

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: NEO-RAY

Report Number: P231552

Luminaire Tested: **S122-DR-2-30-X-0048-1-U-DD-3-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231552
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1612-022-4)
Test Lab: INNOVATION CENTER(G2)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122-DR-2-30-X-0048-1-U-DD-3-W
Description: DEFINE 2 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH ASYMMETRIC LENS.
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3915.6 lumens
Efficiency: N/A
Efficacy: 91.9 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.03 / 1.18
Luminous Opening: Rectangular (W 3.92' x L: 0.14' x H: 0')
CIE Type: Direct

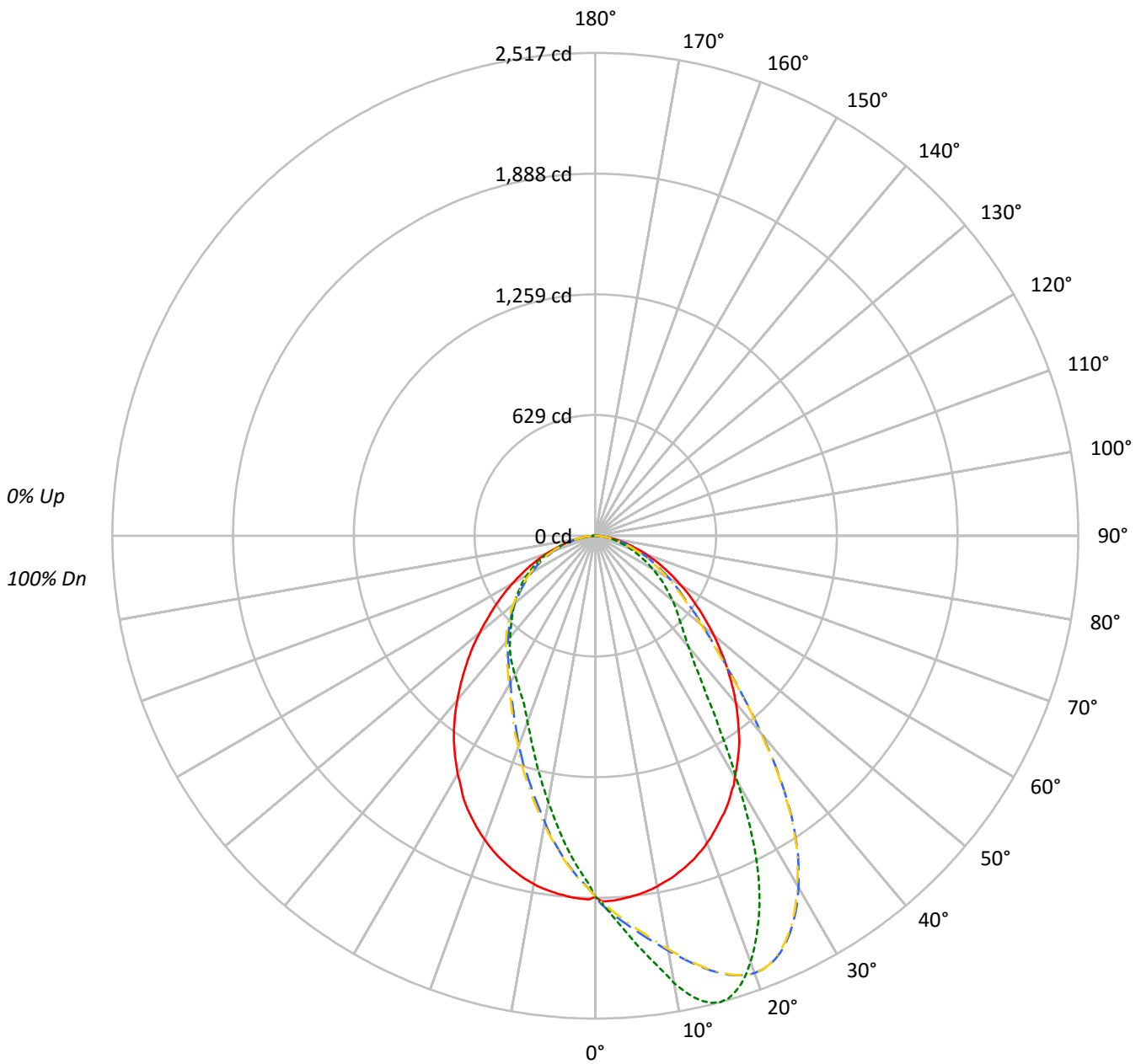
Input Watts (W): 42.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot



— 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	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					100			
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	88					86				
2	101	94	88	83	99	92	86	82	88	84	80	85	81	78	82	79	76					74				
3	93	84	76	70	91	82	75	70	79	73	68	76	72	67	74	70	66					64				
4	86	75	67	61	84	74	66	60	71	65	60	69	63	59	67	62	58					56				
5	80	68	59	53	78	67	59	53	65	58	53	63	57	52	61	56	51					49				
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46					44				
7	69	56	48	42	67	56	48	42	54	47	42	53	46	42	51	46	41					40				
8	64	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38					36				
9	60	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34					33				
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	31					30				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	36950	36950	36950	36950
5°	37319	41379	37069	32366
10°	36993	47225	36762	28087
15°	36428	51154	36107	24472
20°	35569	49405	35216	21579
25°	34477	43789	34090	19812
30°	32969	33640	32513	18986
35°	31362	24122	30806	18452
40°	29205	19298	28664	17702
45°	26920	17270	26420	17095
50°	24581	16063	24031	16775
55°	22304	14857	21725	16448
60°	20195	13478	19575	16171
65°	18203	12170	17516	15505
70°	16185	11031	15336	14308
75°	13857	9852	12901	12901
80°	11463	8478	10151	10389
85°	8806	7365	7613	7140



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	178.4	4.6
10°-20°	513.1	13.1
20°-30°	727.5	18.6
30°-40°	747.9	19.1
40°-50°	655.4	16.7
50°-60°	521.2	13.3
60°-70°	351.5	9.0
70°-80°	178.0	4.5
80°-90°	42.7	1.1
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°	1419.0	36.2
0°-40°	2166.9	55.3
0°-60°	3343.5	85.4
0°-90°	3915.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3915.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1882	1882	1882	1882	1882	
5°	1894	2100	1881	1642	1894	180
15°	1792	2517	1777	1204	1792	505
25°	1592	2022	1574	915	1592	731
35°	1309	1007	1286	770	1309	814
45°	970	622	952	616	970	748
55°	652	434	635	481	652	585
65°	392	262	377	334	392	390
75°	183	130	170	170	183	196
85°	39	33	34	32	39	48
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°	1882.3	1882.3	1882.3	1882.3	1882.3	1882.3	1882.3	1882.3	1882.3	1882.3	1882.3
1°	1906.6	1907.6	1923.5	1937.2	1915.0	1910.8	1909.8	1886.5	1896.0	1855.9	1842.2
2°	1905.5	1923.5	1955.2	1978.4	1957.3	1949.9	1939.3	1900.2	1893.9	1836.9	1810.5
3°	1903.4	1939.3	1985.8	2018.6	2002.7	1989.0	1970.0	1915.0	1891.8	1817.9	1779.8
4°	1899.2	1952.0	2014.3	2058.7	2050.2	2029.1	1999.5	1928.8	1887.6	1796.7	1746.0
5°	1893.9	1965.7	2043.9	2102.0	2099.9	2070.3	2030.2	1941.4	1881.2	1777.7	1710.1
6°	1888.6	1977.4	2073.5	2145.3	2151.6	2113.6	2059.7	1953.1	1876.0	1754.5	1673.1
7°	1882.3	1987.9	2104.1	2192.8	2203.4	2159.0	2090.4	1964.7	1869.6	1731.2	1635.1
8°	1874.9	1999.5	2134.7	2239.3	2254.1	2205.5	2122.1	1974.2	1862.2	1706.9	1597.1
9°	1866.4	2009.0	2165.4	2287.9	2305.9	2250.9	2154.8	1983.7	1853.8	1681.6	1560.1
10°	1855.9	2018.6	2197.1	2334.4	2369.2	2305.9	2187.6	1992.1	1844.3	1655.2	1513.6
11°	1844.3	2027.0	2228.8	2378.7	2416.8	2349.2	2220.3	2001.7	1832.6	1627.7	1474.6
12°	1833.7	2035.5	2260.4	2421.0	2458.0	2389.3	2254.1	2008.0	1821.0	1599.2	1437.6
13°	1822.1	2041.8	2291.1	2456.9	2489.7	2426.3	2285.8	2013.3	1806.2	1569.6	1400.6
14°	1806.2	2049.2	2320.6	2485.4	2509.7	2458.0	2316.4	2019.6	1792.5	1540.1	1363.7
15°	1792.5	2054.5	2348.1	2503.4	2517.1	2480.1	2344.9	2027.0	1776.7	1509.4	1327.7
16°	1776.7	2060.8	2372.4	2510.8	2509.7	2488.6	2369.2	2031.2	1759.8	1477.7	1291.8
17°	1761.9	2065.0	2393.5	2505.5	2488.6	2482.3	2391.4	2036.5	1743.9	1447.1	1265.4
18°	1741.8	2069.3	2409.4	2487.5	2458.0	2469.6	2408.3	2038.6	1726.0	1415.4	1230.6
19°	1724.9	2073.5	2421.0	2459.0	2415.7	2441.1	2421.0	2041.8	1706.9	1383.7	1195.7
20°	1702.7	2075.6	2426.3	2419.9	2365.0	2400.9	2426.3	2042.8	1685.8	1343.6	1161.9
21°	1683.7	2076.6	2424.2	2373.5	2308.0	2353.4	2424.2	2043.9	1665.8	1311.9	1130.2
22°	1658.4	2077.7	2414.7	2319.6	2244.6	2299.5	2413.6	2045.0	1643.6	1280.2	1097.5
23°	1636.2	2077.7	2398.8	2261.5	2177.0	2240.4	2394.6	2045.0	1620.3	1246.4	1067.9
24°	1611.9	2076.6	2374.5	2200.2	2103.1	2180.2	2369.2	2043.9	1597.1	1222.1	1038.3
25°	1591.8	2074.5	2344.9	2134.7	2021.7	2116.8	2338.6	2041.8	1573.9	1189.4	1009.8
26°	1566.5	2070.3	2310.1	2064.0	1929.8	2047.1	2301.6	2038.6	1548.5	1157.7	983.4
27°	1540.1	2066.1	2268.9	1985.8	1827.4	1970.0	2260.4	2034.4	1522.1	1126.0	957.0
28°	1510.5	2059.7	2223.5	1897.1	1715.4	1881.2	2212.9	2027.0	1489.4	1095.4	932.7
29°	1487.2	2052.4	2172.8	1802.0	1599.2	1780.9	2160.1	2020.7	1460.8	1064.7	908.4
30°	1454.5	2043.9	2117.8	1698.5	1484.1	1675.3	2104.1	2012.2	1434.4	1035.2	885.2
32.5°	1381.6	2012.2	1964.7	1433.4	1217.9	1405.9	1960.5	1981.6	1360.5	963.3	835.5
35°	1308.7	1968.9	1781.9	1169.3	1006.6	1164.0	1775.6	1940.4	1285.5	895.7	791.2
37.5°	1222.1	1910.8	1569.6	991.8	855.6	971.8	1561.2	1884.4	1204.2	829.2	750.0
40°	1139.7	1840.0	1349.9	846.1	753.1	832.3	1340.4	1814.7	1118.6	769.0	708.8
42.5°	1054.2	1754.5	1145.0	742.6	679.2	733.1	1135.5	1728.1	1034.1	714.0	667.6
45°	969.7	1653.1	971.8	661.2	622.1	659.1	963.3	1627.7	951.7	661.2	627.4
47.5°	886.2	1537.9	835.5	606.3	572.5	598.9	825.0	1511.5	869.3	611.6	587.3
50°	804.9	1408.0	727.8	553.5	526.0	547.2	716.2	1372.1	786.9	564.1	545.0
52.5°	725.7	1282.3	641.2	502.8	476.4	499.6	627.4	1236.9	707.7	517.6	502.8
55°	651.7	1138.7	563.0	455.3	434.1	451.0	554.5	1098.5	634.8	473.2	462.7
57.5°	582.0	996.1	504.9	407.7	387.7	403.5	489.1	951.7	566.2	429.9	422.5
60°	514.4	858.8	444.7	360.2	343.3	357.0	431.0	813.3	498.6	385.5	384.5
62.5°	451.0	729.9	389.8	315.8	302.1	313.7	376.0	688.7	435.2	343.3	345.4
65°	391.9	612.6	334.8	276.7	262.0	272.5	325.3	577.8	377.1	302.1	307.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	334.8	498.6	290.5	234.5	226.0	232.4	277.8	473.2	320.1	257.7	265.1
70°	282.0	407.7	240.8	198.6	192.2	196.5	227.1	382.4	267.2	218.6	227.1
72.5°	229.2	327.4	198.6	165.8	159.5	162.7	188.0	304.2	215.5	180.6	190.1
75°	182.7	253.5	159.5	134.1	129.9	131.0	151.0	230.3	170.1	144.7	153.2
77.5°	139.4	189.1	123.6	104.6	101.4	102.5	115.1	169.0	127.8	110.9	117.2
80°	101.4	133.1	90.8	77.1	75.0	75.0	83.4	117.2	89.8	79.2	84.5
82.5°	67.6	87.7	63.4	53.9	51.8	51.8	56.0	73.9	57.0	51.8	56.0
85°	39.1	51.8	39.1	32.7	32.7	31.7	33.8	40.1	33.8	28.5	30.6
87.5°	19.0	23.2	19.0	15.8	15.8	13.7	14.8	14.8	11.6	9.5	9.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	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°	1882.3	1882.3	1882.3	1882.3	1882.3	1882.3
1°	1841.1	1818.9	1828.4	1844.3	1859.1	1906.6
2°	1799.9	1774.6	1788.3	1812.6	1842.2	1905.5
3°	1758.7	1732.3	1749.2	1783.0	1823.1	1903.4
4°	1713.3	1687.9	1704.8	1750.3	1804.1	1899.2
5°	1666.8	1642.5	1659.4	1715.4	1784.1	1893.9
6°	1621.4	1595.0	1614.0	1679.5	1762.9	1888.6
7°	1574.9	1546.4	1568.6	1642.5	1741.8	1882.3
8°	1530.5	1498.9	1525.3	1604.5	1717.5	1874.9
9°	1486.2	1453.4	1480.9	1567.5	1686.9	1866.4
10°	1442.9	1409.1	1436.5	1530.5	1659.4	1855.9
11°	1400.6	1366.8	1394.3	1493.6	1632.0	1844.3
12°	1359.4	1324.6	1353.1	1456.6	1605.5	1833.7
13°	1318.2	1284.4	1315.1	1420.7	1576.0	1822.1
14°	1279.2	1244.3	1278.1	1384.8	1547.5	1806.2
15°	1240.1	1204.2	1241.1	1348.9	1515.8	1792.5
16°	1202.0	1167.2	1204.2	1314.0	1485.1	1776.7
17°	1166.1	1130.2	1168.2	1280.2	1453.4	1761.9
18°	1131.3	1095.4	1131.3	1246.4	1428.1	1741.8
19°	1095.4	1063.7	1096.4	1213.7	1395.3	1724.9
20°	1063.7	1033.0	1062.6	1172.5	1361.5	1702.7
21°	1034.1	1003.5	1032.0	1140.8	1328.8	1683.7
22°	1005.6	977.1	1002.4	1116.5	1296.1	1658.4
23°	978.1	952.8	974.9	1083.7	1264.4	1636.2
24°	952.8	932.7	950.7	1053.1	1232.7	1611.9
25°	930.6	914.7	928.5	1023.5	1201.0	1591.8
26°	911.6	897.8	909.5	996.1	1168.2	1566.5
27°	893.6	882.0	893.6	969.7	1136.6	1540.1
28°	877.8	866.1	876.7	945.4	1105.9	1510.5
29°	861.9	851.4	857.7	921.1	1075.3	1487.2
30°	846.1	837.6	842.9	898.9	1045.7	1454.5
32.5°	808.1	803.8	807.0	847.1	973.9	1381.6
35°	771.1	770.0	773.2	803.8	906.3	1308.7
37.5°	734.1	732.0	737.3	763.7	841.9	1222.1
40°	695.0	690.8	698.2	724.6	783.8	1139.7
42.5°	652.8	651.7	658.1	684.5	728.8	1054.2
45°	612.6	615.8	619.0	643.3	676.0	969.7
47.5°	574.6	582.0	581.0	601.0	628.5	886.2
50°	538.7	549.3	545.0	557.7	582.0	804.9
52.5°	503.8	517.6	510.2	514.4	536.6	725.7
55°	470.0	480.6	477.4	472.2	493.3	651.7
57.5°	434.1	448.9	442.6	433.1	450.0	582.0
60°	397.2	411.9	405.6	392.9	405.6	514.4
62.5°	360.2	375.0	368.6	353.9	362.3	451.0
65°	323.2	333.8	331.7	316.9	320.1	391.9



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	285.2	295.8	291.5	277.8	277.8	334.8
70°	244.0	249.3	249.3	237.7	234.5	282.0
72.5°	200.7	209.1	207.0	199.6	195.4	229.2
75°	163.7	170.1	172.2	162.7	157.4	182.7
77.5°	126.8	131.0	135.2	126.8	122.5	139.4
80°	89.8	91.9	98.2	93.0	90.8	101.4
82.5°	58.1	60.2	64.4	63.4	62.3	67.6
85°	30.6	31.7	35.9	37.0	37.0	39.1
87.5°	8.5	10.6	12.7	14.8	16.9	19.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)