

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: P188248

Luminaire Tested: **FUSL-N12-4-LD4-1LO-40-UNV-80/86**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P188248
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27114)
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-LD4-1LO-40-UNV-80/86
Description:
Light Source: (84) NICHIA ELM 4000K LED
2UT217042A8404A
Ballast/Driver: ELECTRONIC DRIVER

Summary

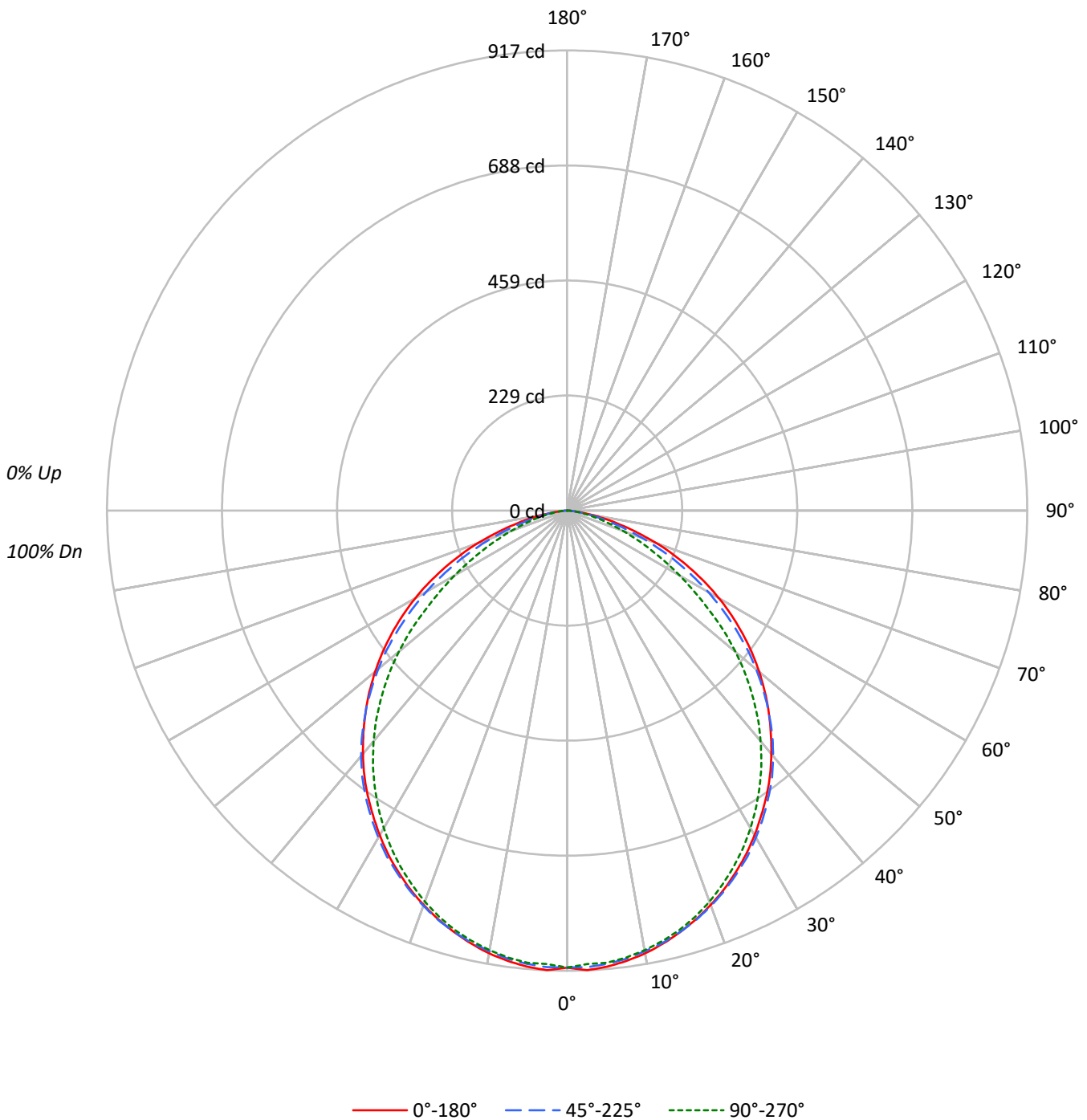
Lumens per Lamp: N/A
Luminaire Lumens: 2258.6 lumens
Efficiency: N/A
Efficacy: 87.9 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.2 / 1.33
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 25.7
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	106	102	98	107	103	100	97	99	96	94	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	68	90	81	74	68	78	72	67	75	70	65	72	68	64					62				
4	85	73	65	58	82	72	64	58	69	63	57	67	61	57	65	60	56					54				
5	78	66	57	51	76	65	56	50	62	55	50	61	54	49	59	53	49					47				
6	72	59	51	44	70	58	50	44	57	49	44	55	48	44	53	48	43					41				
7	67	54	45	39	65	53	45	39	52	44	39	50	44	39	49	43	38					37				
8	62	49	41	35	61	49	41	35	47	40	35	46	40	35	45	39	35					33				
9	58	45	37	32	57	45	37	32	44	37	32	42	36	31	41	36	31					30				
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	39	33	29					27				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2450	2450	2450
5°	2465	2450	2443
10°	2448	2437	2430
15°	2423	2422	2410
20°	2395	2400	2374
25°	2361	2371	2328
30°	2321	2338	2270
35°	2276	2296	2198
40°	2224	2244	2107
45°	2162	2162	1988
50°	2091	2058	1834
55°	2000	1918	1618
60°	1883	1748	1394
65°	1712	1526	1162
70°	1484	1249	933
75°	1163	942	708
80°	783	632	499
85°	377	377	377



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.0	3.8
10°-20°	244.3	10.8
20°-30°	364.7	16.1
30°-40°	429.9	19.0
40°-50°	428.1	19.0
50°-60°	356.1	15.8
60°-70°	232.3	10.3
70°-80°	99.9	4.4
80°-90°	17.4	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°	694.9	30.8
0°-40°	1124.8	49.8
0°-60°	1909.0	84.5
0°-90°	2258.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2258.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	911	911	911	911	911	
5°	912	903	907	904	904	87
15°	870	863	869	866	865	245
25°	795	791	799	787	784	366
35°	693	695	699	676	669	433
45°	568	573	568	536	522	438
55°	426	431	409	369	345	381
65°	269	270	240	201	182	266
75°	112	111	91	75	68	121
85°	12	13	12	12	12	19
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	910.6	910.6	910.6	910.6	910.6
2.5°	916.7	906.4	910.6	908.2	904.5
5°	912.5	902.7	907.0	903.9	904.5
7.5°	905.2	896.6	900.9	897.9	898.5
10°	896.0	887.5	891.8	889.3	889.3
12.5°	883.9	876.0	882.0	878.4	878.4
15°	869.9	862.6	869.3	866.2	865.0
17.5°	854.1	847.4	855.3	850.4	848.6
20°	836.4	830.3	838.2	830.9	829.1
22.5°	817.0	811.5	819.4	809.7	807.2
25°	795.1	790.8	798.7	787.1	784.1
27.5°	772.5	769.5	777.4	763.4	758.6
30°	747.0	745.8	752.5	736.7	730.6
32.5°	720.2	721.4	726.3	707.5	700.8
35°	692.9	695.3	698.9	676.4	669.1
37.5°	664.3	666.7	670.4	644.2	635.7
40°	633.2	636.9	638.7	609.5	599.8
42.5°	601.0	605.9	604.7	574.2	562.7
45°	568.2	573.0	568.2	535.9	522.5
47.5°	534.7	540.8	530.4	497.0	481.8
50°	499.4	504.3	491.5	456.2	438.0
52.5°	463.5	468.4	451.4	413.6	393.6
55°	426.4	430.7	408.8	369.2	344.9
57.5°	388.1	392.4	366.8	324.2	300.5
60°	349.8	352.8	324.8	281.0	259.1
62.5°	309.6	311.5	281.6	239.7	219.0
65°	268.9	270.1	239.7	201.3	182.5
67.5°	228.7	228.1	197.7	164.9	148.4
70°	188.6	186.7	158.8	131.4	118.6
72.5°	147.8	149.0	122.3	101.6	91.9
75°	111.9	111.3	90.6	74.8	68.1
77.5°	80.3	79.1	63.3	52.3	48.1
80°	50.5	51.1	40.8	34.1	32.2
82.5°	28.6	28.6	23.1	20.7	20.1
85°	12.2	13.4	12.2	12.2	12.2
87.5°	3.0	5.5	6.7	7.9	7.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)