

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: P646665

Luminaire Tested: S123RDR-S1000D940-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646665
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-S1000D940-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC STANDARD LIGHT ENGINE
Light Source: 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

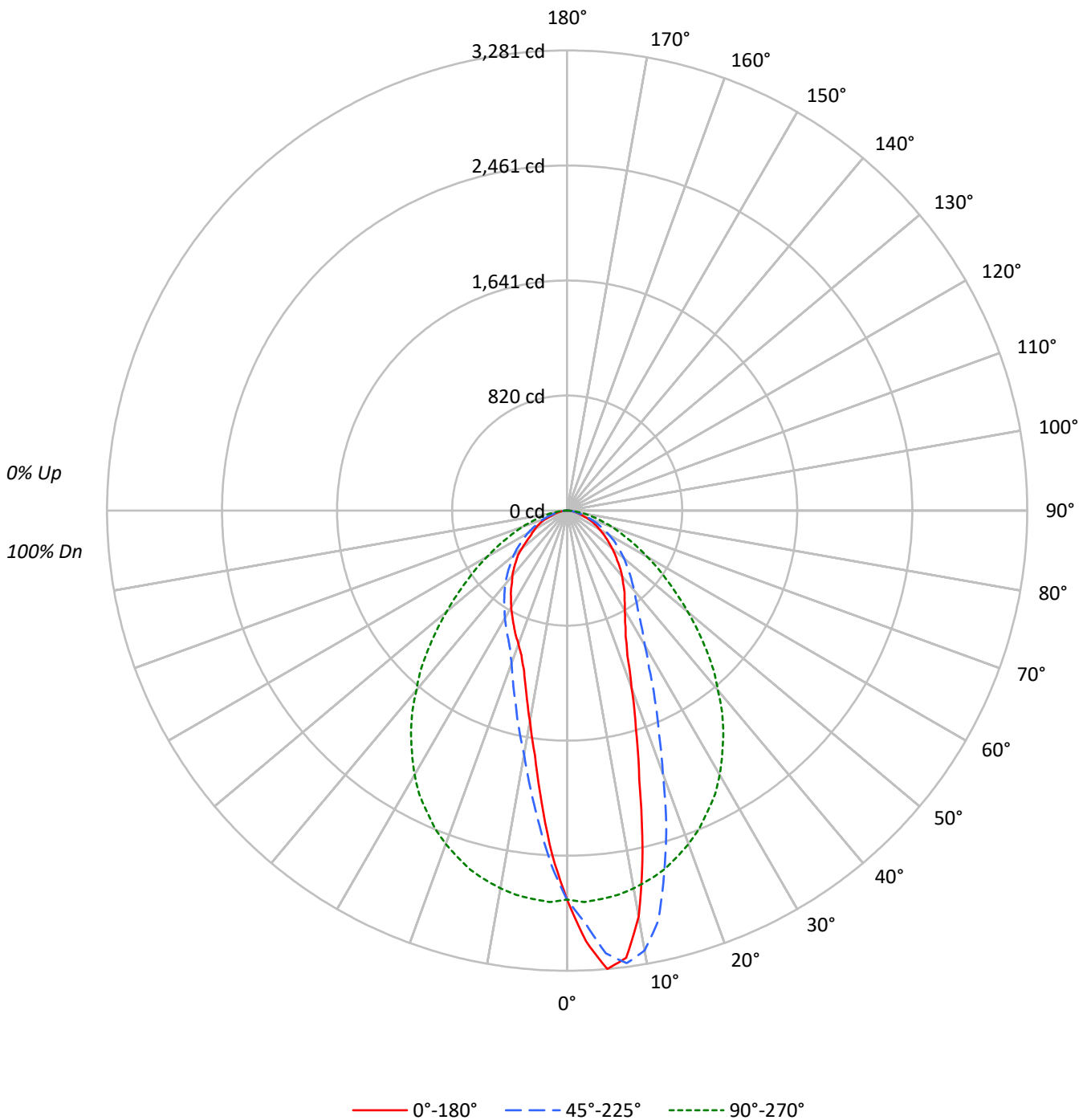
Lumens per Lamp: N/A
Luminaire Lumens: 3674.5 lumens
Efficiency: N/A
Efficacy: 106.5 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 34.5
Input Voltage (V): 120
Input Current (Ain): 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°	33418	33418	33418	33418	33418
5°	39681	38332	33628	27275	25239
10°	35951	38956	33460	21594	18685
15°	24753	33364	33108	17731	14781
20°	17221	25590	32443	14859	12992
25°	13122	19639	31475	13274	11973
30°	11423	15442	30267	12341	11090
35°	10488	12997	28552	11509	10286
40°	9570	11662	26310	10803	9551
45°	8643	10677	23892	10037	8817
50°	7845	9912	21040	9337	7909
55°	7094	9102	18299	8529	6785
60°	6357	8275	15893	7810	6413
65°	5868	7359	13682	6940	6061
70°	4767	6288	11939	6288	4929
75°	4181	5084	10112	5242	4339
80°	3789	4260	8285	4420	4101
85°	3456	3622	6290	3926	3774

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 25209 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.8	6.9
10°-20°	584.8	15.9
20°-30°	671.0	18.3
30°-40°	660.9	18.0
40°-50°	582.6	15.9
50°-60°	448.3	12.2
60°-70°	294.8	8.0
70°-80°	143.2	3.9
80°-90°	36.1	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°	1508.6	41.1
0°-40°	2169.5	59.0
0°-60°	3200.4	87.1
0°-90°	3674.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3674.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2774	2774	2774	2774	2774	
5°	3281	3169	2780	2255	2087	300
15°	1984	2675	2654	1421	1185	560
25°	987	1477	2368	998	901	466
35°	713	884	1941	782	699	444
45°	507	627	1402	589	517	394
55°	338	433	871	406	323	303
65°	206	258	480	243	213	202
75°	90	109	217	113	93	97
85°	25	26	46	28	27	28
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°	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5
2.5°	3073.7	3054.4	3048.7	3041.9	3030.5	2989.6	2942.9	2947.5	2941.8	2906.6	2887.2
5°	3280.7	3283.0	3277.3	3272.7	3253.4	3203.4	3169.2	3148.8	3105.6	3039.6	3019.1
7.5°	3217.0	3253.4	3260.2	3268.2	3278.4	3267.0	3254.5	3246.6	3211.3	3139.7	3106.7
10°	2938.4	2936.1	2977.1	3010.0	3098.7	3161.3	3184.0	3217.0	3246.6	3196.5	3160.1
12.5°	2483.5	2486.9	2621.1	2621.1	2736.0	2895.2	2997.5	3066.9	3194.3	3197.7	3176.1
15°	1984.3	2040.0	2159.5	2184.5	2332.3	2546.1	2674.6	2817.9	3064.6	3141.9	3137.4
17.5°	1629.5	1653.4	1768.3	1801.2	1932.0	2174.2	2351.6	2524.5	2870.2	3032.8	3062.3
20°	1343.0	1364.6	1447.6	1472.6	1604.5	1835.4	1995.7	2182.2	2634.8	2883.8	2936.1
22.5°	1121.2	1163.3	1219.0	1257.7	1332.7	1568.1	1705.7	1884.3	2361.9	2716.7	2778.1
25°	987.0	1006.4	1054.1	1072.3	1163.3	1319.1	1477.2	1634.1	2119.6	2507.4	2615.4
27.5°	896.1	901.8	937.0	952.9	1007.5	1151.9	1265.6	1411.2	1872.9	2292.5	2418.7
30°	821.0	831.3	858.5	862.0	909.7	1012.1	1109.9	1244.0	1656.8	2084.4	2214.0
32.5°	763.0	768.7	791.5	798.3	829.0	909.7	989.3	1087.1	1456.7	1867.2	2016.2
35°	713.0	714.1	731.2	740.3	767.6	834.7	883.6	965.4	1296.4	1687.5	1818.3
37.5°	656.1	664.1	676.6	684.6	708.4	763.0	807.4	871.1	1148.5	1517.0	1638.6
40°	608.4	615.2	630.0	633.4	655.0	705.0	741.4	798.3	1021.2	1353.2	1477.2
42.5°	560.6	565.2	579.9	586.8	610.7	650.5	683.4	727.8	920.0	1207.7	1329.3
45°	507.2	518.5	534.5	537.9	560.6	601.6	626.6	667.5	829.0	1081.4	1189.5
47.5°	462.8	468.5	482.2	487.8	514.0	550.4	576.5	611.8	750.5	966.6	1072.3
50°	418.5	420.7	433.3	441.2	461.7	503.8	528.8	560.6	678.9	873.3	947.2
52.5°	376.4	382.1	394.6	400.3	413.9	457.1	479.9	512.9	610.7	777.8	851.7
55°	337.7	341.1	350.2	357.1	373.0	410.5	433.3	461.7	551.5	690.3	755.1
57.5°	301.3	305.9	312.7	318.4	333.2	366.2	388.9	417.3	495.8	610.7	660.7
60°	263.8	269.5	277.5	279.7	293.4	323.0	343.4	368.4	438.9	536.7	581.1
62.5°	236.5	237.7	244.5	247.9	255.9	279.7	301.3	325.2	387.8	465.1	501.5
65°	205.8	209.2	212.6	214.9	221.7	242.2	258.1	276.3	337.7	404.8	429.8
67.5°	174.0	177.4	183.1	185.4	191.0	204.7	218.3	236.5	287.7	344.6	367.3
70°	135.3	135.3	144.4	149.0	158.1	168.3	178.5	194.5	238.8	287.7	304.8
72.5°	110.3	111.4	112.6	112.6	120.5	137.6	143.3	153.5	188.8	235.4	250.2
75°	89.8	91.0	92.1	93.2	94.4	100.1	109.2	118.3	144.4	178.5	192.2
77.5°	71.6	72.8	73.9	73.9	76.2	78.5	80.7	85.3	103.5	128.5	139.9
80°	54.6	55.7	56.9	56.9	58.0	60.3	61.4	63.7	69.4	86.4	92.1
82.5°	39.8	39.8	39.8	40.9	42.1	42.1	44.3	44.3	47.8	52.3	55.7
85°	25.0	25.0	26.2	26.2	26.2	27.3	26.2	27.3	28.4	29.6	31.8
87.5°	11.4	10.2	11.4	11.4	11.4	12.5	12.5	12.5	12.5	13.6	13.6
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):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5	2773.5
2.5°	2833.8	2794.0	2726.9	2684.8	2668.9	2620.0	2573.4	2534.7	2515.4	2513.1	2477.9
5°	2889.5	2780.3	2641.6	2525.6	2498.3	2413.0	2302.7	2255.0	2192.4	2167.4	2137.8
7.5°	2935.0	2764.4	2559.7	2384.6	2333.4	2204.9	2063.9	2001.4	1953.6	1878.6	1834.2
10°	2966.8	2734.8	2459.7	2233.4	2160.6	2010.5	1839.9	1764.9	1720.5	1634.1	1598.8
12.5°	2979.3	2697.3	2359.6	2076.4	2012.8	1834.2	1667.1	1589.7	1523.8	1445.3	1411.2
15°	2974.8	2654.1	2257.2	1932.0	1852.4	1671.6	1494.2	1421.4	1360.0	1281.6	1237.2
17.5°	2944.1	2592.7	2145.8	1792.2	1716.0	1529.5	1349.8	1282.7	1228.1	1151.9	1117.8
20°	2892.9	2530.2	2048.0	1664.8	1578.4	1399.8	1230.4	1158.8	1111.0	1070.1	1045.0
22.5°	2822.4	2456.2	1928.6	1538.6	1463.5	1283.8	1121.2	1063.2	1034.8	1001.8	983.6
25°	2715.5	2367.5	1820.6	1432.8	1357.8	1179.2	1037.1	998.4	970.0	948.4	929.1
27.5°	2600.7	2282.3	1712.5	1325.9	1255.4	1084.8	971.1	941.6	916.5	889.3	872.2
30°	2467.6	2175.4	1610.2	1231.5	1163.3	1008.7	914.3	887.0	866.5	836.9	819.9
32.5°	2310.7	2058.2	1514.7	1140.6	1076.9	942.7	862.0	832.4	815.3	786.9	769.9
35°	2148.1	1941.1	1410.1	1056.4	998.4	884.7	810.8	782.4	764.2	735.7	718.7
37.5°	1988.9	1816.0	1316.8	982.5	930.2	826.7	757.3	733.5	716.4	686.8	666.4
40°	1820.6	1672.7	1225.8	913.1	864.2	775.5	708.4	686.8	664.1	637.9	617.5
42.5°	1644.3	1546.5	1141.7	851.7	806.2	725.5	659.5	636.8	617.5	586.8	577.7
45°	1479.4	1402.1	1053.0	786.9	750.5	675.5	611.8	589.0	567.4	541.3	532.2
47.5°	1332.7	1261.1	972.3	730.1	693.7	626.6	564.0	540.1	524.2	503.8	490.1
50°	1181.5	1122.4	883.6	674.3	640.2	574.3	514.0	498.1	479.9	454.9	444.6
52.5°	1040.5	995.0	810.8	620.9	589.0	529.9	468.5	452.6	435.5	413.9	399.1
55°	916.5	871.1	727.8	560.6	536.7	481.0	426.4	406.0	392.3	367.3	349.1
57.5°	789.2	767.6	648.2	510.6	487.8	432.1	383.2	367.3	350.2	323.0	304.8
60°	684.6	659.5	574.3	456.0	434.4	387.8	340.0	324.1	308.2	282.0	274.1
62.5°	585.6	567.4	502.6	404.8	386.6	341.1	299.1	284.3	268.4	251.3	245.6
65°	495.8	479.9	431.0	352.5	337.7	297.9	259.3	243.4	233.1	225.2	219.5
67.5°	411.6	402.6	365.0	303.6	292.2	257.0	222.9	210.4	204.7	195.6	191.0
70°	335.5	338.9	304.8	259.3	246.8	218.3	188.8	178.5	171.7	163.7	154.7
72.5°	274.1	272.9	252.4	211.5	202.4	179.7	156.9	150.1	142.1	126.2	116.0
75°	212.6	217.2	197.9	175.1	166.0	143.3	121.7	112.6	104.6	98.9	95.5
77.5°	162.6	164.9	155.8	134.2	126.2	106.9	89.8	85.3	81.9	78.5	77.3
80°	116.0	119.4	110.3	96.7	89.8	73.9	64.8	63.7	62.5	60.3	59.1
82.5°	75.1	79.6	75.1	60.3	56.9	48.9	46.6	46.6	45.5	44.3	43.2
85°	40.9	45.5	43.2	35.3	33.0	30.7	29.6	28.4	28.4	28.4	28.4
87.5°	15.9	21.6	18.2	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
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°	2773.5	2773.5	2773.5
2.5°	2469.9	2458.5	2454.0
5°	2129.9	2094.6	2086.7
7.5°	1820.6	1805.8	1756.9
10°	1593.1	1547.7	1527.2
12.5°	1388.5	1346.4	1339.6
15°	1224.7	1195.1	1184.9
17.5°	1116.7	1096.2	1083.7
20°	1037.1	1022.3	1013.2
22.5°	976.8	965.4	958.6
25°	923.4	906.3	900.6
27.5°	868.8	854.0	848.3
30°	817.6	805.1	797.1
32.5°	764.2	749.4	744.8
35°	713.0	703.9	699.3
37.5°	663.0	651.6	644.8
40°	616.3	610.7	607.2
42.5°	574.3	564.0	562.9
45°	529.9	519.7	517.4
47.5°	487.8	478.7	477.6
50°	443.5	431.0	421.9
52.5°	390.0	378.7	370.7
55°	342.3	329.8	323.0
57.5°	302.5	296.8	293.4
60°	271.8	268.4	266.1
62.5°	244.5	241.1	241.1
65°	219.5	216.1	212.6
67.5°	188.8	181.9	180.8
70°	151.2	141.0	139.9
72.5°	114.9	113.7	111.4
75°	95.5	93.2	93.2
77.5°	77.3	75.1	75.1
80°	59.1	58.0	59.1
82.5°	43.2	43.2	42.1
85°	28.4	27.3	27.3
87.5°	13.6	13.6	13.6
90°	0.0	0.0	0.0

(END OF REPORT)