

SONNEMAN - A WAY OF LIGHT

TEST REPORT

SCOPE OF WORK

Electrical and Photometric tests as required to the IESNA test standard.

MODEL NUMBER

2970C

PROJECT NUMBER

G103590523

REPORT NUMBER

103590523CRT-009

ISSUE DATE

August 10, 2018

REVISION DATE

None

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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TEST REPORT**REPORT NO.: 103590523CRT-009****REPORT DATE: August 10, 2018**

TEST OF (1) LIQUID LED PENDANT - CLEAR

MODEL NO. 2970C

RENDERED TO:

SONNEMAN - A WAY OF LIGHT
151 AIRPORT DRIVE
WAPPINGERS FALLS, NY 12590**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-00895529.

STANDARDS USED

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

SAMPLE INFORMATION

CONTROL NO.	MODEL/SERIAL NO.	DESCRIPTION	TYPE	RECEIVED
CRT1808021341-005	2970C	Luminaire	Production	8/2/2018

DATE OF TESTS

August 8, 2018.

TEST REPORT

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SUMMARY

MODEL NO:	2970C
DESCRIPTION:	Liquid LED Pendant - Clear
LED MODEL NO:	Proprietary-Not Reported
DRIVER MODEL NO:	LTF TA60WA24LED

CRITERIA	RESULTS
Lumen Output (lumens)	226.0
Input Power (W) @ 120 (VAC)	4.00
Lumen Efficacy (lm/W)	56.6
Input Power Factor () @ 120 (VAC)	0.760

EQUIPMENT LIST

EQUIPMENT USED	MODEL NO.	CONTROL NO.	CAL DUE DATE	DATE USED
LSI High Speed Mirror Goniometer	6440	---	9/7/2018	8/8/2018
Elgar AC Power Supply	CW1251	---	VBU	8/8/2018
Sorenson DC Power Supply	XG 150-10	---	VBU	8/8/2018
Yokogawa Power Analyzer	WT210	E464	5/3/2019	8/8/2018
Omega Thermometer	DPi8-C24	M263	5/3/2019	8/8/2018
M-D Building Products Digital Level	Smart Tool	L112	4/21/2019	8/8/2018
NIST Luminous Intensity Standard Source	NBS10322	N1427	1/9/2019	8/8/2018
NIST Luminous Intensity Standard Source	NBS10332	N1435	1/9/2019	8/8/2018
NIST Luminous Intensity Standard Source	NBS10265	N1437	1/9/2019	8/8/2018
NIST Luminous Flux Standard Source	NBS10428	N1424	1/11/2019	8/8/2018

TEST REPORT**REPORT NO.: 103590523CRT-009****REPORT DATE: August 10, 2018****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 Type C Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for the SSL sample.

Ambient temperature was measured equal to the height of the sample mounted on the goniometer equipment. The SSL sample was operated on the client provided driver at rated input volts in its designated orientation. The SSL sample was allowed to stabilize for at least thirty minutes before measurements were made. Stabilization procedures to LM-79 were followed. Electrical measurements including voltage, current, and power were measured using a power analyzer.

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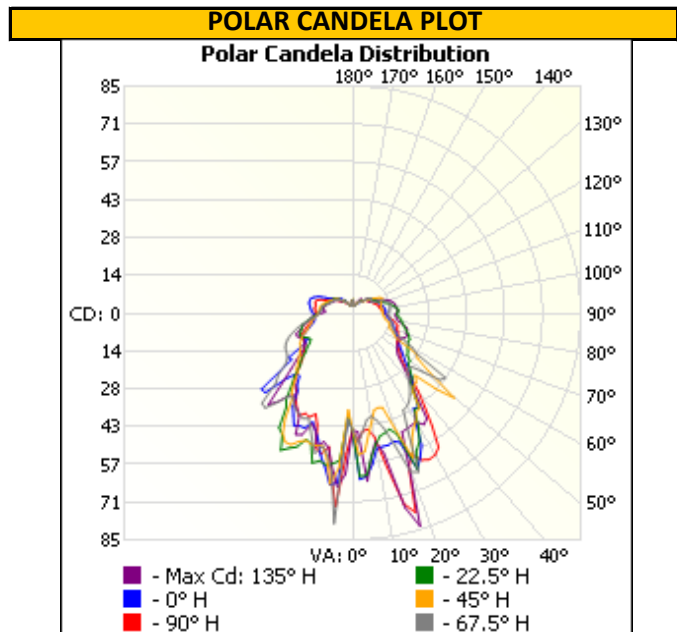
RESULTS OF TESTS

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

INTERTEK CONTROL NO.	BASE POSITION	INPUT VOLTAGE (VAC)	INPUT CURRENT (mA)	INPUT POWER (W)	INPUT POWER FACTOR ()	LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)
CRT1808021341-005	Base Up	120.05	43.8	4.00	0.760	226.0	56.6

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	44	44	44	44	44
5	61	61	52	44	44
10	52	50	41	39	47
15	51	46	37	44	74
20	52	48	46	63	61
25	60	57	52	49	61
30	47	49	47	40	61
35	43	43	44	37	52
40	35	34	36	32	38
45	30	30	33	29	27
50	25	28	49	34	23
55	21	25	30	42	20
60	19	24	19	26	19
65	18	24	16	17	19
70	16	22	15	16	18
75	16	20	14	15	17
80	14	19	12	14	15
85	13	18	12	14	13
90	12	17	11	13	12
95	12	17	11	14	11
100	12	16	11	14	10
105	12	14	11	14	10
110	11	12	11	13	10
115	10	10	12	11	9
120	9	10	12	9	8
125	9	9	10	8	8
130	8	8	8	9	7
135	7	7	7	7	7
140	6	6	6	6	6
145	5	6	5	5	5
150	4	5	5	5	5
155	4	4	4	4	4
160	3	4	4	3	3
165	3	3	3	3	3
170	3	3	3	3	3
175	4	4	4	5	5
180	5	5	5	5	5



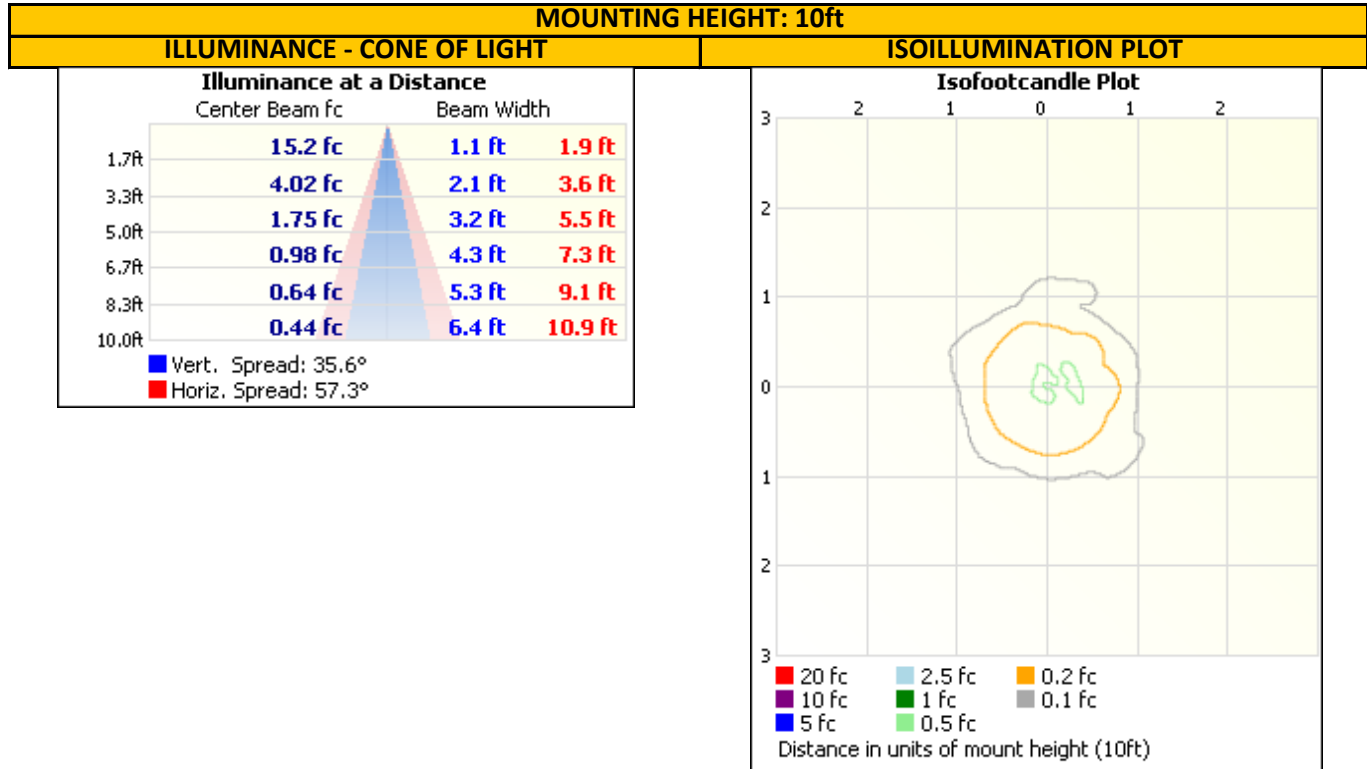
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RESULTS OF TESTS

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



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	43.3	19.2
0-40	68.3	30.2
0-60	114.9	50.8
60-90	53.3	23.6
0-90	168.2	74.4
90-180	57.8	25.6
0-180	226.0	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	5.2	2.3
10-20	14.7	6.5
20-30	23.4	10.4
30-40	25.0	11.1
40-50	24.3	10.7
50-60	22.3	9.9
60-70	20.0	8.8
70-80	18.0	8.0
80-90	15.3	6.8
90-100	14.3	6.3
100-110	13.2	5.9
110-120	10.4	4.6
120-130	7.7	3.4
130-140	5.5	2.4
140-150	3.5	1.5
150-160	2.0	0.9
160-170	0.9	0.4
170-180	0.3	0.1

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PICTURES



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:



Jerry Gray
Associate Engineer
Lighting Division

Report Reviewed By:



Ryan Siddon
Project Engineer
Lighting Division

Attachments: IES File

REVISION HISTORY

JOB NUMBER	DATE OF REVISION	PROJECT HANDLER	REVIEWED BY	REVISION NOTE
None				