

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: ITL50718

Luminaire Tested: **FMW-2/254HOT5-86/80**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: ITL50718
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: FMW-2/254HOT5-86/80
Description: FABRICATED METAL HOUSING WITH WHITE PAINTED GENERAL INTERIOR FINISH, FORMED WHITE PAINTED METAL REFLECTOR, TWO 1/4" CLEAR FLAT POLYCARBONATE LENSES WITH 1/8" CLEAR ACRYLIC PRISMATIC OVERLAYS.
Light Source: FOUR 54-WATT T-5 FP54/835/HO LINEAR FLUORESCENTS.
Ballast/Driver: TWO ENERGY SAVINGS ES-2-T5-54-UNV-K

Summary

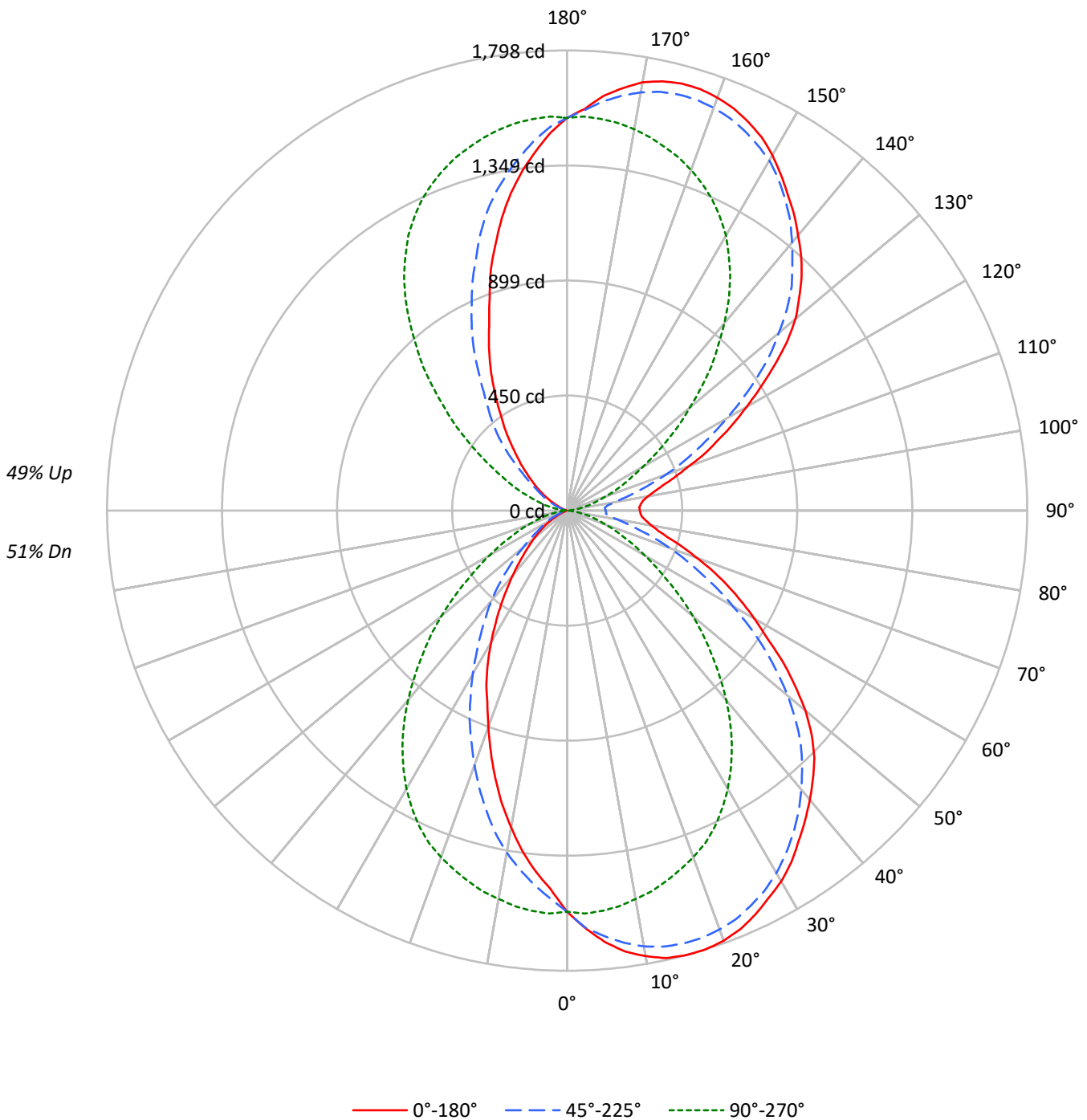
Lumens per Lamp: 5000 (4 lamps)
Luminaire Lumens: 6936.8 lumens
Efficiency: 34.7%
Efficacy: 32.1 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1.19 / 1.25
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 0.28' x H: 0.64')
CIE Type: General Diffuse

Input Watts (W): 216
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	0
RCR																		
0	37	37	37	37	34	34	34	34	29	29	29	24	24	24	20	20	20	18
1	34	33	31	30	31	30	29	28	26	25	24	21	21	20	18	17	17	15
2	31	29	27	25	29	27	25	23	23	21	20	19	18	17	16	15	14	13
3	28	25	23	21	26	23	21	20	20	18	17	17	16	15	14	13	12	11
4	26	22	20	18	24	21	19	17	18	16	15	15	14	13	13	12	11	10
5	24	20	17	15	22	19	16	14	16	14	13	14	12	11	11	10	9	8
6	22	18	15	13	20	17	14	13	15	13	11	12	11	10	10	9	8	7
7	21	16	14	12	19	15	13	11	13	11	10	11	10	9	10	8	8	7
8	19	15	12	10	18	14	12	10	12	10	9	10	9	8	9	8	7	6
9	18	14	11	9	16	13	10	9	11	9	8	10	8	7	8	7	6	5
10	17	13	10	8	15	12	9	8	10	8	7	9	7	6	8	6	6	5

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	15603	15603	15603
5°	14077	15473	11772
10°	12715	15148	9047
15°	11463	14799	6905
20°	10308	14418	5183
25°	9225	13932	3958
30°	8259	13194	2927
35°	7339	12247	2094
40°	6540	11063	1463
45°	5825	9693	1006
50°	5028	8321	695
55°	4162	6779	457
60°	3370	5441	256
65°	2742	4213	99
70°	2138	3222	0
75°	1636	2372	0
80°	1363	1434	0
85°	1230	280	0



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	148.4	2.1	0.7	0°	1567	1567	1567	1567	1567	
10°-20°	416.0	6.0	2.1	5°	1692	1669	1570	1468	1415	164
20°-30°	599.9	8.6	3.0	15°	1798	1751	1498	1216	1083	508
30°-40°	671.0	9.7	3.4	25°	1741	1701	1364	902	747	802
40°-50°	629.0	9.1	3.1	35°	1577	1540	1122	588	450	988
50°-60°	486.4	7.0	2.4	45°	1366	1291	800	336	236	1048
60°-70°	311.1	4.5	1.6	55°	1028	941	481	143	113	917
70°-80°	167.2	2.4	0.8	65°	691	574	241	57	25	683
80°-90°	91.7	1.3	0.5	75°	408	291	99	0	0	444
90°-100°	88.8	1.3	0.4	85°	294	153	7	0	0	250
100°-110°	159.4	2.3	0.8	90°	284	151	0	0	0	156
110°-120°	300.1	4.3	1.5	95°	289	149	6	0	0	242
120°-130°	470.8	6.8	2.4	105°	391	278	98	4	0	422
130°-140°	611.0	8.8	3.1	115°	650	556	242	63	34	648
140°-150°	651.7	9.4	3.3	125°	988	905	475	150	122	883
150°-160°	583.4	8.4	2.9	135°	1296	1241	797	344	253	997
160°-170°	405.9	5.9	2.0	145°	1504	1485	1111	570	449	943
170°-180°	144.9	2.1	0.7	155°	1675	1638	1341	882	724	772
0°-30°	1164.3	16.8	5.8	165°	1727	1683	1471	1209	1079	488
0°-40°	1835.3	26.5	9.2	175°	1626	1604	1536	1453	1409	157
0°-60°	2950.7	42.5	14.8	180°	1534	1534	1534	1534	1534	
0°-90°	3520.7	50.8	17.6							
90°-120°	548.3	7.9	2.7							
90°-150°	2281.9	32.9	11.4							
90°-180°	3416.0	49.2	17.1							
0°-180°	6936.8	100.0	34.7							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1567	1567	1567	1567	1567	1567	1567	1567	1567
2.5°	1633	1622	1631	1599	1576	1546	1517	1497	1480
5°	1692	1673	1669	1618	1570	1517	1468	1436	1415
7.5°	1738	1721	1703	1634	1559	1485	1415	1373	1342
10°	1768	1754	1729	1645	1541	1447	1357	1299	1258
12.5°	1791	1775	1745	1651	1524	1405	1292	1210	1174
15°	1798	1782	1751	1650	1498	1358	1216	1126	1083
17.5°	1798	1784	1751	1646	1471	1307	1139	1042	991
20°	1788	1775	1741	1636	1441	1250	1058	953	899
22.5°	1770	1761	1727	1618	1408	1185	978	868	814
25°	1741	1735	1701	1594	1364	1116	902	784	747
27.5°	1706	1703	1673	1566	1312	1050	816	703	671
30°	1673	1664	1635	1530	1255	981	738	628	593
32.5°	1630	1622	1590	1488	1191	902	658	559	519
35°	1577	1576	1540	1437	1122	821	588	498	450
37.5°	1527	1520	1485	1378	1047	740	521	438	387
40°	1475	1464	1423	1311	967	665	461	379	330
42.5°	1422	1413	1359	1237	884	592	398	322	278
45°	1366	1353	1291	1155	800	524	336	270	236
47.5°	1296	1291	1211	1074	723	457	279	223	200
50°	1215	1209	1125	977	641	401	225	189	168
52.5°	1120	1118	1032	874	561	336	180	155	138
55°	1028	1025	941	776	481	275	143	126	113
57.5°	925	930	844	681	412	222	117	99	88
60°	844	840	750	593	350	179	96	73	64
62.5°	766	751	662	512	295	145	78	53	42
65°	691	664	574	438	241	118	57	36	25
67.5°	614	586	498	367	201	96	38	22	17
70°	538	516	426	304	160	74	22	13	0
72.5°	473	452	356	250	127	52	14	0	0
75°	408	408	291	203	99	32	0	0	0
77.5°	365	350	239	164	73	16	0	0	0
80°	334	308	199	130	48	6	0	0	0
82.5°	312	275	166	99	25	0	0	0	0
85°	294	254	153	80	7	0	0	0	0
87.5°	287	244	152	65	0	0	0	0	0
90°	284	240	151	59	0	0	0	0	0
92.5°	282	241	148	62	0	0	0	0	0
95°	289	247	149	75	6	0	0	0	0
97.5°	299	263	161	93	23	0	0	0	0
100°	320	291	186	123	48	6	0	0	0
102.5°	350	329	228	157	73	15	0	0	0
105°	391	380	278	195	98	33	4	0	0
107.5°	445	422	339	237	124	52	15	0	0
110°	505	484	411	290	159	73	26	16	0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	582	549	484	349	199	98	45	26	22
115°	650	628	556	417	242	120	63	41	34
117.5°	730	714	633	486	285	144	81	59	49
120°	808	798	719	559	341	173	101	78	71
122.5°	896	886	812	644	405	213	124	103	96
125°	988	979	905	738	475	266	150	131	122
127.5°	1082	1069	998	840	553	324	187	164	151
130°	1165	1151	1079	936	626	384	229	196	179
132.5°	1229	1223	1165	1032	709	447	284	232	212
135°	1296	1293	1241	1118	797	517	344	281	253
137.5°	1353	1353	1302	1197	872	584	402	331	292
140°	1404	1406	1367	1267	955	654	456	386	341
142.5°	1457	1460	1431	1330	1036	728	509	438	397
145°	1504	1508	1485	1389	1111	806	570	487	449
147.5°	1555	1559	1536	1439	1176	891	645	541	514
150°	1604	1606	1580	1482	1241	959	730	616	583
152.5°	1645	1646	1611	1515	1293	1025	807	690	653
155°	1675	1678	1638	1545	1341	1098	882	766	724
157.5°	1701	1700	1660	1569	1381	1166	967	846	795
160°	1717	1713	1674	1584	1416	1228	1042	935	886
162.5°	1727	1722	1683	1597	1447	1287	1130	1030	991
165°	1727	1720	1683	1601	1471	1336	1209	1126	1079
167.5°	1718	1710	1676	1603	1494	1384	1278	1210	1174
170°	1699	1691	1659	1599	1513	1425	1339	1286	1261
172.5°	1665	1657	1635	1590	1527	1464	1397	1357	1339
175°	1626	1616	1604	1576	1536	1497	1453	1422	1409
177.5°	1571	1568	1567	1557	1541	1525	1501	1487	1478
180°	1534	1534	1534	1534	1534	1534	1534	1534	1534

(END OF REPORT)