

National Lighting Co. Inc.

TEST REPORT

SCOPE OF WORKs

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

MODEL NUMBER

S23-LED-3500K-UNV-4'

REPORT NUMBER

103111568CRT-003

ISSUE DATE

June 20, 2017

PAGES

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TEST REPORT

REPORT NO.: 103111568CRT-003

REPORT DATE: June 20, 2017

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TEST OF ONE LINEAR PENDANT OR SURFACE

MODEL NO. S23-LED-3500K-UNV-4'

LED MODEL NO. PHILIPS LED STRIP GEN 4 MODEL 929000777913

DRIVER MODEL NO. PHILIPS XITANIUM 40 MODEL XI0470C110V054BST1

RENDERED TO:

NATIONAL LIGHTING CO. INC.
522 CORTLANDT ST
BELLEVILLE, NJ 07109-3328

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-00796899.

STANDARDS USED

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

DESCRIPTION OF SAMPLE

The client submitted one production sample(s) of model number S23-LED-3500K-UNV-4'. The sample was received by Intertek on June 16, 2017 in undamaged condition and one sample was tested as received. The sample designation was CRT1706161002-005.

DATE OF TESTS

June 20, 2017 through June 20, 2017.



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SUMMARY

MODEL NO:	S23-LED-3500K-UNV-4'
DESCRIPTION:	Linear Pendant or Surface

CRITERIA	RESULTS
Lumen Output (lumens)	3513.0
Input Power (W) @ 120 (VAC)	31.75
Lumen Efficacy (lm/W)	110.7
Input Power Factor () @ 120 (VAC)	0.996

EQUIPMENT LIST

EQUIPMENT USED	MODEL NO.	CONTROL NO.	LAST CAL DATE	CAL DUE DATE
LSI High Speed Mirror Goniometer	6440	---	6/2/2017	7/2/2017
Elgar AC Power Supply	CW1251	---	VBU	VBU
Sorenson DC Power Supply	XG 150-10	---	VBU	VBU
Yokogawa Power Analyzer	WT210	E464	5/2/2017	5/2/2018
Omega Thermometer	DPI8-C24	M263	5/2/2017	5/2/2018
M-D Building Products Digital Level	Smart Tool	L112	4/4/2017	4/4/2018
NIST Luminous Intensity Standard Source	NBS10322	N1427	1/9/2017	1/9/2019
NIST Luminous Intensity Standard Source	NBS10332	N1435	1/9/2017	1/9/2019
NIST Luminous Intensity Standard Source	NBS10265	N1437	1/9/2017	1/9/2019
NIST Luminous Flux Standard Source	NBS10428	N1424	1/11/2017	1/11/2019



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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 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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TEST REPORT

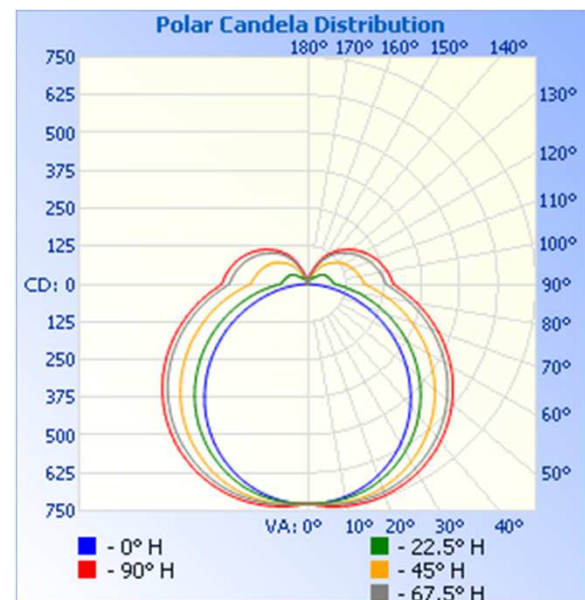
RESULTS OF TESTS

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)
CRT1706161002-005	Base Up	120.06	265.5	31.75	0.996	3513.0	110.7

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	726	726	726	726	726
5	725	725	732	731	739
10	714	721	733	737	745
15	697	710	728	736	747
20	674	692	718	731	743
25	645	669	701	722	735
30	611	640	679	705	721
35	570	606	653	685	702
40	526	568	622	661	679
45	476	525	586	632	651
50	424	479	546	598	619
55	368	429	503	561	582
60	310	378	458	520	543
65	250	323	410	477	500
70	191	270	363	432	456
75	135	218	315	386	411
80	81	170	269	340	366
85	33	124	225	296	321
90	0	90	188	258	282
95	0	83	179	249	273
100	0	78	171	239	263
105	0	74	163	228	252
110	0	70	155	217	240
115	0	66	145	204	226
120	0	61	135	191	211
125	0	52	125	175	195
130	0	40	110	160	178
135	0	31	97	143	160
140	0	27	81	126	142
145	0	23	62	103	121
150	0	20	45	81	99
155	0	16	34	54	72
160	0	12	25	35	48
165	0	8	18	21	31
170	0	5	11	11	15
175	0	1	4	4	1





TEST REPORT

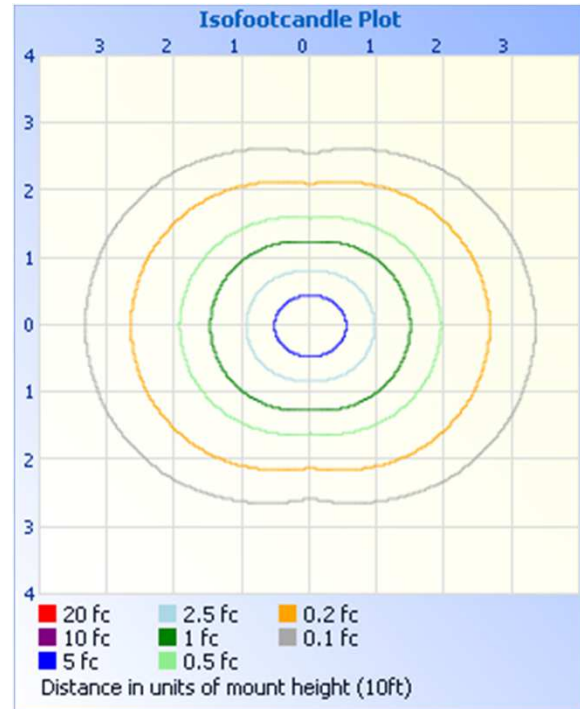
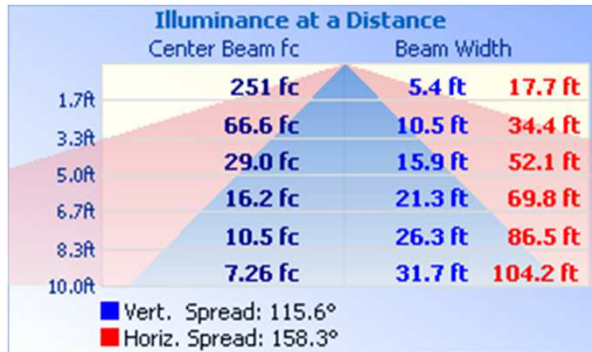
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RESULTS OF TESTS

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

MOUNTING HEIGHT: 10ft	
ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	595.2	16.9
0-40	999.2	28.4
0-60	1884.5	53.6
60-90	933.9	26.6
0-90	2818.4	80.2
90-180	694.6	19.8
0-180	3513.0	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	69.7	2.0
10-20	204.7	5.8
20-30	320.9	9.1
30-40	404.0	11.5
40-50	445.0	12.7
50-60	440.2	12.5
60-70	392.9	11.2
70-80	315.2	9.0
80-90	225.8	6.4
90-100	176.5	5.0
100-110	156.5	4.5
110-120	131.2	3.7
120-130	100.7	2.9
130-140	68.2	1.9
140-150	39.5	1.1
150-160	16.7	0.5
160-170	4.7	0.1
170-180	0.4	0.0



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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:

Gerald Gray
Associate Engineer
Lighting Division

Report Reviewed By:

Jeffrey Davis
Engineering Supervisor
Lighting Division

Attachments: IES File CRT1706161002-005

REVISION HISTORY

JOB NUMBER	DATE OF REVISION	PROJECT HANDLER	REVIEWED BY	REVISION NOTE