

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: P188250

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

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P188250  
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-LD4-2LO-40-UNV-80/86  
Description:  
Light Source: (168) NICHIA ELM 4000K LED  
2UT217042A8404A  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

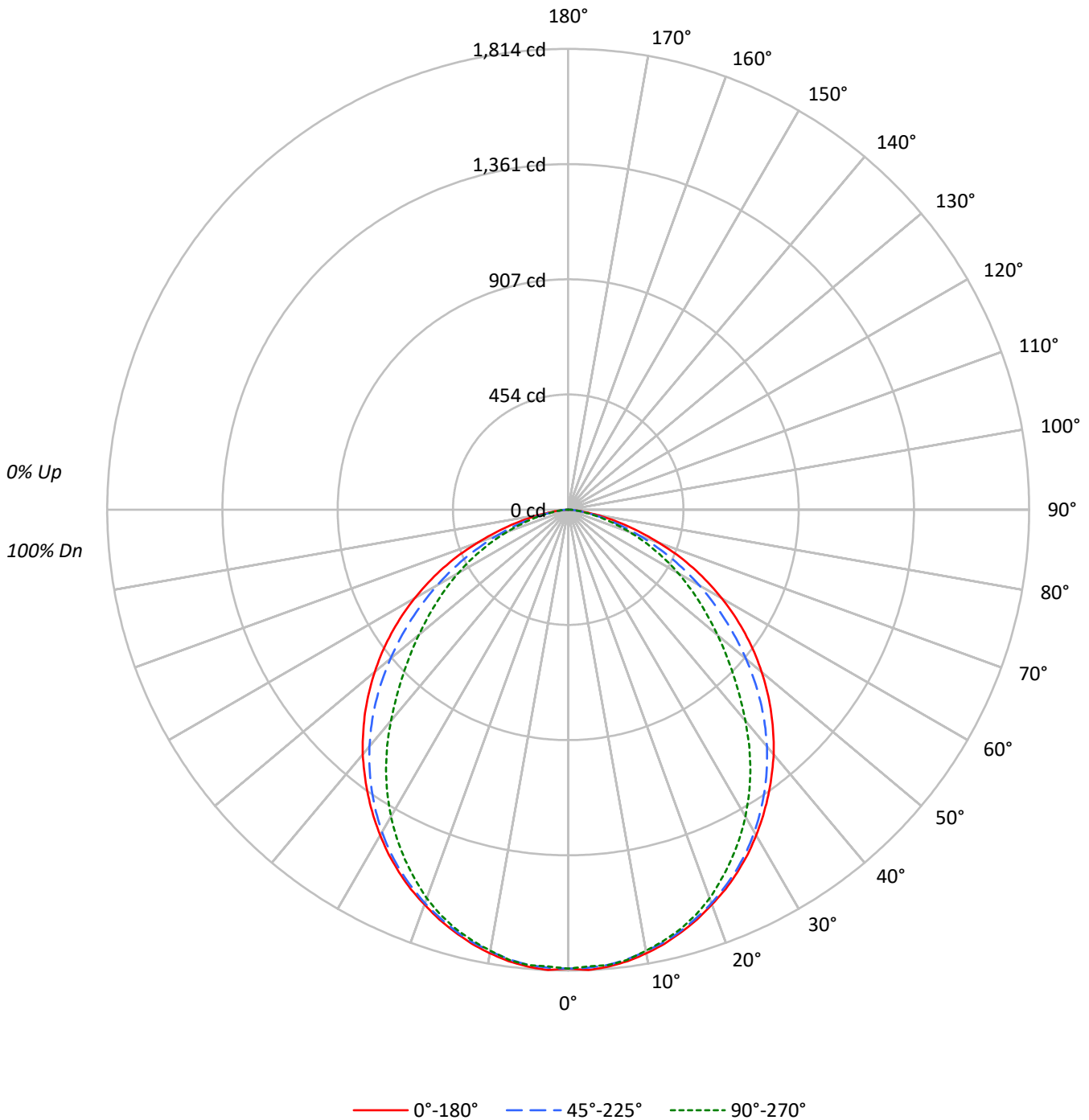
Lumens per Lamp: N/A  
Luminaire Lumens: 4354.7 lumens  
Efficiency: N/A  
Efficacy: 84.9 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct

Input Watts (W): 51.3  
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°	9723	9723	9723
5°	9756	9717	9723
10°	9690	9646	9633
15°	9591	9561	9520
20°	9472	9441	9322
25°	9352	9297	9023
30°	9197	9106	8667
35°	9020	8856	8213
40°	8838	8547	7619
45°	8601	8148	6995
50°	8322	7644	6422
55°	7973	7066	5895
60°	7504	6410	5382
65°	6910	5624	4779
70°	5962	4700	4049
75°	4818	3618	3188
80°	3298	2470	2281
85°	1655	1618	1729



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	170.6	3.9
10°-20°	482.9	11.1
20°-30°	715.0	16.4
30°-40°	828.9	19.0
40°-50°	806.1	18.5
50°-60°	667.5	15.3
60°-70°	447.4	10.3
70°-80°	199.6	4.6
80°-90°	36.7	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°	1368.5	31.4
0°-40°	2197.3	50.5
0°-60°	3671.0	84.3
0°-90°	4354.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4354.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1806	1806	1806	1806	1806	
5°	1806	1795	1799	1797	1800	171
15°	1721	1714	1716	1710	1709	486
25°	1575	1569	1566	1532	1519	725
35°	1373	1370	1348	1278	1250	859
45°	1130	1125	1070	963	919	871
55°	850	835	753	659	628	759
65°	543	515	442	390	375	534
75°	232	211	174	159	153	247
85°	27	27	26	27	28	40
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1806.5	1806.5	1806.5	1806.5	1806.5
2.5°	1813.8	1802.2	1804.7	1805.9	1799.2
5°	1805.9	1794.9	1798.6	1796.8	1799.8
7.5°	1792.5	1781.6	1784.6	1782.2	1787.0
10°	1773.1	1763.9	1765.1	1762.7	1762.7
12.5°	1750.5	1741.4	1743.9	1739.0	1737.8
15°	1721.4	1714.1	1715.9	1709.8	1708.6
17.5°	1690.3	1683.0	1683.6	1673.9	1671.5
20°	1653.8	1649.0	1648.4	1630.7	1627.7
22.5°	1617.3	1610.0	1608.8	1582.7	1574.8
25°	1574.8	1569.3	1565.6	1531.6	1519.4
27.5°	1529.8	1524.3	1518.2	1476.2	1459.8
30°	1479.9	1475.6	1465.3	1414.8	1394.7
32.5°	1427.6	1424.5	1408.1	1349.7	1324.8
35°	1372.8	1370.4	1347.9	1277.9	1250.0
37.5°	1315.6	1313.8	1284.0	1204.3	1169.7
40°	1257.9	1253.6	1216.5	1125.3	1084.5
42.5°	1194.6	1191.0	1145.3	1044.4	1000.0
45°	1130.1	1124.7	1070.5	962.9	919.1
47.5°	1062.6	1055.9	992.7	882.0	841.2
50°	993.9	985.4	913.0	805.9	767.0
52.5°	923.3	911.8	832.7	731.7	695.8
55°	849.7	835.1	753.0	659.3	628.3
57.5°	775.5	756.1	673.3	590.6	563.2
60°	697.1	677.0	595.5	521.9	500.0
62.5°	619.2	596.7	518.2	455.6	437.3
65°	542.6	515.2	441.6	390.5	375.3
67.5°	461.7	434.3	368.0	329.1	315.1
70°	378.9	355.8	298.7	267.6	257.3
72.5°	301.7	281.6	233.6	211.1	202.5
75°	231.7	211.1	174.0	158.8	153.3
77.5°	163.6	151.5	122.3	114.4	109.5
80°	106.4	98.5	79.7	75.4	73.6
82.5°	60.2	56.6	47.4	46.8	47.4
85°	26.8	27.4	26.2	27.4	28.0
87.5°	7.9	10.9	14.6	17.0	18.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)