



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-DW-W-20
Project Number
10345709
Test Number
33047

Test Date

2014-06-09

Prepared By

Handwritten signature of Dennis Boyles in black ink.

Dennis Boyles, Technician

Approved By

Handwritten signature of Jim Domigan in black ink.

Jim Domigan, Laboratory Team Leader

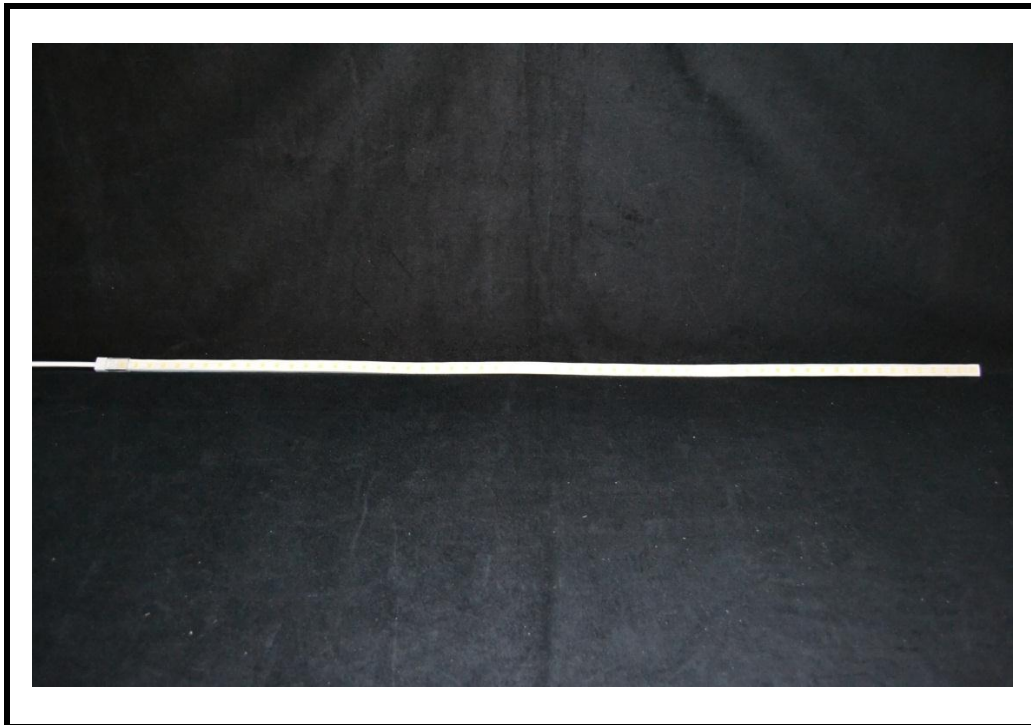
The results contained in this report pertain only to the tested sample.
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Luminaire Description: LED Super Flat Rope
Catalog Number: SFR-DW-W-20
Lamp: 60 LEDs
Ballast/Driver: One Mean Well SP-320-24 Driver

Luminaire

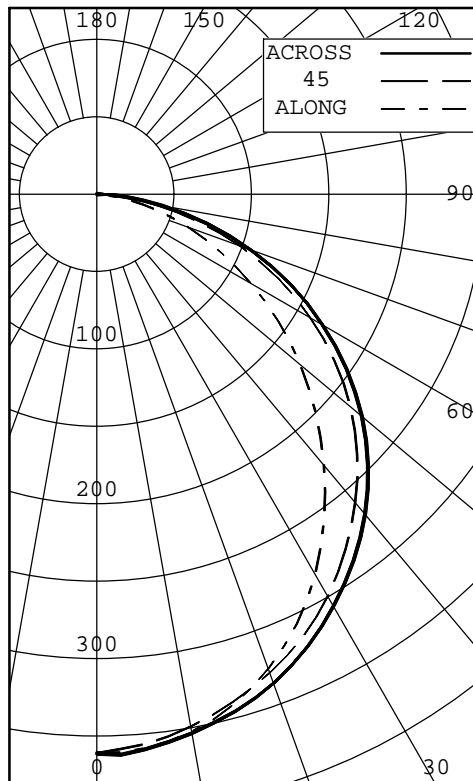


Test Conditions

Test Temperature: 24.6 °C
Voltage: 24.0 VDC



INTENSITY (CANDLEPOWER) SUMMARY OUTPUT LUMENS



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	361	361	361	361	361	
5	359	356	357	360	360	34
10	353	349	349	353	354	
15	341	338	340	345	346	96
20	326	324	328	335	336	
25	306	308	315	322	322	145
30	283	290	299	306	307	
35	256	269	280	288	289	173
40	228	245	260	268	270	
45	200	219	238	246	248	179
50	172	193	214	222	223	
55	143	165	187	195	197	160
60	115	136	159	167	168	
65	88	106	130	136	138	120
70	64	78	99	105	107	
75	41	51	68	73	74	66
80	22	25	38	42	44	
85	7	9	15	18	19	17
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	275	27.83
0-40	449	45.33
0-60	787	79.54
0-90	989	100.00
40-90	541	54.67
60-90	202	20.46
90-180	0	0.00
0-180	989	100.00

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 39.370 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	29709	35449	36917
55	26211	34441	36187
65	21923	32321	34500
75	16529	27454	30254
85	8733	18598	23338

TESTED IN ACCORDANCE WITH IES PROCEDURES.



INTENSITY (CANDLEPOWER) DATA
IN 2.5 DEGREE STEPS

ANGLE	PLANE					AVERAGE	OUTPUT LUMENS
	ALONG	22.5	45	67.5	ACROSS		
0.0	361	361	361	361	361	361	
2.5	361	358	359	362	363	360	
5.0	359	356	357	360	360	358	34
7.5	357	353	353	356	357	355	
10.0	353	349	349	353	354	351	
12.5	348	344	345	349	350	347	
15.0	341	338	340	345	346	341	96
17.5	334	331	334	340	341	336	
20.0	326	324	328	335	336	329	
22.5	316	316	322	329	329	322	
25.0	306	308	315	322	322	315	145
27.5	295	300	308	314	315	306	
30.0	283	290	299	306	307	297	
32.5	269	280	290	297	298	288	
35.0	256	269	280	288	289	277	173
37.5	242	257	270	278	280	267	
40.0	228	245	260	268	270	255	
42.5	214	232	249	258	259	244	
45.0	200	219	238	246	248	232	179
47.5	186	206	226	235	236	219	
50.0	172	193	214	222	223	207	
52.5	158	179	201	209	210	193	
55.0	143	165	187	195	197	179	160
57.5	129	150	174	181	183	165	
60.0	115	136	159	167	168	151	
62.5	101	121	145	152	154	136	
65.0	88	106	130	136	138	121	120
67.5	76	92	115	121	123	107	
70.0	64	78	99	105	107	92	
72.5	52	64	83	89	91	77	
75.0	41	51	68	73	74	62	66
77.5	31	39	53	57	59	48	
80.0	22	25	38	42	44	35	
82.5	14	16	26	29	31	23	
85.0	7	9	15	18	19	14	17
87.5	3	4	8	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	
	70	50	30	10	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																										
0	1.221	.221	.221	.22	1.191	.191	.191	.19	1.161	.161	.161	.16	1.111	.111	.111	.11	1.061	.061	.06	1.021	.021	.02	1.00			
1	1.121	.071	.030	.99	1.101	.051	.010	.98	1.071	.030	.990	.96	0.990	.960	.93	0.950	.930	.90	0.910	.890	.88	0.86				
2	1.030	.950	.890	.82	1.010	.930	.870	.82	0.980	.910	.850	.81	0.880	.830	.79	0.850	.810	.77	0.820	.780	.75	0.73				
3	0.940	.840	.760	.69	0.920	.820	.750	.69	0.900	.810	.740	.68	0.780	.720	.67	0.750	.700	.66	0.730	.680	.65	0.63				
4	0.870	.750	.660	.60	0.850	.740	.660	.59	0.830	.730	.650	.59	0.700	.630	.58	0.680	.620	.57	0.660	.610	.57	0.55				
5	0.810	.670	.580	.51	0.780	.660	.570	.51	0.760	.650	.570	.51	0.630	.560	.50	0.610	.550	.50	0.590	.540	.49	0.47				
6	0.740	.600	.510	.45	0.720	.590	.510	.45	0.700	.580	.500	.44	0.560	.490	.44	0.550	.480	.43	0.530	.470	.43	0.41				
7	0.680	.540	.450	.39	0.660	.530	.450	.39	0.650	.520	.440	.38	0.510	.430	.38	0.490	.430	.38	0.480	.420	.37	0.35				
8	0.630	.490	.400	.34	0.610	.480	.400	.34	0.600	.470	.390	.34	0.460	.390	.34	0.450	.380	.33	0.440	.380	.33	0.31				
9	0.580	.450	.360	.30	0.570	.440	.360	.30	0.560	.430	.350	.30	0.420	.350	.30	0.410	.340	.29	0.400	.340	.29	0.27				
10	0.540	.410	.320	.27	0.530	.400	.320	.27	0.520	.390	.320	.27	0.380	.310	.26	0.370	.310	.26	0.360	.300	.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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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.