

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: P392631

Luminaire Tested: **MWL-4-00-45-UNV-L830-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392631  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-4-00-45-UNV-L830-EDD  
Description: MWL 4FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

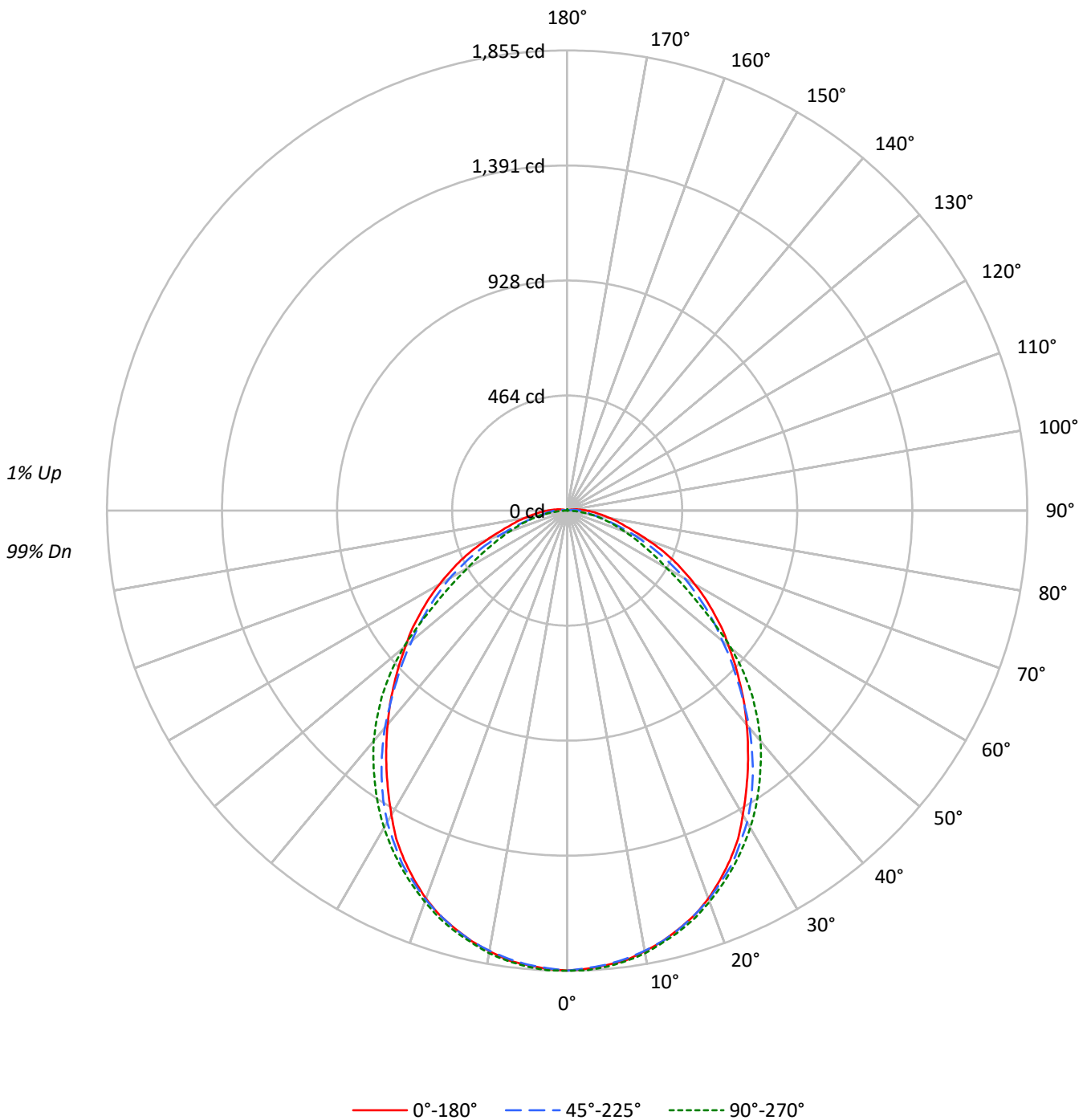
Lumens per Lamp: N/A  
Luminaire Lumens: 4332.1 lumens  
Efficiency: N/A  
Efficacy: 95.2 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.19 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 4' x H: 0.42')  
CIE Type: Direct

Input Watts (W): 45.5  
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					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	111	111	111	106	106	106	101	101	101	99				
1	109	105	101	97	106	102	99	95	98	95	92	94	92	89	90	88	86	84				
2	100	92	86	81	97	90	85	80	87	82	78	83	79	76	80	77	74	72				
3	92	82	74	68	89	80	73	68	77	71	66	74	69	65	72	67	64	62				
4	85	73	65	59	82	72	64	58	69	63	57	67	61	56	65	60	56	53				
5	78	66	57	51	76	65	57	51	63	55	50	60	54	49	59	53	49	47				
6	72	60	51	45	70	59	51	45	57	50	44	55	49	44	53	48	43	41				
7	67	54	46	40	66	53	46	40	52	45	40	50	44	39	49	43	39	37				
8	63	50	42	36	61	49	41	36	48	41	36	46	40	35	45	39	35	33				
9	59	46	38	33	57	45	38	32	44	37	32	43	37	32	42	36	32	30				
10	55	42	35	30	54	42	35	30	41	34	29	40	34	29	39	33	29	27				

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

	0°	45°	90°
0°	11978	11978	11978
5°	11816	11150	11004
10°	11615	10386	10103
15°	11351	9655	9253
20°	11022	8929	8455
25°	10561	8214	7702
30°	9966	7456	6980
35°	9332	6650	6258
40°	8730	5824	5562
45°	8147	4987	4817
50°	7593	4256	3960
55°	7085	3623	2960
60°	6502	3005	2188
65°	5887	2342	1665
70°	5059	1712	1243
75°	4364	1151	901
80°	4085	750	573
85°	4059	559	263



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	174.7	4.0
10°-20°	492.9	11.4
20°-30°	722.3	16.7
30°-40°	817.2	18.9
40°-50°	769.6	17.8
50°-60°	614.3	14.2
60°-70°	403.4	9.3
70°-80°	205.0	4.7
80°-90°	85.6	2.0
90°-100°	30.7	0.7
100°-110°	5.5	0.1
110°-120°	2.3	0.1
120°-130°	2.3	0.1
130°-140°	2.1	0.0
140°-150°	1.8	0.0
150°-160°	1.3	0.0
160°-170°	0.8	0.0
170°-180°	0.3	0.0
0°-30°	1389.9	32.1
0°-40°	2207.1	50.9
0°-60°	3590.9	82.9
0°-90°	4285.0	98.9
90°-120°	38.4	0.9
90°-150°	44.7	1.0
90°-180°	47.0	1.1
0°-180°	4332.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1855	1855	1855	1855	1855	
5°	1839	1843	1837	1845	1846	175
15°	1745	1746	1746	1756	1755	492
25°	1554	1561	1572	1584	1585	714
35°	1270	1278	1304	1344	1350	794
45°	985	972	972	1024	1055	761
55°	723	713	681	672	638	647
65°	471	461	410	345	343	464
75°	243	215	180	156	171	264
85°	120	100	75	49	44	109
90°	79	70	50	27	1	43
95°	48	49	30	6	1	35
105°	10	7	2	1	1	12
115°	3	3	2	2	2	3
125°	3	3	3	2	2	3
135°	3	3	3	3	2	2
145°	3	3	3	3	3	2
155°	3	3	3	3	3	1
165°	3	3	3	3	3	1
175°	2	3	3	3	4	0
180°	3	3	3	3	3	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1854.6	1854.6	1854.6	1854.6	1854.6
2.5°	1848.8	1852.6	1845.9	1855.5	1854.6
5°	1839.2	1843.0	1837.3	1845.0	1845.9
7.5°	1827.7	1826.7	1821.9	1831.5	1831.5
10°	1803.7	1806.6	1801.8	1812.3	1812.3
12.5°	1777.8	1779.7	1777.8	1786.4	1783.5
15°	1745.1	1746.1	1746.1	1755.7	1754.7
17.5°	1709.6	1710.6	1708.7	1719.2	1720.2
20°	1664.5	1664.5	1668.3	1677.0	1677.9
22.5°	1610.7	1616.5	1620.3	1632.8	1632.8
25°	1554.1	1560.8	1572.3	1583.9	1584.8
27.5°	1491.7	1499.4	1510.9	1532.0	1532.0
30°	1416.8	1428.4	1450.4	1472.5	1476.4
32.5°	1342.0	1353.5	1380.4	1409.2	1415.9
35°	1270.0	1277.7	1304.5	1343.9	1349.6
37.5°	1197.0	1198.9	1224.9	1271.9	1282.5
40°	1126.0	1121.2	1143.3	1192.2	1213.3
42.5°	1056.9	1046.3	1054.9	1112.5	1134.6
45°	984.9	972.4	972.4	1024.2	1054.9
47.5°	917.7	902.3	895.6	939.8	963.8
50°	849.5	837.0	817.8	844.7	863.9
52.5°	791.0	773.7	748.7	757.4	746.8
55°	722.8	713.2	680.6	671.9	638.3
57.5°	659.5	653.7	612.4	577.9	546.2
60°	594.2	591.3	547.2	494.4	462.7
62.5°	529.9	526.0	477.1	413.7	401.2
65°	471.3	460.8	409.9	344.6	342.7
67.5°	407.0	390.7	342.7	288.0	292.8
70°	344.6	323.5	285.1	239.0	246.7
72.5°	288.0	264.0	229.4	194.9	207.3
75°	242.9	215.0	180.5	155.5	170.9
77.5°	208.3	173.7	138.2	120.0	137.3
80°	174.7	144.0	109.4	89.3	102.7
82.5°	144.9	117.1	89.3	63.4	72.0
85°	120.0	99.8	74.9	49.0	44.2
87.5°	97.9	82.6	60.5	38.4	15.4
90°	78.7	70.1	49.9	26.9	1.0
92.5°	61.4	58.6	40.3	16.3	1.0
95°	48.0	49.0	29.8	5.8	1.0
97.5°	36.5	37.4	18.2	1.0	1.0
100°	26.9	25.9	8.6	1.0	1.0
102.5°	18.2	15.4	2.9	1.0	1.0
105°	9.6	6.7	1.9	1.0	1.0
107.5°	3.8	2.9	1.9	1.9	1.0
110°	2.9	2.9	1.9	1.9	1.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	2.9	2.9	1.9	1.9	1.9
115°	2.9	2.9	1.9	1.9	1.9
117.5°	2.9	2.9	1.9	1.9	1.9
120°	2.9	2.9	2.9	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	2.9	1.9
130°	2.9	2.9	2.9	2.9	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	2.9
147.5°	2.9	2.9	2.9	2.9	1.9
150°	2.9	2.9	2.9	2.9	2.9
152.5°	2.9	2.9	2.9	2.9	2.9
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	2.9	2.9	2.9	2.9
172.5°	1.9	2.9	2.9	2.9	3.8
175°	1.9	2.9	2.9	2.9	3.8
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)