

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: P243417

Luminaire Tested: **S123RDR-H1000D940-X4F0-XX-UDD-F-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243417  
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-H1000D940-X4F0-XX-UDD-F-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3156.3 lumens  
Efficiency: N/A  
Efficacy: 100.2 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

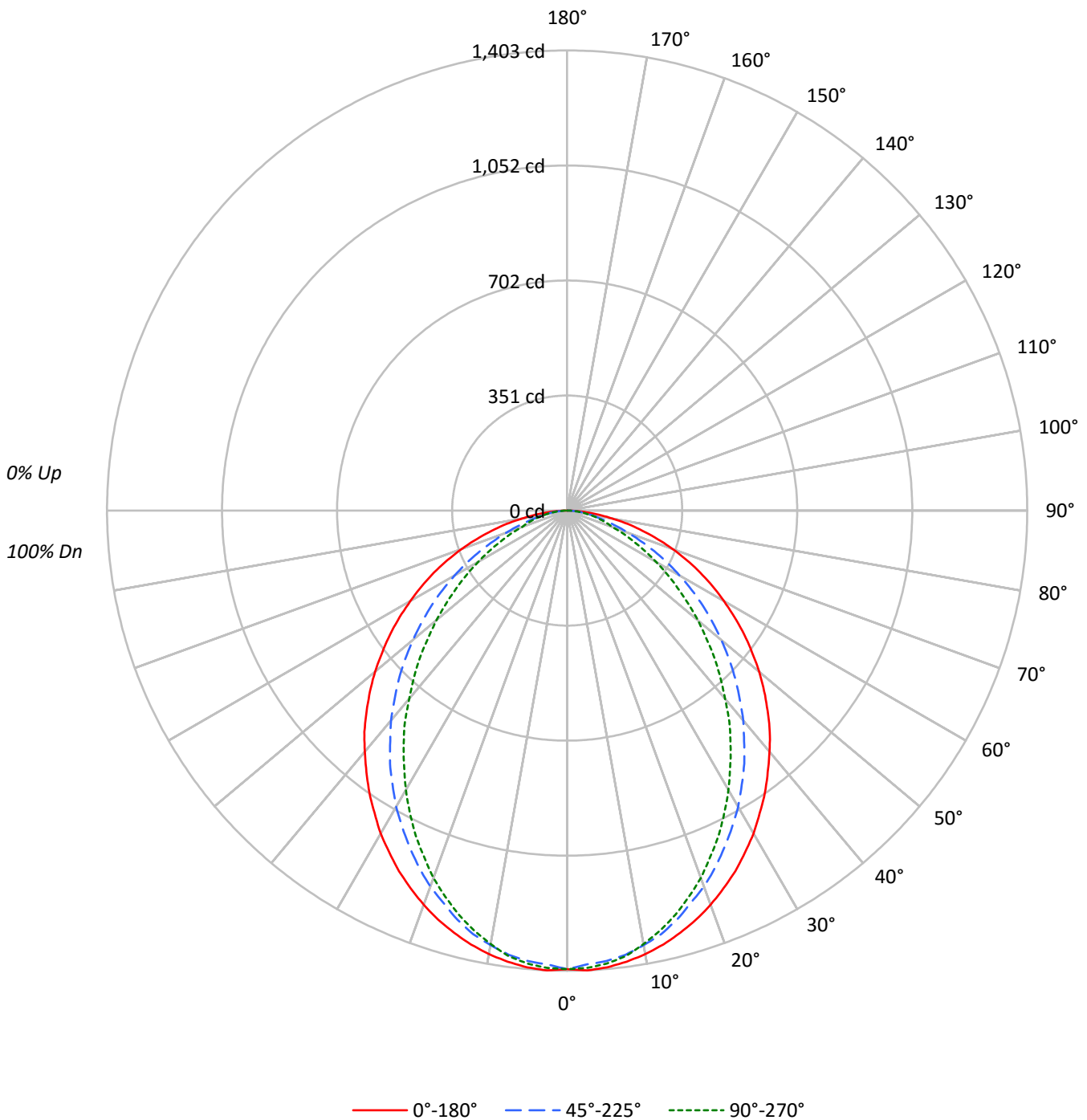
Input Watts (W): 31.5  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P243417

CATALOG NUMBER: S123RDR-H1000D940-X4F0-XX-UDD-F-W

### Luminous Intensity Polar Plot





TEST NUMBER: P243417

CATALOG NUMBER: S123RDR-H1000D940-X4F0-XX-UDD-F-W

**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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	99	96	99	96	93	95	93	90	91	89	88	86
2	101	93	87	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65	62
4	85	73	65	59	83	72	64	58	70	63	58	67	62	57	65	60	56	54
5	78	66	58	51	76	65	57	51	63	56	50	61	55	50	59	54	49	47
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42
7	67	55	46	40	66	54	46	40	52	45	40	51	44	40	49	44	39	37
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	34
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30
10	55	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	29	28

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	16945	16945	16945
5°	17010	16774	16867
10°	16903	16559	16519
15°	16721	16209	16007
20°	16495	15733	15373
25°	16227	15164	14618
30°	15915	14593	13765
35°	15555	13933	12853
40°	15189	13217	11842
45°	14816	12425	10895
50°	14416	11561	9800
55°	13933	10664	8690
60°	13379	9605	7573
65°	12841	8406	6468
70°	12099	7038	5174
75°	11165	5582	4927
80°	9745	4949	4495
85°	8219	4325	4186



TEST NUMBER: P243417

CATALOG NUMBER: S123RDR-H1000D940-X4F0-XX-UDD-F-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	131.5	4.2
10°-20°	366.1	11.6
20°-30°	527.1	16.7
30°-40°	593.7	18.8
40°-50°	567.2	18.0
50°-60°	463.8	14.7
60°-70°	311.4	9.9
70°-80°	155.3	4.9
80°-90°	40.2	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°	1024.7	32.5
0°-40°	1618.4	51.3
0°-60°	2649.4	83.9
0°-90°	3156.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3156.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1398	1398	1398	1398	1398	
5°	1398	1393	1379	1389	1386	133
15°	1332	1323	1292	1284	1276	376
25°	1213	1186	1134	1109	1093	558
35°	1051	1010	942	889	869	657
45°	864	813	725	661	636	667
55°	659	600	505	435	411	589
65°	448	386	293	239	226	443
75°	238	182	119	107	105	253
85°	59	34	31	29	30	69
90°	0	0	0	0	0	



TEST NUMBER: P243417

CATALOG NUMBER: S123RDR-H1000D940-X4F0-XX-UDD-F-W

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0
2.5°	1403.3	1400.1	1395.8	1396.9	1398.0	1399.0	1399.0	1398.0	1394.7	1390.5	1385.1
5°	1398.0	1394.7	1390.5	1390.5	1392.6	1392.6	1392.6	1391.5	1388.3	1384.0	1378.6
7.5°	1387.2	1385.1	1379.7	1380.8	1381.9	1381.9	1381.9	1380.8	1376.5	1371.1	1365.8
10°	1373.3	1370.1	1365.8	1365.8	1366.8	1366.8	1366.8	1364.7	1359.3	1352.9	1345.4
12.5°	1355.0	1351.8	1347.5	1347.5	1347.5	1347.5	1347.5	1344.3	1335.7	1329.2	1322.8
15°	1332.5	1329.2	1325.0	1325.0	1323.9	1322.8	1320.7	1315.3	1307.8	1300.3	1291.7
17.5°	1307.8	1303.5	1298.1	1297.0	1296.0	1294.9	1291.7	1288.4	1277.7	1267.0	1254.1
20°	1278.8	1274.5	1269.1	1268.0	1264.8	1261.6	1259.5	1253.0	1241.2	1228.3	1219.7
22.5°	1246.6	1242.3	1236.9	1234.8	1228.3	1226.2	1223.0	1213.3	1200.4	1188.6	1178.9
25°	1213.3	1207.9	1201.5	1198.3	1190.7	1186.4	1185.4	1171.4	1158.5	1145.6	1133.8
27.5°	1174.6	1170.3	1165.0	1158.5	1151.0	1145.6	1143.5	1130.6	1114.5	1099.5	1088.7
30°	1137.1	1130.6	1125.2	1117.7	1107.0	1101.6	1097.3	1084.4	1070.5	1052.2	1042.6
32.5°	1093.0	1088.7	1082.3	1074.8	1064.0	1059.7	1053.3	1037.2	1018.9	1006.1	991.0
35°	1051.2	1046.9	1037.2	1029.7	1014.7	1010.4	1003.9	990.0	969.6	954.5	941.6
37.5°	1005.0	999.6	992.1	981.4	968.5	963.1	954.5	940.6	916.9	901.9	885.8
40°	959.9	952.4	943.8	932.0	919.1	913.7	906.2	885.8	866.5	849.3	835.3
42.5°	914.8	906.2	895.5	884.7	870.8	863.3	854.7	835.3	813.9	797.8	778.4
45°	864.3	857.9	847.2	834.3	818.2	812.8	803.1	782.7	761.3	744.1	724.8
47.5°	814.9	807.4	796.7	783.8	767.7	760.2	750.5	730.1	708.6	687.2	670.0
50°	764.5	757.0	744.1	731.2	716.2	706.5	697.9	677.5	653.9	634.6	613.1
52.5°	710.8	704.4	693.6	680.7	661.4	653.9	645.3	622.8	600.2	577.7	558.3
55°	659.3	655.0	642.1	629.2	608.8	600.2	591.6	568.0	545.4	522.9	504.6
57.5°	605.6	602.3	589.5	574.4	556.2	547.6	536.9	513.2	491.8	469.2	449.9
60°	551.9	548.7	535.8	520.7	503.6	492.8	481.0	462.8	438.1	417.7	396.2
62.5°	500.3	496.1	485.3	469.2	449.9	439.1	428.4	406.9	384.4	362.9	343.6
65°	447.7	442.4	429.5	413.4	395.1	385.5	374.7	354.3	331.8	311.4	293.1
67.5°	395.1	389.8	375.8	362.9	341.4	331.8	322.1	301.7	280.2	259.8	242.7
70°	341.4	336.1	325.3	308.2	289.9	280.2	270.6	249.1	229.8	214.7	198.6
72.5°	288.8	284.5	273.8	257.7	240.5	230.8	220.1	201.9	184.7	168.6	156.8
75°	238.4	231.9	222.3	207.2	190.0	181.5	173.9	155.7	139.6	128.8	119.2
77.5°	190.0	182.5	171.8	160.0	143.9	135.3	127.8	112.7	102.0	94.5	92.3
80°	139.6	138.5	127.8	114.9	100.9	94.5	87.0	77.3	74.1	73.0	70.9
82.5°	97.7	93.4	84.8	73.0	62.3	58.0	55.8	53.7	51.5	51.5	49.4
85°	59.1	54.8	47.2	37.6	35.4	34.4	33.3	33.3	32.2	31.1	31.1
87.5°	25.8	21.5	16.1	15.0	14.0	14.0	15.0	15.0	15.0	14.0	14.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243417

CATALOG NUMBER: S123RDR-H1000D940-X4F0-XX-UDD-F-W

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0	1398.0
2.5°	1387.2	1392.6	1395.8	1396.9	1396.9	1396.9	1398.0	1398.0	1396.9	1395.8
5°	1379.7	1385.1	1387.2	1389.4	1389.4	1389.4	1389.4	1389.4	1388.3	1386.2
7.5°	1367.9	1371.1	1374.3	1373.3	1373.3	1372.2	1371.1	1372.2	1370.1	1370.1
10°	1346.4	1349.6	1351.8	1348.6	1348.6	1349.6	1349.6	1348.6	1345.4	1342.1
12.5°	1321.7	1325.0	1321.7	1322.8	1320.7	1318.5	1317.4	1316.4	1313.1	1311.0
15°	1289.5	1289.5	1287.4	1287.4	1284.2	1279.9	1278.8	1279.9	1275.6	1275.6
17.5°	1254.1	1251.9	1248.7	1246.6	1245.5	1245.5	1241.2	1241.2	1235.8	1234.8
20°	1215.4	1213.3	1210.1	1204.7	1202.6	1203.6	1199.3	1196.1	1192.9	1191.8
22.5°	1174.6	1169.3	1166.0	1160.7	1156.4	1156.4	1153.2	1147.8	1144.6	1141.4
25°	1128.5	1123.1	1116.7	1112.4	1109.1	1103.8	1101.6	1097.3	1094.1	1093.0
27.5°	1081.2	1072.6	1064.0	1059.7	1057.6	1051.2	1047.9	1045.8	1039.3	1038.3
30°	1030.8	1024.3	1013.6	1006.1	1000.7	1001.8	994.3	990.0	986.7	983.5
32.5°	982.4	971.7	961.0	951.3	944.9	943.8	936.3	932.0	928.8	925.5
35°	927.7	916.9	904.1	895.5	889.0	885.8	878.3	876.1	870.8	868.6
37.5°	872.9	861.1	848.2	837.5	833.2	825.7	822.5	817.1	812.8	812.8
40°	819.2	805.3	792.4	779.5	774.1	769.8	761.3	757.0	751.6	748.4
42.5°	763.4	747.3	735.5	723.7	716.2	712.9	703.3	697.9	692.5	691.5
45°	707.6	691.5	676.4	664.6	661.4	655.0	645.3	637.8	636.7	635.6
47.5°	650.7	634.6	620.6	607.7	603.4	595.9	589.5	584.1	577.7	574.4
50°	595.9	579.8	564.8	550.8	545.4	539.0	532.6	525.0	522.9	519.7
52.5°	541.1	522.9	506.8	493.9	489.6	484.2	476.7	470.3	467.1	464.9
55°	485.3	467.1	453.1	440.2	434.9	431.6	423.0	417.7	413.4	411.2
57.5°	430.6	412.3	399.4	389.8	382.2	379.0	370.4	365.1	362.9	361.8
60°	379.0	361.8	347.9	338.2	331.8	328.6	322.1	316.7	313.5	312.4
62.5°	327.5	312.4	299.6	289.9	285.6	281.3	275.9	271.6	268.4	268.4
65°	278.1	263.1	251.2	243.7	239.4	237.3	230.8	228.7	225.5	225.5
67.5°	229.8	219.0	210.4	200.8	197.6	197.6	191.1	189.0	186.8	186.8
70°	187.9	178.2	168.6	163.2	160.0	158.9	153.5	150.3	148.2	146.0
72.5°	147.1	138.5	129.9	128.8	128.8	127.8	127.8	125.6	125.6	126.7
75°	112.7	110.6	108.4	108.4	107.4	106.3	106.3	105.2	105.2	105.2
77.5°	90.2	89.1	88.0	87.0	87.0	85.9	84.8	84.8	84.8	84.8
80°	68.7	67.6	67.6	66.6	65.5	66.6	65.5	65.5	64.4	64.4
82.5°	48.3	48.3	48.3	47.2	47.2	47.2	47.2	46.2	46.2	47.2
85°	30.1	30.1	30.1	30.1	29.0	30.1	29.0	29.0	29.0	30.1
87.5°	12.9	14.0	12.9	14.0	14.0	12.9	12.9	12.9	12.9	12.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)