



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-WW-W-20
Project Number
10345709
Test Number
33045

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

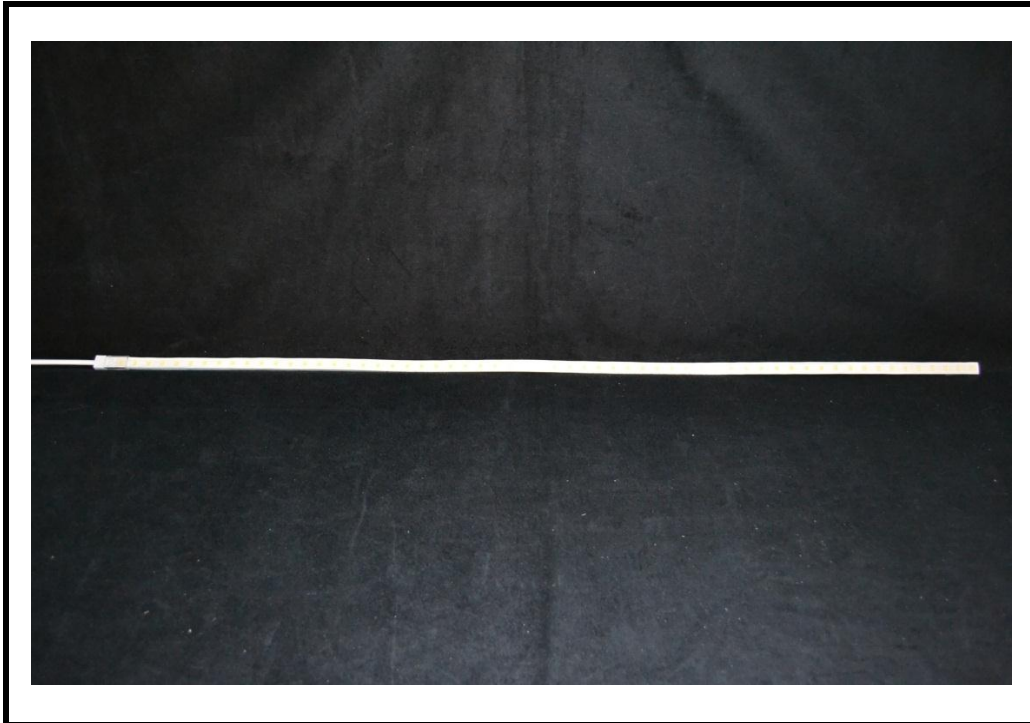
The results contained in this report pertain only to the tested sample.
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Luminaire Description: LED Super Flat Rope
Catalog Number: SFR-WW-W-20
Lamp: 60 LEDs
Ballast/Driver: One Mean Well SP-320-24 Driver

Luminaire



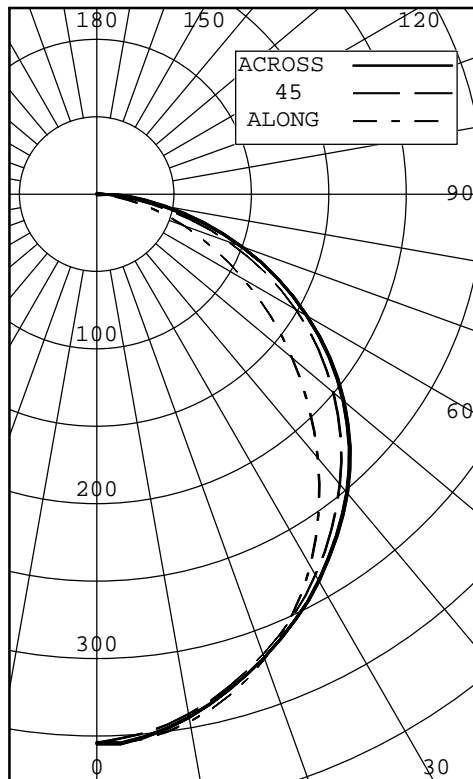
Test Conditions

Test Temperature: 24.1 °C
Voltage: 24.0 VDC



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INTENSITY (CANDLEPOWER) SUMMARY OUTPUT



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	355	355	355	355	355	
5	353	350	350	353	352	34
10	346	342	341	344	343	
15	335	331	330	332	331	93
20	319	316	316	318	318	
25	299	299	301	304	304	139
30	276	281	283	288	288	
35	250	259	264	270	270	164
40	222	236	244	251	252	
45	194	211	223	230	231	169
50	165	185	200	207	208	
55	137	158	175	182	183	150
60	110	129	148	155	157	
65	84	101	120	127	129	112
70	61	74	91	98	101	
75	39	49	63	70	72	62
80	21	24	36	42	44	
85	7	9	15	20	21	17
90	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	266	28.23
0-40	430	45.71
0-60	749	79.62
0-90	940	100.00
40-90	511	54.29
60-90	192	20.38
90-180	0	0.00
0-180	940	100.00

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS LENGTH: 39.370 INS
 WIDTH: 0.375 INS

LUMINANCE SUMMARY CD./SQ.M.

S/MH: 1.2
 SC: 1.2

ANGLE	ALONG	45	ACROSS
45	28737	33206	34428
55	25039	32089	33688
65	20867	29990	32231
75	15820	25504	29114
85	8010	18538	25817

TESTED IN ACCORDANCE WITH IES PROCEDURES.



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INTENSITY (CANDLEPOWER) DATA
IN 2.5 DEGREE STEPS

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	22.5	45	67.5	ACROSS	AVERAGE	
0.0	355	355	355	355	355	355	
2.5	355	351	352	355	355	353	
5.0	353	350	350	353	352	351	34
7.5	350	346	346	349	348	348	
10.0	346	342	341	344	343	343	
12.5	341	337	336	338	338	338	
15.0	335	331	330	332	331	331	93
17.5	327	324	323	325	325	324	
20.0	319	316	316	318	318	317	
22.5	309	308	308	311	311	309	
25.0	299	299	301	304	304	301	139
27.5	288	290	292	296	296	293	
30.0	276	281	283	288	288	283	
32.5	263	270	274	279	279	273	
35.0	250	259	264	270	270	263	164
37.5	236	247	254	260	261	253	
40.0	222	236	244	251	252	242	
42.5	208	223	234	240	241	231	
45.0	194	211	223	230	231	219	169
47.5	179	198	211	219	220	207	
50.0	165	185	200	207	208	194	
52.5	151	171	187	195	196	182	
55.0	137	158	175	182	183	169	150
57.5	123	144	162	169	170	155	
60.0	110	129	148	155	157	141	
62.5	97	115	134	141	143	128	
65.0	84	101	120	127	129	114	112
67.5	72	88	106	113	115	100	
70.0	61	74	91	98	101	86	
72.5	50	61	77	84	86	72	
75.0	39	49	63	70	72	59	62
77.5	29	37	49	55	58	46	
80.0	21	24	36	42	44	33	
82.5	13	15	25	30	32	23	
85.0	7	9	15	20	21	14	17
87.5	2	4	8	12	13	8	
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	.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	.920	.90	0.910	.890	.87	0.86			
2	1.030	.950	.890	.83	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	.690	.65	0.63			
4	0.870	.750	.660	.60	0.850	.740	.660	.60	0.830	.730	.650	.59	0.700	.640	.58	0.680	.620	.58	0.660	.610	.57	0.55			
5	0.810	.680	.580	.52	0.780	.660	.580	.51	0.760	.650	.570	.51	0.630	.560	.51	0.610	.550	.50	0.590	.540	.49	0.48			
6	0.740	.600	.510	.45	0.720	.590	.510	.45	0.700	.580	.500	.44	0.570	.500	.44	0.550	.490	.44	0.540	.480	.43	0.41			
7	0.680	.540	.450	.40	0.660	.530	.450	.39	0.650	.530	.440	.39	0.510	.440	.38	0.490	.430	.38	0.480	.420	.38	0.36			
8	0.630	.490	.410	.35	0.620	.480	.400	.34	0.600	.480	.400	.34	0.460	.390	.34	0.450	.390	.34	0.440	.380	.34	0.32			
9	0.590	.450	.360	.30	0.570	.440	.360	.30	0.560	.430	.360	.30	0.420	.350	.30	0.410	.350	.30	0.400	.340	.30	0.28			
10	0.540	.410	.320	.27	0.530	.400	.320	.27	0.520	.400	.320	.27	0.390	.320	.27	0.380	.310	.27	0.370	.310	.26	0.25			

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.