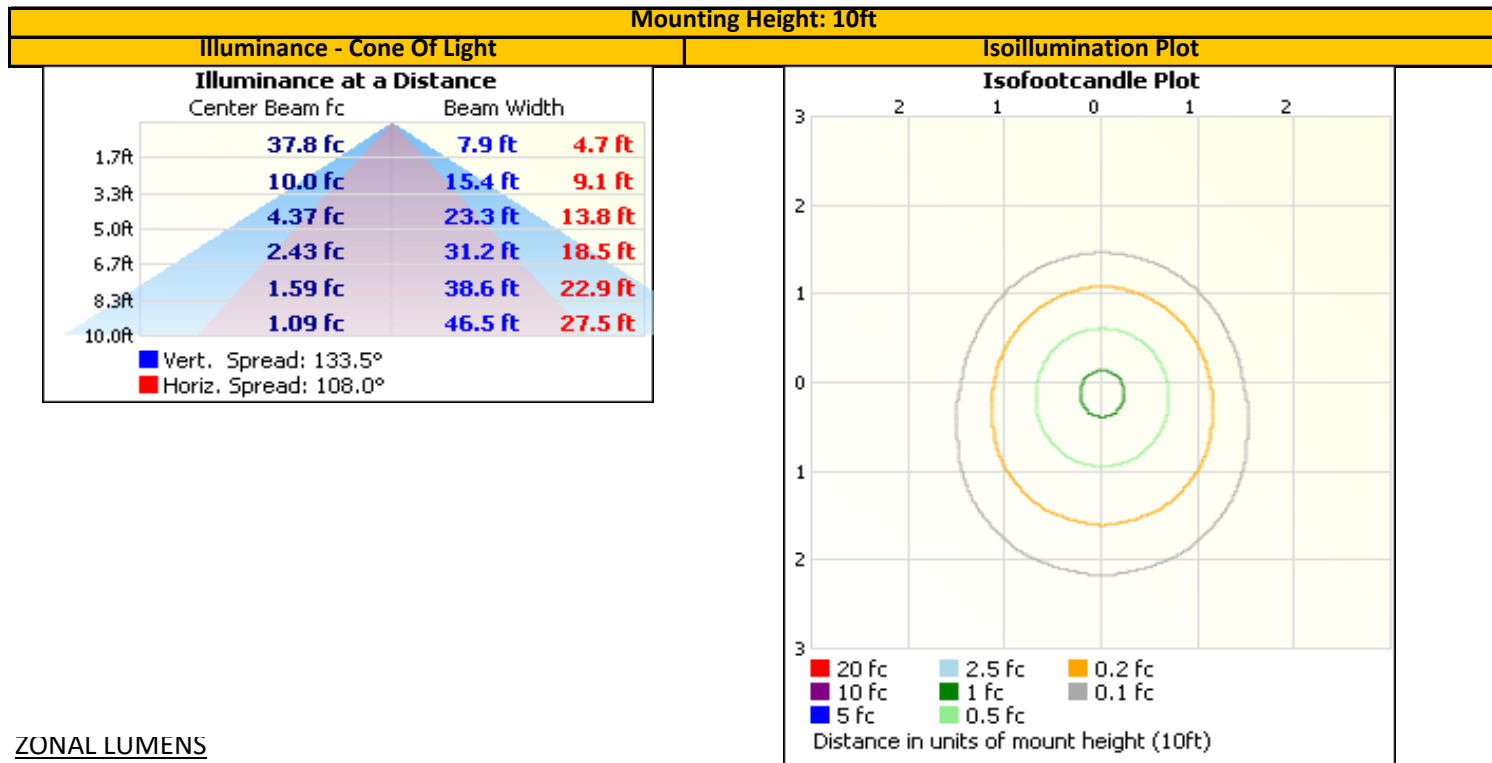
Angle	0	22.5	45	67.5	90
0	109	109	109	109	109
5	113	112	111	110	109
10	116	115	112	109	108
15	119	118	114	109	105
20	122	120	114	107	101
25	123	121	114	105	97
30	125	121	112	101	92
35	126	122	110	97	86
40	128	122	108	92	80
45	129	122	106	87	72
50	131	123	103	80	65
55	133	124	100	74	56
60	134	124	98	67	47
65	135	124	95	60	38
70	136	125	94	54	29
75	138	125	92	48	20
80	138	126	91	44	11
85	139	126	90	41	4
90	140	126	90	40	0
95	140	126	90	41	4
100	140	126	92	45	11
105	140	126	93	49	20
110	139	127	95	55	29
115	138	127	98	62	38
120	137	127	100	68	48
125	136	126	103	75	56
130	134	126	106	82	65
135	133	126	108	88	73
140	131	125	110	94	80
145	129	124	112	98	87
150	127	123	114	102	92
155	125	123	115	106	98
160	123	121	115	108	102
165	121	119	115	110	106
170	117	116	113	110	108
175	114	113	112	110	109
180	110	110	110	110	110

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
0-30	87.5	9.2%	90-100	60.9	6.4%
0-40	146.7	15.5%	100-110	63.4	6.7%
0-60	281.3	29.7%	110-120	67.3	7.1%
60-90	189.7	20.0%	120-130	69.4	7.3%
70-100	184.2	19.4%	130-140	67.1	7.1%
90-120	191.6	20.2%	140-150	59.8	6.3%
0-90	470.9	49.7%	150-160	47.3	5.0%
90-180	476.1	50.3%	160-170	30.4	3.2%
0-180	947.0	100.0%	170-180	10.4	1.1%

EQUIPMENT LIST

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#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	LSI High Speed Mirror Goniometer	6440	---	4/21/2020	5/21/2020
2	Elgar AC Power Supply	CW1251	---	VBV	VBV
3	Sorenson DC Power Supply	XG 150-10	---	VBV	VBV
4	Yokogawa Power Analyzer	WT210	E464	5/7/2019	5/7/2020
5	Omega Thermometer	DPI8-C24	M263	2/27/2020	2/27/2021
6	M-D Building Products Digital Level	Smart Tool	E499	6/27/2019	6/27/2020
7	NIST Luminous Intensity Standard Source	NBS10322	N1427	2/11/2019	2/11/2021
8	NIST Luminous Intensity Standard Source	NBS10332	N1435	2/11/2019	2/11/2021
9	NIST Luminous Intensity Standard Source	NBS10265	N1437	2/11/2019	2/11/2021
10	NIST Luminous Flux Standard Source	NBS10428	N1424	1/3/2019	1/3/2021

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

*Validated by calibration on 5/11/20.

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
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