

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: P392628

Luminaire Tested: **MWL-4-00-33-UNV-L830-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392628  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-4-00-33-UNV-L830-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

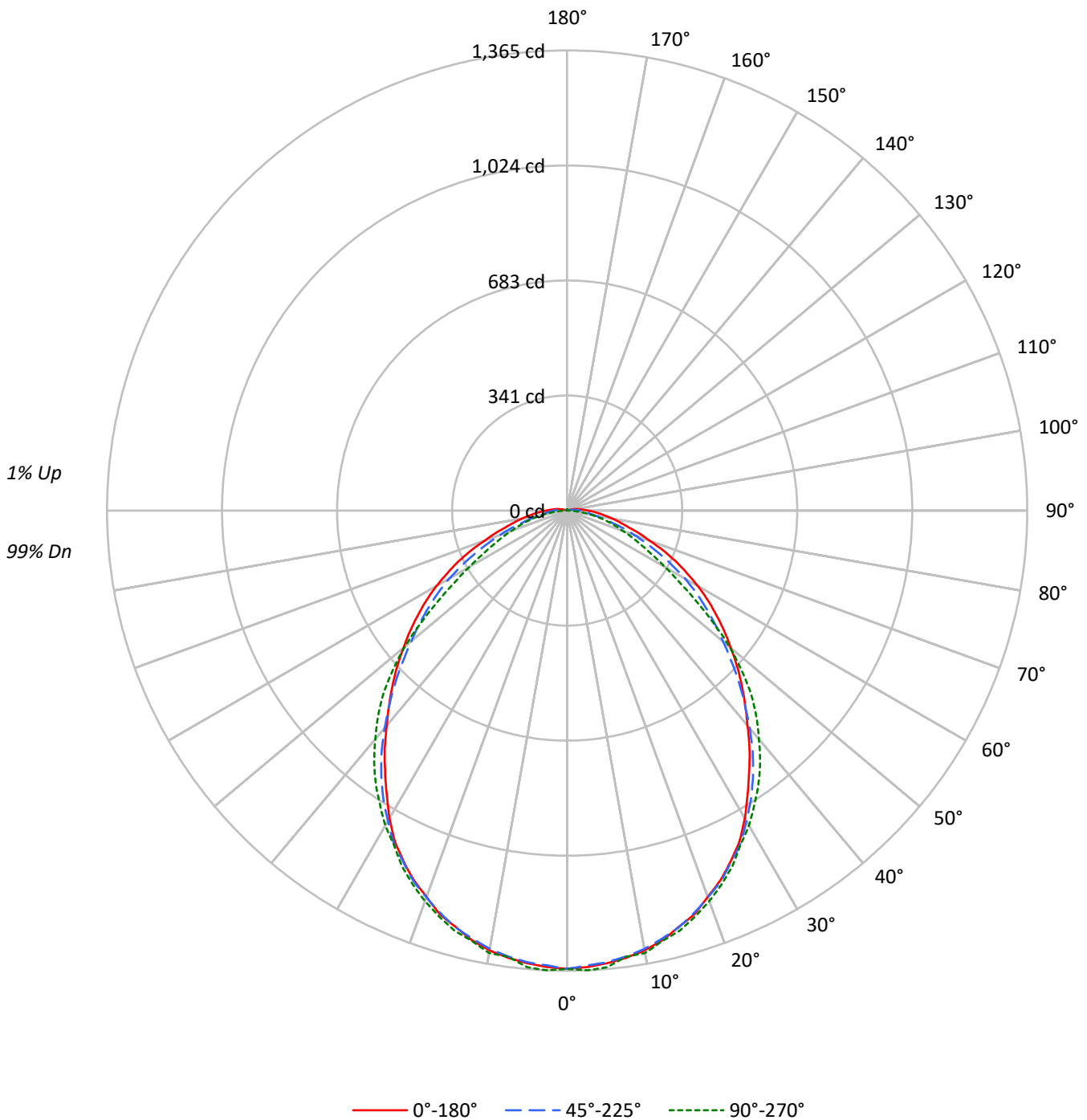
Lumens per Lamp: N/A  
Luminaire Lumens: 3202.0 lumens  
Efficiency: N/A  
Efficacy: 95.0 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.18 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: Direct

Input Watts (W): 33.7  
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	0	
RCR																						
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101	99				
1	109	105	101	97	106	102	99	95	98	95	92	94	91	89	90	88	86	84				
2	100	92	86	80	97	90	84	79	87	82	77	83	79	75	80	77	74	71				
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	71	67	63	61				
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	64	59	55	53				
5	78	66	57	51	76	65	57	51	62	55	50	60	54	49	58	53	49	47				
6	72	60	51	45	70	59	50	45	57	49	44	55	48	44	53	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	38	32	44	37	32	43	36	32	42	36	32	30				
10	55	42	35	30	54	42	34	29	41	34	29	40	33	29	39	33	29	27				

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

	0°	45°	90°
0°	8779	8779	8779
5°	8658	8162	8103
10°	8531	7608	7428
15°	8317	7075	6803
20°	8073	6535	6211
25°	7802	6008	5645
30°	7414	5467	5101
35°	6920	4898	4589
40°	6453	4288	4057
45°	6058	3697	3529
50°	5663	3143	2887
55°	5297	2672	2159
60°	4895	2214	1593
65°	4424	1722	1185
70°	3819	1273	885
75°	3346	875	653
80°	3166	566	418
85°	3183	430	189



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	128.0	4.0
10°-20°	361.3	11.3
20°-30°	530.6	16.6
30°-40°	602.4	18.8
40°-50°	567.4	17.7
50°-60°	452.5	14.1
60°-70°	298.2	9.3
70°-80°	154.7	4.8
80°-90°	65.7	2.1
90°-100°	25.2	0.8
100°-110°	5.5	0.2
110°-120°	2.1	0.1
120°-130°	2.2	0.1
130°-140°	2.1	0.1
140°-150°	1.7	0.1
150°-160°	1.3	0.0
160°-170°	0.8	0.0
170°-180°	0.3	0.0
0°-30°	1019.9	31.9
0°-40°	1622.2	50.7
0°-60°	2642.1	82.5
0°-90°	3160.7	98.7
90°-120°	32.8	1.0
90°-150°	38.9	1.2
90°-180°	41.0	1.3
0°-180°	3202.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1359	1359	1359	1359	1359	
5°	1348	1348	1345	1354	1359	128
15°	1279	1283	1280	1285	1290	361
25°	1148	1148	1150	1162	1162	528
35°	942	945	961	989	990	589
45°	732	720	721	753	773	565
55°	540	526	502	488	466	483
65°	354	344	301	253	244	350
75°	186	163	137	115	124	202
85°	94	77	58	37	32	86
90°	62	55	39	21	1	35
95°	40	40	24	4	1	31
105°	12	9	2	1	1	13
115°	3	2	2	2	2	3
125°	3	3	3	2	2	3
135°	3	3	3	3	2	2
145°	3	3	3	3	2	2
155°	3	3	3	3	3	1
165°	3	3	3	3	3	1
175°	2	3	3	3	3	0
180°	3	3	3	3	3	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1359.3	1359.3	1359.3	1359.3	1359.3
2.5°	1355.4	1352.5	1350.6	1357.3	1365.0
5°	1347.7	1347.7	1344.9	1353.5	1359.3
7.5°	1338.1	1340.1	1334.3	1342.0	1335.3
10°	1324.7	1323.7	1319.9	1328.5	1332.4
12.5°	1305.5	1300.7	1300.7	1306.5	1307.4
15°	1278.6	1283.4	1279.6	1285.3	1290.1
17.5°	1255.6	1256.6	1251.8	1256.6	1262.3
20°	1219.1	1222.0	1221.0	1231.6	1232.6
22.5°	1187.4	1189.4	1190.3	1191.3	1199.0
25°	1148.1	1148.1	1150.0	1162.5	1161.5
27.5°	1106.8	1104.9	1113.5	1121.2	1115.4
30°	1054.0	1055.9	1063.6	1081.8	1079.0
32.5°	996.4	1004.1	1014.6	1038.6	1033.8
35°	941.7	944.6	960.9	988.7	989.7
37.5°	888.9	884.1	904.3	934.0	940.7
40°	832.3	833.2	841.9	878.3	885.1
42.5°	781.4	771.8	780.4	816.9	831.3
45°	732.4	719.9	720.9	752.6	772.7
47.5°	683.5	668.1	660.4	686.4	702.7
50°	633.6	619.2	603.8	620.1	629.7
52.5°	587.5	571.2	552.9	554.8	546.2
55°	540.4	526.0	502.0	487.6	465.6
57.5°	494.4	483.8	453.1	423.3	393.6
60°	447.3	438.7	403.2	360.0	336.9
62.5°	399.3	392.6	351.3	301.4	284.1
65°	354.2	343.7	301.4	253.4	243.8
67.5°	307.2	294.7	254.4	211.2	209.3
70°	260.1	247.7	212.1	174.7	175.7
72.5°	223.7	202.5	173.7	144.0	148.8
75°	186.2	163.2	137.3	115.2	123.8
77.5°	159.3	133.4	106.6	92.2	97.9
80°	135.4	108.5	82.6	69.1	74.9
82.5°	114.2	91.2	68.2	49.0	51.8
85°	94.1	76.8	57.6	37.4	31.7
87.5°	76.8	64.3	47.0	28.8	8.6
90°	62.4	54.7	39.4	21.1	1.0
92.5°	50.9	47.0	30.7	12.5	1.0
95°	40.3	40.3	24.0	3.8	1.0
97.5°	33.6	32.6	16.3	1.0	1.0
100°	25.9	24.0	8.6	1.0	1.0
102.5°	18.2	15.4	2.9	1.0	1.0
105°	11.5	8.6	1.9	1.0	1.0
107.5°	5.8	2.9	1.9	1.0	1.0
110°	2.9	1.9	1.9	1.9	1.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	2.9	1.9	1.9	1.9	1.0
115°	2.9	1.9	1.9	1.9	1.9
117.5°	2.9	2.9	1.9	1.9	1.9
120°	2.9	2.9	1.9	1.9	1.9
122.5°	2.9	2.9	2.9	1.9	1.9
125°	2.9	2.9	2.9	1.9	1.9
127.5°	2.9	2.9	2.9	1.9	1.9
130°	2.9	2.9	2.9	1.9	1.9
132.5°	2.9	2.9	2.9	2.9	1.9
135°	2.9	2.9	2.9	2.9	1.9
137.5°	2.9	2.9	2.9	2.9	1.9
140°	2.9	2.9	2.9	2.9	1.9
142.5°	2.9	2.9	2.9	2.9	1.9
145°	2.9	2.9	2.9	2.9	1.9
147.5°	2.9	2.9	2.9	2.9	1.9
150°	2.9	2.9	2.9	2.9	1.9
152.5°	2.9	2.9	2.9	2.9	1.9
155°	2.9	2.9	2.9	2.9	2.9
157.5°	2.9	2.9	2.9	2.9	2.9
160°	2.9	2.9	2.9	2.9	2.9
162.5°	2.9	2.9	2.9	2.9	2.9
165°	2.9	2.9	2.9	2.9	2.9
167.5°	2.9	2.9	2.9	2.9	2.9
170°	1.9	1.9	2.9	2.9	2.9
172.5°	1.9	2.9	2.9	2.9	2.9
175°	1.9	2.9	2.9	2.9	2.9
177.5°	1.9	2.9	2.9	2.9	2.9
180°	2.9	2.9	2.9	2.9	2.9

(END OF REPORT)