

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: P243418

Luminaire Tested: **S123RDR-H1165D940-X4F0-XX-UDD-F-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243418
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-H1165D940-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: 3687.2 lumens
Efficiency: N/A
Efficacy: 97.8 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

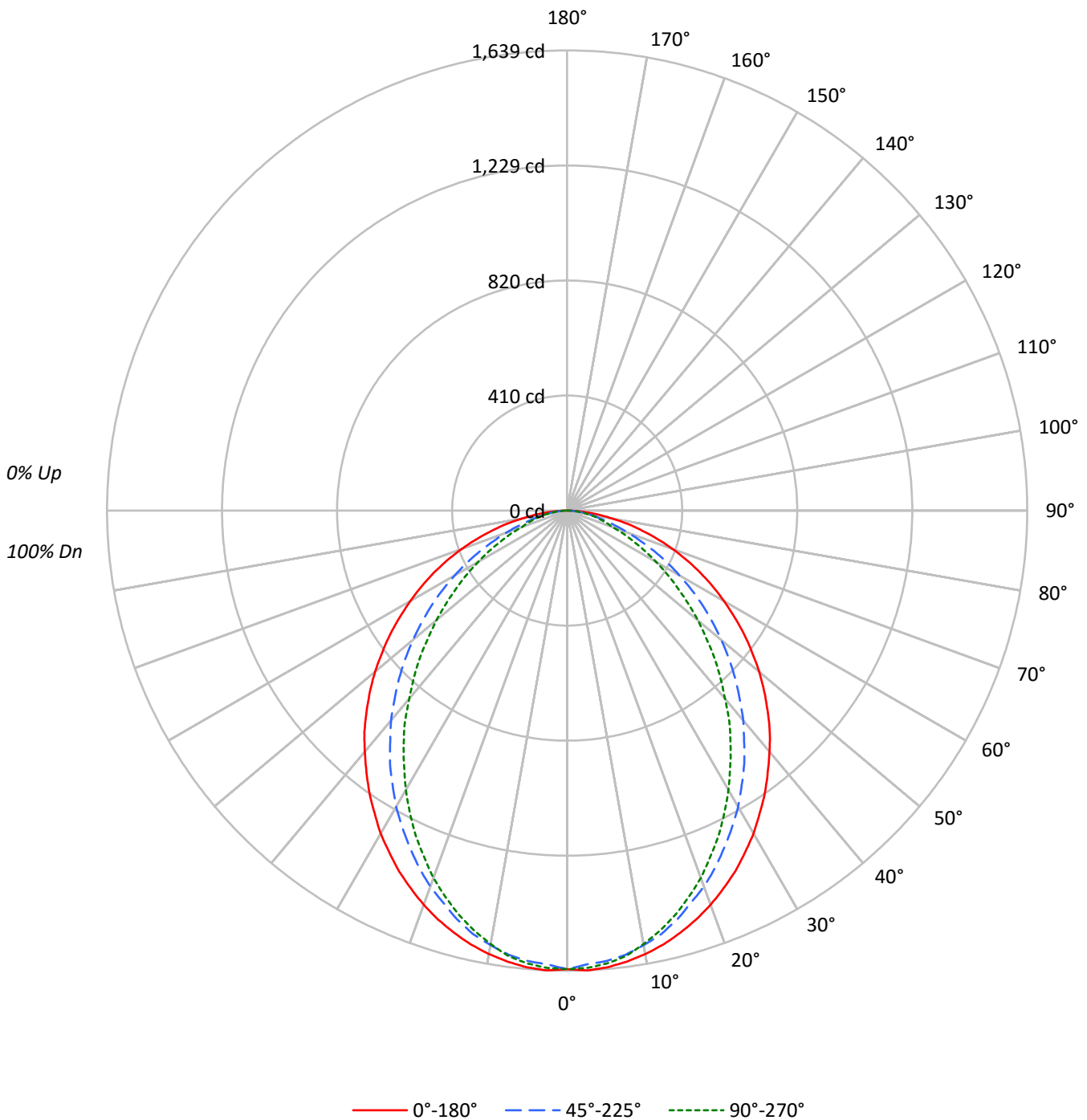
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	19795	19795	19795
5°	19871	19596	19703
10°	19745	19344	19298
15°	19533	18935	18699
20°	19270	18380	17959
25°	18957	17714	17078
30°	18591	17046	16080
35°	18171	16277	15015
40°	17742	15440	13833
45°	17308	14512	12728
50°	16841	13506	11448
55°	16274	12458	10152
60°	15629	11219	8848
65°	15000	9820	7555
70°	14137	8222	6046
75°	13043	6519	5756
80°	11385	5780	5256
85°	9596	5062	4882



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.6	4.2
10°-20°	427.7	11.6
20°-30°	615.7	16.7
30°-40°	693.6	18.8
40°-50°	662.6	18.0
50°-60°	541.8	14.7
60°-70°	363.8	9.9
70°-80°	181.5	4.9
80°-90°	46.9	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°	1197.1	32.5
0°-40°	1890.6	51.3
0°-60°	3095.0	83.9
0°-90°	3687.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3687.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1633	1633	1633	1633	1633	
5°	1633	1627	1610	1623	1619	155
15°	1557	1545	1509	1500	1490	439
25°	1417	1386	1324	1296	1277	652
35°	1228	1180	1100	1039	1015	768
45°	1010	950	847	773	742	779
55°	770	701	590	508	480	688
65°	523	450	342	280	263	517
75°	278	212	139	125	123	295
85°	69	40	36	34	35	80
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°	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1
2.5°	1639.4	1635.6	1630.6	1631.8	1633.1	1634.3	1634.3	1633.1	1629.3	1624.3	1618.0
5°	1633.1	1629.3	1624.3	1624.3	1626.8	1626.8	1626.8	1625.6	1621.8	1616.8	1610.5
7.5°	1620.5	1618.0	1611.8	1613.0	1614.3	1614.3	1614.3	1613.0	1608.0	1601.7	1595.5
10°	1604.2	1600.5	1595.5	1595.5	1596.7	1596.7	1596.7	1594.2	1587.9	1580.4	1571.6
12.5°	1582.9	1579.2	1574.1	1574.1	1574.1	1574.1	1574.1	1570.4	1560.3	1552.8	1545.3
15°	1556.6	1552.8	1547.8	1547.8	1546.5	1545.3	1542.8	1536.5	1527.7	1519.0	1508.9
17.5°	1527.7	1522.7	1516.4	1515.2	1513.9	1512.7	1508.9	1505.2	1492.6	1480.1	1465.0
20°	1493.9	1488.8	1482.6	1481.3	1477.6	1473.8	1471.3	1463.8	1450.0	1434.9	1424.9
22.5°	1456.2	1451.2	1444.9	1442.4	1434.9	1432.4	1428.6	1417.4	1402.3	1388.5	1377.2
25°	1417.4	1411.1	1403.6	1399.8	1391.0	1386.0	1384.7	1368.4	1353.4	1338.3	1324.5
27.5°	1372.2	1367.2	1360.9	1353.4	1344.6	1338.3	1335.8	1320.8	1302.0	1284.4	1271.9
30°	1328.3	1320.8	1314.5	1305.7	1293.2	1286.9	1281.9	1266.8	1250.5	1229.2	1217.9
32.5°	1276.9	1271.9	1264.3	1255.5	1243.0	1238.0	1230.5	1211.6	1190.3	1175.3	1157.7
35°	1228.0	1222.9	1211.6	1202.9	1185.3	1180.3	1172.8	1156.5	1132.6	1115.1	1100.0
37.5°	1174.0	1167.7	1159.0	1146.4	1131.4	1125.1	1115.1	1098.8	1071.2	1053.6	1034.8
40°	1121.3	1112.6	1102.5	1088.7	1073.7	1067.4	1058.6	1034.8	1012.2	992.1	975.8
42.5°	1068.7	1058.6	1046.1	1033.5	1017.2	1008.5	998.4	975.8	950.8	931.9	909.4
45°	1009.7	1002.2	989.6	974.6	955.8	949.5	938.2	914.4	889.3	869.2	846.6
47.5°	952.0	943.2	930.7	915.6	896.8	888.0	876.8	852.9	827.8	802.7	782.7
50°	893.1	884.3	869.2	854.2	836.6	825.3	815.3	791.5	763.9	741.3	716.2
52.5°	830.3	822.8	810.3	795.2	772.6	763.9	753.8	727.5	701.2	674.8	652.2
55°	770.1	765.1	750.1	735.0	711.2	701.2	691.1	663.5	637.2	610.8	589.5
57.5°	707.4	703.7	688.6	671.0	649.7	639.7	627.1	599.6	574.5	548.1	525.5
60°	644.7	640.9	625.9	608.3	588.3	575.7	561.9	540.6	511.8	487.9	462.8
62.5°	584.5	579.5	566.9	548.1	525.5	513.0	500.5	475.4	449.0	424.0	401.4
65°	523.0	516.8	501.7	482.9	461.6	450.3	437.7	413.9	387.6	363.7	342.4
67.5°	461.6	455.3	439.0	424.0	398.9	387.6	376.3	352.5	327.4	303.5	283.5
70°	398.9	392.6	380.1	360.0	338.7	327.4	316.1	291.0	268.4	250.9	232.0
72.5°	337.4	332.4	319.8	301.0	281.0	269.7	257.1	235.8	215.7	196.9	183.1
75°	278.5	270.9	259.6	242.1	222.0	212.0	203.2	181.9	163.1	150.5	139.2
77.5°	222.0	213.2	200.7	186.9	168.1	158.0	149.3	131.7	119.2	110.4	107.9
80°	163.1	161.8	149.3	134.2	117.9	110.4	101.6	90.3	86.5	85.3	82.8
82.5°	114.1	109.1	99.1	85.3	72.7	67.7	65.2	62.7	60.2	60.2	57.7
85°	69.0	64.0	55.2	43.9	41.4	40.1	38.9	38.9	37.6	36.4	36.4
87.5°	30.1	25.1	18.8	17.6	16.3	16.3	17.6	17.6	17.6	16.3	16.3
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°	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1
2.5°	1620.5	1626.8	1630.6	1631.8	1631.8	1631.8	1633.1	1633.1	1631.8	1630.6
5°	1611.8	1618.0	1620.5	1623.1	1623.1	1623.1	1623.1	1623.1	1621.8	1619.3
7.5°	1598.0	1601.7	1605.5	1604.2	1604.2	1603.0	1601.7	1603.0	1600.5	1600.5
10°	1572.9	1576.6	1579.2	1575.4	1575.4	1576.6	1576.6	1575.4	1571.6	1567.9
12.5°	1544.0	1547.8	1544.0	1545.3	1542.8	1540.3	1539.0	1537.8	1534.0	1531.5
15°	1506.4	1506.4	1503.9	1503.9	1500.1	1495.1	1493.9	1495.1	1490.1	1490.1
17.5°	1465.0	1462.5	1458.7	1456.2	1455.0	1455.0	1450.0	1450.0	1443.7	1442.4
20°	1419.9	1417.4	1413.6	1407.3	1404.8	1406.1	1401.0	1397.3	1393.5	1392.3
22.5°	1372.2	1365.9	1362.2	1355.9	1350.9	1350.9	1347.1	1340.8	1337.1	1333.3
25°	1318.3	1312.0	1304.5	1299.4	1295.7	1289.4	1286.9	1281.9	1278.1	1276.9
27.5°	1263.1	1253.0	1243.0	1238.0	1235.5	1228.0	1224.2	1221.7	1214.2	1212.9
30°	1204.1	1196.6	1184.1	1175.3	1169.0	1170.3	1161.5	1156.5	1152.7	1148.9
32.5°	1147.7	1135.1	1122.6	1111.3	1103.8	1102.5	1093.7	1088.7	1085.0	1081.2
35°	1083.7	1071.2	1056.1	1046.1	1038.6	1034.8	1026.0	1023.5	1017.2	1014.7
37.5°	1019.7	1005.9	990.9	978.3	973.3	964.6	960.8	954.5	949.5	949.5
40°	957.0	940.7	925.7	910.6	904.3	899.3	889.3	884.3	878.0	874.2
42.5°	891.8	873.0	859.2	845.4	836.6	832.9	821.6	815.3	809.0	807.8
45°	826.6	807.8	790.2	776.4	772.6	765.1	753.8	745.1	743.8	742.5
47.5°	760.1	741.3	725.0	709.9	704.9	696.1	688.6	682.3	674.8	671.0
50°	696.1	677.3	659.8	643.5	637.2	629.7	622.1	613.3	610.8	607.1
52.5°	632.2	610.8	592.0	577.0	572.0	565.7	556.9	549.4	545.6	543.1
55°	566.9	545.6	529.3	514.3	508.0	504.2	494.2	487.9	482.9	480.4
57.5°	503.0	481.6	466.6	455.3	446.5	442.8	432.7	426.5	424.0	422.7
60°	442.8	422.7	406.4	395.1	387.6	383.8	376.3	370.0	366.3	365.0
62.5°	382.6	365.0	349.9	338.7	333.6	328.6	322.4	317.3	313.6	313.6
65°	324.9	307.3	293.5	284.7	279.7	277.2	269.7	267.2	263.4	263.4
67.5°	268.4	255.9	245.8	234.6	230.8	230.8	223.3	220.8	218.2	218.2
70°	219.5	208.2	196.9	190.7	186.9	185.6	179.4	175.6	173.1	170.6
72.5°	171.8	161.8	151.8	150.5	150.5	149.3	149.3	146.8	146.8	148.0
75°	131.7	129.2	126.7	126.7	125.4	124.2	124.2	122.9	122.9	122.9
77.5°	105.4	104.1	102.9	101.6	101.6	100.3	99.1	99.1	99.1	99.1
80°	80.3	79.0	79.0	77.8	76.5	77.8	76.5	76.5	75.3	75.3
82.5°	56.4	56.4	56.4	55.2	55.2	55.2	55.2	53.9	53.9	55.2
85°	35.1	35.1	35.1	35.1	33.9	35.1	33.9	33.9	33.9	35.1
87.5°	15.1	16.3	15.1	16.3	16.3	15.1	15.1	15.1	15.1	15.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)