

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: P34266

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

Test Date: 07/29/15

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: P34266  
Test Lab: INNOVATION CENTER-P3  
Test Date: 07/29/15  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MNAE-G-48-LD4-HI/HI-40  
Description: FAILSAFE MNAE 4' RECESSED LED FIXTURE WITH AMBIENT AND 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

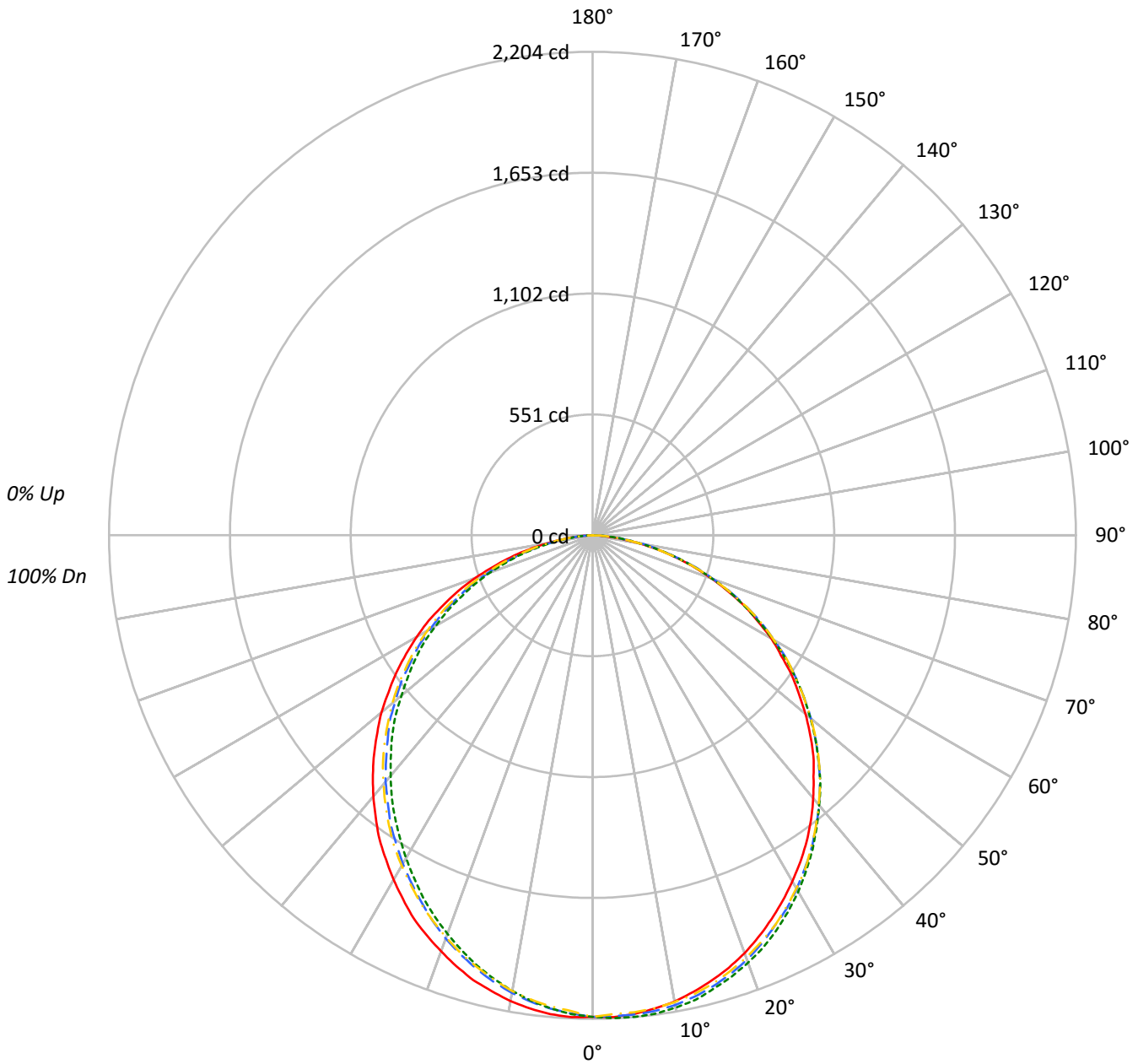
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5996.2 lumens  
Efficiency: N/A  
Efficacy: 66.4 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): 90.3  
Input Voltage (V): 120.0  
Input Current (Ain): 0.755  
Voltage Rise (V): NR  
Power Factor: 0.9992  
Total Harmonic Distortion (THDi): 7.94%  
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°	17183	17183	17183	17183
5°	17209	17319	17217	17013
10°	17154	17377	17130	16757
15°	17027	17335	17011	16460
20°	16886	17270	16811	16103
25°	16679	17154	16653	15755
30°	16470	16958	16388	15367
35°	16275	16714	16179	15004
40°	16003	16432	15881	14624
45°	15776	16141	15588	14293
50°	15443	15796	15296	13835
55°	15122	15422	14904	13471
60°	14764	14889	14467	12901
65°	14189	14207	13837	12170
70°	13252	13367	13001	11353
75°	12038	12219	11675	10102
80°	10098	10459	9332	8160
85°	6736	8353	6018	6108



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	207.3	3.5
10°-20°	589.3	9.8
20°-30°	881.7	14.7
30°-40°	1049.3	17.5
40°-50°	1076.7	18.0
50°-60°	965.0	16.1
60°-70°	727.6	12.1
70°-80°	401.8	6.7
80°-90°	97.5	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°	1678.3	28.0
0°-40°	2727.6	45.5
0°-60°	4769.3	79.5
0°-90°	5996.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5996.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2195	2195	2195	2195	2195	
5°	2190	2204	2191	2165	2190	208
15°	2101	2139	2099	2031	2101	593
25°	1931	1986	1928	1824	1931	890
35°	1703	1749	1693	1570	1703	1064
45°	1425	1458	1408	1291	1425	1097
55°	1108	1130	1092	987	1108	988
65°	766	767	747	657	766	754
75°	398	404	386	334	398	422
85°	75	93	67	68	75	97
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°	2195	2195	2195	2195	2195	2195	2195	2195	2195	2195	2195
2.5°	2198	2210	2194	2205	2203	2201	2184	2184	2198	2206	2182
5°	2190	2206	2193	2206	2204	2202	2182	2180	2191	2192	2166
7.5°	2176	2197	2187	2201	2199	2196	2174	2168	2176	2174	2145
10°	2158	2181	2174	2190	2186	2183	2160	2151	2155	2150	2118
12.5°	2131	2161	2154	2170	2169	2163	2142	2130	2128	2120	2084
15°	2101	2130	2128	2146	2139	2137	2116	2102	2099	2085	2045
17.5°	2067	2100	2096	2115	2109	2107	2084	2069	2060	2045	2002
20°	2027	2061	2059	2076	2073	2070	2049	2030	2018	1997	1956
22.5°	1981	2017	2015	2034	2034	2032	2007	1987	1974	1949	1903
25°	1931	1968	1965	1987	1986	1981	1965	1943	1928	1898	1845
27.5°	1878	1916	1918	1931	1933	1933	1912	1889	1870	1841	1787
30°	1822	1862	1861	1877	1876	1875	1859	1833	1813	1787	1729
32.5°	1764	1804	1802	1815	1813	1812	1805	1777	1752	1724	1666
35°	1703	1740	1741	1752	1749	1750	1738	1712	1693	1659	1605
37.5°	1636	1678	1673	1682	1679	1684	1673	1649	1623	1591	1533
40°	1566	1604	1608	1611	1608	1610	1604	1579	1554	1522	1467
42.5°	1492	1534	1534	1537	1538	1535	1536	1508	1482	1452	1393
45°	1425	1461	1459	1459	1458	1461	1460	1438	1408	1376	1321
47.5°	1347	1384	1380	1382	1379	1383	1384	1362	1330	1304	1254
50°	1268	1307	1301	1297	1297	1302	1300	1286	1256	1225	1171
52.5°	1186	1225	1216	1218	1215	1215	1215	1205	1171	1149	1099
55°	1108	1136	1132	1128	1130	1134	1131	1119	1092	1066	1014
57.5°	1020	1049	1049	1042	1043	1052	1050	1035	1007	977	939
60°	943	968	958	954	951	956	955	947	924	896	854
62.5°	851	877	869	861	859	868	869	858	841	807	769
65°	766	782	779	770	767	770	777	770	747	721	683
67.5°	671	687	686	681	678	679	683	677	662	629	603
70°	579	594	589	585	584	586	588	581	568	542	513
72.5°	490	498	503	492	493	490	494	491	472	455	429
75°	398	405	407	402	404	399	400	400	386	367	344
77.5°	311	319	317	318	315	314	309	303	296	283	266
80°	224	229	246	234	232	226	225	222	207	197	188
82.5°	144	150	157	156	155	154	156	141	134	126	122
85°	75	84	92	96	93	90	85	77	67	67	64
87.5°	26	39	46	52	48	45	42	35	20	26	30
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°	2195	2195	2195	2195	2195	2195
2.5°	2191	2185	2187	2171	2176	2198
5°	2172	2165	2168	2156	2164	2190
7.5°	2148	2140	2143	2135	2147	2176
10°	2115	2108	2112	2109	2124	2158
12.5°	2080	2071	2076	2075	2096	2131
15°	2038	2031	2035	2037	2062	2101
17.5°	1994	1983	1990	1997	2024	2067
20°	1947	1933	1943	1950	1980	2027
22.5°	1892	1880	1890	1902	1932	1981
25°	1837	1824	1839	1852	1882	1931
27.5°	1775	1761	1776	1795	1829	1878
30°	1715	1700	1718	1739	1774	1822
32.5°	1644	1634	1654	1682	1713	1764
35°	1577	1570	1587	1616	1654	1703
37.5°	1515	1504	1518	1550	1586	1636
40°	1439	1431	1452	1482	1516	1566
42.5°	1372	1360	1382	1414	1446	1492
45°	1297	1291	1307	1341	1377	1425
47.5°	1220	1218	1233	1265	1303	1347
50°	1149	1136	1157	1191	1226	1268
52.5°	1070	1061	1078	1112	1155	1186
55°	991	987	1001	1031	1073	1108
57.5°	910	912	920	954	993	1020
60°	831	824	844	868	904	943
62.5°	750	745	762	788	826	851
65°	671	657	677	699	732	766
67.5°	580	579	589	618	647	671
70°	498	496	512	529	558	579
72.5°	416	414	422	445	470	490
75°	332	334	348	359	380	398
77.5°	254	254	266	280	292	311
80°	183	181	189	201	214	224
82.5°	119	119	124	128	138	144
85°	66	68	70	74	73	75
87.5°	31	32	35	34	31	26
90°	0	0	0	0	0	0

(END OF REPORT)