

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: P231549

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231549
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-1-35-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

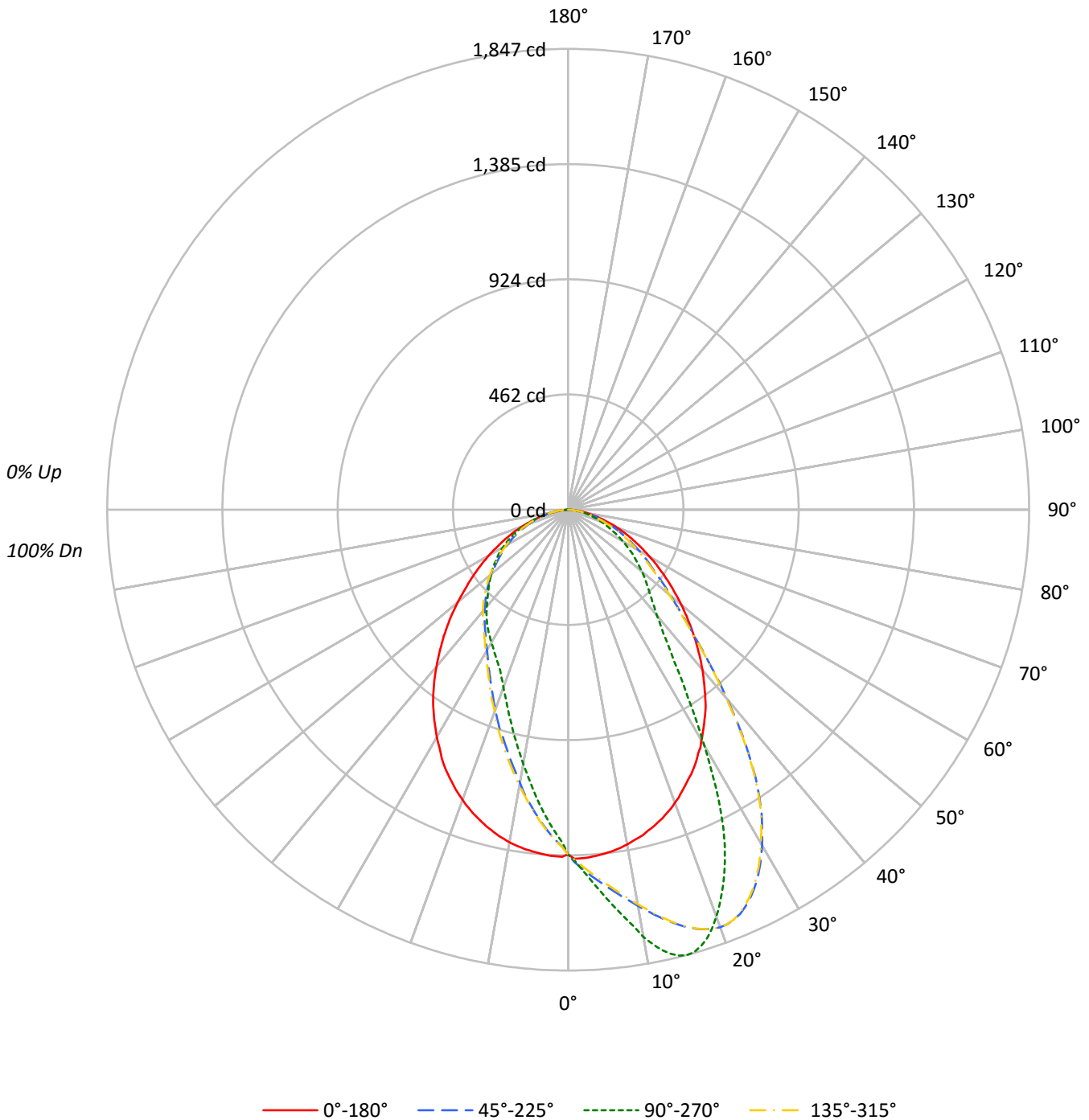
Lumens per Lamp: N/A
Luminaire Lumens: 2873.8 lumens
Efficiency: N/A
Efficacy: 103.0 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.03 / 1.18
Luminous Opening: Rectangular (W 3.92' x L: 0.14' x H: 0')
CIE Type: Direct

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



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	27119	27119	27119	27119
5°	27390	30369	27207	23754
10°	27151	34661	26981	20615
15°	26736	37544	26501	17961
20°	26106	36261	25847	15839
25°	25305	32138	25019	14542
30°	24197	24689	23864	13936
35°	23017	17705	22610	13544
40°	21436	14166	21038	12992
45°	19758	12676	19391	12548
50°	18039	11791	17639	12310
55°	16369	10904	15945	12071
60°	14821	9894	14365	11868
65°	13359	8932	12857	11380
70°	11881	8098	11255	10503
75°	10171	7236	9465	9465
80°	8411	6217	7450	7619
85°	6464	5406	5586	5248



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	130.9	4.6
10°-20°	376.6	13.1
20°-30°	534.0	18.6
30°-40°	548.9	19.1
40°-50°	481.0	16.7
50°-60°	382.5	13.3
60°-70°	257.9	9.0
70°-80°	130.6	4.5
80°-90°	31.3	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°	1041.5	36.2
0°-40°	1590.4	55.3
0°-60°	2453.9	85.4
0°-90°	2873.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2873.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1382	1382	1382	1382	1382	
5°	1390	1541	1381	1206	1390	132
15°	1316	1847	1304	884	1316	370
25°	1168	1484	1155	671	1168	536
35°	960	739	944	565	960	598
45°	712	457	698	452	712	549
55°	478	319	466	353	478	429
65°	288	192	277	245	288	286
75°	134	95	125	125	134	144
85°	29	24	25	23	29	35
90°	0	0	0	0	0	



TEST NUMBER: P231549

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1381.5	1381.5	1381.5	1381.5	1381.5	1381.5	1381.5	1381.5	1381.5	1381.5	1381.5
1°	1399.3	1400.1	1411.7	1421.8	1405.5	1402.4	1401.7	1384.6	1391.6	1362.1	1352.0
2°	1398.5	1411.7	1435.0	1452.0	1436.5	1431.1	1423.4	1394.7	1390.0	1348.2	1328.8
3°	1397.0	1423.4	1457.5	1481.5	1469.9	1459.8	1445.8	1405.5	1388.5	1334.2	1306.3
4°	1393.9	1432.7	1478.4	1511.0	1504.8	1489.3	1467.5	1415.6	1385.4	1318.7	1281.5
5°	1390.0	1442.7	1500.1	1542.7	1541.2	1519.5	1490.0	1424.9	1380.7	1304.7	1255.1
6°	1386.1	1451.3	1521.8	1574.5	1579.2	1551.3	1511.7	1433.4	1376.8	1287.7	1228.0
7°	1381.5	1459.0	1544.3	1609.4	1617.2	1584.6	1534.2	1442.0	1372.2	1270.6	1200.1
8°	1376.1	1467.5	1566.8	1643.5	1654.4	1618.7	1557.5	1448.9	1366.8	1252.8	1172.2
9°	1369.9	1474.5	1589.3	1679.2	1692.4	1652.1	1581.5	1455.9	1360.6	1234.2	1145.0
10°	1362.1	1481.5	1612.5	1713.3	1738.9	1692.4	1605.5	1462.1	1353.6	1214.8	1110.9
11°	1353.6	1487.7	1635.8	1745.9	1773.8	1724.2	1629.6	1469.1	1345.1	1194.7	1082.2
12°	1345.8	1493.9	1659.0	1776.9	1804.0	1753.6	1654.4	1473.7	1336.5	1173.7	1055.1
13°	1337.3	1498.6	1681.5	1803.2	1827.3	1780.7	1677.6	1477.6	1325.7	1152.0	1028.0
14°	1325.7	1504.0	1703.2	1824.2	1842.0	1804.0	1700.1	1482.3	1315.6	1130.3	1000.8
15°	1315.6	1507.9	1723.4	1837.3	1847.4	1820.3	1721.1	1487.7	1304.0	1107.8	974.5
16°	1304.0	1512.5	1741.2	1842.8	1842.0	1826.5	1738.9	1490.8	1291.6	1084.6	948.1
17°	1293.1	1515.6	1756.7	1838.9	1826.5	1821.8	1755.2	1494.7	1279.9	1062.1	928.7
18°	1278.4	1518.7	1768.3	1825.7	1804.0	1812.5	1767.6	1496.2	1266.8	1038.8	903.2
19°	1266.0	1521.8	1776.9	1804.8	1773.0	1791.6	1776.9	1498.6	1252.8	1015.6	877.6
20°	1249.7	1523.4	1780.7	1776.1	1735.8	1762.1	1780.7	1499.3	1237.3	986.1	852.8
21°	1235.7	1524.1	1779.2	1742.0	1693.9	1727.3	1779.2	1500.1	1222.6	962.9	829.5
22°	1217.1	1524.9	1772.2	1702.4	1647.4	1687.7	1771.4	1500.9	1206.3	939.6	805.5
23°	1200.9	1524.9	1760.6	1659.8	1597.8	1644.3	1757.5	1500.9	1189.2	914.8	783.8
24°	1183.0	1524.1	1742.8	1614.8	1543.5	1600.1	1738.9	1500.1	1172.2	897.0	762.1
25°	1168.3	1522.6	1721.1	1566.8	1483.8	1553.6	1716.4	1498.6	1155.1	872.9	741.1
26°	1149.7	1519.5	1695.5	1514.8	1416.4	1502.4	1689.3	1496.2	1136.5	849.7	721.8
27°	1130.3	1516.4	1665.2	1457.5	1341.2	1445.8	1659.0	1493.1	1117.1	826.4	702.4
28°	1108.6	1511.7	1631.9	1392.3	1259.0	1380.7	1624.1	1487.7	1093.1	803.9	684.5
29°	1091.6	1506.3	1594.7	1322.6	1173.7	1307.1	1585.4	1483.1	1072.2	781.5	666.7
30°	1067.5	1500.1	1554.4	1246.6	1089.2	1229.5	1544.3	1476.8	1052.8	759.7	649.7
32.5°	1014.0	1476.8	1442.0	1052.0	893.9	1031.9	1438.9	1454.4	998.5	707.0	613.2
35°	960.5	1445.1	1307.8	858.2	738.8	854.3	1303.2	1424.1	943.5	657.4	580.7
37.5°	897.0	1402.4	1152.0	728.0	628.0	713.2	1145.8	1383.0	883.8	608.6	550.4
40°	836.5	1350.5	990.8	621.0	552.8	610.9	983.8	1331.9	821.0	564.4	520.2
42.5°	773.7	1287.7	840.4	545.0	498.5	538.0	833.4	1268.3	759.0	524.1	490.0
45°	711.7	1213.3	713.2	485.3	456.6	483.8	707.0	1194.7	698.5	485.3	460.5
47.5°	650.4	1128.8	613.2	445.0	420.2	439.6	605.5	1109.4	638.0	448.9	431.0
50°	590.7	1033.4	534.1	406.2	386.1	401.6	525.6	1007.0	577.6	414.0	400.0
52.5°	532.6	941.2	470.6	369.0	349.6	366.7	460.5	907.8	519.4	379.9	369.0
55°	478.3	835.7	413.2	334.1	318.6	331.0	407.0	806.3	465.9	347.3	339.6
57.5°	427.2	731.1	370.6	299.2	284.5	296.1	358.9	698.5	415.5	315.5	310.1
60°	377.5	630.3	326.4	264.4	252.0	262.0	316.3	596.9	365.9	283.0	282.2
62.5°	331.0	535.7	286.1	231.8	221.7	230.2	276.0	505.5	319.4	252.0	253.5
65°	287.6	449.6	245.8	203.1	192.3	200.0	238.8	424.1	276.8	221.7	225.6



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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°	245.8	365.9	213.2	172.1	165.9	170.6	203.9	347.3	234.9	189.2	194.6
70°	207.0	299.2	176.8	145.7	141.1	144.2	166.7	280.6	196.1	160.5	166.7
72.5°	168.2	240.3	145.7	121.7	117.1	119.4	138.0	223.3	158.2	132.6	139.5
75°	134.1	186.1	117.1	98.5	95.4	96.1	110.9	169.0	124.8	106.2	112.4
77.5°	102.3	138.8	90.7	76.7	74.4	75.2	84.5	124.0	93.8	81.4	86.1
80°	74.4	97.7	66.7	56.6	55.0	55.0	61.2	86.1	65.9	58.1	62.0
82.5°	49.6	64.3	46.5	39.5	38.0	38.0	41.1	54.3	41.9	38.0	41.1
85°	28.7	38.0	28.7	24.0	24.0	23.3	24.8	29.5	24.8	20.9	22.5
87.5°	14.0	17.1	14.0	11.6	11.6	10.1	10.9	10.9	8.5	7.0	7.0
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°	1381.5	1381.5	1381.5	1381.5	1381.5	1381.5
1°	1351.3	1335.0	1342.0	1353.6	1364.4	1399.3
2°	1321.0	1302.4	1312.5	1330.3	1352.0	1398.5
3°	1290.8	1271.4	1283.8	1308.6	1338.1	1397.0
4°	1257.5	1238.8	1251.3	1284.6	1324.1	1393.9
5°	1223.3	1205.5	1217.9	1259.0	1309.4	1390.0
6°	1190.0	1170.6	1184.6	1232.6	1293.9	1386.1
7°	1155.9	1135.0	1151.2	1205.5	1278.4	1381.5
8°	1123.3	1100.1	1119.5	1177.6	1260.6	1376.1
9°	1090.8	1066.7	1086.9	1150.5	1238.1	1369.9
10°	1059.0	1034.2	1054.3	1123.3	1217.9	1362.1
11°	1028.0	1003.2	1023.3	1096.2	1197.8	1353.6
12°	997.7	972.2	993.1	1069.1	1178.4	1345.8
13°	967.5	942.7	965.2	1042.7	1156.7	1337.3
14°	938.8	913.2	938.1	1016.4	1135.7	1325.7
15°	910.1	883.8	910.9	990.0	1112.5	1315.6
16°	882.2	856.7	883.8	964.4	1090.0	1304.0
17°	855.9	829.5	857.4	939.6	1066.7	1293.1
18°	830.3	803.9	830.3	914.8	1048.1	1278.4
19°	803.9	780.7	804.7	890.8	1024.1	1266.0
20°	780.7	758.2	779.9	860.5	999.3	1249.7
21°	759.0	736.5	757.4	837.3	975.3	1235.7
22°	738.0	717.1	735.7	819.4	951.2	1217.1
23°	717.9	699.3	715.6	795.4	928.0	1200.9
24°	699.3	684.5	697.7	772.9	904.7	1183.0
25°	683.0	671.4	681.4	751.2	881.5	1168.3
26°	669.0	659.0	667.5	731.1	857.4	1149.7
27°	655.9	647.3	655.9	711.7	834.2	1130.3
28°	644.2	635.7	643.5	693.8	811.7	1108.6
29°	632.6	624.9	629.5	676.0	789.2	1091.6
30°	621.0	614.8	618.6	659.7	767.5	1067.5
32.5°	593.1	590.0	592.3	621.7	714.8	1014.0
35°	565.9	565.2	567.5	590.0	665.2	960.5
37.5°	538.8	537.2	541.1	560.5	617.9	897.0
40°	510.1	507.0	512.4	531.8	575.2	836.5
42.5°	479.1	478.3	483.0	502.4	534.9	773.7
45°	449.6	452.0	454.3	472.1	496.2	711.7
47.5°	421.7	427.2	426.4	441.1	461.3	650.4
50°	395.4	403.1	400.0	409.3	427.2	590.7
52.5°	369.8	379.9	374.4	377.5	393.8	532.6
55°	345.0	352.7	350.4	346.5	362.0	478.3
57.5°	318.6	329.5	324.8	317.9	330.3	427.2
60°	291.5	302.3	297.7	288.4	297.7	377.5
62.5°	264.4	275.2	270.6	259.7	265.9	331.0
65°	237.2	245.0	243.4	232.6	234.9	287.6



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	209.3	217.1	214.0	203.9	203.9	245.8
70°	179.1	183.0	183.0	174.4	172.1	207.0
72.5°	147.3	153.5	151.9	146.5	143.4	168.2
75°	120.2	124.8	126.4	119.4	115.5	134.1
77.5°	93.0	96.1	99.2	93.0	89.9	102.3
80°	65.9	67.4	72.1	68.2	66.7	74.4
82.5°	42.6	44.2	47.3	46.5	45.7	49.6
85°	22.5	23.3	26.4	27.1	27.1	28.7
87.5°	6.2	7.8	9.3	10.9	12.4	14.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)