

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: P34267

Luminaire Tested: **MNAE-G-48-LD4-STD/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: P34267
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/HI-40
Description: FAILSAFE MNAE 4' RECESSED LED FIXTURE WITH AMBIENT LIGHT LEVEL STANDARD & 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

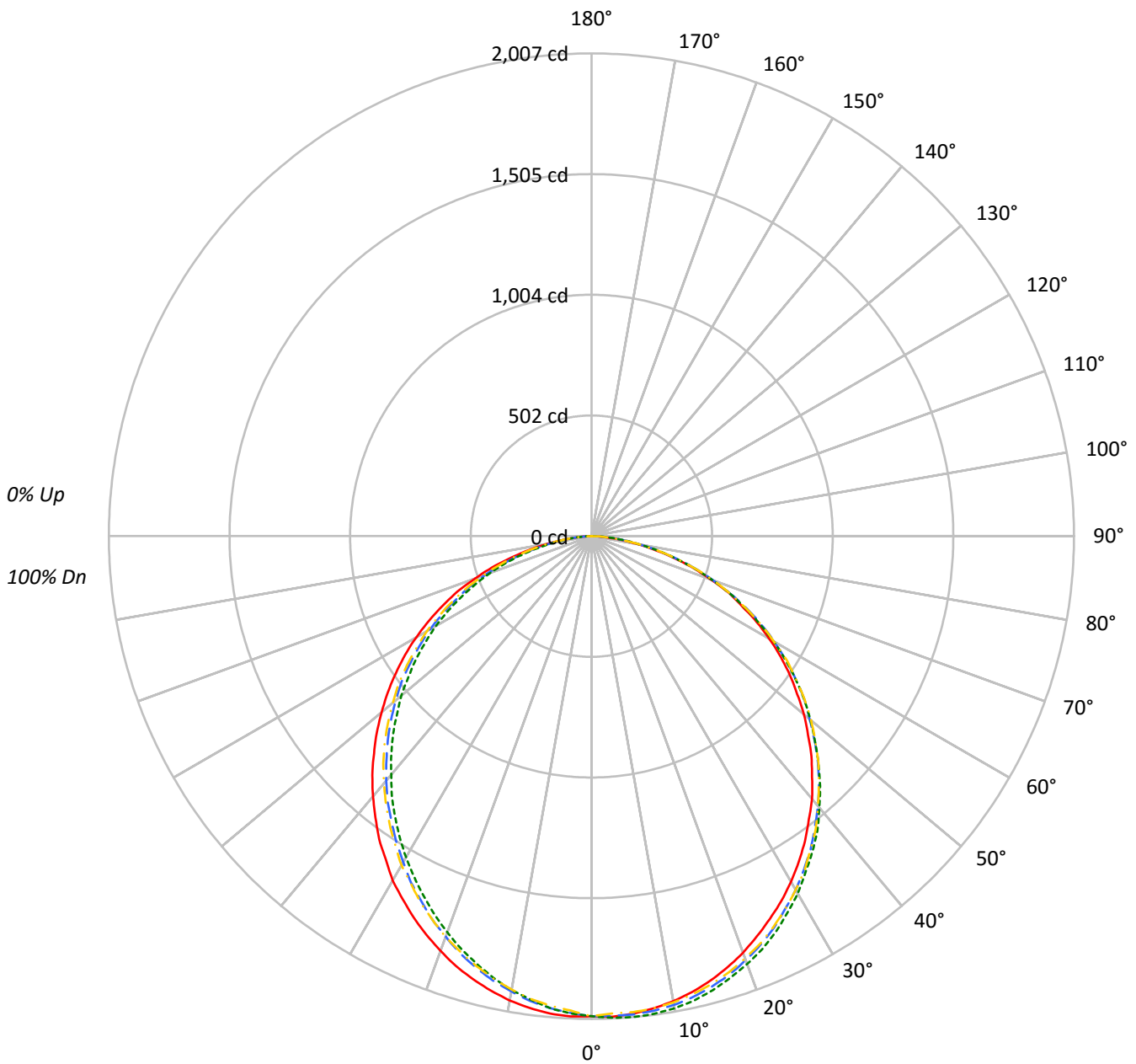
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5459.6 lumens
Efficiency: N/A
Efficacy: 68.8 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): 79.3
Input Voltage (V): 120.0
Input Current (A_{in}): 0.664
Voltage Rise (V): NR
Power Factor: 0.9989
Total Harmonic Distortion (THDi): 7.84%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 13 HR
Ambient Temperature (°C): 25.0
Test Distance: 25 FT

TEST NUMBER: P34267
CATALOG NUMBER: MNAE-G-48-LD4-STD/HI-40

Luminous Intensity Polar Plot



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



TEST NUMBER: P34267

CATALOG NUMBER: MNAE-G-48-LD4-STD/HI-40

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	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°	15625	15625	15625	15625
5°	15661	15771	15654	15481
10°	15604	15842	15580	15230
15°	15504	15828	15447	14920
20°	15353	15770	15287	14604
25°	15168	15677	15107	14261
30°	15005	15512	14942	13939
35°	14794	15310	14708	13609
40°	14593	15073	14440	13234
45°	14326	14780	14160	12920
50°	14054	14480	13872	12568
55°	13757	14153	13553	12147
60°	13386	13700	13167	11711
65°	12818	13077	12614	11021
70°	12154	12268	11765	10254
75°	10858	11191	10526	9044
80°	9152	9512	8520	7393
85°	6377	7904	5479	5569



TEST NUMBER: P34267

CATALOG NUMBER: MNAE-G-48-LD4-STD/HI-40

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	188.6	3.5
10°-20°	536.1	9.8
20°-30°	802.2	14.7
30°-40°	955.0	17.5
40°-50°	979.8	17.9
50°-60°	879.1	16.1
60°-70°	663.3	12.2
70°-80°	366.3	6.7
80°-90°	89.2	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°	1526.9	28.0
0°-40°	2481.8	45.5
0°-60°	4340.8	79.5
0°-90°	5459.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5459.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1996	1996	1996	1996	1996	
5°	1993	2007	1992	1970	1993	189
15°	1913	1953	1906	1841	1913	539
25°	1756	1815	1749	1651	1756	810
35°	1548	1602	1539	1424	1548	968
45°	1294	1335	1279	1167	1294	997
55°	1008	1037	993	890	1008	900
65°	692	706	681	595	692	689
75°	359	370	348	299	359	383
85°	71	88	61	62	71	88
90°	0	0	0	0	0	



TEST NUMBER: P34267

CATALOG NUMBER: MNAE-G-48-LD4-STD/HI-40

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996
2.5°	2000	2010	1996	2006	2004	2002	1986	1988	1999	2006	1984
5°	1993	2007	1996	2008	2007	2004	1986	1984	1992	1994	1970
7.5°	1980	1999	1990	2004	2003	2000	1980	1974	1978	1977	1949
10°	1963	1984	1979	1994	1993	1989	1968	1960	1960	1953	1922
12.5°	1941	1965	1962	1979	1977	1973	1950	1941	1935	1927	1892
15°	1913	1939	1938	1955	1953	1950	1928	1915	1906	1892	1857
17.5°	1880	1909	1911	1928	1925	1924	1901	1886	1874	1857	1818
20°	1843	1876	1876	1895	1893	1889	1868	1851	1835	1817	1772
22.5°	1800	1836	1839	1857	1858	1852	1834	1811	1794	1771	1727
25°	1756	1796	1796	1814	1815	1813	1792	1768	1749	1726	1674
27.5°	1710	1749	1746	1766	1765	1763	1747	1721	1701	1674	1624
30°	1660	1696	1699	1714	1716	1715	1699	1672	1653	1624	1565
32.5°	1605	1643	1644	1658	1657	1661	1648	1619	1592	1565	1509
35°	1548	1587	1589	1600	1602	1603	1589	1564	1539	1508	1449
37.5°	1485	1529	1526	1538	1544	1539	1533	1502	1475	1447	1392
40°	1428	1464	1465	1474	1475	1472	1466	1441	1413	1384	1327
42.5°	1358	1400	1401	1407	1408	1408	1400	1377	1349	1320	1262
45°	1294	1330	1332	1334	1335	1339	1335	1311	1279	1250	1197
47.5°	1222	1260	1259	1261	1261	1262	1263	1242	1211	1183	1130
50°	1154	1190	1185	1190	1189	1190	1193	1172	1139	1114	1061
52.5°	1079	1112	1117	1114	1115	1114	1118	1100	1067	1041	995
55°	1008	1042	1038	1038	1037	1038	1039	1029	993	965	919
57.5°	934	960	958	955	956	957	965	950	919	893	847
60°	855	876	879	871	875	880	876	867	841	815	775
62.5°	777	803	796	793	788	797	794	792	761	733	696
65°	692	713	713	709	706	711	709	706	681	655	619
67.5°	621	628	627	621	623	629	625	619	603	576	547
70°	531	543	540	540	536	541	541	532	514	492	468
72.5°	447	458	459	452	453	451	457	450	434	412	389
75°	359	374	373	373	370	369	369	367	348	332	310
77.5°	280	287	288	292	290	287	289	279	266	252	237
80°	203	213	214	213	211	209	210	204	189	179	172
82.5°	128	137	144	146	145	144	140	128	117	115	110
85°	71	79	87	85	88	85	86	70	61	59	60
87.5°	24	34	42	47	46	44	39	31	18	23	27
90°	0	0	0	0	0	0	0	0	0	0	0



TEST NUMBER: P34267

CATALOG NUMBER: MNAE-G-48-LD4-STD/HI-40

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1996	1996	1996	1996	1996	1996
2.5°	1990	1986	1987	1974	1979	2000
5°	1974	1970	1970	1959	1967	1993
7.5°	1949	1943	1946	1940	1952	1980
10°	1920	1916	1918	1914	1931	1963
12.5°	1889	1881	1884	1884	1903	1941
15°	1851	1841	1847	1850	1876	1913
17.5°	1810	1800	1807	1812	1837	1880
20°	1765	1753	1762	1773	1799	1843
22.5°	1714	1704	1715	1727	1755	1800
25°	1660	1651	1663	1680	1711	1756
27.5°	1604	1597	1611	1627	1659	1710
30°	1547	1542	1559	1580	1610	1660
32.5°	1492	1484	1498	1520	1555	1605
35°	1431	1424	1435	1463	1496	1548
37.5°	1368	1363	1377	1403	1442	1485
40°	1305	1295	1313	1343	1378	1428
42.5°	1240	1232	1249	1281	1315	1358
45°	1171	1167	1183	1216	1253	1294
47.5°	1107	1097	1116	1147	1186	1222
50°	1041	1032	1047	1077	1119	1154
52.5°	966	958	979	1011	1048	1079
55°	894	890	906	936	973	1008
57.5°	824	816	837	862	897	934
60°	750	748	761	790	825	855
62.5°	674	670	687	711	753	777
65°	602	595	611	634	670	692
67.5°	525	522	534	559	588	621
70°	453	448	460	479	504	531
72.5°	377	375	386	404	429	447
75°	304	299	310	327	344	359
77.5°	231	229	237	255	266	280
80°	167	164	171	182	193	203
82.5°	109	107	111	117	128	128
85°	60	62	65	63	68	71
87.5°	29	29	32	30	28	24
90°	0	0	0	0	0	0

(END OF REPORT)