

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: P231553

Luminaire Tested: **S122-DR-2-35-X-0048-1-U-DD-3-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P231553  
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-2-35-X-0048-1-U-DD-3-W  
Description: DEFINE 2 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH ASYMMETRIC LENS.  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4072.2 lumens  
Efficiency: N/A  
Efficacy: 95.6 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

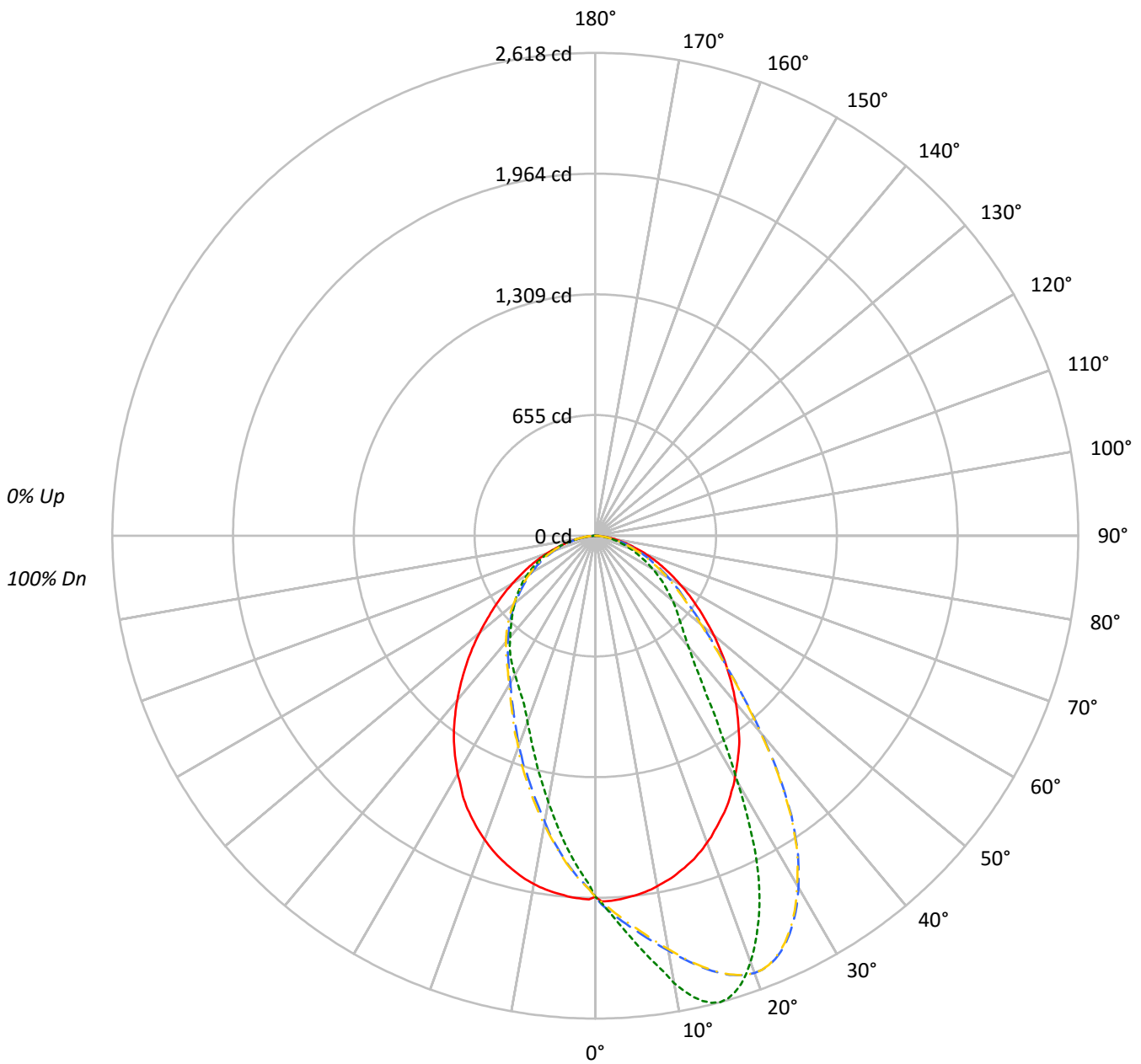
Input Watts (W): 42.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	38428	38428	38428	38428
5°	38813	43034	38553	33660
10°	38472	49115	38231	29210
15°	37885	53200	37550	25450
20°	36992	51381	36626	22444
25°	35857	45541	35452	20605
30°	34288	34984	33814	19745
35°	32617	25088	32037	19190
40°	30374	20072	29810	18409
45°	27997	17961	27478	17778
50°	25564	16708	24993	17444
55°	23197	15452	22595	17105
60°	21004	14016	20356	16819
65°	18932	12653	18217	16122
70°	16834	11473	15950	14882
75°	14411	10247	13417	13417
80°	11926	8818	10558	10807
85°	9144	7680	7928	7433



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	185.5	4.6
10°-20°	533.6	13.1
20°-30°	756.6	18.6
30°-40°	777.8	19.1
40°-50°	681.6	16.7
50°-60°	542.0	13.3
60°-70°	365.5	9.0
70°-80°	185.1	4.5
80°-90°	44.4	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°	1475.8	36.2
0°-40°	2253.6	55.3
0°-60°	3477.2	85.4
0°-90°	4072.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4072.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1958	1958	1958	1958	1958	
5°	1970	2184	1956	1708	1970	187
15°	1864	2618	1848	1252	1864	525
25°	1656	2103	1637	951	1656	760
35°	1361	1047	1337	801	1361	847
45°	1008	647	990	640	1008	778
55°	678	452	660	500	678	608
65°	408	272	392	347	408	405
75°	190	135	177	177	190	204
85°	41	34	35	33	41	50
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°	1957.6	1957.6	1957.6	1957.6	1957.6	1957.6	1957.6	1957.6	1957.6	1957.6	1957.6
1°	1982.8	1983.9	2000.4	2014.7	1991.6	1987.2	1986.1	1962.0	1971.9	1930.1	1915.8
2°	1981.8	2000.4	2033.4	2057.5	2035.6	2027.9	2016.9	1976.3	1969.7	1910.3	1882.9
3°	1979.6	2016.9	2065.2	2099.3	2082.8	2068.5	2048.8	1991.6	1967.5	1890.6	1851.0
4°	1975.2	2030.1	2094.9	2141.0	2132.2	2110.3	2079.5	2005.9	1963.1	1868.6	1815.9
5°	1969.7	2044.4	2125.7	2186.1	2183.9	2153.1	2111.4	2019.1	1956.5	1848.8	1778.5
6°	1964.2	2056.5	2156.4	2231.1	2237.7	2198.2	2142.1	2031.2	1951.0	1824.7	1740.1
7°	1957.6	2067.4	2188.3	2280.6	2291.5	2245.4	2174.0	2043.3	1944.4	1800.5	1700.5
8°	1949.9	2079.5	2220.1	2328.9	2344.3	2293.7	2206.9	2053.2	1936.7	1775.2	1661.0
9°	1941.1	2089.4	2252.0	2379.4	2398.1	2341.0	2241.0	2063.0	1927.9	1748.9	1622.5
10°	1930.1	2099.3	2284.9	2427.8	2464.0	2398.1	2275.1	2071.8	1918.0	1721.4	1574.2
11°	1918.0	2108.1	2317.9	2473.9	2513.4	2443.1	2309.1	2081.7	1906.0	1692.8	1533.5
12°	1907.1	2116.9	2350.9	2517.8	2556.3	2484.9	2344.3	2088.3	1893.9	1663.2	1495.1
13°	1895.0	2123.5	2382.7	2555.2	2589.2	2523.3	2377.2	2093.8	1878.5	1632.4	1456.7
14°	1878.5	2131.2	2413.5	2584.8	2610.1	2556.3	2409.1	2100.4	1864.2	1601.7	1418.2
15°	1864.2	2136.6	2442.0	2603.5	2617.8	2579.4	2438.7	2108.1	1847.7	1569.8	1380.9
16°	1847.7	2143.2	2467.3	2611.2	2610.1	2588.1	2464.0	2112.5	1830.2	1536.8	1343.5
17°	1832.3	2147.6	2489.3	2605.7	2588.1	2581.5	2487.1	2118.0	1813.7	1505.0	1316.0
18°	1811.5	2152.0	2505.7	2587.0	2556.3	2568.4	2504.7	2120.2	1795.0	1472.0	1279.8
19°	1793.9	2156.4	2517.8	2557.4	2512.3	2538.7	2517.8	2123.5	1775.2	1439.1	1243.5
20°	1770.8	2158.6	2523.3	2516.7	2459.6	2497.0	2523.3	2124.6	1753.3	1397.3	1208.4
21°	1751.1	2159.7	2521.1	2468.4	2400.3	2447.5	2521.1	2125.7	1732.4	1364.4	1175.4
22°	1724.7	2160.8	2511.2	2412.4	2334.4	2391.5	2510.1	2126.8	1709.3	1331.4	1141.4
23°	1701.6	2160.8	2494.8	2352.0	2264.1	2330.0	2490.4	2126.8	1685.1	1296.3	1110.6
24°	1676.4	2159.7	2469.5	2288.2	2187.2	2267.4	2464.0	2125.7	1661.0	1271.0	1079.9
25°	1655.5	2157.5	2438.7	2220.1	2102.6	2201.5	2432.1	2123.5	1636.8	1236.9	1050.2
26°	1629.1	2153.1	2402.5	2146.5	2007.0	2129.0	2393.7	2120.2	1610.4	1204.0	1022.7
27°	1601.7	2148.7	2359.6	2065.2	1900.5	2048.8	2350.9	2115.8	1583.0	1171.0	995.3
28°	1570.9	2142.1	2312.4	1973.0	1784.0	1956.5	2301.4	2108.1	1548.9	1139.2	970.0
29°	1546.7	2134.4	2259.7	1874.1	1663.2	1852.1	2246.5	2101.5	1519.3	1107.3	944.7
30°	1512.7	2125.7	2202.6	1766.4	1543.4	1742.3	2188.3	2092.7	1491.8	1076.6	920.6
32.5°	1436.9	2092.7	2043.3	1490.7	1266.6	1462.1	2038.9	2060.8	1414.9	1001.9	868.9
35°	1361.1	2047.7	1853.2	1216.1	1046.9	1210.6	1846.6	2018.0	1336.9	931.6	822.8
37.5°	1271.0	1987.2	1632.4	1031.5	889.8	1010.6	1623.6	1959.8	1252.3	862.3	780.0
40°	1185.3	1913.6	1403.9	879.9	783.3	865.6	1394.0	1887.3	1163.3	799.7	737.1
42.5°	1096.3	1824.7	1190.8	772.3	706.4	762.4	1180.9	1797.2	1075.5	742.6	694.3
45°	1008.5	1719.2	1010.6	687.7	647.0	685.5	1001.9	1692.8	989.8	687.7	652.5
47.5°	921.7	1599.5	868.9	630.6	595.4	622.9	858.0	1572.0	904.1	636.0	610.8
50°	837.1	1464.3	756.9	575.6	547.1	569.0	744.8	1427.0	818.4	586.6	566.8
52.5°	754.7	1333.6	666.8	522.9	495.4	519.6	652.5	1286.4	736.0	538.3	522.9
55°	677.8	1184.2	585.5	473.5	451.5	469.1	576.7	1142.5	660.2	492.1	481.2
57.5°	605.3	1035.9	525.1	424.0	403.2	419.6	508.6	989.8	588.8	447.1	439.4
60°	535.0	893.1	462.5	374.6	357.0	371.3	448.2	845.9	518.5	401.0	399.9
62.5°	469.1	759.1	405.4	328.5	314.2	326.3	391.1	716.2	452.6	357.0	359.2
65°	407.6	637.1	348.2	287.8	272.4	283.4	338.3	600.9	392.2	314.2	319.7



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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°	348.2	518.5	302.1	243.9	235.1	241.7	288.9	492.1	332.9	268.0	275.7
70°	293.3	424.0	250.5	206.5	199.9	204.3	236.2	397.7	277.9	227.4	236.2
72.5°	238.4	340.5	206.5	172.5	165.9	169.2	195.5	316.4	224.1	187.8	197.7
75°	190.0	263.6	165.9	139.5	135.1	136.2	157.1	239.5	176.9	150.5	159.3
77.5°	145.0	196.6	128.5	108.8	105.5	106.6	119.7	175.8	132.9	115.3	121.9
80°	105.5	138.4	94.5	80.2	78.0	78.0	86.8	121.9	93.4	82.4	87.9
82.5°	70.3	91.2	65.9	56.0	53.8	53.8	58.2	76.9	59.3	53.8	58.2
85°	40.6	53.8	40.6	34.1	34.1	33.0	35.2	41.7	35.2	29.7	31.9
87.5°	19.8	24.2	19.8	16.5	16.5	14.3	15.4	15.4	12.1	9.9	9.9
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°	1957.6	1957.6	1957.6	1957.6	1957.6	1957.6
1°	1914.7	1891.7	1901.6	1918.0	1933.4	1982.8
2°	1871.9	1845.5	1859.8	1885.1	1915.8	1981.8
3°	1829.1	1801.6	1819.2	1854.3	1896.1	1979.6
4°	1781.8	1755.5	1773.0	1820.3	1876.3	1975.2
5°	1733.5	1708.2	1725.8	1784.0	1855.4	1969.7
6°	1686.2	1658.8	1678.6	1746.7	1833.4	1964.2
7°	1637.9	1608.2	1631.3	1708.2	1811.5	1957.6
8°	1591.8	1558.8	1586.3	1668.7	1786.2	1949.9
9°	1545.6	1511.6	1540.1	1630.2	1754.4	1941.1
10°	1500.6	1465.4	1494.0	1591.8	1725.8	1930.1
11°	1456.7	1421.5	1450.1	1553.3	1697.2	1918.0
12°	1413.8	1377.6	1407.2	1514.9	1669.8	1907.1
13°	1371.0	1335.8	1367.7	1477.5	1639.0	1895.0
14°	1330.3	1294.1	1329.2	1440.2	1609.3	1878.5
15°	1289.7	1252.3	1290.8	1402.8	1576.4	1864.2
16°	1250.1	1213.9	1252.3	1366.6	1544.5	1847.7
17°	1212.8	1175.4	1215.0	1331.4	1511.6	1832.3
18°	1176.5	1139.2	1176.5	1296.3	1485.2	1811.5
19°	1139.2	1106.2	1140.3	1262.2	1451.2	1793.9
20°	1106.2	1074.4	1105.1	1219.4	1416.0	1770.8
21°	1075.5	1043.6	1073.3	1186.4	1382.0	1751.1
22°	1045.8	1016.1	1042.5	1161.1	1347.9	1724.7
23°	1017.2	990.9	1013.9	1127.1	1314.9	1701.6
24°	990.9	970.0	988.7	1095.2	1282.0	1676.4
25°	967.8	951.3	965.6	1064.5	1249.0	1655.5
26°	948.0	933.8	945.8	1035.9	1215.0	1629.1
27°	929.4	917.3	929.4	1008.5	1182.0	1601.7
28°	912.9	900.8	911.8	983.2	1150.2	1570.9
29°	896.4	885.4	892.0	957.9	1118.3	1546.7
30°	879.9	871.1	876.6	934.8	1087.5	1512.7
32.5°	840.4	836.0	839.3	881.0	1012.8	1436.9
35°	801.9	800.8	804.1	836.0	942.5	1361.1
37.5°	763.5	761.3	766.8	794.2	875.5	1271.0
40°	722.8	718.4	726.1	753.6	815.1	1185.3
42.5°	678.9	677.8	684.4	711.8	758.0	1096.3
45°	637.1	640.4	643.7	669.0	703.1	1008.5
47.5°	597.6	605.3	604.2	625.1	653.6	921.7
50°	560.3	571.2	566.8	580.0	605.3	837.1
52.5°	524.0	538.3	530.6	535.0	558.1	754.7
55°	488.8	499.8	496.5	491.0	513.0	677.8
57.5°	451.5	466.9	460.3	450.4	468.0	605.3
60°	413.0	428.4	421.8	408.7	421.8	535.0
62.5°	374.6	390.0	383.4	368.0	376.8	469.1
65°	336.2	347.1	344.9	329.6	332.9	407.6





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	296.6	307.6	303.2	288.9	288.9	348.2
70°	253.8	259.3	259.3	247.2	243.9	293.3
72.5°	208.7	217.5	215.3	207.6	203.2	238.4
75°	170.3	176.9	179.1	169.2	163.7	190.0
77.5°	131.8	136.2	140.6	131.8	127.4	145.0
80°	93.4	95.6	102.2	96.7	94.5	105.5
82.5°	60.4	62.6	67.0	65.9	64.8	70.3
85°	31.9	33.0	37.4	38.4	38.4	40.6
87.5°	8.8	11.0	13.2	15.4	17.6	19.8
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)