

SONNEMAN - A WAY OF LIGHT TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

CST.2890

PROJECT NUMBER

G104393027

REPORT NUMBER

104393027CRT-008

ISSUE DATE

10/16/2020

REVISED DATE

None

TEST DATES

10/12/2020

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104393027CRT-008

MODEL NUMBER(s)

CST.2890

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-01089188-1.

TEST STANDARDS

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

In Charge of Testing:



Gerald Gray
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Reviewer:



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SAMPLE INFORMATION

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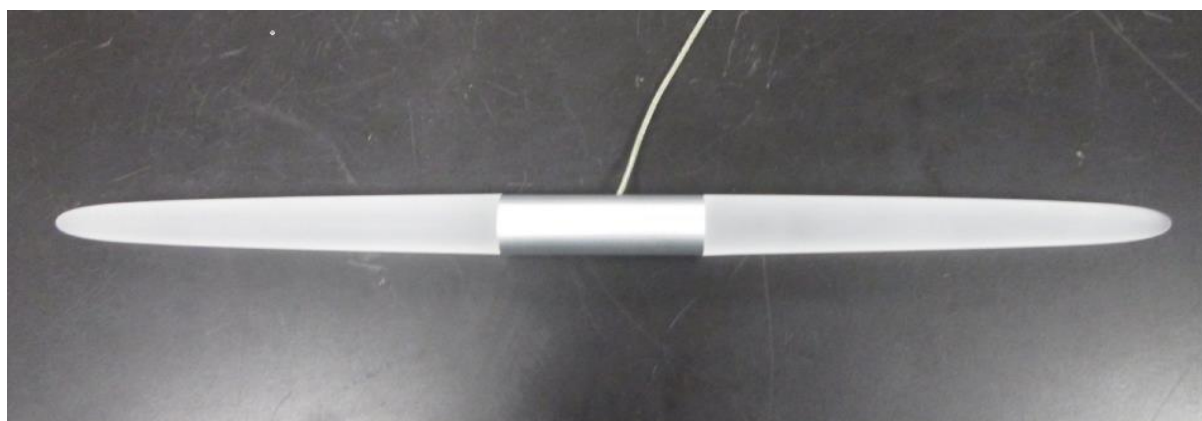
ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	CRT2010010907-003	CST.2890	Ballet LED Pendant	Production	10/1/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	CST.2890	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	CST.2890
Product Description:	Ballet LED Pendant
LED Model No.:	Luminus 5050 18V
Driver Model No.:	--
Light Source:	LED

Criteria	Results
Light Output (lumens)	267.5
Input Power (W) @ 24-36 (Vdc)	3.54
Lumen Efficacy (lm/W)	75.48

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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Test Configuration	Tested Model No.	Pass/Fail/NA
1	CST.2890	NA

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

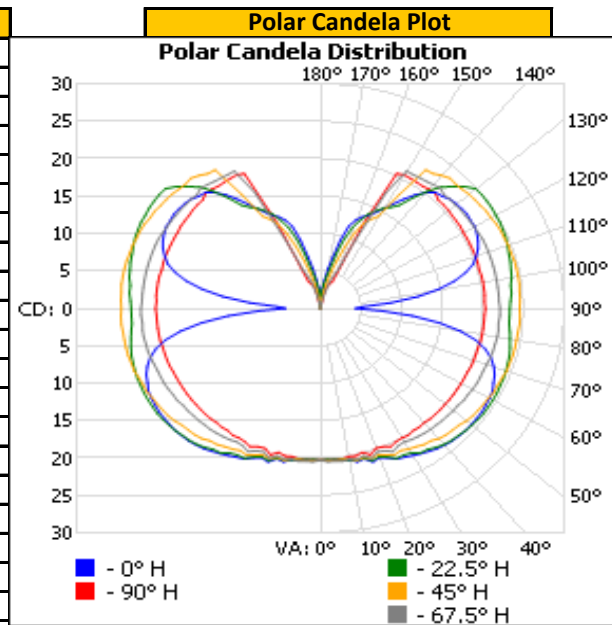
Base Orientation	Input Voltage (Vdc)	Input Current (mA)	Input Power (W)
Up	34.78	101.9	3.54

Light Output (lm)	Lumen Efficacy (lm/W)
267.5	75.5

INTENSITY SUMMARY - CANDELA

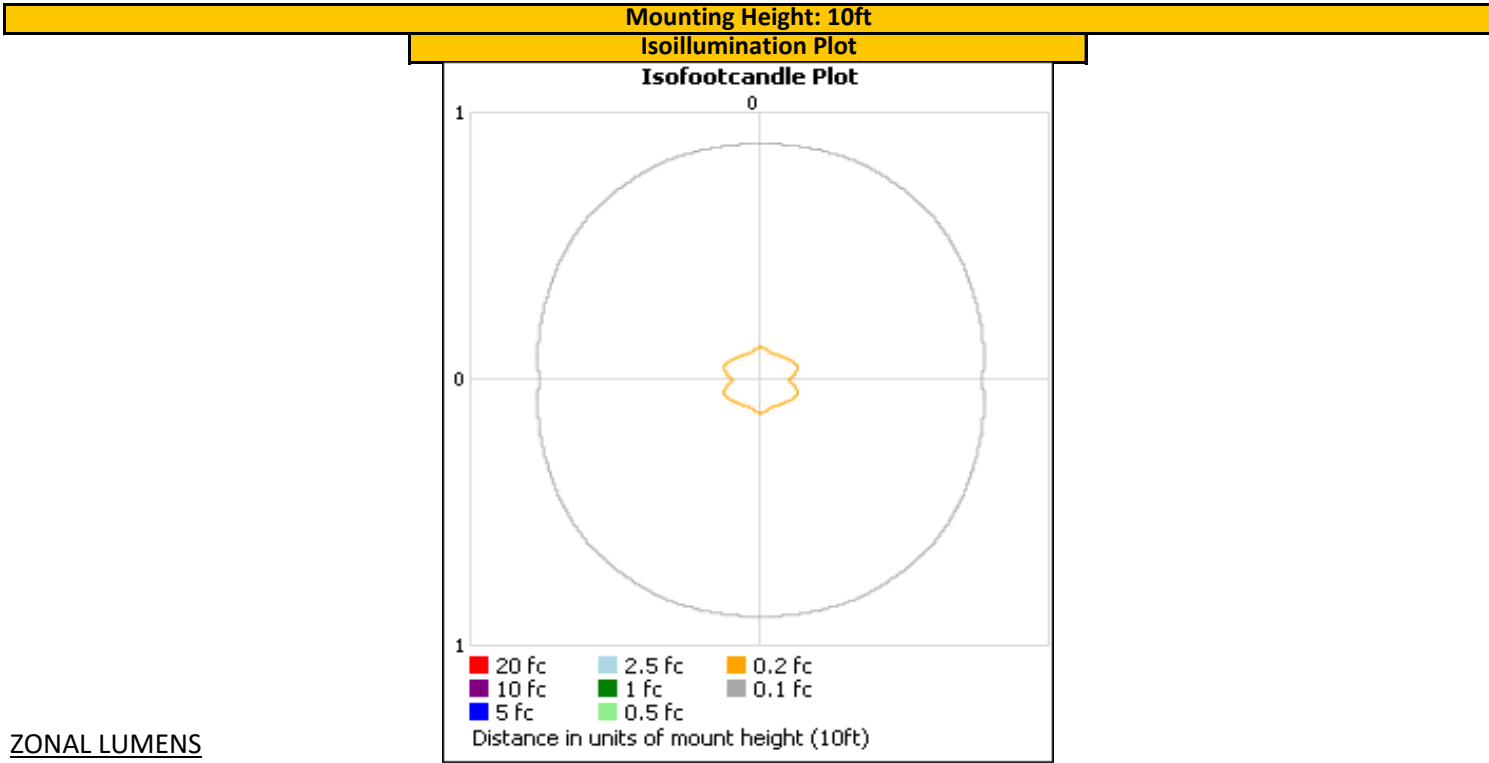
Angle	0	22.5	45	67.5	90
0	20	20	20	20	20
5	20	20	20	20	20
10	20	20	20	20	20
15	21	21	21	20	20
20	21	21	21	20	20
25	22	22	22	21	20
30	23	22	22	21	20
35	23	23	22	21	20
40	24	24	23	21	20
45	24	24	23	21	20
50	24	24	23	21	20
55	24	24	24	22	20
60	24	24	24	22	20
65	24	24	24	22	20
70	23	24	24	22	20
75	21	24	24	22	20
80	18	24	24	22	20
85	11	23	25	22	20
90	4	23	24	22	20
95	9	24	25	22	20
100	15	24	25	22	20
105	18	24	25	22	20
110	20	24	25	22	20
115	21	25	24	22	20
120	22	25	24	22	20
125	22	25	24	22	20
130	22	25	24	22	20
135	21	23	24	22	20
140	20	20	23	22	21
145	18	17	23	21	21
150	15	15	14	21	21
155	14	14	12	10	12
160	12	12	9	4	4
165	9	8	5	2	3
170	5	4	2	1	0
175	3	2	1	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
0-30	17.7	6.6%	0-10	1.9	0.7%
0-40	31.5	11.8%	10-20	5.9	2.2%
0-60	69.5	26.0%	20-30	9.8	3.7%
60-90	70.3	26.3%	30-40	13.8	5.2%
70-100	70.5	26.4%	40-50	17.5	6.5%
90-120	69.8	26.1%	50-60	20.6	7.7%
0-90	139.8	52.3%	60-70	22.8	8.5%
90-180	127.7	47.7%	70-80	24.0	9.0%
0-180	267.5	100.0%	80-90	23.4	8.7%
			90-100	23.1	8.6%
			100-110	23.8	8.9%
			110-120	22.8	8.5%
			120-130	20.6	7.7%
			130-140	17.2	6.4%
			140-150	12.4	4.6%
			150-160	6.0	2.2%
			160-170	1.6	0.6%
			170-180	0.2	0.1%

EQUIPMENT LIST

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#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	LSI High Speed Mirror Goniometer	6440	---	9/21/2020	10/21/2020
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

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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