7826 East Evans Road
Scottsdale, AZ 85260
480-991-9260

Photometric Indoor Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002

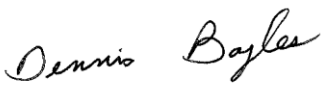
Prepared For
Environmental Lights
11235 W. Bernardo Court, Suite 102
San Diego, CA 92127

Catalog Number
SFR-NW-W-20
Project Number
10345709
Test Number
33046

Test Date

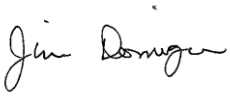
2014-06-09

Prepared By



Dennis Boyles, Technician

Approved By



Jim Domigan, Laboratory Team Leader

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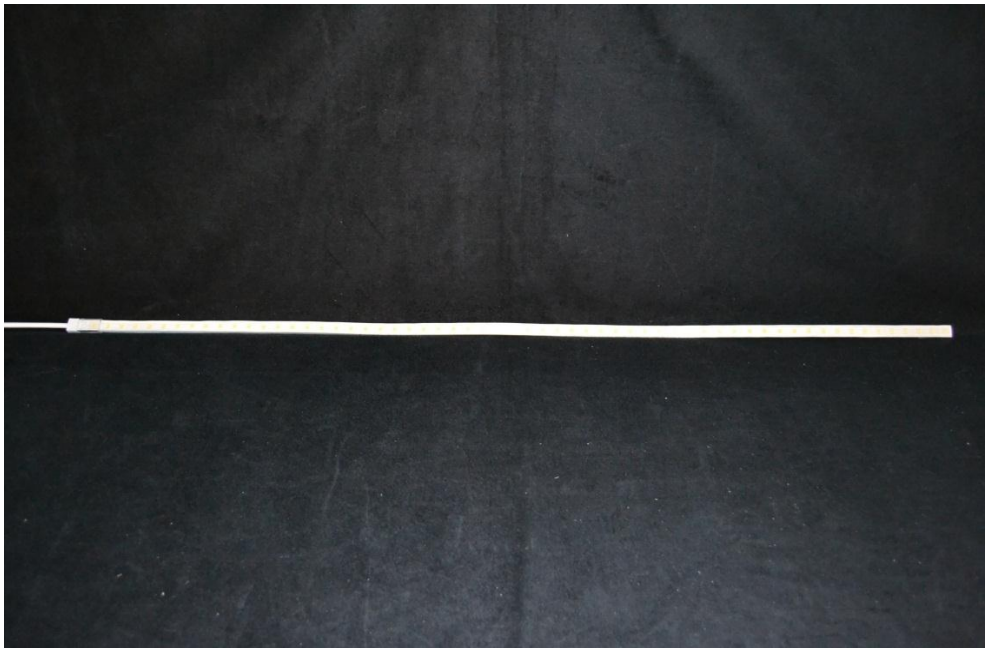
Luminaire Description:	LED Super Flat Rope
Catalog Number:	SFR-NW-W-20
Lamp:	60 LEDs
Ballast/Driver:	One Mean Well SP-320-24 Driver

Luminaire



Test Conditions

Test Temperature:	24.3 °C
Voltage:	24.0 VDC

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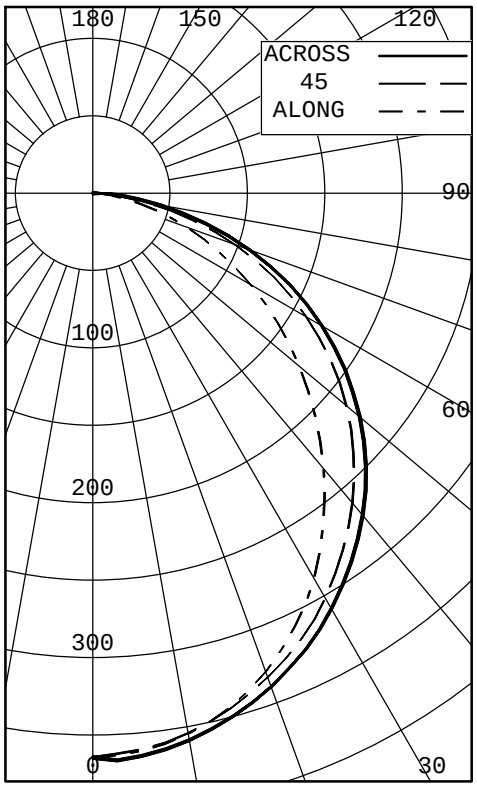

INTENSITY(CANDLEPOWER) SUMMARY

ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	365	365	365	365	365	
5	362	360	361	365	365	35
10	355	353	354	358	359	
15	344	342	345	349	350	97
20	328	328	332	337	339	
25	309	312	318	324	325	146
30	286	293	301	308	309	
35	260	271	282	290	291	175
40	232	247	261	270	271	
45	203	221	238	248	250	180
50	174	194	214	223	225	
55	146	165	187	197	199	161
60	117	136	159	168	171	
65	91	107	130	138	141	121
70	66	78	99	106	109	
75	42	51	67	73	76	66
80	22	26	37	42	44	
85	7	9	14	17	19	17
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	278	27.92
0-40	453	45.42
0-60	793	79.57
0-90	997	100.00
40-90	544	54.58
60-90	204	20.43
90-180	0	0.00
0-180	997	100.00

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 40.000 INS
WIDTH: 0.375 INS

LUMINANCE SUMMARY CD./SQ.M.

S/MH: 1.3
SC(ALONG): 1.2, SC(ACROSS): 1.3

ANGLE	ALONG	45	ACROSS
45	29672	34927	36607
55	26248	33854	35969
65	22140	31799	34570
75	16928	26722	30298
85	8773	16879	22494

TESTED IN ACCORDANCE WITH IES PROCEDURES.

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INTENSITY(CANDLEPOWER) DATA
IN 2.5 DEGREE STEPS

ANGLE	PLANE						OUTPUT
	ALONG	22.5	45	67.5	ACROSS	AVERAGE	LUMENS
0.0	365	365	365	365	365	365	
2.5	363	361	363	366	367	364	
5.0	362	360	361	365	365	362	35
7.5	359	357	358	362	362	359	
10.0	355	353	354	358	359	356	
12.5	350	348	350	354	355	351	
15.0	344	342	345	349	350	346	97
17.5	336	336	339	343	345	340	
20.0	328	328	332	337	339	333	
22.5	319	321	326	331	332	326	
25.0	309	312	318	324	325	318	146
27.5	298	303	310	317	318	309	
30.0	286	293	301	308	309	300	
32.5	273	282	292	299	300	290	
35.0	260	271	282	290	291	279	175
37.5	246	259	271	280	281	269	
40.0	232	247	261	270	271	257	
42.5	217	234	250	259	261	245	
45.0	203	221	238	248	250	233	180
47.5	189	207	226	236	238	221	
50.0	174	194	214	223	225	208	
52.5	160	180	201	211	212	194	
55.0	146	165	187	197	199	180	161
57.5	131	151	173	183	185	166	
60.0	117	136	159	168	171	152	
62.5	104	121	145	153	156	137	
65.0	91	107	130	138	141	123	121
67.5	78	92	114	122	125	108	
70.0	66	78	99	106	109	93	
72.5	54	64	83	90	92	77	
75.0	42	51	67	73	76	63	66
77.5	32	38	52	57	60	48	
80.0	22	26	37	42	44	35	
82.5	14	17	24	29	31	23	
85.0	7	9	14	17	19	13	17
87.5	3	4	7	10	11	7	
90.0	0	0	0	0	0	0	

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COEFFICIENTS OF UTILIZATION

ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

CC WALL	90				80				70				50			30			10			0
RCR	70	50	30	10	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	1.22	1.22	1.22	1.22	1.19	1.19	1.19	1.19	1.16	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
1	1.12	1.07	1.03	0.99	1.10	1.05	1.01	0.98	1.07	1.03	1.00	0.96	0.99	0.96	0.93	0.95	0.93	0.90	0.91	0.89	0.88	0.86
2	1.03	0.95	0.89	0.83	1.01	0.93	0.87	0.82	0.98	0.91	0.85	0.81	0.88	0.83	0.79	0.85	0.81	0.77	0.82	0.78	0.75	0.73
3	0.94	0.84	0.76	0.69	0.92	0.82	0.75	0.69	0.90	0.81	0.74	0.68	0.78	0.72	0.67	0.75	0.70	0.66	0.73	0.69	0.65	0.63
4	0.87	0.75	0.66	0.60	0.85	0.74	0.66	0.59	0.83	0.73	0.65	0.59	0.70	0.63	0.58	0.68	0.62	0.58	0.66	0.61	0.57	0.55
5	0.81	0.67	0.58	0.51	0.78	0.66	0.58	0.51	0.76	0.65	0.57	0.51	0.63	0.56	0.50	0.61	0.55	0.50	0.59	0.54	0.49	0.47
6	0.74	0.60	0.51	0.45	0.72	0.59	0.51	0.45	0.70	0.58	0.50	0.44	0.56	0.49	0.44	0.55	0.48	0.44	0.53	0.48	0.43	0.41
7	0.68	0.54	0.45	0.39	0.66	0.53	0.45	0.39	0.65	0.52	0.44	0.38	0.51	0.43	0.38	0.49	0.43	0.38	0.48	0.42	0.37	0.36
8	0.63	0.49	0.40	0.34	0.62	0.48	0.40	0.34	0.60	0.47	0.40	0.34	0.46	0.39	0.34	0.45	0.38	0.33	0.44	0.38	0.33	0.31
9	0.58	0.45	0.36	0.30	0.57	0.44	0.36	0.30	0.56	0.43	0.35	0.30	0.42	0.35	0.30	0.41	0.34	0.30	0.40	0.34	0.29	0.28
10	0.54	0.41	0.32	0.27	0.53	0.40	0.32	0.27	0.52	0.39	0.32	0.27	0.38	0.31	0.27	0.37	0.31	0.26	0.37	0.30	0.26	0.24

THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS
BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN.
LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD
THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST
LUMINOUS OPENING OF LUMINAIRE.

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All testing was conducted in accordance with LM-79-08,
Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products as published by the Illuminating Engineering Society of North America (IESNA).

The condition of the item tested was new. Stabilization time before testing meets the stabilization requirements of LM-79-08.

The test results (luminous distribution and flux) were obtained by using a Lighting Sciences series 6000 Type C Moving Mirror Goniophotometer

- The photometric reference standard used is a set of three incandescent luminous intensity standard lamps calibrated and traceable to the U.S. National Institute of Standards and Technology.

Power measurements were obtained with a Xitron 2801 power analyzer.

Ambient temperature during testing was 25° C ± 1° C, measured using an Omega model DP460.

Calibration certificates are on file at the laboratory

The results in this report apply to the test sample(s) mentioned in this report at the time of the testing period only and are not to be used to indicate applicability to other similar products.