

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: P231551

Luminaire Tested: **S122-DR-2-27-X-0048-1-U-DD-3-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P231551  
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-2-27-X-0048-1-U-DD-3-W  
Description: DEFINE 2 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH ASYMMETRIC LENS.  
Light Source: 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

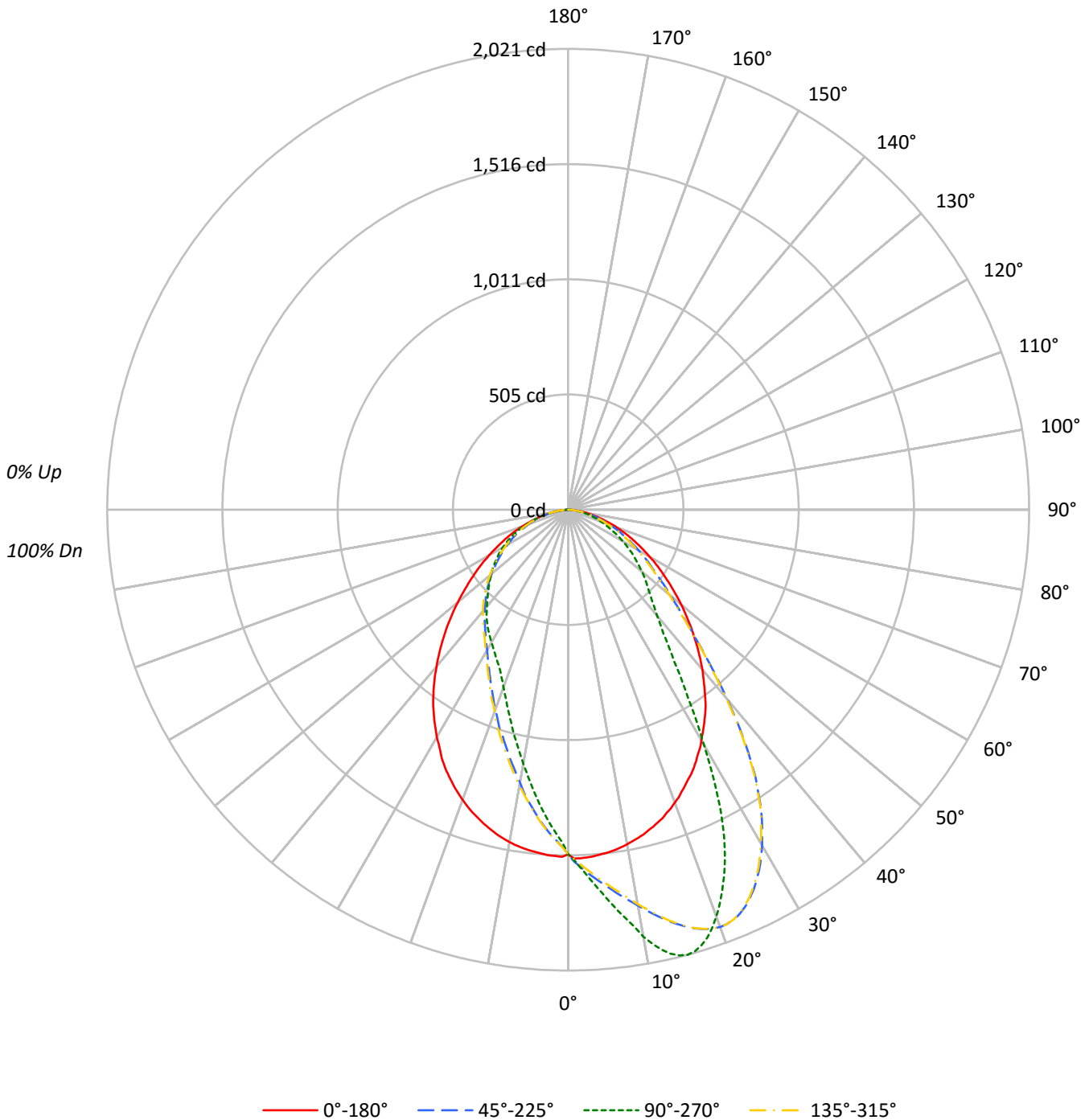
Lumens per Lamp: N/A  
Luminaire Lumens: 3143.2 lumens  
Efficiency: N/A  
Efficacy: 73.8 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.03 / 1.18  
Luminous Opening: Rectangular (W 3.92' x L: 0.14' x H: 0')  
CIE Type: Direct

Input Watts (W): 42.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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





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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°	29661	29661	29661	29661
5°	29958	33215	29757	25981
10°	29696	37910	29509	22546
15°	29242	41064	28984	19644
20°	28552	39659	28270	17324
25°	27676	35151	27364	15904
30°	26466	27003	26101	15241
35°	25176	19365	24728	14812
40°	23445	15493	23009	14209
45°	21609	13864	21209	13722
50°	19731	12897	19291	13465
55°	17906	11927	17441	13204
60°	16211	10820	15712	12983
65°	14613	9768	14060	12444
70°	12994	8856	12311	11485
75°	11126	7911	10353	10353
80°	9202	6805	8151	8343
85°	7072	5924	6104	5721



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	143.2	4.6
10°-20°	411.9	13.1
20°-30°	584.0	18.6
30°-40°	600.4	19.1
40°-50°	526.1	16.7
50°-60°	418.4	13.3
60°-70°	282.1	9.0
70°-80°	142.9	4.5
80°-90°	34.3	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°	1139.1	36.2
0°-40°	1739.4	55.3
0°-60°	2683.9	85.4
0°-90°	3143.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3143.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1511	1511	1511	1511	1511	
5°	1520	1686	1510	1318	1520	144
15°	1439	2021	1426	967	1439	405
25°	1278	1623	1263	734	1278	587
35°	1051	808	1032	618	1051	654
45°	778	499	764	494	778	601
55°	523	348	510	386	523	470
65°	315	210	303	268	315	313
75°	147	104	136	136	147	157
85°	31	26	27	25	31	39
90°	0	0	0	0	0	



TEST NUMBER: P231551

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1511.0	1511.0	1511.0	1511.0	1511.0	1511.0	1511.0	1511.0	1511.0	1511.0	1511.0
1°	1530.5	1531.3	1544.0	1555.1	1537.3	1533.9	1533.0	1514.4	1522.0	1489.8	1478.7
2°	1529.6	1544.0	1569.5	1588.1	1571.2	1565.2	1556.8	1525.4	1520.3	1474.5	1453.3
3°	1527.9	1556.8	1594.1	1620.4	1607.6	1596.6	1581.3	1537.3	1518.6	1459.2	1428.7
4°	1524.5	1566.9	1617.0	1652.6	1645.8	1628.8	1605.1	1548.3	1515.2	1442.3	1401.6
5°	1520.3	1578.0	1640.7	1687.3	1685.6	1661.9	1629.7	1558.5	1510.1	1427.0	1372.8
6°	1516.1	1587.3	1664.4	1722.1	1727.2	1696.7	1653.4	1567.8	1505.9	1408.4	1343.1
7°	1511.0	1595.8	1689.0	1760.3	1768.7	1733.1	1678.0	1577.1	1500.8	1389.7	1312.6
8°	1505.0	1605.1	1713.6	1797.6	1809.4	1770.4	1703.4	1584.7	1494.9	1370.2	1282.0
9°	1498.3	1612.7	1738.2	1836.6	1851.0	1806.9	1729.7	1592.4	1488.1	1349.9	1252.4
10°	1489.8	1620.4	1763.6	1873.9	1901.9	1851.0	1756.0	1599.2	1480.4	1328.7	1215.1
11°	1480.4	1627.1	1789.1	1909.5	1940.0	1885.7	1782.3	1606.8	1471.1	1306.6	1183.7
12°	1472.0	1633.9	1814.5	1943.4	1973.1	1918.0	1809.4	1611.9	1461.8	1283.7	1154.0
13°	1462.6	1639.0	1839.1	1972.2	1998.5	1947.6	1834.9	1616.1	1449.9	1260.0	1124.3
14°	1449.9	1644.9	1862.9	1995.1	2014.6	1973.1	1859.5	1621.2	1438.9	1236.2	1094.6
15°	1438.9	1649.2	1884.9	2009.5	2020.6	1990.9	1882.4	1627.1	1426.2	1211.7	1065.8
16°	1426.2	1654.3	1904.4	2015.5	2014.6	1997.7	1901.9	1630.5	1412.6	1186.2	1037.0
17°	1414.3	1657.7	1921.4	2011.2	1997.7	1992.6	1919.7	1634.8	1399.9	1161.6	1015.8
18°	1398.2	1661.0	1934.1	1996.8	1973.1	1982.4	1933.2	1636.5	1385.5	1136.2	987.8
19°	1384.6	1664.4	1943.4	1973.9	1939.2	1959.5	1943.4	1639.0	1370.2	1110.8	959.8
20°	1366.8	1666.1	1947.6	1942.6	1898.5	1927.3	1947.6	1639.9	1353.3	1078.5	932.7
21°	1351.6	1667.0	1945.9	1905.2	1852.7	1889.1	1945.9	1640.7	1337.1	1053.1	907.3
22°	1331.2	1667.8	1938.3	1862.0	1801.8	1845.9	1937.5	1641.5	1319.3	1027.7	881.0
23°	1313.4	1667.8	1925.6	1815.4	1747.5	1798.4	1922.2	1641.5	1300.7	1000.5	857.2
24°	1293.9	1667.0	1906.1	1766.2	1688.2	1750.1	1901.9	1640.7	1282.0	981.0	833.5
25°	1277.8	1665.3	1882.4	1713.6	1622.9	1699.2	1877.3	1639.0	1263.4	954.7	810.6
26°	1257.4	1661.9	1854.4	1656.8	1549.1	1643.2	1847.6	1636.5	1243.0	929.3	789.4
27°	1236.2	1658.5	1821.3	1594.1	1466.9	1581.3	1814.5	1633.1	1221.8	903.9	768.2
28°	1212.5	1653.4	1784.8	1522.8	1377.0	1510.1	1776.4	1627.1	1195.5	879.3	748.7
29°	1193.9	1647.5	1744.1	1446.5	1283.7	1429.6	1734.0	1622.0	1172.7	854.7	729.2
30°	1167.6	1640.7	1700.1	1363.4	1191.3	1344.8	1689.0	1615.3	1151.5	830.9	710.5
32.5°	1109.1	1615.3	1577.1	1150.6	977.6	1128.6	1573.7	1590.7	1092.1	773.3	670.7
35°	1050.6	1580.5	1430.4	938.6	808.1	934.4	1425.3	1557.6	1031.9	719.0	635.1
37.5°	981.0	1533.9	1260.0	796.2	686.8	780.1	1253.2	1512.7	966.6	665.6	602.0
40°	914.9	1477.1	1083.6	679.2	604.6	668.2	1076.0	1456.7	897.9	617.3	568.9
42.5°	846.2	1408.4	919.1	596.1	545.2	588.4	911.5	1387.2	830.1	573.2	535.9
45°	778.4	1327.0	780.1	530.8	499.4	529.1	773.3	1306.6	764.0	530.8	503.7
47.5°	711.4	1234.6	670.7	486.7	459.6	480.8	662.2	1213.4	697.8	490.9	471.4
50°	646.1	1130.3	584.2	444.3	422.3	439.2	574.9	1101.4	631.7	452.8	437.5
52.5°	582.5	1029.4	514.7	403.6	382.4	401.1	503.7	992.9	568.1	415.5	403.6
55°	523.2	914.0	451.9	365.4	348.5	362.1	445.2	881.8	509.6	379.9	371.4
57.5°	467.2	799.6	405.3	327.3	311.2	323.9	392.6	764.0	454.5	345.1	339.2
60°	412.9	689.3	357.0	289.1	275.6	286.6	345.9	652.9	400.2	309.5	308.6
62.5°	362.1	585.9	312.9	253.5	242.5	251.8	301.9	552.8	349.3	275.6	277.3
65°	314.6	491.8	268.8	222.2	210.3	218.8	261.2	463.8	302.7	242.5	246.7



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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°	268.8	400.2	233.2	188.2	181.5	186.5	223.0	379.9	256.9	206.9	212.8
70°	226.4	327.3	193.3	159.4	154.3	157.7	182.3	306.9	214.5	175.5	182.3
72.5°	184.0	262.9	159.4	133.1	128.0	130.6	150.9	244.2	173.0	145.0	152.6
75°	146.7	203.5	128.0	107.7	104.3	105.1	121.3	184.8	136.5	116.2	122.9
77.5°	111.9	151.8	99.2	83.9	81.4	82.2	92.4	135.7	102.6	89.0	94.1
80°	81.4	106.8	72.9	61.9	60.2	60.2	67.0	94.1	72.1	63.6	67.8
82.5°	54.3	70.4	50.9	43.2	41.5	41.5	44.9	59.4	45.8	41.5	44.9
85°	31.4	41.5	31.4	26.3	26.3	25.4	27.1	32.2	27.1	22.9	24.6
87.5°	15.3	18.7	15.3	12.7	12.7	11.0	11.9	11.9	9.3	7.6	7.6
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°	1511.0	1511.0	1511.0	1511.0	1511.0	1511.0
1°	1477.9	1460.1	1467.7	1480.4	1492.3	1530.5
2°	1444.8	1424.5	1435.5	1455.0	1478.7	1529.6
3°	1411.8	1390.6	1404.1	1431.3	1463.5	1527.9
4°	1375.3	1355.0	1368.5	1405.0	1448.2	1524.5
5°	1338.0	1318.5	1332.1	1377.0	1432.1	1520.3
6°	1301.5	1280.3	1295.6	1348.2	1415.2	1516.1
7°	1264.2	1241.3	1259.1	1318.5	1398.2	1511.0
8°	1228.6	1203.2	1224.4	1288.0	1378.7	1505.0
9°	1193.0	1166.7	1188.8	1258.3	1354.1	1498.3
10°	1158.2	1131.1	1153.2	1228.6	1332.1	1489.8
11°	1124.3	1097.2	1119.2	1198.9	1310.0	1480.4
12°	1091.3	1063.3	1086.2	1169.3	1288.8	1472.0
13°	1058.2	1031.1	1055.6	1140.4	1265.1	1462.6
14°	1026.8	998.8	1026.0	1111.6	1242.2	1449.9
15°	995.4	966.6	996.3	1082.8	1216.7	1438.9
16°	964.9	936.9	966.6	1054.8	1192.2	1426.2
17°	936.1	907.3	937.8	1027.7	1166.7	1414.3
18°	908.1	879.3	908.1	1000.5	1146.4	1398.2
19°	879.3	853.8	880.1	974.2	1120.1	1384.6
20°	853.8	829.3	853.0	941.2	1093.0	1366.8
21°	830.1	805.5	828.4	915.7	1066.7	1351.6
22°	807.2	784.3	804.7	896.2	1040.4	1331.2
23°	785.2	764.8	782.6	870.0	1014.9	1313.4
24°	764.8	748.7	763.1	845.4	989.5	1293.9
25°	747.0	734.3	745.3	821.6	964.1	1277.8
26°	731.7	720.7	730.0	799.6	937.8	1257.4
27°	717.3	708.0	717.3	778.4	912.3	1236.2
28°	704.6	695.3	703.8	758.9	887.8	1212.5
29°	691.9	683.4	688.5	739.4	863.2	1193.9
30°	679.2	672.4	676.6	721.6	839.4	1167.6
32.5°	648.6	645.3	647.8	680.0	781.8	1109.1
35°	619.0	618.1	620.7	645.3	727.5	1050.6
37.5°	589.3	587.6	591.8	613.0	675.8	981.0
40°	557.9	554.5	560.5	581.7	629.1	914.9
42.5°	524.0	523.2	528.2	549.4	585.1	846.2
45°	491.8	494.3	496.9	516.4	542.7	778.4
47.5°	461.3	467.2	466.3	482.5	504.5	711.4
50°	432.4	440.9	437.5	447.7	467.2	646.1
52.5°	404.5	415.5	409.5	412.9	430.7	582.5
55°	377.3	385.8	383.3	379.0	396.0	523.2
57.5°	348.5	360.4	355.3	347.6	361.2	467.2
60°	318.8	330.7	325.6	315.4	325.6	412.9
62.5°	289.1	301.0	295.9	284.0	290.8	362.1
65°	259.5	267.9	266.2	254.4	256.9	314.6





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	228.9	237.4	234.0	223.0	223.0	268.8
70°	195.9	200.1	200.1	190.8	188.2	226.4
72.5°	161.1	167.9	166.2	160.3	156.9	184.0
75°	131.4	136.5	138.2	130.6	126.3	146.7
77.5°	101.7	105.1	108.5	101.7	98.4	111.9
80°	72.1	73.8	78.9	74.6	72.9	81.4
82.5°	46.6	48.3	51.7	50.9	50.0	54.3
85°	24.6	25.4	28.8	29.7	29.7	31.4
87.5°	6.8	8.5	10.2	11.9	13.6	15.3
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)