

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: P188246

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

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P188246
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27113)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FUSL-N12-2-LD4-2LO-40-UNV-80/86
Description:
Light Source: (84) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

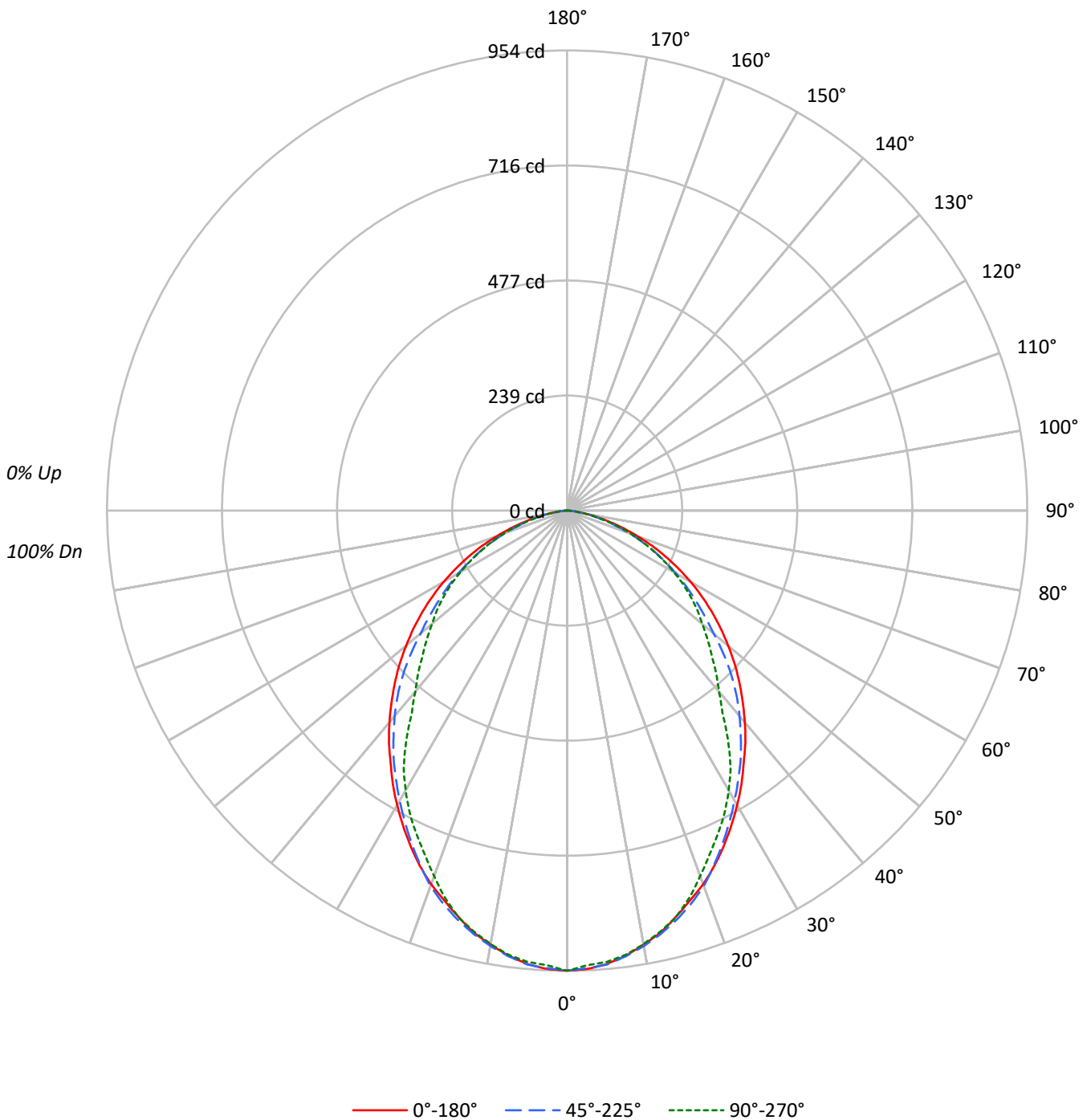
Lumens per Lamp: N/A
Luminaire Lumens: 2044.4 lumens
Efficiency: N/A
Efficacy: 79.9 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.07 / 1.21
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 25.6
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	91	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	75	69	90	81	74	69	78	72	67	76	71	66	73	69	65	63
4	85	74	66	60	83	73	65	59	70	64	58	68	62	58	66	61	57	55
5	79	67	58	52	77	66	58	52	64	57	51	62	55	51	60	54	50	48
6	73	60	52	46	71	60	52	46	58	51	45	56	50	45	55	49	45	43
7	68	55	47	41	66	54	46	41	53	46	40	51	45	40	50	44	40	38
8	63	51	42	37	62	50	42	37	49	42	36	47	41	36	46	40	36	34
9	59	47	39	33	58	46	38	33	45	38	33	44	38	33	43	37	33	31
10	56	43	36	30	55	43	35	30	42	35	30	41	35	30	40	34	30	28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5133	5133	5133
5°	5097	5104	5074
10°	4993	5010	4987
15°	4857	4891	4860
20°	4721	4745	4620
25°	4559	4526	4393
30°	4381	4314	4163
35°	4192	4121	3821
40°	4026	3906	3440
45°	3843	3663	3223
50°	3647	3321	3061
55°	3436	3048	2940
60°	3182	2803	2744
65°	2859	2510	2502
70°	2441	2154	2192
75°	1923	1707	1745
80°	1302	1224	1187
85°	673	753	753



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.1	4.4
10°-20°	246.1	12.0
20°-30°	349.2	17.1
30°-40°	386.1	18.9
40°-50°	362.1	17.7
50°-60°	298.7	14.6
60°-70°	203.7	10.0
70°-80°	93.0	4.5
80°-90°	16.5	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°	684.4	33.5
0°-40°	1070.5	52.4
0°-60°	1731.3	84.7
0°-90°	2044.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2044.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	954	954	954	954	954	
5°	944	944	945	942	939	89
15°	872	876	878	877	872	246
25°	768	772	762	746	740	353
35°	638	636	627	602	582	400
45°	505	498	481	434	423	390
55°	366	358	325	313	313	327
65°	224	218	197	196	196	222
75°	92	90	82	83	84	100
85°	11	12	12	12	12	16
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	953.8	953.8	953.8	953.8	953.8
2.5°	951.4	951.4	949.6	946.5	943.5
5°	943.5	944.1	944.7	941.7	939.2
7.5°	930.7	932.5	931.9	931.3	928.9
10°	913.7	917.3	916.7	913.7	912.5
12.5°	896.0	899.7	898.5	896.0	893.6
15°	871.7	876.0	877.8	876.6	872.3
17.5°	847.4	854.1	854.7	850.4	841.9
20°	824.3	827.9	828.5	814.5	806.6
22.5°	797.5	801.2	795.7	781.1	771.3
25°	767.7	772.0	762.2	746.4	739.7
27.5°	736.7	740.3	728.2	715.4	706.9
30°	705.0	705.6	694.1	681.3	669.8
32.5°	672.8	671.0	660.6	643.6	630.8
35°	638.1	635.7	627.2	602.2	581.5
37.5°	607.1	601.0	591.3	556.0	529.2
40°	573.0	566.9	556.0	505.5	489.7
42.5°	539.0	532.3	520.1	467.8	456.8
45°	504.9	498.2	481.2	433.7	423.4
47.5°	471.4	463.5	439.8	401.5	394.8
50°	435.6	428.9	396.6	369.9	365.6
52.5°	401.5	393.6	359.5	341.3	340.7
55°	366.2	358.3	324.8	312.7	313.3
57.5°	330.9	323.0	292.6	283.5	285.9
60°	295.6	288.3	260.4	255.5	254.9
62.5°	259.8	253.1	228.1	225.7	226.9
65°	224.5	218.4	197.1	195.9	196.5
67.5°	189.8	184.9	166.7	166.7	169.1
70°	155.1	151.5	136.9	138.1	139.3
72.5°	122.9	119.8	108.3	110.1	111.9
75°	92.5	90.0	82.1	83.3	83.9
77.5°	65.7	63.9	59.6	60.2	59.0
80°	42.0	42.0	39.5	38.9	38.3
82.5°	24.3	23.7	23.1	23.1	22.5
85°	10.9	12.2	12.2	12.2	12.2
87.5°	3.6	4.9	5.5	5.5	5.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)