

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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: P646660

Luminaire Tested: S123RDR-S1000D840-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646660
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-S1000D840-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

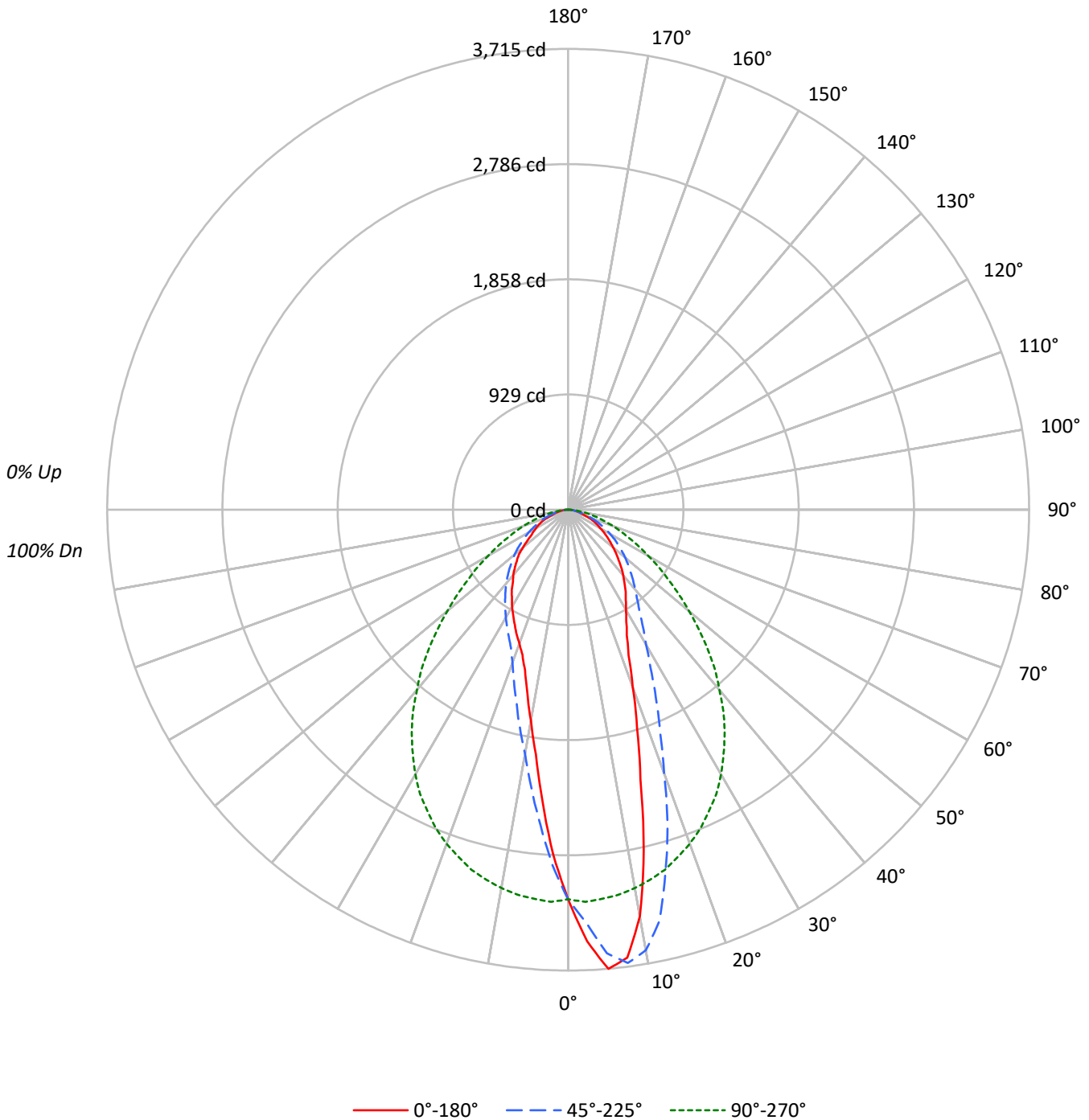
Lumens per Lamp: N/A
Luminaire Lumens: 4161.4 lumens
Efficiency: N/A
Efficacy: 120.6 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

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°	37846	37846	37846	37846	37846
5°	44939	43412	38084	30889	28583
10°	40715	44118	37894	24454	21162
15°	28033	37784	37495	20081	16739
20°	19502	28980	36741	16827	14714
25°	14861	22241	35647	15032	13561
30°	12936	17487	34277	13976	12561
35°	11878	14718	32336	13032	11650
40°	10837	13208	29797	12234	10817
45°	9788	12092	27058	11367	9986
50°	8883	11225	23827	10574	8956
55°	8035	10308	20724	9659	7682
60°	7201	9372	17999	8844	7263
65°	6646	8334	15496	7858	6865
70°	5401	7123	13521	7123	5580
75°	4735	5754	11452	5936	4916
80°	4288	4822	9381	5003	4649
85°	3912	4092	7120	4452	4272

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 28551 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	286.3	6.9
10°-20°	662.3	15.9
20°-30°	759.9	18.3
30°-40°	748.5	18.0
40°-50°	659.7	15.9
50°-60°	507.7	12.2
60°-70°	333.9	8.0
70°-80°	162.1	3.9
80°-90°	40.9	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°	1708.5	41.1
0°-40°	2457.0	59.0
0°-60°	3624.5	87.1
0°-90°	4161.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4161.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3141	3141	3141	3141	3141	
5°	3715	3589	3149	2554	2363	339
15°	2247	3029	3006	1610	1342	634
25°	1118	1673	2681	1131	1020	528
35°	808	1001	2198	886	792	503
45°	574	710	1588	667	586	446
55°	382	491	986	460	366	343
65°	233	292	544	276	241	228
75°	102	124	246	128	106	109
85°	28	30	52	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°	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0
2.5°	3481.0	3459.1	3452.7	3444.9	3432.1	3385.7	3332.9	3338.1	3331.6	3291.7	3269.8
5°	3715.4	3718.0	3711.5	3706.4	3684.5	3627.8	3589.2	3566.0	3517.1	3442.4	3419.2
7.5°	3643.3	3684.5	3692.2	3701.2	3712.8	3699.9	3685.8	3676.7	3636.8	3555.7	3518.3
10°	3327.7	3325.2	3371.5	3408.9	3509.3	3580.2	3605.9	3643.3	3676.7	3620.1	3578.9
12.5°	2812.6	2816.5	2968.4	2968.4	3098.5	3278.8	3394.7	3473.3	3617.5	3621.4	3596.9
15°	2247.3	2310.4	2445.6	2473.9	2641.3	2883.4	3029.0	3191.2	3470.7	3558.3	3553.1
17.5°	1845.5	1872.5	2002.6	2039.9	2188.0	2462.3	2663.2	2859.0	3250.5	3434.6	3468.1
20°	1520.9	1545.4	1639.4	1667.7	1817.1	2078.6	2260.1	2471.3	2983.9	3265.9	3325.2
22.5°	1269.8	1317.4	1380.6	1424.3	1509.3	1775.9	1931.7	2133.9	2674.8	3076.6	3146.2
25°	1117.8	1139.7	1193.8	1214.4	1317.4	1493.9	1672.9	1850.6	2400.5	2839.7	2962.0
27.5°	1014.8	1021.2	1061.2	1079.2	1141.0	1304.6	1433.4	1598.2	2121.1	2596.3	2739.2
30°	929.8	941.4	972.3	976.2	1030.3	1146.2	1256.9	1408.9	1876.4	2360.6	2507.4
32.5°	864.1	870.6	896.3	904.1	938.8	1030.3	1120.4	1231.2	1649.7	2114.6	2283.3
35°	807.5	808.8	828.1	838.4	869.3	945.3	1000.6	1093.4	1468.1	1911.1	2059.2
37.5°	743.1	752.1	766.3	775.3	802.3	864.1	914.4	986.5	1300.7	1718.0	1855.8
40°	689.0	696.7	713.5	717.3	741.8	798.5	839.7	904.1	1156.5	1532.5	1672.9
42.5°	634.9	640.1	656.8	664.5	691.6	736.6	774.0	824.2	1041.9	1367.7	1505.5
45°	574.4	587.2	605.3	609.1	634.9	681.3	709.6	756.0	938.8	1224.7	1347.1
47.5°	524.1	530.6	546.0	552.5	582.1	623.3	652.9	692.9	850.0	1094.7	1214.4
50°	473.9	476.5	490.7	499.7	522.9	570.5	598.8	634.9	768.8	989.1	1072.8
52.5°	426.3	432.7	446.9	453.3	468.8	517.7	543.5	580.8	691.6	880.9	964.6
55°	382.5	386.3	396.7	404.4	422.4	464.9	490.7	522.9	624.6	781.7	855.1
57.5°	341.3	346.4	354.2	360.6	377.3	414.7	440.4	472.6	561.5	691.6	748.2
60°	298.8	305.2	314.2	316.8	332.3	365.7	388.9	417.3	497.1	607.9	658.1
62.5°	267.9	269.2	276.9	280.7	289.8	316.8	341.3	368.3	439.1	526.7	567.9
65°	233.1	237.0	240.8	243.4	251.1	274.3	292.3	312.9	382.5	458.5	486.8
67.5°	197.0	200.9	207.3	209.9	216.4	231.8	247.3	267.9	325.8	390.2	416.0
70°	153.3	153.3	163.6	168.7	179.0	190.6	202.2	220.2	270.4	325.8	345.1
72.5°	124.9	126.2	127.5	127.5	136.5	155.8	162.3	173.9	213.8	266.6	283.3
75°	101.7	103.0	104.3	105.6	106.9	113.3	123.6	133.9	163.6	202.2	217.6
77.5°	81.1	82.4	83.7	83.7	86.3	88.9	91.4	96.6	117.2	145.5	158.4
80°	61.8	63.1	64.4	64.4	65.7	68.3	69.5	72.1	78.6	97.9	104.3
82.5°	45.1	45.1	45.1	46.4	47.6	47.6	50.2	50.2	54.1	59.2	63.1
85°	28.3	28.3	29.6	29.6	29.6	30.9	29.6	30.9	32.2	33.5	36.1
87.5°	12.9	11.6	12.9	12.9	12.9	14.2	14.2	14.2	14.2	15.5	15.5
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°	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0	3141.0
2.5°	3209.3	3164.2	3088.2	3040.6	3022.5	2967.2	2914.4	2870.6	2848.7	2846.1	2806.2
5°	3272.4	3148.7	2991.6	2860.3	2829.4	2732.8	2607.9	2553.8	2482.9	2454.6	2421.1
7.5°	3323.9	3130.7	2898.9	2700.6	2642.6	2497.1	2337.4	2266.6	2212.5	2127.5	2077.3
10°	3359.9	3097.2	2785.6	2529.3	2446.9	2276.9	2083.7	1998.7	1948.5	1850.6	1810.7
12.5°	3374.1	3054.7	2672.2	2351.6	2279.5	2077.3	1888.0	1800.4	1725.7	1636.8	1598.2
15°	3369.0	3005.8	2556.3	2188.0	2097.9	1893.1	1692.2	1609.8	1540.2	1451.4	1401.2
17.5°	3334.2	2936.2	2430.1	2029.6	1943.3	1732.1	1528.7	1452.7	1390.9	1304.6	1265.9
20°	3276.2	2865.4	2319.4	1885.4	1787.5	1585.3	1393.4	1312.3	1258.2	1211.8	1183.5
22.5°	3196.4	2781.7	2184.2	1742.4	1657.4	1454.0	1269.8	1204.1	1171.9	1134.6	1114.0
25°	3075.3	2681.3	2061.8	1622.7	1537.7	1335.5	1174.5	1130.7	1098.5	1074.0	1052.2
27.5°	2945.3	2584.7	1939.5	1501.6	1421.8	1228.6	1099.8	1066.3	1038.0	1007.1	987.8
30°	2794.6	2463.6	1823.6	1394.7	1317.4	1142.3	1035.4	1004.5	981.3	947.8	928.5
32.5°	2616.9	2331.0	1715.4	1291.7	1219.6	1067.6	976.2	942.7	923.4	891.2	871.9
35°	2432.7	2198.3	1596.9	1196.4	1130.7	1001.9	918.2	886.0	865.4	833.2	813.9
37.5°	2252.4	2056.7	1491.3	1112.7	1053.4	936.3	857.7	830.6	811.3	777.8	754.7
40°	2061.8	1894.4	1388.3	1034.1	978.7	878.3	802.3	777.8	752.1	722.5	699.3
42.5°	1862.2	1751.4	1293.0	964.6	913.1	821.6	746.9	721.2	699.3	664.5	654.2
45°	1675.5	1587.9	1192.5	891.2	850.0	765.0	692.9	667.1	642.6	613.0	602.7
47.5°	1509.3	1428.2	1101.1	826.8	785.6	709.6	638.8	611.7	593.7	570.5	555.1
50°	1338.1	1271.1	1000.6	763.7	725.0	650.4	582.1	564.1	543.5	515.1	503.5
52.5°	1178.4	1126.8	918.2	703.2	667.1	600.1	530.6	512.6	493.2	468.8	452.0
55°	1038.0	986.5	824.2	634.9	607.9	544.8	482.9	459.8	444.3	416.0	395.4
57.5°	893.8	869.3	734.1	578.2	552.5	489.4	434.0	416.0	396.7	365.7	345.1
60°	775.3	746.9	650.4	516.4	492.0	439.1	385.1	367.0	349.0	319.4	310.4
62.5°	663.2	642.6	569.2	458.5	437.9	386.3	338.7	322.0	303.9	284.6	278.2
65°	561.5	543.5	488.1	399.2	382.5	337.4	293.6	275.6	264.0	255.0	248.6
67.5°	466.2	455.9	413.4	343.9	331.0	291.0	252.4	238.2	231.8	221.5	216.4
70°	379.9	383.8	345.1	293.6	279.5	247.3	213.8	202.2	194.5	185.4	175.1
72.5°	310.4	309.1	285.9	239.5	229.2	203.5	177.7	170.0	161.0	142.9	131.4
75°	240.8	246.0	224.1	198.3	188.0	162.3	137.8	127.5	118.5	112.0	108.2
77.5°	184.2	186.7	176.4	152.0	142.9	121.1	101.7	96.6	92.7	88.9	87.6
80°	131.4	135.2	124.9	109.5	101.7	83.7	73.4	72.1	70.8	68.3	67.0
82.5°	85.0	90.1	85.0	68.3	64.4	55.4	52.8	52.8	51.5	50.2	48.9
85°	46.4	51.5	48.9	39.9	37.3	34.8	33.5	32.2	32.2	32.2	32.2
87.5°	18.0	24.5	20.6	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7
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°	3141.0	3141.0	3141.0
2.5°	2797.2	2784.3	2779.1
5°	2412.1	2372.2	2363.2
7.5°	2061.8	2045.1	1989.7
10°	1804.2	1752.7	1729.6
12.5°	1572.4	1524.8	1517.1
15°	1387.0	1353.5	1341.9
17.5°	1264.6	1241.5	1227.3
20°	1174.5	1157.8	1147.5
22.5°	1106.2	1093.4	1085.6
25°	1045.7	1026.4	1020.0
27.5°	983.9	967.2	960.7
30°	925.9	911.8	902.8
32.5°	865.4	848.7	843.5
35°	807.5	797.2	792.0
37.5°	750.8	737.9	730.2
40°	698.0	691.6	687.7
42.5°	650.4	638.8	637.5
45°	600.1	588.5	586.0
47.5°	552.5	542.2	540.9
50°	502.3	488.1	477.8
52.5°	441.7	428.8	419.8
55°	387.6	373.5	365.7
57.5°	342.6	336.1	332.3
60°	307.8	303.9	301.4
62.5°	276.9	273.0	273.0
65°	248.6	244.7	240.8
67.5°	213.8	206.1	204.8
70°	171.3	159.7	158.4
72.5°	130.1	128.8	126.2
75°	108.2	105.6	105.6
77.5°	87.6	85.0	85.0
80°	67.0	65.7	67.0
82.5°	48.9	48.9	47.6
85°	32.2	30.9	30.9
87.5°	15.5	15.5	15.5
90°	0.0	0.0	0.0

(END OF REPORT)