

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P188249

Luminaire Tested: **FUSL-N12-4-LD4-2STD-40-UNV-80/86**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P188249
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27124)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FUSL-N12-4-LD4-2STD-40-UNV-80/86
Description:
Light Source: (168) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

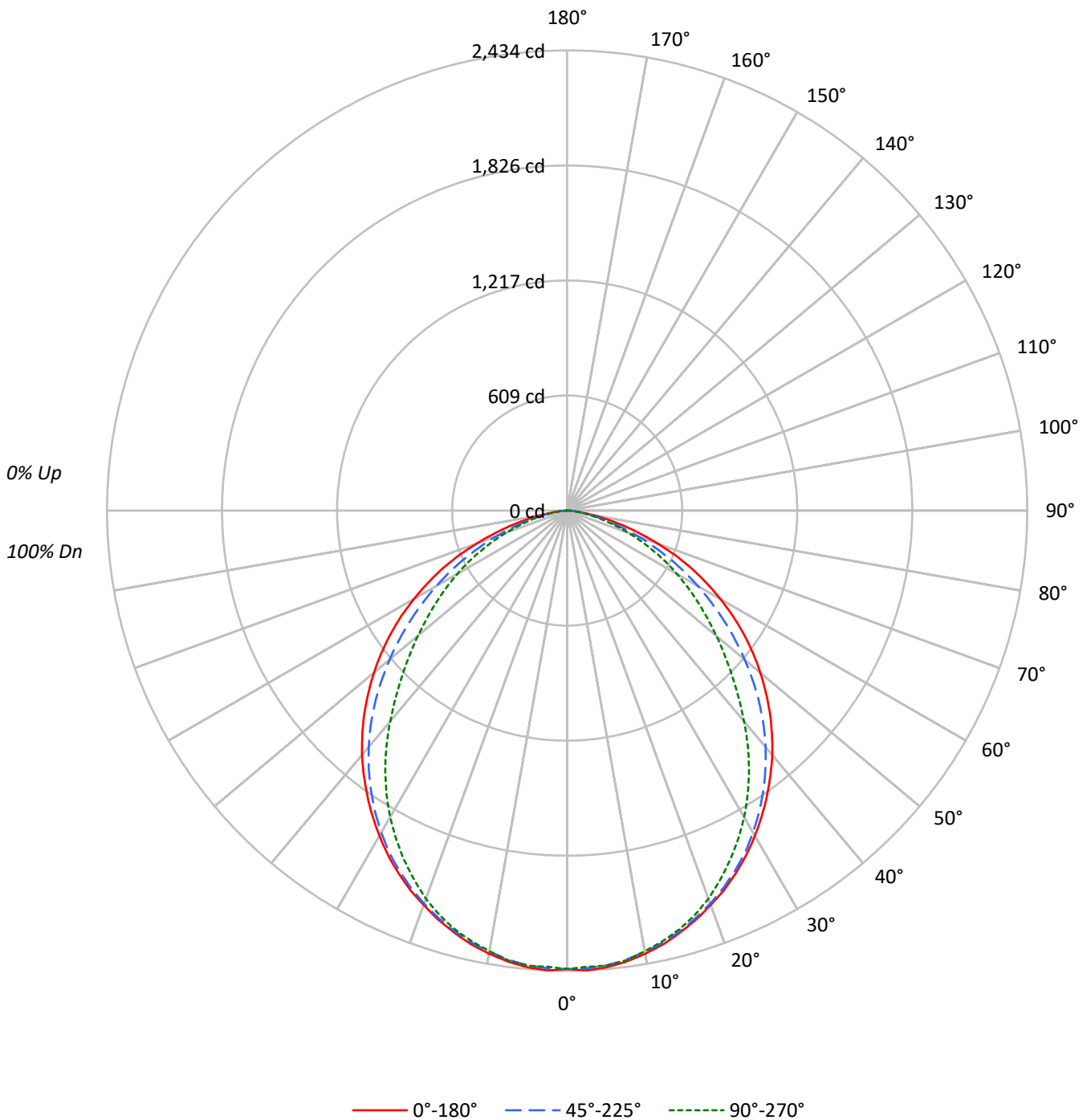
Lumens per Lamp: N/A
Luminaire Lumens: 5845.0 lumens
Efficiency: N/A
Efficacy: 83.6 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.16 / 1.3
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 69.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20					
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	110	105	102	98	107	103	100	97	99	96	93	95	93	91	92	90	88					86				
2	101	93	87	81	98	91	85	80	88	83	78	84	80	77	81	78	75					73				
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	64					62				
4	85	73	65	59	82	72	64	58	70	63	57	67	61	57	65	60	56					54				
5	78	66	57	51	76	65	57	51	63	56	50	61	54	50	59	53	49					47				
6	72	60	51	45	70	59	50	45	57	50	44	55	49	44	54	48	43					41				
7	67	54	46	40	65	53	45	40	52	45	39	50	44	39	49	43	39					37				
8	63	50	41	36	61	49	41	36	48	40	35	46	40	35	45	39	35					33				
9	59	46	38	32	57	45	37	32	44	37	32	43	36	32	42	36	32					30				
10	55	42	34	29	54	42	34	29	41	34	29	40	33	29	39	33	29					27				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13050	13050	13050
5°	13095	13042	13051
10°	13006	12948	12930
15°	12873	12832	12778
20°	12714	12672	12513
25°	12552	12479	12111
30°	12344	12222	11634
35°	12106	11887	11023
40°	11861	11471	10227
45°	11545	10937	9389
50°	11169	10260	8620
55°	10701	9484	7914
60°	10071	8604	7224
65°	9273	7548	6415
70°	8003	6308	5434
75°	6469	4855	4277
80°	4429	3313	3062
85°	2217	2167	2322



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	228.9	3.9
10°-20°	648.2	11.1
20°-30°	959.7	16.4
30°-40°	1112.5	19.0
40°-50°	1082.0	18.5
50°-60°	896.0	15.3
60°-70°	600.5	10.3
70°-80°	267.8	4.6
80°-90°	49.3	0.8
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1836.8	31.4
0°-40°	2949.3	50.5
0°-60°	4927.3	84.3
0°-90°	5845.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5845.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2425	2425	2425	2425	2425	
5°	2424	2409	2414	2412	2416	230
15°	2310	2301	2303	2295	2293	652
25°	2114	2106	2101	2056	2039	974
35°	1843	1839	1809	1715	1678	1153
45°	1517	1510	1437	1292	1234	1169
55°	1140	1121	1011	885	843	1018
65°	728	692	593	524	504	717
75°	311	283	234	213	206	332
85°	36	37	35	37	38	54
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2424.7	2424.7	2424.7	2424.7	2424.7
2.5°	2434.5	2419.0	2422.3	2423.9	2414.9
5°	2423.9	2409.2	2414.1	2411.7	2415.8
7.5°	2406.0	2391.3	2395.3	2392.1	2398.6
10°	2379.8	2367.6	2369.2	2366.0	2366.0
12.5°	2349.6	2337.4	2340.6	2334.1	2332.5
15°	2310.4	2300.6	2303.1	2294.9	2293.3
17.5°	2268.8	2259.0	2259.8	2246.8	2243.5
20°	2219.8	2213.3	2212.5	2188.8	2184.7
22.5°	2170.8	2161.0	2159.4	2124.3	2113.7
25°	2113.7	2106.3	2101.4	2055.7	2039.4
27.5°	2053.3	2045.9	2037.8	1981.4	1959.4
30°	1986.3	1980.6	1966.7	1899.0	1872.0
32.5°	1916.1	1912.0	1890.0	1811.6	1778.1
35°	1842.6	1839.4	1809.2	1715.3	1677.7
37.5°	1765.9	1763.4	1723.4	1616.5	1570.0
40°	1688.3	1682.6	1632.8	1510.4	1455.7
42.5°	1603.4	1598.5	1537.3	1401.8	1342.2
45°	1516.9	1509.5	1436.9	1292.4	1233.6
47.5°	1426.3	1417.3	1332.4	1183.8	1129.1
50°	1334.0	1322.6	1225.4	1081.7	1029.5
52.5°	1239.3	1223.8	1117.7	982.1	934.0
55°	1140.5	1120.9	1010.7	885.0	843.4
57.5°	1040.9	1014.8	903.8	792.7	756.0
60°	935.6	908.7	799.3	700.5	671.1
62.5°	831.1	800.9	695.6	611.5	587.0
65°	728.2	691.5	592.7	524.1	503.7
67.5°	619.7	582.9	493.9	441.7	422.9
70°	508.6	477.6	400.9	359.2	345.3
72.5°	404.9	378.0	313.5	283.3	271.9
75°	311.1	283.3	233.5	213.1	205.7
77.5°	219.6	203.3	164.1	153.5	147.0
80°	142.9	132.3	106.9	101.2	98.8
82.5°	80.8	75.9	63.7	62.9	63.7
85°	35.9	36.7	35.1	36.7	37.6
87.5°	10.6	14.7	19.6	22.9	24.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)