

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: P231554

Luminaire Tested: **S122-DR-2-40-X-0048-1-U-DD-3-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231554
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-2-40-X-0048-1-U-DD-3-W
Description: DEFINE 2 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH ASYMMETRIC LENS.
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4150.6 lumens
Efficiency: N/A
Efficacy: 97.4 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

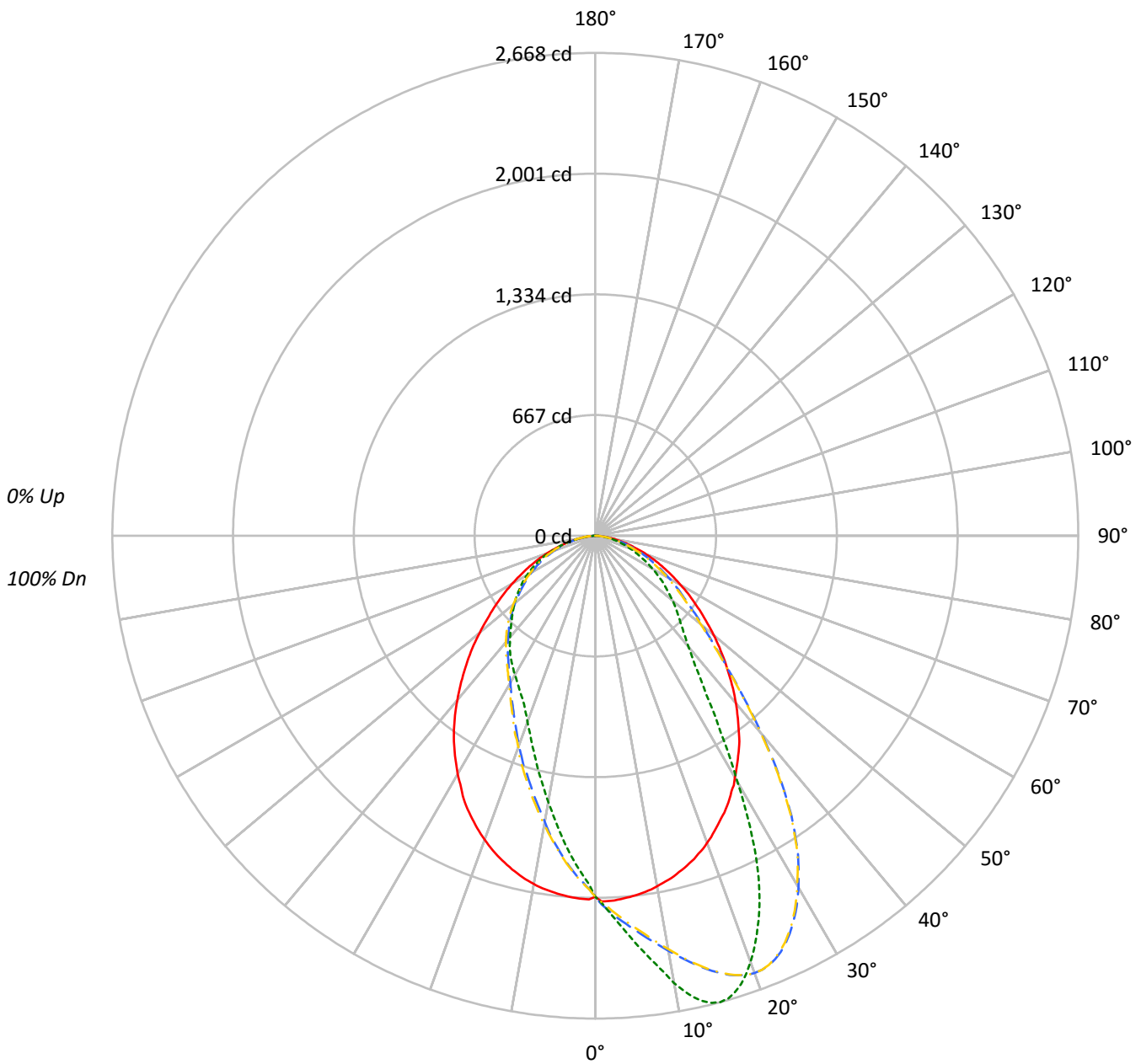
Input Watts (W): 42.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	39166	39166	39166	39166
5°	39558	43861	39294	34308
10°	39212	50059	38967	29772
15°	38615	54223	38273	25940
20°	37704	52369	37330	22874
25°	36546	46416	36134	21001
30°	34948	35657	34465	20126
35°	33245	25569	32653	19559
40°	30958	20457	30384	18765
45°	28533	18308	28005	18122
50°	26056	17029	25473	17780
55°	23642	15750	23029	17434
60°	21409	14287	20749	17145
65°	19295	12899	18566	16434
70°	17155	11697	16260	15164
75°	14691	10444	13675	13675
80°	12152	8987	10762	11011
85°	9325	7815	8063	7568



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.1	4.6
10°-20°	543.9	13.1
20°-30°	771.2	18.6
30°-40°	792.8	19.1
40°-50°	694.7	16.7
50°-60°	552.4	13.3
60°-70°	372.5	9.0
70°-80°	188.7	4.5
80°-90°	45.2	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°	1504.1	36.2
0°-40°	2296.9	55.3
0°-60°	3544.1	85.4
0°-90°	4150.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4150.6	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1995	1995	1995	1995	1995	
5°	2008	2226	1994	1741	2008	190
15°	1900	2668	1883	1276	1900	535
25°	1687	2143	1668	970	1687	775
35°	1387	1067	1363	816	1387	863
45°	1028	660	1009	653	1028	793
55°	691	460	673	509	691	620
65°	415	278	400	354	415	413
75°	194	138	180	180	194	208
85°	41	35	36	34	41	51
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°	1995.2	1995.2	1995.2	1995.2	1995.2	1995.2	1995.2	1995.2	1995.2	1995.2	1995.2
1°	2021.0	2022.1	2038.9	2053.5	2029.9	2025.5	2024.3	1999.7	2009.8	1967.2	1952.7
2°	2019.9	2038.9	2072.5	2097.1	2074.7	2066.9	2055.7	2014.3	2007.5	1947.1	1919.1
3°	2017.6	2055.7	2105.0	2139.7	2122.9	2108.3	2088.2	2029.9	2005.3	1926.9	1886.6
4°	2013.1	2069.1	2135.2	2182.2	2173.3	2150.9	2119.5	2044.5	2000.8	1904.5	1850.8
5°	2007.5	2083.7	2166.5	2228.1	2225.9	2194.5	2152.0	2057.9	1994.1	1884.4	1812.7
6°	2001.9	2096.0	2197.9	2274.0	2280.7	2240.4	2183.3	2070.2	1988.5	1859.7	1773.5
7°	1995.2	2107.2	2230.4	2324.4	2335.6	2288.6	2215.8	2082.6	1981.8	1835.1	1733.2
8°	1987.4	2119.5	2262.8	2373.7	2389.3	2337.8	2249.4	2092.6	1974.0	1809.4	1692.9
9°	1978.4	2129.6	2295.3	2425.2	2444.2	2386.0	2284.1	2102.7	1965.0	1782.5	1653.7
10°	1967.2	2139.7	2328.9	2474.4	2511.4	2444.2	2318.8	2111.7	1954.9	1754.5	1604.5
11°	1954.9	2148.6	2362.5	2521.5	2561.8	2490.1	2353.5	2121.7	1942.6	1725.4	1563.0
12°	1943.7	2157.6	2396.1	2566.3	2605.4	2532.7	2389.3	2128.5	1930.3	1695.2	1523.9
13°	1931.4	2164.3	2428.5	2604.3	2639.0	2571.9	2422.9	2134.1	1914.6	1663.8	1484.7
14°	1914.6	2172.1	2459.9	2634.6	2660.3	2605.4	2455.4	2140.8	1900.1	1632.5	1445.5
15°	1900.1	2177.7	2489.0	2653.6	2668.1	2629.0	2485.6	2148.6	1883.3	1600.0	1407.4
16°	1883.3	2184.5	2514.7	2661.4	2660.3	2637.9	2511.4	2153.1	1865.3	1566.4	1369.3
17°	1867.6	2188.9	2537.1	2655.8	2637.9	2631.2	2534.9	2158.7	1848.6	1533.9	1341.3
18°	1846.3	2193.4	2553.9	2636.8	2605.4	2617.8	2552.8	2160.9	1829.5	1500.3	1304.4
19°	1828.4	2197.9	2566.3	2606.6	2560.7	2587.5	2566.3	2164.3	1809.4	1466.8	1267.5
20°	1804.9	2200.1	2571.9	2565.1	2506.9	2545.0	2571.9	2165.4	1787.0	1424.2	1231.6
21°	1784.7	2201.2	2569.6	2515.9	2446.4	2494.6	2569.6	2166.5	1765.7	1390.6	1198.0
22°	1757.9	2202.4	2559.5	2458.8	2379.3	2437.5	2558.4	2167.7	1742.2	1357.0	1163.3
23°	1734.3	2202.4	2542.7	2397.2	2307.6	2374.8	2538.3	2167.7	1717.6	1321.2	1132.0
24°	1708.6	2201.2	2517.0	2332.2	2229.2	2311.0	2511.4	2166.5	1692.9	1295.4	1100.6
25°	1687.3	2199.0	2485.6	2262.8	2143.0	2243.8	2478.9	2164.3	1668.3	1260.7	1070.4
26°	1660.5	2194.5	2448.7	2187.8	2045.6	2169.9	2439.7	2160.9	1641.4	1227.1	1042.4
27°	1632.5	2190.0	2405.0	2105.0	1937.0	2088.2	2396.1	2156.5	1613.4	1193.6	1014.4
28°	1601.1	2183.3	2356.9	2010.9	1818.3	1994.1	2345.7	2148.6	1578.7	1161.1	988.7
29°	1576.5	2175.5	2303.1	1910.1	1695.2	1887.7	2289.7	2141.9	1548.5	1128.6	962.9
30°	1541.8	2166.5	2244.9	1800.4	1573.1	1775.8	2230.4	2132.9	1520.5	1097.3	938.3
32.5°	1464.5	2132.9	2082.6	1519.4	1291.0	1490.3	2078.1	2100.5	1442.1	1021.1	885.6
35°	1387.3	2087.0	1888.9	1239.5	1067.0	1233.9	1882.1	2056.8	1362.6	949.5	838.6
37.5°	1295.4	2025.5	1663.8	1051.4	906.9	1030.1	1654.9	1997.5	1276.4	878.9	795.0
40°	1208.1	1950.4	1430.9	896.8	798.3	882.3	1420.8	1923.6	1185.7	815.1	751.3
42.5°	1117.4	1859.7	1213.7	787.1	719.9	777.0	1203.6	1831.8	1096.1	756.9	707.6
45°	1027.8	1752.3	1030.1	700.9	659.5	698.7	1021.1	1725.4	1008.8	700.9	665.1
47.5°	939.4	1630.2	885.6	642.7	606.9	634.8	874.5	1602.2	921.5	648.3	622.5
50°	853.2	1492.5	771.4	586.7	557.6	580.0	759.1	1454.4	834.1	597.9	577.7
52.5°	769.2	1359.3	679.6	533.0	505.0	529.6	665.1	1311.1	750.2	548.6	533.0
55°	690.8	1207.0	596.8	482.6	460.2	478.1	587.8	1164.4	672.9	501.6	490.4
57.5°	616.9	1055.8	535.2	432.2	410.9	427.7	518.4	1008.8	600.1	455.7	447.9
60°	545.3	910.3	471.4	381.8	363.9	378.4	456.8	862.1	528.5	408.7	407.6
62.5°	478.1	773.7	413.2	334.8	320.2	332.5	398.6	730.0	461.3	363.9	366.1
65°	415.4	649.4	354.9	293.4	277.7	288.9	344.9	612.5	399.7	320.2	325.8



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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°	354.9	528.5	307.9	248.6	239.6	246.3	294.5	501.6	339.3	273.2	281.0
70°	298.9	432.2	255.3	210.5	203.8	208.3	240.7	405.3	283.3	231.8	240.7
72.5°	243.0	347.1	210.5	175.8	169.1	172.4	199.3	322.5	228.4	191.5	201.5
75°	193.7	268.7	169.1	142.2	137.7	138.8	160.1	244.1	180.3	153.4	162.4
77.5°	147.8	200.4	131.0	110.8	107.5	108.6	122.0	179.1	135.5	117.6	124.3
80°	107.5	141.1	96.3	81.7	79.5	79.5	88.5	124.3	95.2	84.0	89.6
82.5°	71.7	92.9	67.2	57.1	54.9	54.9	59.3	78.4	60.5	54.9	59.3
85°	41.4	54.9	41.4	34.7	34.7	33.6	35.8	42.5	35.8	30.2	32.5
87.5°	20.2	24.6	20.2	16.8	16.8	14.6	15.7	15.7	12.3	10.1	10.1
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°	1995.2	1995.2	1995.2	1995.2	1995.2	1995.2
1°	1951.6	1928.0	1938.1	1954.9	1970.6	2021.0
2°	1907.9	1881.0	1895.6	1921.3	1952.7	2019.9
3°	1864.2	1836.2	1854.2	1890.0	1932.5	2017.6
4°	1816.1	1789.2	1807.1	1855.3	1912.4	2013.1
5°	1766.8	1741.1	1759.0	1818.3	1891.1	2007.5
6°	1718.7	1690.7	1710.8	1780.3	1868.7	2001.9
7°	1669.4	1639.2	1662.7	1741.1	1846.3	1995.2
8°	1622.4	1588.8	1616.8	1700.8	1820.6	1987.4
9°	1575.4	1540.6	1569.8	1661.6	1788.1	1978.4
10°	1529.5	1493.6	1522.7	1622.4	1759.0	1967.2
11°	1484.7	1448.8	1477.9	1583.2	1729.9	1954.9
12°	1441.0	1404.0	1434.3	1544.0	1701.9	1943.7
13°	1397.3	1361.5	1394.0	1505.9	1670.5	1931.4
14°	1355.9	1319.0	1354.8	1467.9	1640.3	1914.6
15°	1314.5	1276.4	1315.6	1429.8	1606.7	1900.1
16°	1274.2	1237.2	1276.4	1392.9	1574.2	1883.3
17°	1236.1	1198.0	1238.3	1357.0	1540.6	1867.6
18°	1199.2	1161.1	1199.2	1321.2	1513.8	1846.3
19°	1161.1	1127.5	1162.2	1286.5	1479.1	1828.4
20°	1127.5	1095.0	1126.4	1242.8	1443.2	1804.9
21°	1096.1	1063.7	1093.9	1209.2	1408.5	1784.7
22°	1065.9	1035.7	1062.6	1183.5	1373.8	1757.9
23°	1036.8	1009.9	1033.4	1148.8	1340.2	1734.3
24°	1009.9	988.7	1007.7	1116.3	1306.6	1708.6
25°	986.4	969.6	984.2	1084.9	1273.0	1687.3
26°	966.3	951.7	964.0	1055.8	1238.3	1660.5
27°	947.2	934.9	947.2	1027.8	1204.8	1632.5
28°	930.4	918.1	929.3	1002.1	1172.3	1601.1
29°	913.6	902.4	909.2	976.3	1139.8	1576.5
30°	896.8	887.9	893.5	952.8	1108.5	1541.8
32.5°	856.5	852.1	855.4	898.0	1032.3	1464.5
35°	817.3	816.2	819.6	852.1	960.7	1387.3
37.5°	778.2	775.9	781.5	809.5	892.4	1295.4
40°	736.7	732.3	740.1	768.1	830.8	1208.1
42.5°	691.9	690.8	697.5	725.5	772.6	1117.4
45°	649.4	652.8	656.1	681.9	716.6	1027.8
47.5°	609.1	616.9	615.8	637.1	666.2	939.4
50°	571.0	582.2	577.7	591.2	616.9	853.2
52.5°	534.1	548.6	540.8	545.3	568.8	769.2
55°	498.2	509.4	506.1	500.5	522.9	690.8
57.5°	460.2	475.9	469.1	459.1	477.0	616.9
60°	421.0	436.7	429.9	416.5	429.9	545.3
62.5°	381.8	397.5	390.8	375.1	384.0	478.1
65°	342.6	353.8	351.6	335.9	339.3	415.4



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	302.3	313.5	309.0	294.5	294.5	354.9
70°	258.6	264.2	264.2	251.9	248.6	298.9
72.5°	212.7	221.7	219.5	211.6	207.1	243.0
75°	173.5	180.3	182.5	172.4	166.8	193.7
77.5°	134.4	138.8	143.3	134.4	129.9	147.8
80°	95.2	97.4	104.1	98.5	96.3	107.5
82.5°	61.6	63.8	68.3	67.2	66.1	71.7
85°	32.5	33.6	38.1	39.2	39.2	41.4
87.5°	9.0	11.2	13.4	15.7	17.9	20.2
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)