

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: P556681

Luminaire Tested: **FUSL-12-4-LD4-1STD-30-UNV-81-88-EDD**

Issue Date: 7/16/2021

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



**Test Information**

Test Method: LM-79-08  
Report Number: P556681  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2105-257-2)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/16/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FUSL-12-4-LD4-1STD-30-UNV-81-88-EDD  
Description: 4FT FUSL SURFACE MOUNT WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

Luminaire Equipment: Sample No.   Condition   Description

**Summary**

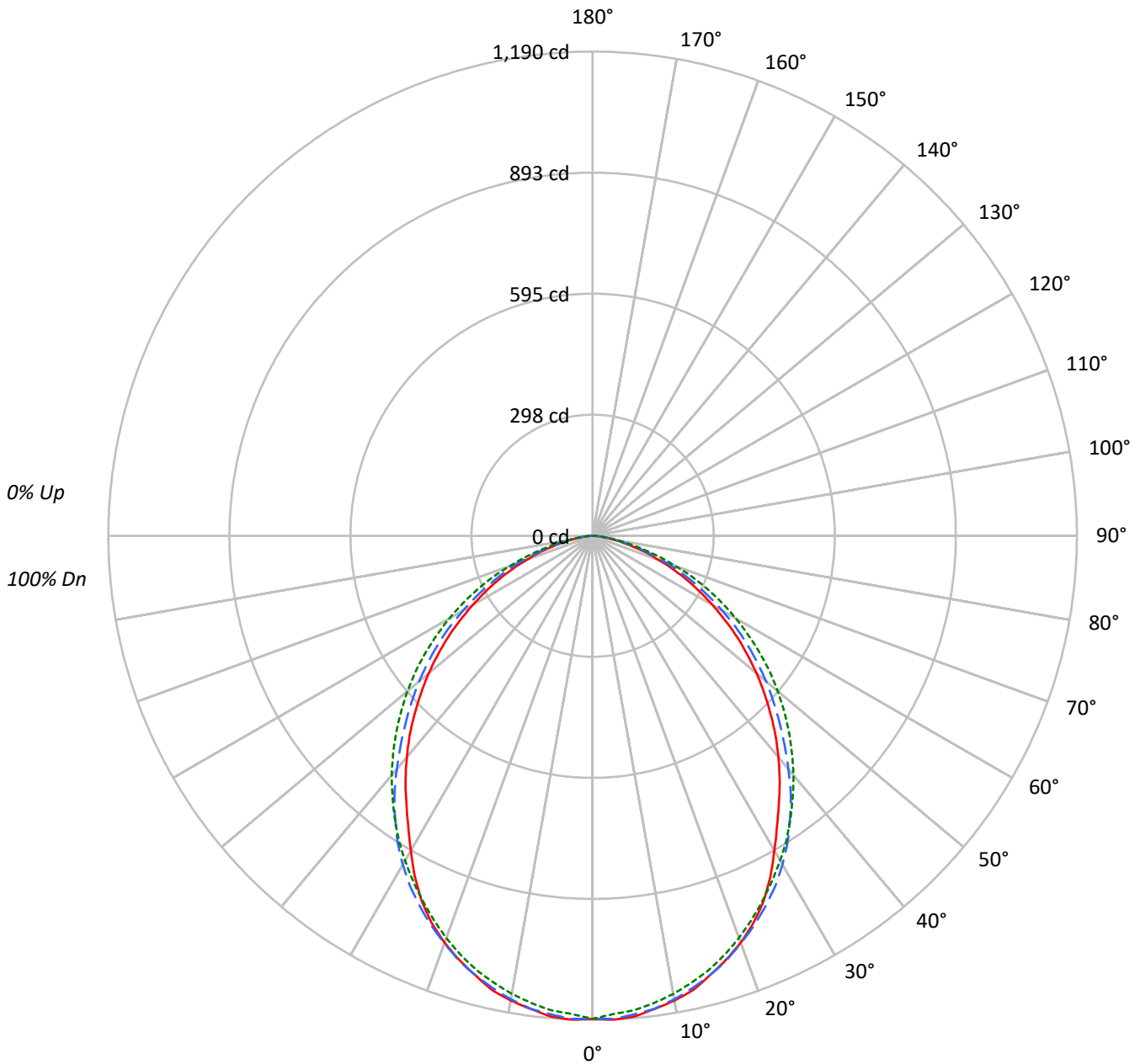
Lumens per Lamp: N/A  
Luminaire Lumens: 2745.0 lumens  
Efficiency: N/A  
Efficacy: 82.4 lumens/watt  
Spacing Criteria (0/90/45): 1.13 / 1.16 / 1.26  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 33.3  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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									
RC	80									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	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	78	75	73																			
3	92	83	75	69	90	81	74	68	78	72	67	75	70	66	73	69	65	63																			
4	85	74	65	59	83	72	65	59	70	63	58	68	62	57	65	61	56	54																			
5	78	66	58	51	76	65	57	51	63	56	51	61	55	50	59	54	50	47																			
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42																			
7	68	55	46	40	66	54	46	40	52	45	40	51	44	40	49	44	39	37																			
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	34																			
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30																			
10	55	43	35	30	54	42	35	30	41	34	30	40	34	29	39	33	29	28																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3194	3194	3194
5°	3203	3190	3162
10°	3169	3160	3124
15°	3113	3113	3077
20°	3047	3051	3012
25°	2947	2983	2936
30°	2775	2899	2864
35°	2622	2779	2784
40°	2494	2629	2698
45°	2352	2470	2597
50°	2201	2327	2486
55°	2031	2165	2351
60°	1829	1976	2187
65°	1615	1757	1989
70°	1345	1496	1690
75°	1057	1195	1323
80°	756	841	933
85°	494	494	466



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	111.8	4.1
10°-20°	314.0	11.4
20°-30°	458.9	16.7
30°-40°	520.9	19.0
40°-50°	502.8	18.3
50°-60°	414.8	15.1
60°-70°	276.2	10.1
70°-80°	123.6	4.5
80°-90°	22.1	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°	884.6	32.2
0°-40°	1405.5	51.2
0°-60°	2323.1	84.6
0°-90°	2745.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2745.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1187	1187	1187	1187	1187	
5°	1186	1185	1181	1174	1171	112
15°	1117	1120	1117	1112	1105	315
25°	992	1000	1005	997	989	454
35°	798	809	846	851	847	500
45°	618	628	649	679	682	477
55°	433	440	462	487	501	386
65°	254	260	276	296	312	251
75°	102	107	115	120	127	111
85°	16	16	16	15	15	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1187.1	<i>1187.1</i>	1187.1	1187.1	1187.1
2.5°	<i>1190.3</i>	<i>1190.8</i>	<i>1188.1</i>	<i>1180.8</i>	<i>1176.2</i>
5°	1185.8	<i>1185.3</i>	1180.8	1174.4	1170.7
7.5°	1172.5	<i>1173.5</i>	1172.1	1163.0	1158.0
10°	1159.8	<i>1160.2</i>	1156.6	1149.3	1143.4
12.5°	1143.4	<i>1142.9</i>	1137.9	1134.2	1124.7
15°	1117.4	<i>1120.1</i>	1117.4	1112.3	1104.6
17.5°	1092.3	<i>1092.3</i>	1094.1	1085.4	1079.5
20°	1064.0	<i>1065.4</i>	1065.4	1058.5	1051.7
22.5°	1031.2	<i>1035.3</i>	1036.6	1029.3	1021.1
25°	992.4	<i>1000.2</i>	1004.7	997.4	988.8
27.5°	945.4	<i>957.3</i>	971.0	965.5	955.9
30°	893.0	<i>910.3</i>	933.1	928.6	921.7
32.5°	843.3	<i>860.6</i>	892.1	890.2	886.6
35°	798.1	<i>809.1</i>	846.0	850.6	847.4
37.5°	755.2	<i>765.3</i>	799.9	810.4	807.7
40°	710.1	<i>721.0</i>	748.4	767.1	768.0
42.5°	665.4	<i>675.9</i>	698.2	725.1	725.1
45°	618.0	<i>628.5</i>	649.0	678.6	682.3
47.5°	571.5	<i>582.4</i>	602.5	632.1	638.0
50°	525.8	<i>535.9</i>	555.9	584.7	593.8
52.5°	478.4	<i>489.4</i>	509.0	535.4	548.6
55°	432.8	<i>440.1</i>	461.5	487.1	501.2
57.5°	385.4	<i>392.2</i>	416.4	438.3	452.9
60°	339.8	<i>348.4</i>	367.1	389.5	406.4
62.5°	296.0	<i>305.1</i>	321.1	340.7	359.8
65°	253.6	<i>260.4</i>	275.9	295.5	312.4
67.5°	212.5	<i>218.5</i>	234.0	247.6	265.4
70°	171.0	<i>178.8</i>	190.2	203.4	214.8
72.5°	137.7	<i>140.9</i>	150.5	160.1	171.9
75°	101.7	<i>107.2</i>	114.9	120.4	127.2
77.5°	73.0	<i>76.2</i>	80.7	85.3	91.7
80°	48.8	<i>50.2</i>	54.3	55.2	60.2
82.5°	29.6	<i>30.6</i>	31.5	31.9	33.7
85°	16.0	<i>16.0</i>	16.0	15.1	15.1
87.5°	9.1	<i>9.1</i>	7.8	6.4	4.6
90°	0.0	<i>0.0</i>	0.0	0.0	0.0



Report Generated By 670246072 / DESKTOP-MV3F9LC







— 0°-180°    - - 45°-225°    - - - - 90°-270°







(END OF REPORT)