

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: P34269

Luminaire Tested: **MNAE-G-48-LD4-STD/STD-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: P34269
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-STD/STD-40
Description: FAILSAFE MNAE 4' RECESSED LED FIXTURE WITH AMBIENT & EXAM LIGHT LEVEL STD
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

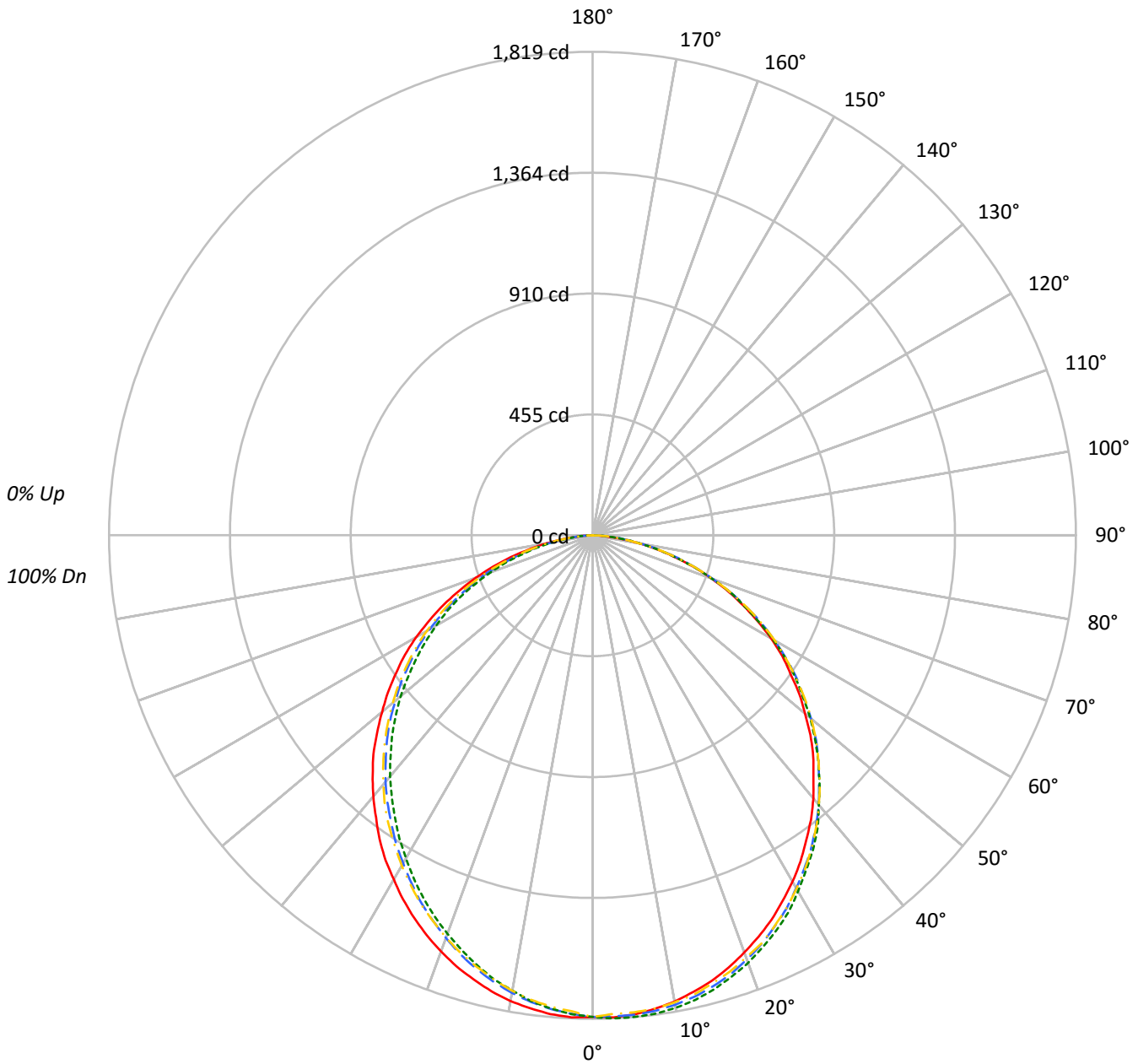
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4949.4 lumens
Efficiency: N/A
Efficacy: 72.5 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.21 / 1.34
Luminous Opening: Rectangular (W 0.38' x L: 3.67' x H: 0')
CIE Type: Direct

Input Watts (W): 68.3
Input Voltage (V): 120.0
Input Current (A_{in}): 0.572
Voltage Rise (V): NR
Power Factor: 0.9983
Total Harmonic Distortion (THDi): 7.64%
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	53	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	43	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	30	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°	14185	14185	14185	14185
5°	14215	14294	14208	14043
10°	14157	14348	14141	13823
15°	14061	14329	14013	13575
20°	13912	14262	13879	13287
25°	13777	14157	13716	13000
30°	13604	13984	13514	12682
35°	13398	13819	13341	12385
40°	13213	13540	13111	12110
45°	13008	13296	12909	11802
50°	12715	13019	12581	11472
55°	12420	12720	12297	11041
60°	12150	12290	11977	10615
65°	11614	11688	11429	10132
70°	10941	10964	10666	9338
75°	9891	9860	9618	8227
80°	8340	8475	7889	6897
85°	5479	6736	5030	4940



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.1	3.5
10°-20°	486.4	9.8
20°-30°	727.9	14.7
30°-40°	866.1	17.5
40°-50°	888.6	18.0
50°-60°	796.5	16.1
60°-70°	600.6	12.1
70°-80°	331.7	6.7
80°-90°	80.4	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°	1385.4	28.0
0°-40°	2251.5	45.5
0°-60°	3936.7	79.5
0°-90°	4949.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4949.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1812	1812	1812	1812	1812	
5°	1809	1819	1808	1787	1809	172
15°	1735	1768	1729	1675	1735	489
25°	1595	1639	1588	1505	1595	734
35°	1402	1446	1396	1296	1402	878
45°	1175	1201	1166	1066	1175	905
55°	910	932	901	809	910	816
65°	627	631	617	547	627	621
75°	327	326	318	272	327	348
85°	61	75	56	55	61	79
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°	1812	1812	1812	1812	1812	1812	1812	1812	1812	1812	1812
2.5°	1815	1824	1811	1820	1819	1818	1802	1804	1815	1820	1802
5°	1809	1821	1811	1821	1819	1818	1801	1799	1808	1810	1789
7.5°	1797	1814	1805	1817	1815	1813	1796	1790	1795	1794	1771
10°	1781	1800	1793	1807	1805	1803	1784	1777	1779	1774	1748
12.5°	1759	1782	1778	1791	1790	1786	1769	1760	1757	1749	1720
15°	1735	1759	1756	1770	1768	1765	1745	1737	1729	1720	1688
17.5°	1705	1731	1731	1745	1741	1740	1721	1708	1701	1687	1653
20°	1670	1698	1698	1716	1712	1710	1690	1677	1666	1649	1612
22.5°	1634	1663	1664	1681	1676	1677	1662	1642	1629	1611	1569
25°	1595	1624	1623	1637	1639	1637	1622	1602	1588	1566	1525
27.5°	1550	1581	1582	1597	1598	1593	1581	1560	1544	1523	1475
30°	1505	1538	1533	1551	1547	1547	1535	1514	1495	1475	1425
32.5°	1456	1489	1485	1498	1495	1496	1488	1466	1449	1422	1375
35°	1402	1435	1436	1446	1446	1446	1437	1413	1396	1369	1320
37.5°	1350	1380	1380	1391	1391	1390	1383	1364	1338	1317	1267
40°	1293	1322	1325	1330	1325	1330	1325	1306	1283	1259	1211
42.5°	1230	1270	1261	1266	1265	1268	1266	1248	1224	1197	1151
45°	1175	1204	1203	1204	1201	1204	1203	1187	1166	1139	1094
47.5°	1112	1143	1141	1141	1136	1142	1141	1126	1099	1074	1033
50°	1044	1077	1073	1072	1069	1071	1075	1061	1033	1010	967
52.5°	982	1010	1002	1005	998	1003	1006	994	970	946	907
55°	910	936	938	933	932	937	934	926	901	879	839
57.5°	847	866	865	859	861	867	863	855	837	811	775
60°	776	793	791	784	785	791	793	786	765	740	707
62.5°	701	720	718	714	707	714	717	714	690	665	635
65°	627	644	642	639	631	637	641	637	617	597	568
67.5°	555	570	563	558	563	561	564	561	542	525	495
70°	478	488	484	481	479	483	482	483	466	448	432
72.5°	405	415	409	407	404	407	408	405	391	376	354
75°	327	336	337	335	326	334	330	330	318	305	285
77.5°	255	260	261	260	258	258	261	253	243	231	220
80°	185	190	194	194	188	189	185	180	175	162	153
82.5°	117	126	129	131	130	125	123	121	109	106	99
85°	61	71	76	77	75	75	73	66	56	57	55
87.5°	21	30	37	42	38	38	34	28	18	21	25
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°	1812	1812	1812	1812	1812	1812
2.5°	1808	1803	1804	1792	1797	1815
5°	1793	1787	1789	1780	1787	1809
7.5°	1772	1767	1769	1763	1772	1797
10°	1747	1739	1744	1740	1753	1781
12.5°	1716	1711	1716	1712	1729	1759
15°	1684	1675	1681	1681	1702	1735
17.5°	1647	1636	1642	1648	1669	1705
20°	1605	1595	1604	1610	1635	1670
22.5°	1561	1552	1560	1570	1598	1634
25°	1513	1505	1516	1530	1553	1595
27.5°	1464	1456	1472	1482	1511	1550
30°	1412	1403	1418	1435	1461	1505
32.5°	1359	1352	1366	1384	1413	1456
35°	1303	1296	1311	1335	1366	1402
37.5°	1247	1240	1255	1283	1308	1350
40°	1189	1185	1195	1224	1254	1293
42.5°	1130	1124	1140	1165	1197	1230
45°	1072	1066	1080	1106	1134	1175
47.5°	1008	1004	1018	1044	1077	1112
50°	947	942	953	981	1017	1044
52.5°	886	874	894	917	948	982
55°	816	809	824	852	886	910
57.5°	755	745	763	787	820	847
60°	687	678	693	720	749	776
62.5°	616	615	630	650	678	701
65°	551	547	556	581	604	627
67.5°	482	476	488	513	535	555
70°	411	408	421	439	460	478
72.5°	345	341	354	369	387	405
75°	278	272	281	299	317	327
77.5°	213	213	218	228	244	255
80°	149	153	157	166	177	185
82.5°	98	96	104	106	113	117
85°	55	55	58	60	61	61
87.5°	27	27	28	27	25	21
90°	0	0	0	0	0	0

(END OF REPORT)