

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: P243398

Luminaire Tested: **S123RDR-H1165D835-X4F0-XX-UDD-F-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243398
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-H1165D835-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4135.0 lumens
Efficiency: N/A
Efficacy: 109.7 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

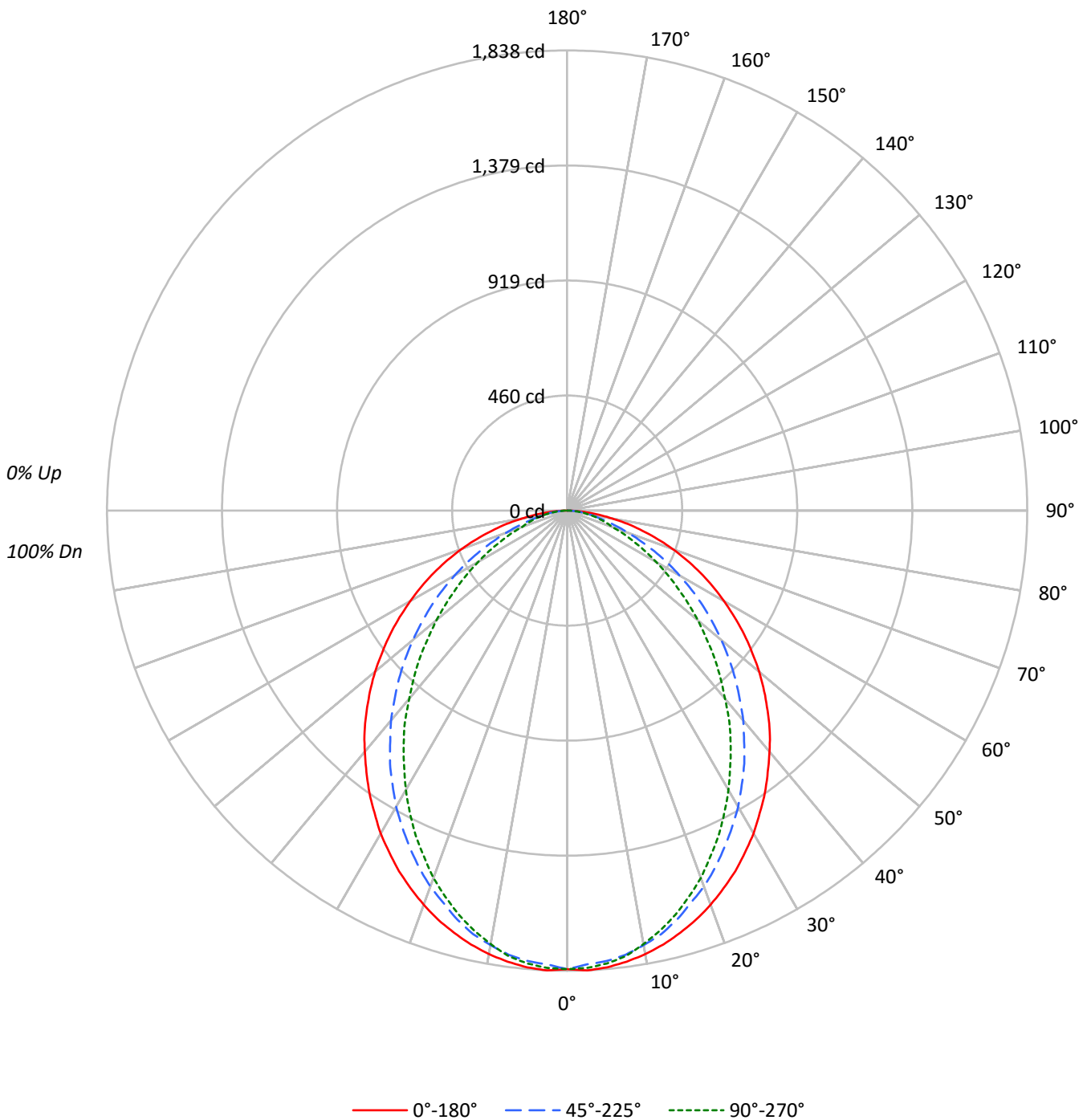
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	22199	22199	22199
5°	22284	21976	22095
10°	22144	21693	21642
15°	21905	21235	20970
20°	21610	20612	20139
25°	21258	19866	19151
30°	20849	19116	18034
35°	20377	18254	16839
40°	19898	17315	15513
45°	19410	16276	14274
50°	18886	15146	12838
55°	18252	13971	11384
60°	17527	12582	9922
65°	16824	11014	8472
70°	15852	9222	6780
75°	14626	7311	6454
80°	12767	6478	5891
85°	10764	5674	5480



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.3	4.2
10°-20°	479.7	11.6
20°-30°	690.5	16.7
30°-40°	777.8	18.8
40°-50°	743.0	18.0
50°-60°	607.6	14.7
60°-70°	408.0	9.9
70°-80°	203.5	4.9
80°-90°	52.6	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°	1342.4	32.5
0°-40°	2120.2	51.3
0°-60°	3470.9	83.9
0°-90°	4135.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4135.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1831	1831	1831	1831	1831	
5°	1831	1824	1806	1820	1816	174
15°	1746	1733	1692	1682	1671	492
25°	1590	1554	1485	1453	1432	732
35°	1377	1324	1234	1165	1138	861
45°	1132	1065	950	866	833	874
55°	864	786	661	570	539	772
65°	587	505	384	314	295	580
75°	312	238	156	141	138	331
85°	77	45	41	38	39	90
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°	1831.4	1831.4	1831.4	1831.4	1831.4	1831.4	1831.4	1831.4	1831.4	1831.4	1831.4
2.5°	1838.4	1834.2	1828.6	1830.0	1831.4	1832.8	1832.8	1831.4	1827.2	1821.6	1814.5
5°	1831.4	1827.2	1821.6	1821.6	1824.4	1824.4	1824.4	1823.0	1818.8	1813.1	1806.1
7.5°	1817.3	1814.5	1807.5	1808.9	1810.3	1810.3	1810.3	1808.9	1803.3	1796.2	1789.2
10°	1799.1	1794.8	1789.2	1789.2	1790.6	1790.6	1790.6	1787.8	1780.8	1772.3	1762.5
12.5°	1775.1	1770.9	1765.3	1765.3	1765.3	1765.3	1765.3	1761.1	1749.8	1741.4	1733.0
15°	1745.6	1741.4	1735.8	1735.8	1734.4	1733.0	1730.1	1723.1	1713.3	1703.4	1692.2
17.5°	1713.3	1707.6	1700.6	1699.2	1697.8	1696.4	1692.2	1687.9	1673.9	1659.8	1642.9
20°	1675.3	1669.7	1662.6	1661.2	1657.0	1652.8	1650.0	1641.5	1626.0	1609.2	1597.9
22.5°	1633.1	1627.5	1620.4	1617.6	1609.2	1606.4	1602.1	1589.5	1572.6	1557.1	1544.5
25°	1589.5	1582.4	1574.0	1569.8	1559.9	1554.3	1552.9	1534.6	1517.7	1500.9	1485.4
27.5°	1538.8	1533.2	1526.2	1517.7	1507.9	1500.9	1498.0	1481.2	1460.1	1440.4	1426.3
30°	1489.6	1481.2	1474.1	1464.3	1450.2	1443.2	1437.6	1420.7	1402.4	1378.5	1365.8
32.5°	1431.9	1426.3	1417.9	1408.0	1394.0	1388.3	1379.9	1358.8	1334.9	1318.0	1298.3
35°	1377.1	1371.4	1358.8	1348.9	1329.3	1323.6	1315.2	1296.9	1270.2	1250.5	1233.6
37.5°	1316.6	1309.6	1299.7	1285.6	1268.8	1261.7	1250.5	1232.2	1201.2	1181.6	1160.5
40°	1257.5	1247.7	1236.4	1220.9	1204.1	1197.0	1187.2	1160.5	1135.1	1112.6	1094.3
42.5°	1198.4	1187.2	1173.1	1159.1	1140.8	1130.9	1119.7	1094.3	1066.2	1045.1	1019.8
45°	1132.3	1123.9	1109.8	1092.9	1071.8	1064.8	1052.1	1025.4	997.3	974.8	949.5
47.5°	1067.6	1057.8	1043.7	1026.8	1005.7	995.9	983.2	956.5	928.4	900.2	877.7
50°	1001.5	991.7	974.8	957.9	938.2	925.6	914.3	887.6	856.6	831.3	803.2
52.5°	931.2	922.7	908.7	891.8	866.5	856.6	845.4	815.8	786.3	756.8	731.4
55°	863.7	858.0	841.2	824.3	797.6	786.3	775.0	744.1	714.6	685.0	661.1
57.5°	793.3	789.1	772.2	752.5	728.6	717.4	703.3	672.4	644.2	614.7	589.4
60°	723.0	718.8	701.9	682.2	659.7	645.6	630.2	606.3	573.9	547.2	519.0
62.5°	655.5	649.9	635.8	614.7	589.4	575.3	561.2	533.1	503.6	475.4	450.1
65°	586.6	579.5	562.6	541.5	517.6	505.0	490.9	464.2	434.6	407.9	384.0
67.5°	517.6	510.6	492.3	475.4	447.3	434.6	422.0	395.3	367.1	340.4	317.9
70°	447.3	440.3	426.2	403.7	379.8	367.1	354.5	326.3	301.0	281.3	260.2
72.5°	378.4	372.8	358.7	337.6	315.1	302.4	288.4	264.4	241.9	220.8	205.4
75°	312.3	303.8	291.2	271.5	249.0	237.7	227.9	204.0	182.9	168.8	156.1
77.5°	249.0	239.1	225.1	209.6	188.5	177.2	167.4	147.7	133.6	123.8	121.0
80°	182.9	181.5	167.4	150.5	132.2	123.8	113.9	101.3	97.1	95.6	92.8
82.5°	128.0	122.4	111.1	95.6	81.6	76.0	73.1	70.3	67.5	67.5	64.7
85°	77.4	71.7	61.9	49.2	46.4	45.0	43.6	43.6	42.2	40.8	40.8
87.5°	33.8	28.1	21.1	19.7	18.3	18.3	19.7	19.7	19.7	18.3	18.3
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°	1831.4	1831.4	1831.4	1831.4	1831.4	1831.4	1831.4	1831.4	1831.4	1831.4
2.5°	1817.3	1824.4	1828.6	1830.0	1830.0	1830.0	1831.4	1831.4	1830.0	1828.6
5°	1807.5	1814.5	1817.3	1820.2	1820.2	1820.2	1820.2	1820.2	1818.8	1815.9
7.5°	1792.0	1796.2	1800.5	1799.1	1799.1	1797.7	1796.2	1797.7	1794.8	1794.8
10°	1763.9	1768.1	1770.9	1766.7	1766.7	1768.1	1768.1	1766.7	1762.5	1758.3
12.5°	1731.5	1735.8	1731.5	1733.0	1730.1	1727.3	1725.9	1724.5	1720.3	1717.5
15°	1689.3	1689.3	1686.5	1686.5	1682.3	1676.7	1675.3	1676.7	1671.1	1671.1
17.5°	1642.9	1640.1	1635.9	1633.1	1631.7	1631.7	1626.0	1626.0	1619.0	1617.6
20°	1592.3	1589.5	1585.3	1578.2	1575.4	1576.8	1571.2	1567.0	1562.7	1561.3
22.5°	1538.8	1531.8	1527.6	1520.6	1514.9	1514.9	1510.7	1503.7	1499.5	1495.2
25°	1478.4	1471.3	1462.9	1457.3	1453.0	1446.0	1443.2	1437.6	1433.3	1431.9
27.5°	1416.5	1405.2	1394.0	1388.3	1385.5	1377.1	1372.9	1370.0	1361.6	1360.2
30°	1350.4	1341.9	1327.8	1318.0	1311.0	1312.4	1302.5	1296.9	1292.7	1288.5
32.5°	1287.1	1273.0	1258.9	1246.3	1237.8	1236.4	1226.6	1220.9	1216.7	1212.5
35°	1215.3	1201.2	1184.4	1173.1	1164.7	1160.5	1150.6	1147.8	1140.8	1138.0
37.5°	1143.6	1128.1	1111.2	1097.2	1091.5	1081.7	1077.5	1070.4	1064.8	1064.8
40°	1073.2	1055.0	1038.1	1021.2	1014.2	1008.5	997.3	991.7	984.6	980.4
42.5°	1000.1	979.0	963.5	948.1	938.2	934.0	921.3	914.3	907.3	905.9
45°	927.0	905.9	886.2	870.7	866.5	858.0	845.4	835.5	834.1	832.7
47.5°	852.4	831.3	813.0	796.1	790.5	780.7	772.2	765.2	756.8	752.5
50°	780.7	759.6	739.9	721.6	714.6	706.1	697.7	687.8	685.0	680.8
52.5°	708.9	685.0	663.9	647.0	641.4	634.4	624.5	616.1	611.9	609.1
55°	635.8	611.9	593.6	576.7	569.7	565.5	554.2	547.2	541.5	538.7
57.5°	564.1	540.1	523.3	510.6	500.8	496.5	485.3	478.2	475.4	474.0
60°	496.5	474.0	455.7	443.1	434.6	430.4	422.0	415.0	410.7	409.3
62.5°	429.0	409.3	392.4	379.8	374.2	368.5	361.5	355.9	351.7	351.7
65°	364.3	344.6	329.1	319.3	313.7	310.9	302.4	299.6	295.4	295.4
67.5°	301.0	286.9	275.7	263.0	258.8	258.8	250.4	247.6	244.8	244.8
70°	246.2	233.5	220.8	213.8	209.6	208.2	201.1	196.9	194.1	191.3
72.5°	192.7	181.5	170.2	168.8	168.8	167.4	167.4	164.6	164.6	166.0
75°	147.7	144.9	142.1	142.1	140.7	139.3	139.3	137.8	137.8	137.8
77.5°	118.2	116.7	115.3	113.9	113.9	112.5	111.1	111.1	111.1	111.1
80°	90.0	88.6	88.6	87.2	85.8	87.2	85.8	85.8	84.4	84.4
82.5°	63.3	63.3	63.3	61.9	61.9	61.9	61.9	60.5	60.5	61.9
85°	39.4	39.4	39.4	39.4	38.0	39.4	38.0	38.0	38.0	39.4
87.5°	16.9	18.3	16.9	18.3	18.3	16.9	16.9	16.9	16.9	16.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)