

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: P34268

Luminaire Tested: **MNAE-G-48-LD4-LO/HI-40**

Test Date: 07/30/15

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: P34268
Test Lab: INNOVATION CENTER-P3
Test Date: 07/30/15
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: MNAE-G-48-LD4-LO/HI-40
Description: FAILSAFE MNAE 4' RECESSED LED FIXTURE WITH AMBIENT LIGHT LEVEL LOW & EXAM LIGHT LEVEL HIGH
Light Source: (168) COOPER LIGHTING 4000K LEDS
2UT217042A8404A
Ballast/Driver: (2) OSRAM ELECTRONIC DRIVER
OT50W

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

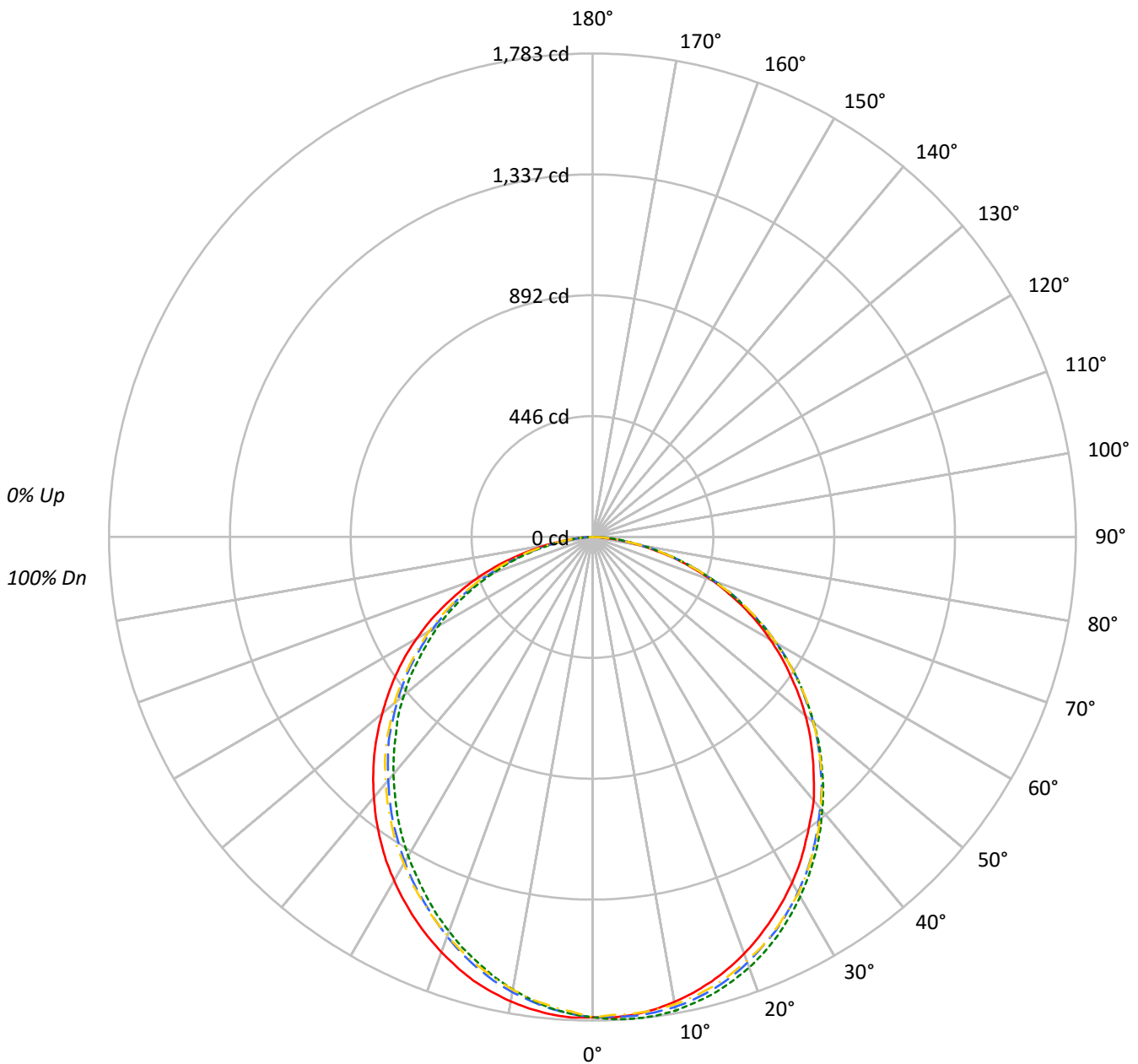
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4848.5 lumens
Efficiency: N/A
Efficacy: 70.1 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.22 / 1.34
Luminous Opening: Rectangular (W 0.38' x L: 3.67' x H: 0')
CIE Type: Direct

Input Watts (W): 69.2
Input Voltage (V): 120.0
Input Current (A_{in}): 0.579
Voltage Rise (V): NR
Power Factor: 0.9984
Total Harmonic Distortion (THDi): 7.73%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 13 HR
Ambient Temperature (°C): 25.0
Test Distance: 25 FT

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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270° - · - 135°-315°



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	95	98	94	92	94	91	89	90	88	86	84
2	99	91	84	78	96	89	83	77	85	80	76	82	78	74	79	75	72	70
3	90	80	72	65	88	78	71	65	75	69	63	72	67	62	70	65	61	59
4	83	71	62	55	80	69	61	55	67	60	54	65	58	53	62	57	53	50
5	76	63	54	48	74	62	54	47	60	52	47	58	51	46	56	50	46	44
6	70	57	48	42	68	56	48	41	54	47	41	52	46	41	51	45	40	38
7	65	52	43	37	63	51	42	37	49	42	36	48	41	36	46	40	36	34
8	61	47	39	33	59	46	38	33	45	38	32	44	37	32	43	37	32	30
9	57	43	35	29	55	43	35	29	42	34	29	40	34	29	39	33	29	27
10	53	40	32	27	52	39	32	27	38	31	27	37	31	26	37	31	26	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	13864	13864	13864	13864
5°	13893	14011	13885	13713
10°	13839	14094	13823	13466
15°	13753	14110	13729	13178
20°	13629	14079	13571	12888
25°	13466	13993	13406	12576
30°	13306	13848	13225	12284
35°	13102	13675	13035	11984
40°	12978	13469	12815	11670
45°	12720	13241	12610	11348
50°	12495	12982	12325	11046
55°	12174	12666	12065	10646
60°	11852	12243	11711	10271
65°	11429	11725	11207	9725
70°	10826	11055	10597	8904
75°	9830	10072	9437	7985
80°	8115	8701	7709	6492
85°	5389	7365	4940	4760



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.3	3.5
10°-20°	475.8	9.8
20°-30°	712.1	14.7
30°-40°	847.7	17.5
40°-50°	871.0	18.0
50°-60°	780.6	16.1
60°-70°	588.8	12.1
70°-80°	325.7	6.7
80°-90°	79.4	1.6
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°	1355.2	28.0
0°-40°	2203.0	45.4
0°-60°	3854.5	79.5
0°-90°	4848.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4848.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1771	1771	1771	1771	1771	
5°	1768	1783	1767	1745	1768	168
15°	1697	1741	1694	1626	1697	479
25°	1559	1620	1552	1456	1559	719
35°	1371	1431	1364	1254	1371	859
45°	1149	1196	1139	1025	1149	887
55°	892	928	884	780	892	799
65°	617	633	605	525	617	610
75°	325	333	312	264	325	342
85°	60	82	55	53	60	78
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771	1771
2.5°	1774	1784	1771	1781	1780	1778	1764	1765	1774	1781	1761
5°	1768	1782	1773	1784	1783	1781	1764	1762	1767	1770	1747
7.5°	1757	1775	1768	1781	1781	1777	1759	1754	1755	1753	1727
10°	1741	1763	1760	1774	1773	1769	1750	1742	1739	1733	1704
12.5°	1721	1746	1745	1761	1758	1756	1735	1726	1718	1708	1677
15°	1697	1724	1726	1742	1741	1736	1716	1703	1694	1681	1644
17.5°	1668	1697	1701	1720	1717	1714	1692	1676	1663	1646	1608
20°	1636	1669	1671	1690	1690	1685	1664	1647	1629	1608	1568
22.5°	1599	1633	1636	1657	1657	1654	1634	1611	1592	1570	1524
25°	1559	1595	1601	1621	1620	1619	1597	1574	1552	1530	1478
27.5°	1517	1555	1559	1576	1577	1578	1557	1535	1509	1482	1433
30°	1472	1509	1514	1534	1532	1534	1518	1489	1463	1434	1384
32.5°	1425	1462	1468	1483	1483	1481	1470	1441	1416	1388	1333
35°	1371	1411	1417	1433	1431	1432	1418	1391	1364	1334	1283
37.5°	1319	1360	1362	1375	1377	1376	1368	1338	1311	1281	1228
40°	1270	1304	1306	1322	1318	1319	1310	1283	1254	1223	1172
42.5°	1208	1248	1252	1259	1260	1260	1252	1230	1197	1168	1117
45°	1149	1192	1188	1197	1196	1198	1192	1170	1139	1108	1063
47.5°	1089	1125	1129	1130	1134	1134	1129	1106	1076	1048	999
50°	1026	1061	1063	1070	1066	1074	1064	1042	1012	982	938
52.5°	960	997	994	1000	997	998	998	979	948	919	877
55°	892	929	928	927	928	929	928	911	884	854	813
57.5°	827	856	858	857	855	861	855	843	819	790	745
60°	757	786	784	786	782	787	783	772	748	721	682
62.5°	689	713	714	711	707	713	712	699	679	647	614
65°	617	637	634	640	633	634	636	626	605	578	552
67.5°	544	562	563	559	555	560	561	550	532	507	477
70°	473	484	483	480	483	484	479	474	463	436	409
72.5°	396	408	410	409	407	408	407	403	388	365	344
75°	325	334	333	334	333	333	329	328	312	290	274
77.5°	249	260	263	262	258	260	261	248	237	221	209
80°	180	190	190	191	193	194	189	182	171	156	148
82.5°	116	126	126	131	130	130	126	118	111	101	93
85°	60	73	76	79	82	77	74	63	55	51	52
87.5°	22	31	38	44	44	40	37	28	17	20	24
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1771	1771	1771	1771	1771	1771
2.5°	1766	1761	1762	1752	1756	1774
5°	1749	1745	1745	1737	1745	1768
7.5°	1727	1721	1725	1719	1729	1757
10°	1701	1694	1697	1695	1711	1741
12.5°	1671	1663	1668	1667	1686	1721
15°	1637	1626	1634	1636	1661	1697
17.5°	1598	1590	1596	1602	1627	1668
20°	1559	1547	1555	1565	1591	1636
22.5°	1514	1504	1515	1525	1554	1599
25°	1469	1456	1470	1482	1512	1559
27.5°	1415	1407	1422	1440	1470	1517
30°	1366	1359	1372	1391	1425	1472
32.5°	1313	1307	1322	1346	1374	1425
35°	1260	1254	1264	1292	1325	1371
37.5°	1206	1197	1212	1241	1274	1319
40°	1147	1142	1157	1185	1217	1270
42.5°	1094	1084	1098	1133	1163	1208
45°	1033	1025	1042	1075	1109	1149
47.5°	977	971	980	1011	1045	1089
50°	911	907	924	954	987	1026
52.5°	856	848	864	890	925	960
55°	787	780	795	823	860	892
57.5°	724	717	732	760	795	827
60°	658	656	669	695	725	757
62.5°	596	592	602	628	661	689
65°	530	525	536	559	593	617
67.5°	462	457	469	488	523	544
70°	402	389	403	421	444	473
72.5°	332	329	338	354	374	396
75°	267	264	274	289	305	325
77.5°	201	204	210	219	234	249
80°	147	144	149	159	168	180
82.5°	91	95	98	102	111	116
85°	51	53	55	58	59	60
87.5°	26	26	27	27	23	22
90°	0	0	0	0	0	0

(END OF REPORT)