

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P646659

Luminaire Tested: S123RDR-S1000D835-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646659
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-2)
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDR-S1000D835-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC STANDARD LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

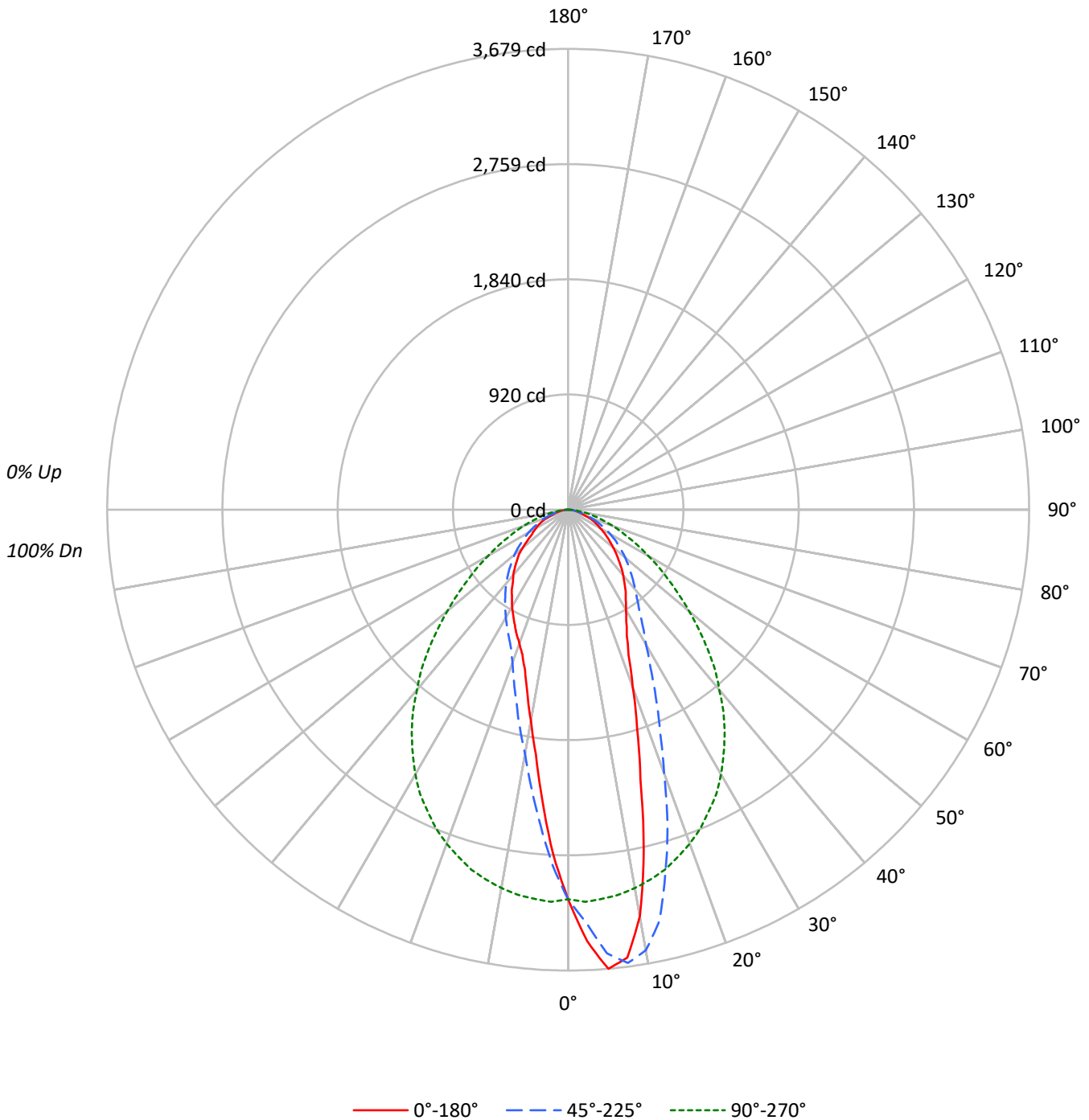
Lumens per Lamp: N/A
Luminaire Lumens: 4120.7 lumens
Efficiency: N/A
Efficacy: 119.4 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 34.5
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: 24 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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	111	107	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89				87	
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78				76	
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69				67	
4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61				59	
5	82	70	62	56	80	69	62	56	67	61	56	65	60	55	63	58	54				53	
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	59	53	49				47	
7	71	59	51	46	70	58	51	46	57	50	45	56	50	45	54	49	45				43	
8	67	55	47	42	65	54	47	42	53	46	41	52	46	41	51	45	41				39	
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38				36	
10	60	47	40	36	58	47	40	35	46	40	35	45	39	35	44	39	35				33	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	37477	37477	37477	37477	37477
5°	44499	42988	37713	30586	28304
10°	40317	43688	37525	24216	20955
15°	27759	37415	37128	19885	16576
20°	19312	28698	36382	16663	14569
25°	14716	22023	35299	14886	13428
30°	12810	17316	33941	13839	12437
35°	11762	14575	32019	12906	11537
40°	10732	13079	29506	12115	10712
45°	9692	11974	26794	11257	9887
50°	8797	11116	23595	10471	8868
55°	7955	10207	20520	9565	7609
60°	7131	9280	17823	8757	7191
65°	6580	8254	15345	7781	6800
70°	5348	7053	13387	7053	5527
75°	4688	5698	11341	5875	4870
80°	4247	4781	9291	4954	4600
85°	3885	4051	7051	4410	4230

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 28271 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	283.5	6.9
10°-20°	655.9	15.9
20°-30°	752.5	18.3
30°-40°	741.2	18.0
40°-50°	653.3	15.9
50°-60°	502.8	12.2
60°-70°	330.6	8.0
70°-80°	160.5	3.9
80°-90°	40.5	1.0
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°	1691.8	41.1
0°-40°	2433.0	59.0
0°-60°	3589.1	87.1
0°-90°	4120.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4120.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3110	3110	3110	3110	3110	
5°	3679	3554	3118	2529	2340	336
15°	2225	2999	2976	1594	1329	628
25°	1107	1656	2655	1120	1010	523
35°	800	991	2177	877	784	498
45°	569	703	1572	661	580	442
55°	379	486	977	455	362	340
65°	231	290	538	273	238	226
75°	101	122	244	126	105	108
85°	28	29	51	32	31	32
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3
2.5°	3447.0	3425.3	3418.9	3411.3	3398.5	3352.6	3300.3	3305.4	3299.1	3259.5	3237.9
5°	3679.1	3681.6	3675.3	3670.2	3648.5	3592.4	3554.1	3531.2	3482.7	3408.7	3385.8
7.5°	3607.7	3648.5	3656.1	3665.1	3676.5	3663.8	3649.8	3640.8	3601.3	3521.0	3484.0
10°	3295.2	3292.7	3338.6	3375.6	3475.0	3545.2	3570.7	3607.7	3640.8	3584.7	3543.9
12.5°	2785.1	2789.0	2939.4	2939.4	3068.2	3246.8	3361.6	3439.3	3582.2	3586.0	3561.8
15°	2225.3	2287.8	2421.7	2449.7	2615.5	2855.3	2999.4	3160.1	3436.8	3523.5	3518.4
17.5°	1827.4	1854.2	1983.0	2020.0	2166.6	2438.3	2637.2	2831.0	3218.7	3401.1	3434.2
20°	1506.1	1530.3	1623.4	1651.4	1799.4	2058.2	2238.1	2447.2	2954.7	3234.0	3292.7
22.5°	1257.4	1304.6	1367.1	1410.4	1494.6	1758.6	1912.9	2113.1	2648.7	3046.6	3115.4
25°	1106.9	1128.6	1182.2	1202.6	1304.6	1479.3	1656.5	1832.5	2377.1	2811.9	2933.1
27.5°	1004.9	1011.3	1050.8	1068.7	1129.9	1291.8	1419.4	1582.6	2100.3	2570.9	2712.5
30°	920.7	932.2	962.8	966.6	1020.2	1135.0	1244.6	1395.1	1858.0	2337.5	2482.9
32.5°	855.7	862.1	887.6	895.2	929.7	1020.2	1109.5	1219.1	1633.6	2094.0	2261.0
35°	799.6	800.9	820.0	830.2	860.8	936.0	990.9	1082.7	1453.8	1892.5	2039.1
37.5°	735.8	744.7	758.8	767.7	794.5	855.7	905.4	976.8	1288.0	1701.2	1837.6
40°	682.3	689.9	706.5	710.3	734.5	790.7	831.5	895.2	1145.2	1517.5	1656.5
42.5°	628.7	633.8	650.4	658.0	684.8	729.4	766.4	816.2	1031.7	1354.3	1490.8
45°	568.8	581.5	599.4	603.2	628.7	674.6	702.7	748.6	929.7	1212.8	1333.9
47.5°	519.0	525.4	540.7	547.1	576.4	617.2	646.6	686.1	841.7	1084.0	1202.6
50°	469.3	471.8	485.9	494.8	517.8	564.9	593.0	628.7	761.3	979.4	1062.3
52.5°	422.1	428.5	442.5	448.9	464.2	512.6	538.2	575.1	684.8	872.3	955.2
55°	378.7	382.6	392.8	400.4	418.3	460.4	485.9	517.8	618.5	774.1	846.8
57.5°	337.9	343.0	350.7	357.1	373.6	410.6	436.1	468.0	556.0	684.8	740.9
60°	295.9	302.2	311.2	313.7	329.0	362.2	385.1	413.2	492.2	601.9	651.7
62.5°	265.3	266.5	274.2	278.0	286.9	313.7	337.9	364.7	434.9	521.6	562.4
65°	230.8	234.6	238.5	241.0	248.7	271.6	289.5	309.9	378.7	454.0	482.0
67.5°	195.1	198.9	205.3	207.9	214.2	229.5	244.8	265.3	322.6	386.4	411.9
70°	151.8	151.8	162.0	167.1	177.3	188.7	200.2	218.1	267.8	322.6	341.8
72.5°	123.7	125.0	126.2	126.2	135.2	154.3	160.7	172.2	211.7	264.0	280.6
75°	100.7	102.0	103.3	104.6	105.8	112.2	122.4	132.6	162.0	200.2	215.5
77.5°	80.3	81.6	82.9	82.9	85.4	88.0	90.5	95.6	116.0	144.1	156.9
80°	61.2	62.5	63.8	63.8	65.0	67.6	68.9	71.4	77.8	96.9	103.3
82.5°	44.6	44.6	44.6	45.9	47.2	47.2	49.7	49.7	53.6	58.7	62.5
85°	28.1	28.1	29.3	29.3	29.3	30.6	29.3	30.6	31.9	33.2	35.7
87.5°	12.8	11.5	12.8	12.8	12.8	14.0	14.0	14.0	14.0	15.3	15.3
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):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3	3110.3
2.5°	3177.9	3133.3	3058.0	3010.9	2993.0	2938.2	2885.9	2842.5	2820.8	2818.3	2778.8
5°	3240.4	3118.0	2962.4	2832.3	2801.7	2706.1	2582.4	2528.8	2458.7	2430.6	2397.5
7.5°	3291.4	3100.1	2870.6	2674.2	2616.8	2472.7	2314.6	2244.4	2190.9	2106.7	2057.0
10°	3327.1	3067.0	2758.4	2504.6	2423.0	2254.6	2063.3	1979.2	1929.4	1832.5	1793.0
12.5°	3341.1	3024.9	2646.1	2328.6	2257.2	2057.0	1869.5	1782.8	1708.8	1620.8	1582.6
15°	3336.0	2976.4	2531.4	2166.6	2077.4	1874.6	1675.7	1594.1	1525.2	1437.2	1387.5
17.5°	3301.6	2907.6	2406.4	2009.8	1924.3	1715.2	1513.7	1438.5	1377.3	1291.8	1253.6
20°	3244.2	2837.4	2296.7	1867.0	1770.0	1569.8	1379.8	1299.5	1245.9	1200.0	1172.0
22.5°	3165.2	2754.5	2162.8	1725.4	1641.2	1439.8	1257.4	1192.4	1160.5	1123.5	1103.1
25°	3045.3	2655.1	2041.7	1606.8	1522.6	1322.4	1163.0	1119.7	1087.8	1063.6	1041.9
27.5°	2916.5	2559.4	1920.5	1486.9	1407.9	1216.6	1089.1	1055.9	1027.8	997.2	978.1
30°	2767.3	2439.5	1805.8	1381.1	1304.6	1131.1	1025.3	994.7	971.7	938.6	919.5
32.5°	2591.3	2308.2	1698.6	1279.1	1207.7	1057.2	966.6	933.5	914.4	882.5	863.3
35°	2408.9	2176.8	1581.3	1184.7	1119.7	992.1	909.3	877.4	857.0	825.1	806.0
37.5°	2230.4	2036.6	1476.7	1101.8	1043.2	927.1	849.3	822.5	803.4	770.2	747.3
40°	2041.7	1875.9	1374.7	1024.0	969.2	869.7	794.5	770.2	744.7	715.4	692.5
42.5°	1844.0	1734.3	1280.3	955.2	904.2	813.6	739.6	714.1	692.5	658.0	647.8
45°	1659.1	1572.4	1180.9	882.5	841.7	757.5	686.1	660.6	636.3	607.0	596.8
47.5°	1494.6	1414.2	1090.3	818.7	777.9	702.7	632.5	605.7	587.9	564.9	549.6
50°	1325.0	1258.7	990.9	756.2	718.0	644.0	576.4	558.6	538.2	510.1	498.6
52.5°	1166.9	1115.8	909.3	696.3	660.6	594.3	525.4	507.5	488.4	464.2	447.6
55°	1027.8	976.8	816.2	628.7	601.9	539.4	478.2	455.3	440.0	411.9	391.5
57.5°	885.0	860.8	726.9	572.6	547.1	484.6	429.8	411.9	392.8	362.2	341.8
60°	767.7	739.6	644.0	511.4	487.1	434.9	381.3	363.4	345.6	316.3	307.3
62.5°	656.8	636.3	563.7	454.0	433.6	382.6	335.4	318.8	301.0	281.8	275.5
65°	556.0	538.2	483.3	395.3	378.7	334.1	290.8	272.9	261.4	252.5	246.1
67.5°	461.6	451.4	409.4	340.5	327.7	288.2	249.9	235.9	229.5	219.3	214.2
70°	376.2	380.0	341.8	290.8	276.7	244.8	211.7	200.2	192.6	183.6	173.4
72.5°	307.3	306.1	283.1	237.2	227.0	201.5	176.0	168.3	159.4	141.6	130.1
75°	238.5	243.6	221.9	196.4	186.2	160.7	136.5	126.2	117.3	110.9	107.1
77.5°	182.4	184.9	174.7	150.5	141.6	119.9	100.7	95.6	91.8	88.0	86.7
80°	130.1	133.9	123.7	108.4	100.7	82.9	72.7	71.4	70.1	67.6	66.3
82.5°	84.2	89.3	84.2	67.6	63.8	54.8	52.3	52.3	51.0	49.7	48.5
85°	45.9	51.0	48.5	39.5	37.0	34.4	33.2	31.9	31.9	31.9	31.9
87.5°	17.9	24.2	20.4	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
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):

	160°	170°	180°
0°	3110.3	3110.3	3110.3
2.5°	2769.8	2757.1	2752.0
5°	2388.5	2349.0	2340.1
7.5°	2041.7	2025.1	1970.3
10°	1786.6	1735.6	1712.7
12.5°	1557.1	1509.9	1502.2
15°	1373.4	1340.3	1328.8
17.5°	1252.3	1229.3	1215.3
20°	1163.0	1146.4	1136.2
22.5°	1095.4	1082.7	1075.0
25°	1035.5	1016.4	1010.0
27.5°	974.3	957.7	951.3
30°	916.9	902.9	893.9
32.5°	857.0	840.4	835.3
35°	799.6	789.4	784.3
37.5°	743.5	730.7	723.1
40°	691.2	684.8	681.0
42.5°	644.0	632.5	631.2
45°	594.3	582.8	580.2
47.5°	547.1	536.9	535.6
50°	497.3	483.3	473.1
52.5°	437.4	424.7	415.7
55°	383.8	369.8	362.2
57.5°	339.2	332.8	329.0
60°	304.8	301.0	298.4
62.5°	274.2	270.4	270.4
65°	246.1	242.3	238.5
67.5°	211.7	204.0	202.8
70°	169.6	158.1	156.9
72.5°	128.8	127.5	125.0
75°	107.1	104.6	104.6
77.5°	86.7	84.2	84.2
80°	66.3	65.0	66.3
82.5°	48.5	48.5	47.2
85°	31.9	30.6	30.6
87.5°	15.3	15.3	15.3
90°	0.0	0.0	0.0

(END OF REPORT)