

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: P231550

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P231550  
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-1-40-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**

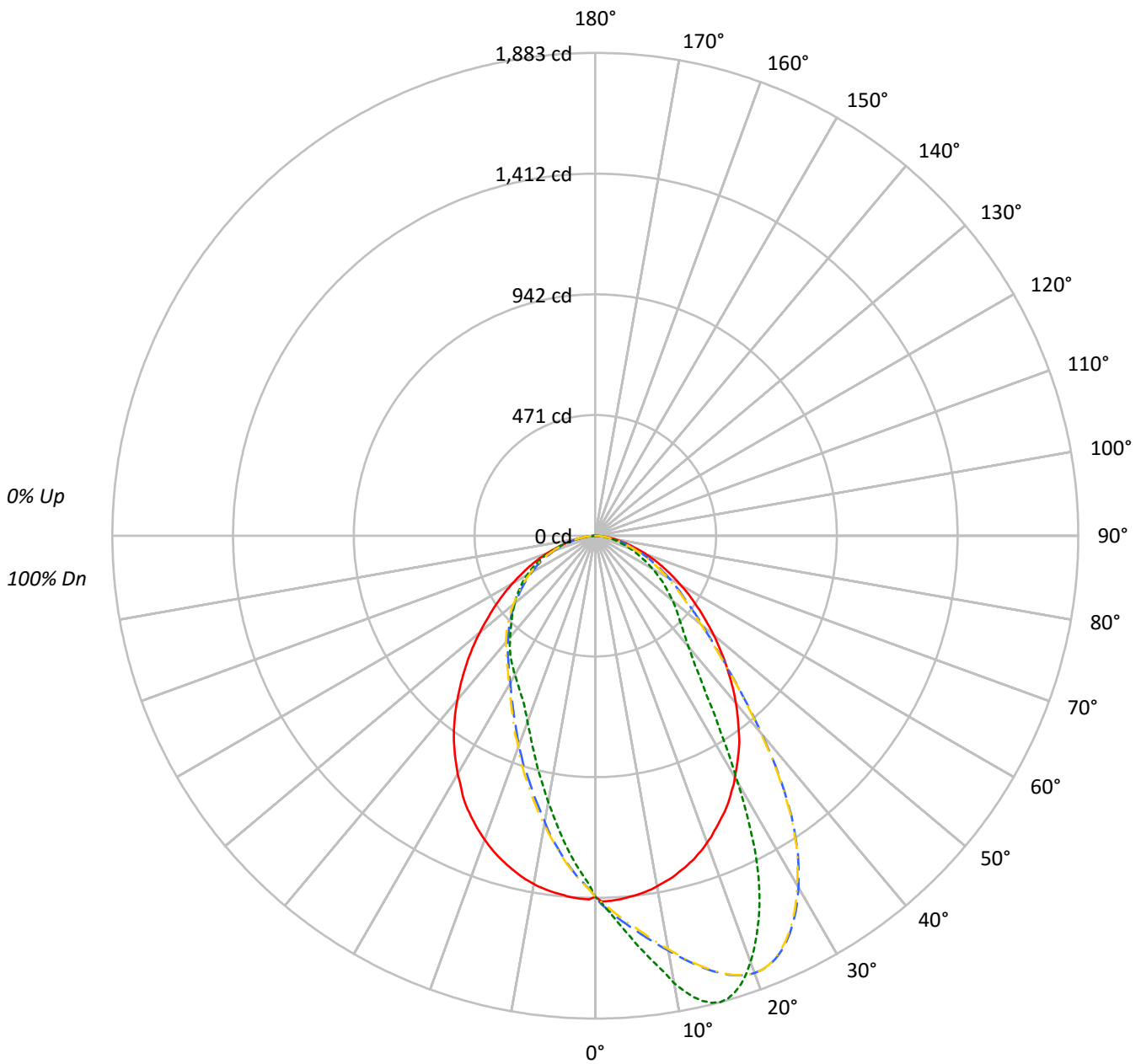
Lumens per Lamp: N/A  
Luminaire Lumens: 2929.1 lumens  
Efficiency: N/A  
Efficacy: 105.0 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.03 / 1.18  
Luminous Opening: Rectangular (W 3.92' x L: 0.14' x H: 0')  
CIE Type: Direct

Input Watts (W): 27.9  
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



TEST NUMBER: P231550  
CATALOG NUMBER: S122-DR-1-40-X-0048-1-U-DD-3-W

### 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°	27641	27641	27641	27641
5°	27918	30953	27731	24212
10°	27673	35327	27499	21011
15°	27251	38265	27009	18307
20°	26607	36958	26344	16144
25°	25792	32758	25500	14822
30°	24662	25165	24322	14203
35°	23461	18045	23044	13803
40°	21848	14437	21443	13243
45°	20138	12920	19763	12790
50°	18388	12017	17978	12548
55°	16684	11116	16253	12304
60°	15107	10082	14644	12100
65°	13614	9104	13103	11598
70°	12110	8253	11473	10704
75°	10368	7372	9647	9647
80°	8580	6342	7597	7766
85°	6577	5518	5698	5338



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.4	4.6
10°-20°	383.8	13.1
20°-30°	544.2	18.6
30°-40°	559.5	19.1
40°-50°	490.3	16.7
50°-60°	389.9	13.3
60°-70°	262.9	9.0
70°-80°	133.1	4.5
80°-90°	31.9	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°	1061.5	36.2
0°-40°	1621.0	55.3
0°-60°	2501.1	85.4
0°-90°	2929.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2929.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1408	1408	1408	1408	1408	
5°	1417	1571	1407	1229	1417	134
15°	1341	1883	1329	901	1341	377
25°	1191	1512	1177	684	1191	547
35°	979	753	962	576	979	609
45°	725	465	712	461	725	560
55°	488	325	475	360	488	438
65°	293	196	282	250	293	291
75°	137	97	127	127	137	147
85°	29	24	25	24	29	36
90°	0	0	0	0	0	



TEST NUMBER: P231550

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1408.1	1408.1	1408.1	1408.1	1408.1	1408.1	1408.1	1408.1	1408.1	1408.1	1408.1
1°	1426.2	1427.0	1438.9	1449.1	1432.6	1429.4	1428.6	1411.2	1418.3	1388.3	1378.0
2°	1425.4	1438.9	1462.6	1480.0	1464.2	1458.6	1450.7	1421.5	1416.8	1374.1	1354.3
3°	1423.9	1450.7	1485.5	1510.0	1498.1	1487.9	1473.6	1432.6	1415.2	1359.9	1331.4
4°	1420.7	1460.2	1506.8	1540.0	1533.7	1517.9	1495.8	1442.8	1412.0	1344.1	1306.1
5°	1416.8	1470.5	1529.0	1572.4	1570.8	1548.7	1518.7	1452.3	1407.3	1329.8	1279.3
6°	1412.8	1479.2	1551.1	1604.8	1609.6	1581.1	1540.8	1461.0	1403.3	1312.5	1251.6
7°	1408.1	1487.1	1574.0	1640.4	1648.3	1615.1	1563.7	1469.7	1398.6	1295.1	1223.2
8°	1402.5	1495.8	1596.9	1675.1	1686.2	1649.8	1587.4	1476.8	1393.0	1276.9	1194.7
9°	1396.2	1502.9	1619.8	1711.5	1724.9	1683.8	1611.9	1483.9	1386.7	1257.9	1167.1
10°	1388.3	1510.0	1643.5	1746.2	1772.3	1724.9	1636.4	1490.2	1379.6	1238.2	1132.3
11°	1379.6	1516.3	1667.2	1779.4	1807.9	1757.3	1660.9	1497.3	1370.9	1217.6	1103.1
12°	1371.7	1522.6	1690.9	1811.0	1838.7	1787.3	1686.2	1502.1	1362.2	1196.3	1075.4
13°	1363.0	1527.4	1713.9	1837.9	1862.4	1815.0	1709.9	1506.0	1351.2	1174.2	1047.7
14°	1351.2	1532.9	1736.0	1859.2	1877.4	1838.7	1732.8	1510.8	1340.9	1152.0	1020.1
15°	1340.9	1536.9	1756.5	1872.7	1882.9	1855.3	1754.2	1516.3	1329.0	1129.1	993.2
16°	1329.0	1541.6	1774.7	1878.2	1877.4	1861.6	1772.3	1519.5	1316.4	1105.4	966.4
17°	1318.0	1544.8	1790.5	1874.3	1861.6	1856.9	1788.9	1523.4	1304.6	1082.5	946.6
18°	1303.0	1547.9	1802.3	1860.8	1838.7	1847.4	1801.6	1525.0	1291.1	1058.8	920.5
19°	1290.3	1551.1	1811.0	1839.5	1807.1	1826.1	1811.0	1527.4	1276.9	1035.1	894.5
20°	1273.7	1552.7	1815.0	1810.3	1769.2	1796.0	1815.0	1528.2	1261.1	1005.1	869.2
21°	1259.5	1553.4	1813.4	1775.5	1726.5	1760.5	1813.4	1529.0	1246.1	981.4	845.5
22°	1240.5	1554.2	1806.3	1735.2	1679.1	1720.2	1805.5	1529.7	1229.5	957.7	821.0
23°	1224.0	1554.2	1794.4	1691.7	1628.5	1675.9	1791.3	1529.7	1212.1	932.4	798.8
24°	1205.8	1553.4	1776.3	1645.9	1573.2	1630.9	1772.3	1529.0	1194.7	914.2	776.7
25°	1190.8	1551.9	1754.2	1596.9	1512.4	1583.5	1749.4	1527.4	1177.3	889.7	755.4
26°	1171.8	1548.7	1728.1	1544.0	1443.6	1531.3	1721.8	1525.0	1158.4	866.0	735.6
27°	1152.0	1545.5	1697.3	1485.5	1367.0	1473.6	1690.9	1521.8	1138.6	842.3	715.9
28°	1129.9	1540.8	1663.3	1419.1	1283.2	1407.3	1655.4	1516.3	1114.1	819.4	697.7
29°	1112.5	1535.3	1625.4	1348.0	1196.3	1332.2	1615.9	1511.6	1092.8	796.5	679.5
30°	1088.0	1529.0	1584.3	1270.6	1110.2	1253.2	1574.0	1505.3	1073.0	774.4	662.2
32.5°	1033.5	1505.3	1469.7	1072.2	911.1	1051.7	1466.5	1482.3	1017.7	720.6	625.0
35°	979.0	1472.9	1333.0	874.7	753.0	870.8	1328.3	1451.5	961.6	670.1	591.8
37.5°	914.2	1429.4	1174.2	742.0	640.0	726.9	1167.9	1409.6	900.8	620.3	561.0
40°	852.6	1376.5	1009.8	632.9	563.4	622.6	1002.7	1357.5	836.8	575.2	530.2
42.5°	788.6	1312.5	856.5	555.5	508.1	548.4	849.4	1292.7	773.6	534.1	499.4
45°	725.4	1236.6	726.9	494.6	465.4	493.1	720.6	1217.6	711.9	494.6	469.4
47.5°	662.9	1150.5	625.0	453.6	428.3	448.0	617.1	1130.7	650.3	457.5	439.3
50°	602.1	1053.3	544.4	414.0	393.5	409.3	535.7	1026.4	588.7	421.9	407.7
52.5°	542.8	959.3	479.6	376.1	356.4	373.7	469.4	925.3	529.4	387.2	376.1
55°	487.5	851.8	421.2	340.6	324.8	337.4	414.8	821.8	474.9	354.0	346.1
57.5°	435.4	745.1	377.7	305.0	290.0	301.8	365.8	711.9	423.5	321.6	316.1
60°	384.8	642.4	332.7	269.4	256.8	267.1	322.4	608.4	373.0	288.4	287.6
62.5°	337.4	546.0	291.6	236.3	226.0	234.7	281.3	515.2	325.5	256.8	258.4
65°	293.1	458.3	250.5	207.0	196.0	203.9	243.4	432.2	282.1	226.0	229.9



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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°	250.5	373.0	217.3	175.4	169.1	173.8	207.8	354.0	239.4	192.8	198.3
70°	211.0	305.0	180.2	148.5	143.8	147.0	169.9	286.0	199.9	163.6	169.9
72.5°	171.5	244.9	148.5	124.1	119.3	121.7	140.6	227.6	161.2	135.1	142.2
75°	136.7	189.6	119.3	100.4	97.2	98.0	113.0	172.3	127.2	108.3	114.6
77.5°	104.3	141.4	92.4	78.2	75.9	76.6	86.1	126.4	95.6	83.0	87.7
80°	75.9	99.6	68.0	57.7	56.1	56.1	62.4	87.7	67.2	59.3	63.2
82.5°	50.6	65.6	47.4	40.3	38.7	38.7	41.9	55.3	42.7	38.7	41.9
85°	29.2	38.7	29.2	24.5	24.5	23.7	25.3	30.0	25.3	21.3	22.9
87.5°	14.2	17.4	14.2	11.9	11.9	10.3	11.1	11.1	8.7	7.1	7.1
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°	1408.1	1408.1	1408.1	1408.1	1408.1	1408.1
1°	1377.2	1360.7	1367.8	1379.6	1390.7	1426.2
2°	1346.4	1327.5	1337.7	1355.9	1378.0	1425.4
3°	1315.6	1295.9	1308.5	1333.8	1363.8	1423.9
4°	1281.6	1262.7	1275.3	1309.3	1349.6	1420.7
5°	1246.9	1228.7	1241.3	1283.2	1334.6	1416.8
6°	1212.9	1193.1	1207.4	1256.4	1318.8	1412.8
7°	1178.1	1156.8	1173.4	1228.7	1303.0	1408.1
8°	1144.9	1121.2	1141.0	1200.2	1284.8	1402.5
9°	1111.8	1087.3	1107.8	1172.6	1261.9	1396.2
10°	1079.4	1054.1	1074.6	1144.9	1241.3	1388.3
11°	1047.7	1022.5	1043.0	1117.3	1220.8	1379.6
12°	1016.9	990.9	1012.2	1089.6	1201.0	1371.7
13°	986.1	960.8	983.7	1062.8	1178.9	1363.0
14°	956.9	930.8	956.1	1035.9	1157.6	1351.2
15°	927.6	900.8	928.4	1009.0	1133.9	1340.9
16°	899.2	873.1	900.8	983.0	1111.0	1329.0
17°	872.3	845.5	873.9	957.7	1087.3	1318.0
18°	846.3	819.4	846.3	932.4	1068.3	1303.0
19°	819.4	795.7	820.2	907.9	1043.8	1290.3
20°	795.7	772.8	794.9	877.1	1018.5	1273.7
21°	773.6	750.6	772.0	853.4	994.0	1259.5
22°	752.2	730.9	749.9	835.2	969.5	1240.5
23°	731.7	712.7	729.3	810.7	945.8	1224.0
24°	712.7	697.7	711.1	787.8	922.1	1205.8
25°	696.1	684.3	694.5	765.7	898.4	1190.8
26°	681.9	671.6	680.3	745.1	873.9	1171.8
27°	668.5	659.8	668.5	725.4	850.2	1152.0
28°	656.6	647.9	655.8	707.2	827.3	1129.9
29°	644.8	636.9	641.6	689.0	804.4	1112.5
30°	632.9	626.6	630.5	672.4	782.3	1088.0
32.5°	604.5	601.3	603.7	633.7	728.5	1033.5
35°	576.8	576.0	578.4	601.3	678.0	979.0
37.5°	549.2	547.6	551.5	571.3	629.8	914.2
40°	519.9	516.8	522.3	542.0	586.3	852.6
42.5°	488.3	487.5	492.3	512.0	545.2	788.6
45°	458.3	460.7	463.0	481.2	505.7	725.4
47.5°	429.8	435.4	434.6	449.6	470.1	662.9
50°	403.0	410.9	407.7	417.2	435.4	602.1
52.5°	376.9	387.2	381.6	384.8	401.4	542.8
55°	351.6	359.5	357.2	353.2	369.0	487.5
57.5°	324.8	335.8	331.1	324.0	336.6	435.4
60°	297.1	308.2	303.4	293.9	303.4	384.8
62.5°	269.4	280.5	275.8	264.7	271.0	337.4
65°	241.8	249.7	248.1	237.0	239.4	293.1





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	213.3	221.2	218.1	207.8	207.8	250.5
70°	182.5	186.5	186.5	177.8	175.4	211.0
72.5°	150.1	156.5	154.9	149.3	146.2	171.5
75°	122.5	127.2	128.8	121.7	117.7	136.7
77.5°	94.8	98.0	101.1	94.8	91.7	104.3
80°	67.2	68.7	73.5	69.5	68.0	75.9
82.5°	43.5	45.0	48.2	47.4	46.6	50.6
85°	22.9	23.7	26.9	27.7	27.7	29.2
87.5°	6.3	7.9	9.5	11.1	12.6	14.2
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)