

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: 168P191

Luminaire Tested: **MPWA-2/254-EXL-WHT**

Issue Date: 3/3/2020

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: 168P191  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MPWA-2/254-EXL-WHT  
Description: Medical Patient Wall Bracket, Architectural style  
angled and rounded front, upper and lower compartments  
different in size with reflector insert.  
Light Source: Four - F54T5/841 HO - 4400 Lumens ea. - 54 Watts ea.  
Ballast/Driver: Three - Advance ICN-2S54

Luminaire Equipment:	<u>Sample No.</u>	<u>Condition</u>	<u>Description</u>
	AS-5443-1	Good	WHITE TWIN R-EVOLVE FLOOD
	AS-5443-2	Good	REFLECTOR
	AS-5443-3	Good	DRIVER
	AS-5443-4	Good	UPPER MODULE
	AS-5443-5	Good	LENS
	AS-5443-6	Good	DRIVER 2
	AS-5443-7	Good	TRIM RING

**Summary**

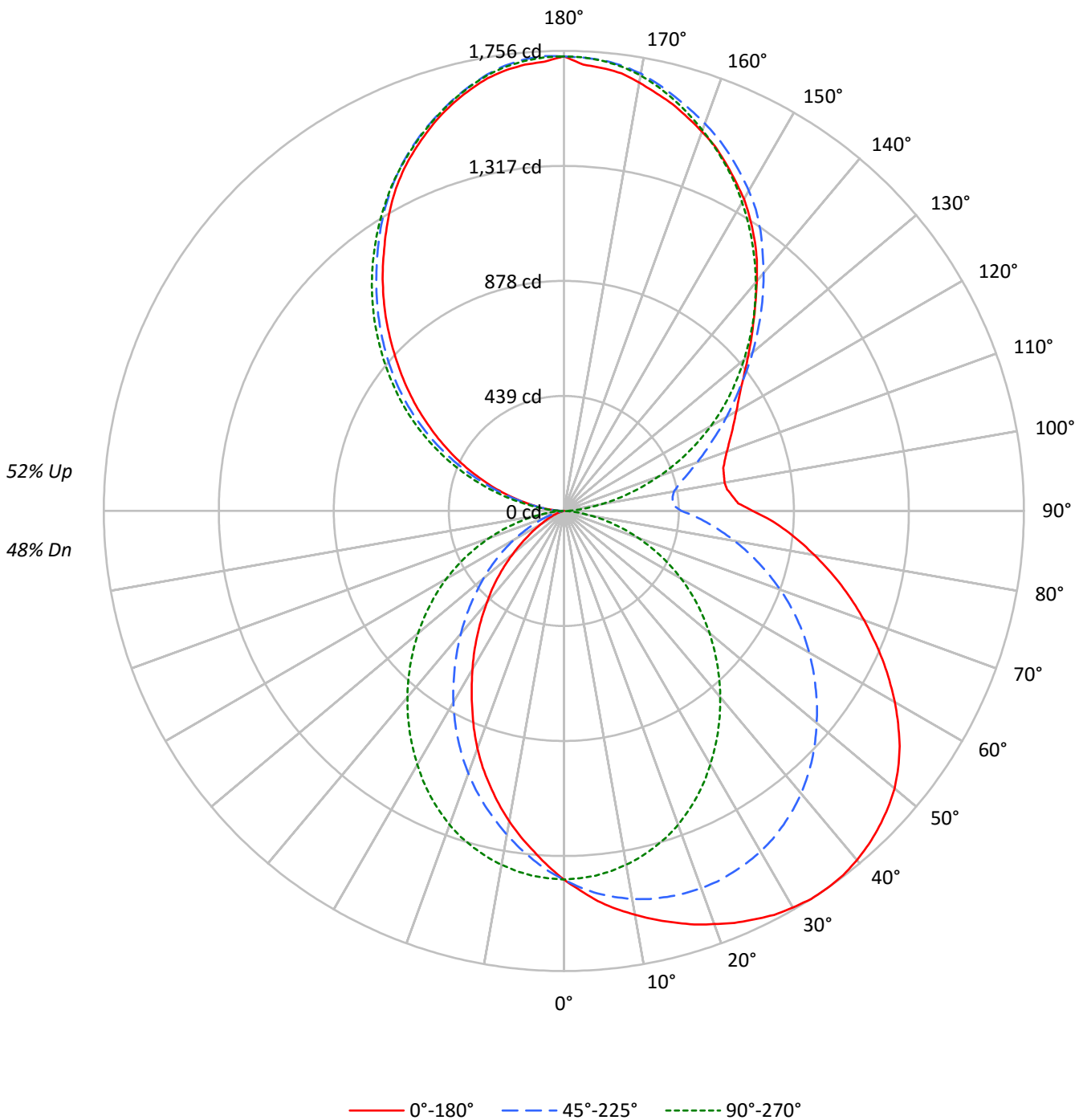
Lumens per Lamp: 4400 (4 lamps)  
Luminaire Lumens: 9098.6 lumens  
Efficiency: 51.7%  
Efficacy: 43.5 lumens/watt  
Spacing Criteria (0/90/45): 1.3 / 1.19 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 3.83' x L: 0.43' x H: 0.25')  
CIE Type: General Diffuse

Input Watts (W): 209  
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	0
RCR																		
0	55	55	55	55	51	51	51	51	43	43	43	35	35	35	28	28	28	25
1	50	47	45	43	46	43	42	40	36	35	34	30	29	28	24	23	23	20
2	45	41	38	35	41	38	35	32	32	29	27	26	24	23	21	20	19	16
3	41	36	32	29	37	33	29	27	28	25	23	23	21	19	18	17	16	13
4	37	32	27	24	34	29	25	22	24	22	19	20	18	16	16	15	13	11
5	34	28	24	20	31	26	22	19	22	19	17	18	16	14	15	13	11	10
6	32	25	21	18	29	23	19	17	20	17	14	16	14	12	13	11	10	9
7	29	23	18	15	27	21	17	14	18	15	13	15	12	11	12	10	9	8
8	27	20	16	14	25	19	15	13	16	13	11	14	11	10	11	9	8	7
9	25	19	15	12	23	17	14	11	15	12	10	12	10	9	10	8	7	6
10	23	17	13	11	22	16	12	10	14	11	9	11	9	8	9	8	6	5

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

	0°	90°	180°
0°	9196	9196	9196
5°	9334	9113	8147
10°	9421	8995	7236
15°	9519	8845	6364
20°	9633	8662	5534
25°	9758	8419	4698
30°	9877	8131	3938
35°	9957	7828	3255
40°	9978	7515	2621
45°	9954	7184	2057
50°	9898	6849	1514
55°	9743	6483	1033
60°	9503	6083	658
65°	9237	5562	399
70°	8976	4910	206
75°	8739	4082	72
80°	8505	3022	26
85°	8347	1718	10



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	132.9	1.5	0.8	0°	1407	1407	1407	1407	1407	
10°-20°	379.1	4.2	2.2	5°	1495	1465	1397	1337	1305	145
20°-30°	570.6	6.3	3.2	15°	1626	1525	1330	1164	1087	462
30°-40°	683.8	7.5	3.9	25°	1720	1523	1203	958	828	796
40°-50°	713.0	7.8	4.1	35°	1756	1462	1026	725	574	1101
50°-60°	662.8	7.3	3.8	45°	1703	1341	828	502	352	1315
60°-70°	552.5	6.1	3.1	55°	1565	1173	622	306	166	1398
70°-80°	415.3	4.6	2.4	65°	1342	984	410	142	58	1329
80°-90°	285.6	3.1	1.6	75°	1097	771	201	37	9	1158
90°-100°	240.0	2.6	1.4	85°	851	556	40	6	1	719
100°-110°	363.3	4.0	2.1	90°	720	449	4	3	0	397
110°-120°	540.6	5.9	3.1	95°	646	416	51	42	45	523
120°-130°	691.5	7.6	3.9	105°	630	473	258	218	204	672
130°-140°	783.0	8.6	4.4	115°	707	622	518	476	431	702
140°-150°	785.6	8.6	4.5	125°	827	821	774	743	680	745
150°-160°	676.6	7.4	3.8	135°	1024	1063	1021	992	939	793
160°-170°	459.0	5.0	2.6	145°	1268	1308	1253	1236	1198	792
170°-180°	163.5	1.8	0.9	155°	1464	1499	1459	1461	1442	674
0°-30°	1082.7	11.9	6.2	165°	1607	1637	1625	1627	1615	453
0°-40°	1766.5	19.4	10.0	175°	1697	1727	1724	1730	1710	161
0°-60°	3142.2	34.5	17.9	180°	1735	1735	1735	1735	1735	
0°-90°	4395.7	48.3	25.0							
90°-120°	1143.8	12.6	6.5							
90°-150°	3403.9	37.4	19.3							
90°-180°	4703.0	51.7	26.7							
0°-180°	9098.6	100.0	51.7							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1407	1407	1407	1407	1407	1407	1407	1407	1407
2.5°	1450	1448	1439	1421	1403	1387	1375	1363	1357
5°	1495	1485	1465	1432	1397	1363	1337	1317	1305
7.5°	1532	1517	1486	1439	1386	1335	1297	1268	1255
10°	1565	1544	1504	1440	1371	1306	1254	1218	1202
12.5°	1597	1570	1517	1437	1353	1273	1209	1166	1146
15°	1626	1593	1525	1430	1330	1237	1164	1113	1087
17.5°	1655	1614	1531	1419	1305	1199	1116	1057	1028
20°	1678	1632	1532	1402	1275	1157	1066	997	964
22.5°	1702	1645	1531	1381	1240	1113	1013	936	897
25°	1720	1656	1523	1356	1203	1066	958	871	828
27.5°	1738	1664	1514	1326	1162	1017	901	805	761
30°	1748	1666	1501	1293	1118	967	843	742	697
32.5°	1756	1665	1484	1258	1073	915	784	679	636
35°	1756	1659	1462	1222	1026	863	725	621	574
37.5°	1752	1648	1437	1183	978	809	667	563	514
40°	1740	1632	1409	1143	929	756	611	503	457
42.5°	1724	1611	1376	1102	879	702	556	450	405
45°	1703	1586	1341	1060	828	648	502	399	352
47.5°	1678	1556	1301	1017	777	593	448	349	301
50°	1648	1523	1260	972	726	537	400	300	252
52.5°	1609	1484	1218	927	674	482	352	253	207
55°	1565	1439	1173	880	622	428	306	209	166
57.5°	1513	1392	1128	833	570	376	261	169	131
60°	1459	1342	1082	784	518	323	219	134	101
62.5°	1401	1290	1034	734	464	271	179	103	78
65°	1342	1235	984	683	410	223	142	78	58
67.5°	1280	1179	932	631	356	180	109	57	41
70°	1220	1122	879	579	303	140	81	40	28
72.5°	1158	1064	825	528	251	103	57	27	17
75°	1097	1005	771	477	201	72	37	16	9
77.5°	1033	945	717	426	154	47	22	9	4
80°	971	885	663	376	110	29	12	5	3
82.5°	911	826	609	326	72	17	7	4	2
85°	851	767	556	277	40	10	6	3	1
87.5°	790	710	504	229	17	7	5	2	1
90°	720	645	449	184	4	4	3	1	0
92.5°	666	609	422	167	18	16	13	8	11
95°	646	595	416	171	51	47	42	38	45
97.5°	629	587	419	188	93	85	75	70	77
100°	623	589	427	216	142	133	116	106	113
102.5°	626	597	446	255	198	187	164	149	155
105°	630	609	473	303	258	247	218	198	204
107.5°	644	625	505	356	321	311	279	252	258
110°	662	646	541	414	386	376	342	309	314



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	683	672	580	475	452	442	408	369	371
115°	707	698	622	539	518	510	476	430	431
117.5°	732	727	668	604	583	576	544	492	491
120°	760	759	717	668	648	642	611	555	553
122.5°	791	796	767	732	712	707	678	618	616
125°	827	838	821	795	774	771	743	682	680
127.5°	870	884	879	859	836	834	806	746	744
130°	918	935	940	923	898	896	869	810	808
132.5°	970	991	1001	986	959	959	930	876	873
135°	1024	1050	1063	1047	1021	1020	992	942	939
137.5°	1083	1114	1125	1105	1081	1078	1053	1007	1006
140°	1146	1178	1186	1162	1140	1135	1113	1071	1071
142.5°	1210	1240	1246	1218	1197	1191	1174	1134	1136
145°	1268	1301	1308	1274	1253	1249	1236	1196	1198
147.5°	1323	1358	1364	1329	1308	1308	1296	1258	1263
150°	1375	1408	1412	1382	1361	1365	1355	1324	1327
152.5°	1419	1458	1456	1431	1412	1417	1410	1387	1388
155°	1464	1504	1499	1477	1459	1465	1461	1444	1442
157.5°	1507	1542	1539	1519	1504	1510	1507	1494	1490
160°	1541	1579	1574	1559	1547	1552	1550	1542	1535
162.5°	1574	1615	1606	1596	1587	1592	1589	1585	1578
165°	1607	1643	1637	1631	1625	1629	1627	1623	1615
167.5°	1633	1670	1668	1662	1659	1663	1661	1658	1648
170°	1660	1698	1695	1689	1688	1692	1691	1690	1677
172.5°	1685	1718	1714	1709	1710	1713	1715	1713	1697
175°	1697	1730	1727	1722	1724	1728	1730	1731	1710
177.5°	1705	1735	1732	1731	1733	1737	1738	1739	1716
180°	1735	1735	1735	1735	1735	1735	1735	1735	1735

(END OF REPORT)