



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  
LN-DW-20  
Project Number  
10345709  
Test Number  
33053

Test Date

2014-06-10

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

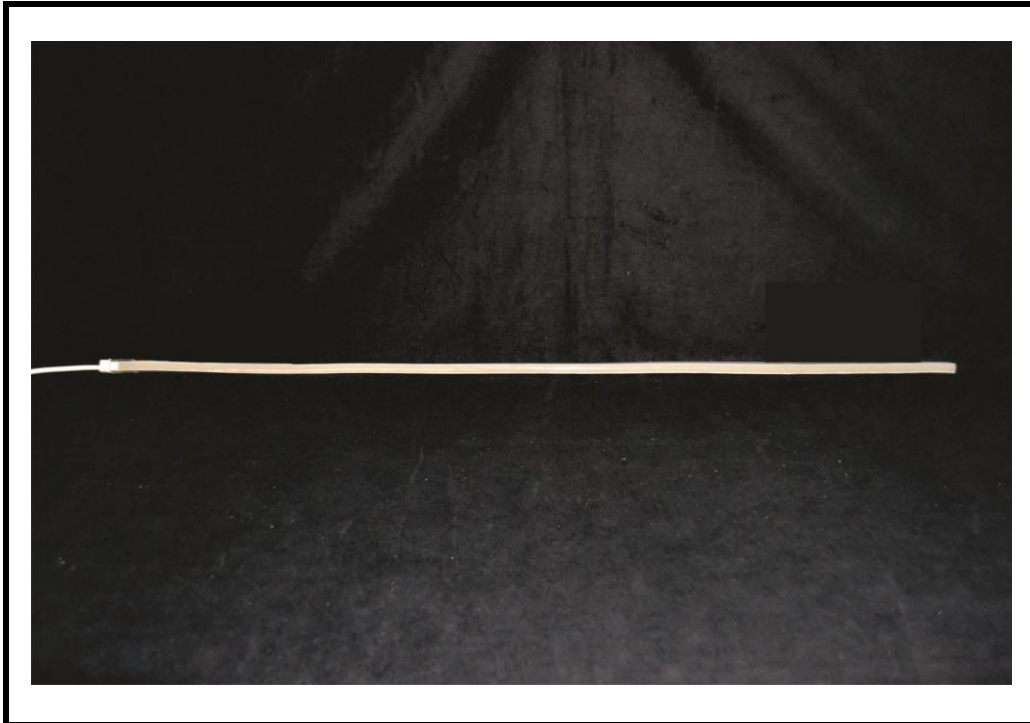
The results contained in this report pertain only to the tested sample.  
This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.



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

Luminaire Description: LED Neon, Flat rope type  
Catalog Number: LN-DW-20  
Lamp: LED Array  
Ballast/Driver: One Mean Well SP-320-24 Driver

Luminaire



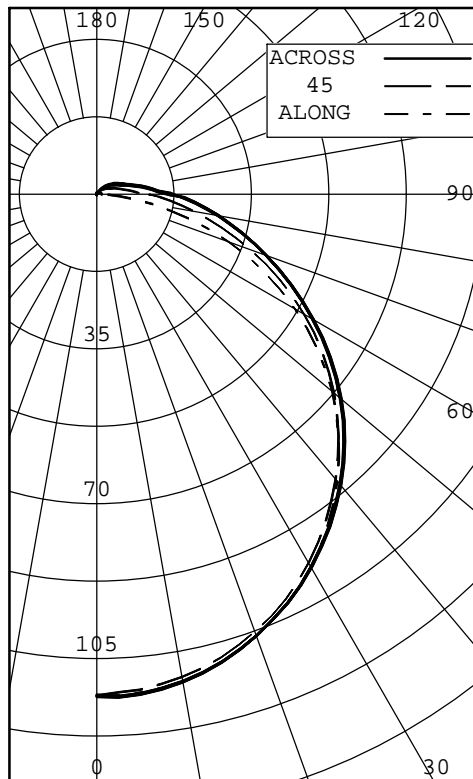
Test Conditions

Test Temperature: 24.3 °C  
Voltage: 24.0 VDC



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

INTENSITY (CANDLEPOWER) SUMMARY OUTPUT



ANGLE	ALONG	22.5	45	67.5	ACROSS	OUTPUT LUMENS
0	113	113	113	113	113	
5	113	112	112	113	113	11
15	109	108	109	110	110	31
25	102	101	101	102	102	47
35	91	90	90	92	92	57
45	77	76	77	79	79	60
55	61	60	62	64	64	56
65	42	43	46	48	49	45
75	22	24	29	33	34	30
85	5	9	17	21	22	17
90	1	5	11	16	17	
95	1	3	8	12	13	8
105	1	2	5	7	8	5
115	1	1	3	5	5	3
125	1	1	2	3	4	2
135	1	1	1	2	2	1
145	0	0	0	0	1	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	88	23.73
0-40	145	38.98
0-60	261	70.01
0-90	353	94.71
40-90	207	55.72
60-90	92	24.69
90-180	20	5.29
0-180	372	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: 1.3

ANGLE	ALONG	45	ACROSS
45	11484	11520	11796
55	11137	11437	11823
65	10421	11380	12094
75	8944	11879	13885
85	6384	20229	27026

TESTED IN ACCORDANCE WITH IES PROCEDURES.



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

INTENSITY (CANDLEPOWER) DATA

ANGLE	PLANE						OUTPUT LUMENS
	ALONG	22.5	45	67.5	ACROSS	AVERAGE	
0	113	113	113	113	113	113	
5	113	112	112	113	113	113	11
10	112	111	111	112	112	111	
15	109	108	109	110	110	109	31
20	106	105	105	106	106	106	
25	102	101	101	102	102	102	47
30	97	96	96	97	97	97	
35	91	90	90	92	92	91	57
40	85	84	84	86	86	85	
45	77	76	77	79	79	78	60
50	70	69	70	72	72	70	
55	61	60	62	64	64	62	56
60	52	52	54	56	56	54	
65	42	43	46	48	49	45	45
70	32	33	37	40	41	37	
75	22	24	29	33	34	29	30
80	13	15	22	27	28	21	
85	5	9	17	21	22	15	17
90	1	5	11	16	17	10	
95	1	3	8	12	13	8	8
100	1	3	6	9	10	6	
105	1	2	5	7	8	5	5
110	1	2	4	6	6	4	
115	1	1	3	5	5	3	3
120	1	1	3	4	5	3	
125	1	1	2	3	4	2	2
130	1	1	1	2	3	2	
135	1	1	1	2	2	1	1
140	1	0	0	1	1	1	
145	0	0	0	0	1	0	0
150	0	0	0	0	0	0	
155	0	0	0	0	0	0	0
160	0	0	0	0	0	0	
165	0	0	0	0	0	0	0
170	0	0	0	0	0	0	
175	0	0	0	0	0	0	0
180	0	0	0	0	0	0	



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

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	1.211	1.211	1.211	1.211	1.181	1.181	1.181	1.181	1.141	1.141	1.141	1.141	1.081	1.081	1.081	1.021	1.021	1.021	0.970	0.970	0.970	0.970	0.970	0.970	0.95
1	1.101	1.051	1.000	0.96	1.071	1.020	0.980	0.94	1.040	0.990	0.950	0.92	0.940	0.910	0.88	0.890	0.870	0.84	0.850	0.830	0.81	0.850	0.830	0.81	0.78
2	1.000	0.920	0.850	0.78	0.980	0.890	0.830	0.77	0.950	0.870	0.810	0.75	0.830	0.770	0.73	0.790	0.740	0.70	0.750	0.710	0.68	0.750	0.710	0.68	0.66
3	0.920	0.800	0.720	0.65	0.890	0.780	0.700	0.64	0.860	0.770	0.690	0.63	0.730	0.670	0.61	0.690	0.640	0.60	0.660	0.620	0.58	0.660	0.620	0.58	0.56
4	0.850	0.720	0.620	0.56	0.820	0.700	0.620	0.55	0.790	0.690	0.610	0.54	0.650	0.580	0.53	0.620	0.560	0.52	0.600	0.550	0.50	0.600	0.550	0.50	0.48
5	0.780	0.640	0.550	0.47	0.750	0.630	0.540	0.47	0.730	0.610	0.530	0.47	0.580	0.510	0.46	0.560	0.490	0.45	0.530	0.480	0.44	0.530	0.480	0.44	0.41
6	0.720	0.570	0.480	0.41	0.690	0.560	0.470	0.41	0.670	0.550	0.460	0.40	0.520	0.450	0.39	0.500	0.440	0.39	0.480	0.420	0.38	0.480	0.420	0.38	0.36
7	0.650	0.510	0.420	0.36	0.640	0.500	0.410	0.35	0.620	0.490	0.410	0.35	0.470	0.390	0.34	0.450	0.380	0.33	0.430	0.370	0.33	0.430	0.370	0.33	0.31
8	0.610	0.460	0.380	0.31	0.590	0.450	0.370	0.31	0.570	0.440	0.360	0.31	0.430	0.350	0.30	0.410	0.340	0.30	0.390	0.340	0.29	0.390	0.340	0.29	0.27
9	0.560	0.420	0.330	0.27	0.550	0.410	0.330	0.27	0.530	0.400	0.330	0.27	0.390	0.320	0.27	0.370	0.310	0.26	0.360	0.300	0.26	0.360	0.300	0.26	0.24
10	0.520	0.380	0.300	0.24	0.510	0.380	0.290	0.24	0.490	0.370	0.290	0.24	0.350	0.280	0.24	0.340	0.280	0.23	0.330	0.270	0.23	0.330	0.270	0.23	0.21

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.



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

**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.