

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: P243403

Luminaire Tested: **S123RDR-H1165D840-X4F0-XX-UDD-F-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243403
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-64)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDR-H1165D840-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4175.8 lumens
Efficiency: N/A
Efficacy: 110.8 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

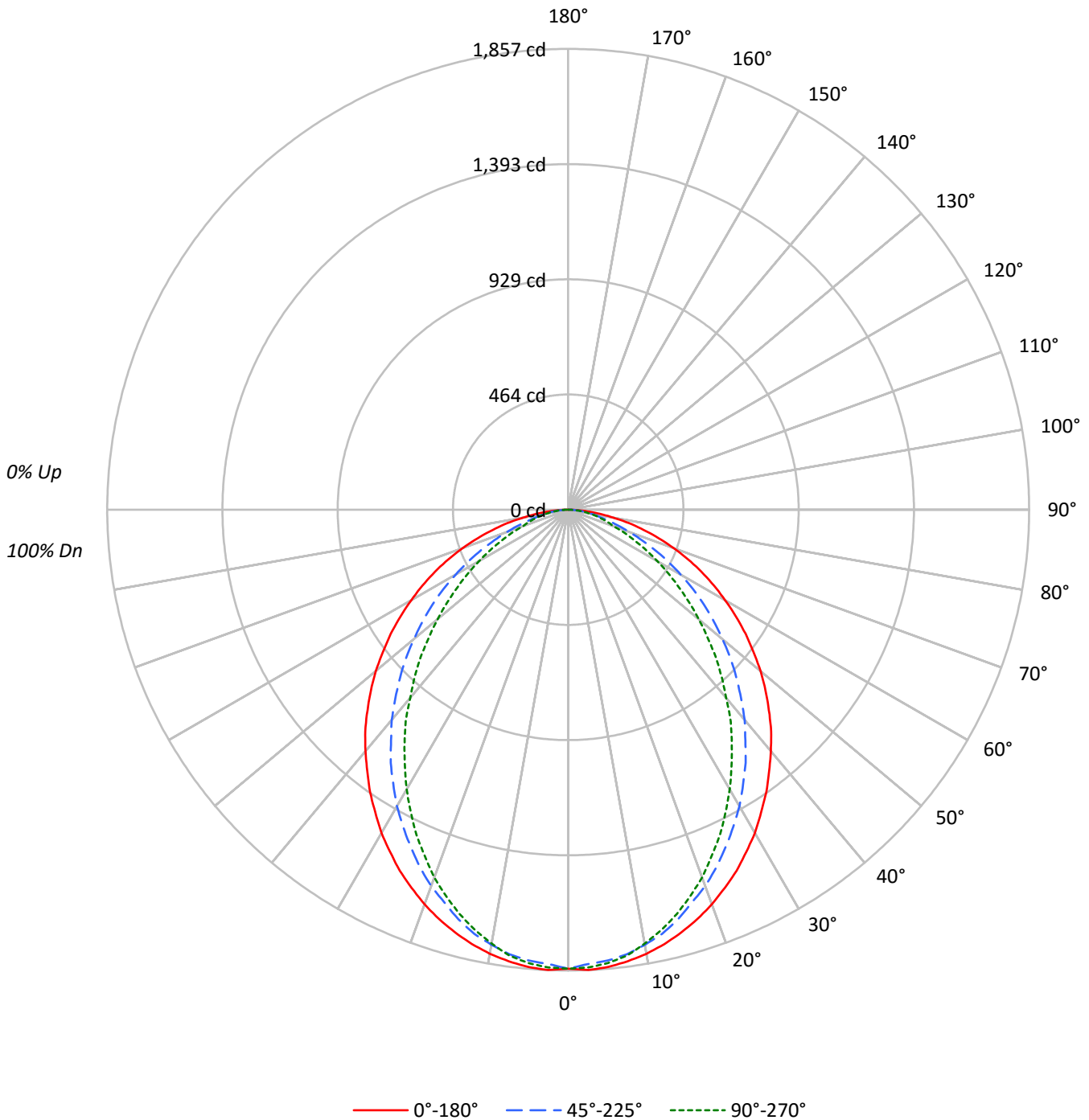
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	105	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88	86					86			
2	101	93	87	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73					73			
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65	62					62			
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54					54			
5	78	66	58	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47					47			
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42					42			
7	67	55	46	40	66	54	46	40	52	45	40	51	44	40	49	44	39	37					37			
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	34					34			
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30					30			
10	55	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	29	28					28			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	22418	22418	22418
5°	22504	22192	22314
10°	22362	21907	21854
15°	22121	21445	21176
20°	21823	20815	20338
25°	21468	20061	19341
30°	21055	19305	18212
35°	20579	18434	17005
40°	20094	17486	15666
45°	19602	16436	14415
50°	19072	15295	12964
55°	18432	14108	11496
60°	17699	12708	10022
65°	16988	11123	8556
70°	16008	9314	6847
75°	14766	7386	6519
80°	12893	6548	5947
85°	10862	5730	5535



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.0	4.2
10°-20°	484.4	11.6
20°-30°	697.3	16.7
30°-40°	785.5	18.8
40°-50°	750.4	18.0
50°-60°	613.6	14.7
60°-70°	412.0	9.9
70°-80°	205.5	4.9
80°-90°	53.1	1.3
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°	1355.7	32.5
0°-40°	2141.2	51.3
0°-60°	3505.1	83.9
0°-90°	4175.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4175.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1850	1850	1850	1850	1850	
5°	1850	1842	1824	1838	1834	175
15°	1763	1750	1709	1699	1688	497
25°	1605	1570	1500	1467	1446	739
35°	1391	1337	1246	1176	1149	869
45°	1144	1075	959	875	841	883
55°	872	794	668	575	544	779
65°	592	510	388	317	298	586
75°	315	240	158	142	139	334
85°	78	46	41	38	40	91
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1849.5	1849.5	1849.5	1849.5	1849.5	1849.5	1849.5	1849.5	1849.5	1849.5	1849.5
2.5°	1856.6	1852.3	1846.6	1848.1	1849.5	1850.9	1850.9	1849.5	1845.2	1839.5	1832.4
5°	1849.5	1845.2	1839.5	1839.5	1842.4	1842.4	1842.4	1841.0	1836.7	1831.0	1823.9
7.5°	1835.3	1832.4	1825.3	1826.8	1828.2	1828.2	1828.2	1826.8	1821.1	1814.0	1806.9
10°	1816.8	1812.5	1806.9	1806.9	1808.3	1808.3	1808.3	1805.4	1798.3	1789.8	1779.9
12.5°	1792.7	1788.4	1782.7	1782.7	1782.7	1782.7	1782.7	1778.5	1767.1	1758.6	1750.0
15°	1762.8	1758.6	1752.9	1752.9	1751.5	1750.0	1747.2	1740.1	1730.2	1720.2	1708.9
17.5°	1730.2	1724.5	1717.4	1716.0	1714.5	1713.1	1708.9	1704.6	1690.4	1676.2	1659.1
20°	1691.8	1686.1	1679.0	1677.6	1673.3	1669.1	1666.2	1657.7	1642.1	1625.0	1613.7
22.5°	1649.2	1643.5	1636.4	1633.6	1625.0	1622.2	1617.9	1605.2	1588.1	1572.5	1559.7
25°	1605.2	1598.1	1589.5	1585.3	1575.3	1569.6	1568.2	1549.8	1532.7	1515.7	1500.0
27.5°	1554.0	1548.3	1541.2	1532.7	1522.8	1515.7	1512.8	1495.8	1474.5	1454.6	1440.4
30°	1504.3	1495.8	1488.7	1478.7	1464.5	1457.4	1451.7	1434.7	1416.2	1392.1	1379.3
32.5°	1446.1	1440.4	1431.9	1421.9	1407.7	1402.0	1393.5	1372.2	1348.0	1331.0	1311.1
35°	1390.7	1385.0	1372.2	1362.3	1342.4	1336.7	1328.2	1309.7	1282.7	1262.8	1245.8
37.5°	1329.6	1322.5	1312.5	1298.3	1281.3	1274.2	1262.8	1244.4	1213.1	1193.2	1171.9
40°	1269.9	1260.0	1248.6	1233.0	1215.9	1208.8	1198.9	1171.9	1146.3	1123.6	1105.1
42.5°	1210.3	1198.9	1184.7	1170.5	1152.0	1142.1	1130.7	1105.1	1076.7	1055.4	1029.9
45°	1143.5	1135.0	1120.8	1103.7	1082.4	1075.3	1062.5	1035.5	1007.1	984.4	958.8
47.5°	1078.2	1068.2	1054.0	1037.0	1015.7	1005.7	992.9	965.9	937.5	909.1	886.4
50°	1011.4	1001.4	984.4	967.4	947.5	934.7	923.3	896.3	865.1	839.5	811.1
52.5°	940.4	931.8	917.6	900.6	875.0	865.1	853.7	823.9	794.1	764.2	738.7
55°	872.2	866.5	849.5	832.4	805.4	794.1	782.7	751.4	721.6	691.8	667.6
57.5°	801.2	796.9	779.8	760.0	735.8	724.5	710.2	679.0	650.6	620.8	595.2
60°	730.1	725.9	708.8	688.9	666.2	652.0	636.4	612.2	579.6	552.6	524.2
62.5°	661.9	656.3	642.1	620.8	595.2	581.0	566.8	538.4	508.5	480.1	454.6
65°	592.3	585.2	568.2	546.9	522.7	510.0	495.8	468.8	438.9	411.9	387.8
67.5°	522.7	515.6	497.2	480.1	451.7	438.9	426.1	399.2	370.7	343.8	321.0
70°	451.7	444.6	430.4	407.7	383.5	370.7	358.0	329.6	304.0	284.1	262.8
72.5°	382.1	376.4	362.2	340.9	318.2	305.4	291.2	267.1	244.3	223.0	207.4
75°	315.3	306.8	294.0	274.2	251.4	240.1	230.1	206.0	184.7	170.5	157.7
77.5°	251.4	241.5	227.3	211.7	190.3	179.0	169.0	149.2	134.9	125.0	122.2
80°	184.7	183.2	169.0	152.0	133.5	125.0	115.1	102.3	98.0	96.6	93.8
82.5°	129.3	123.6	112.2	96.6	82.4	76.7	73.9	71.0	68.2	68.2	65.3
85°	78.1	72.4	62.5	49.7	46.9	45.5	44.0	44.0	42.6	41.2	41.2
87.5°	34.1	28.4	21.3	19.9	18.5	18.5	19.9	19.9	19.9	18.5	18.5
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1849.5	1849.5	1849.5	1849.5	1849.5	1849.5	1849.5	1849.5	1849.5	1849.5
2.5°	1835.3	1842.4	1846.6	1848.1	1848.1	1848.1	1849.5	1849.5	1848.1	1846.6
5°	1825.3	1832.4	1835.3	1838.1	1838.1	1838.1	1838.1	1838.1	1836.7	1833.9
7.5°	1809.7	1814.0	1818.2	1816.8	1816.8	1815.4	1814.0	1815.4	1812.5	1812.5
10°	1781.3	1785.6	1788.4	1784.1	1784.1	1785.6	1785.6	1784.1	1779.9	1775.6
12.5°	1748.6	1752.9	1748.6	1750.0	1747.2	1744.4	1742.9	1741.5	1737.3	1734.4
15°	1706.0	1706.0	1703.2	1703.2	1698.9	1693.2	1691.8	1693.2	1687.5	1687.5
17.5°	1659.1	1656.3	1652.0	1649.2	1647.8	1647.8	1642.1	1642.1	1635.0	1633.6
20°	1608.0	1605.2	1600.9	1593.8	1591.0	1592.4	1586.7	1582.4	1578.2	1576.7
22.5°	1554.0	1546.9	1542.7	1535.6	1529.9	1529.9	1525.6	1518.5	1514.2	1510.0
25°	1492.9	1485.8	1477.3	1471.6	1467.4	1460.3	1457.4	1451.7	1447.5	1446.1
27.5°	1430.4	1419.1	1407.7	1402.0	1399.2	1390.7	1386.4	1383.6	1375.0	1373.6
30°	1363.7	1355.1	1340.9	1331.0	1323.9	1325.3	1315.4	1309.7	1305.4	1301.2
32.5°	1299.7	1285.5	1271.3	1258.6	1250.0	1248.6	1238.7	1233.0	1228.7	1224.5
35°	1227.3	1213.1	1196.1	1184.7	1176.2	1171.9	1162.0	1159.1	1152.0	1149.2
37.5°	1154.9	1139.2	1122.2	1108.0	1102.3	1092.4	1088.1	1081.0	1075.3	1075.3
40°	1083.8	1065.4	1048.3	1031.3	1024.2	1018.5	1007.1	1001.4	994.3	990.1
42.5°	1010.0	988.7	973.0	957.4	947.5	943.2	930.4	923.3	916.2	914.8
45°	936.1	914.8	894.9	879.3	875.0	866.5	853.7	843.8	842.4	840.9
47.5°	860.8	839.5	821.0	804.0	798.3	788.4	779.8	772.7	764.2	760.0
50°	788.4	767.1	747.2	728.7	721.6	713.1	704.6	694.6	691.8	687.5
52.5°	715.9	691.8	670.5	653.4	647.7	640.6	630.7	622.2	617.9	615.1
55°	642.1	617.9	599.4	582.4	575.3	571.0	559.7	552.6	546.9	544.0
57.5°	569.6	545.5	528.4	515.6	505.7	501.4	490.1	483.0	480.1	478.7
60°	501.4	478.7	460.2	447.5	438.9	434.7	426.1	419.0	414.8	413.4
62.5°	433.2	413.4	396.3	383.5	377.9	372.2	365.1	359.4	355.1	355.1
65°	367.9	348.0	332.4	322.5	316.8	313.9	305.4	302.6	298.3	298.3
67.5°	304.0	289.8	278.4	265.6	261.4	261.4	252.8	250.0	247.2	247.2
70°	248.6	235.8	223.0	215.9	211.7	210.2	203.1	198.9	196.0	193.2
72.5°	194.6	183.2	171.9	170.5	170.5	169.0	169.0	166.2	166.2	167.6
75°	149.2	146.3	143.5	143.5	142.0	140.6	140.6	139.2	139.2	139.2
77.5°	119.3	117.9	116.5	115.1	115.1	113.6	112.2	112.2	112.2	112.2
80°	90.9	89.5	89.5	88.1	86.6	88.1	86.6	86.6	85.2	85.2
82.5°	63.9	63.9	63.9	62.5	62.5	62.5	62.5	61.1	61.1	62.5
85°	39.8	39.8	39.8	39.8	38.4	39.8	38.4	38.4	38.4	39.8
87.5°	17.0	18.5	17.0	18.5	18.5	17.0	17.0	17.0	17.0	17.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)