

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: P646622

Luminaire Tested: S123DR-S1165D830-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646622
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2301-905-1)
Test Lab: INNOVATION CENTER
Issue Date: 3/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123DR-S1165D830-X4F0-XX-UDD-G-W
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4836.8 lumens
Efficiency: N/A
Efficacy: 120.6 lumens/watt
Spacing Criteria (0/90/45): 0.65 / 1.19 / 0.89
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

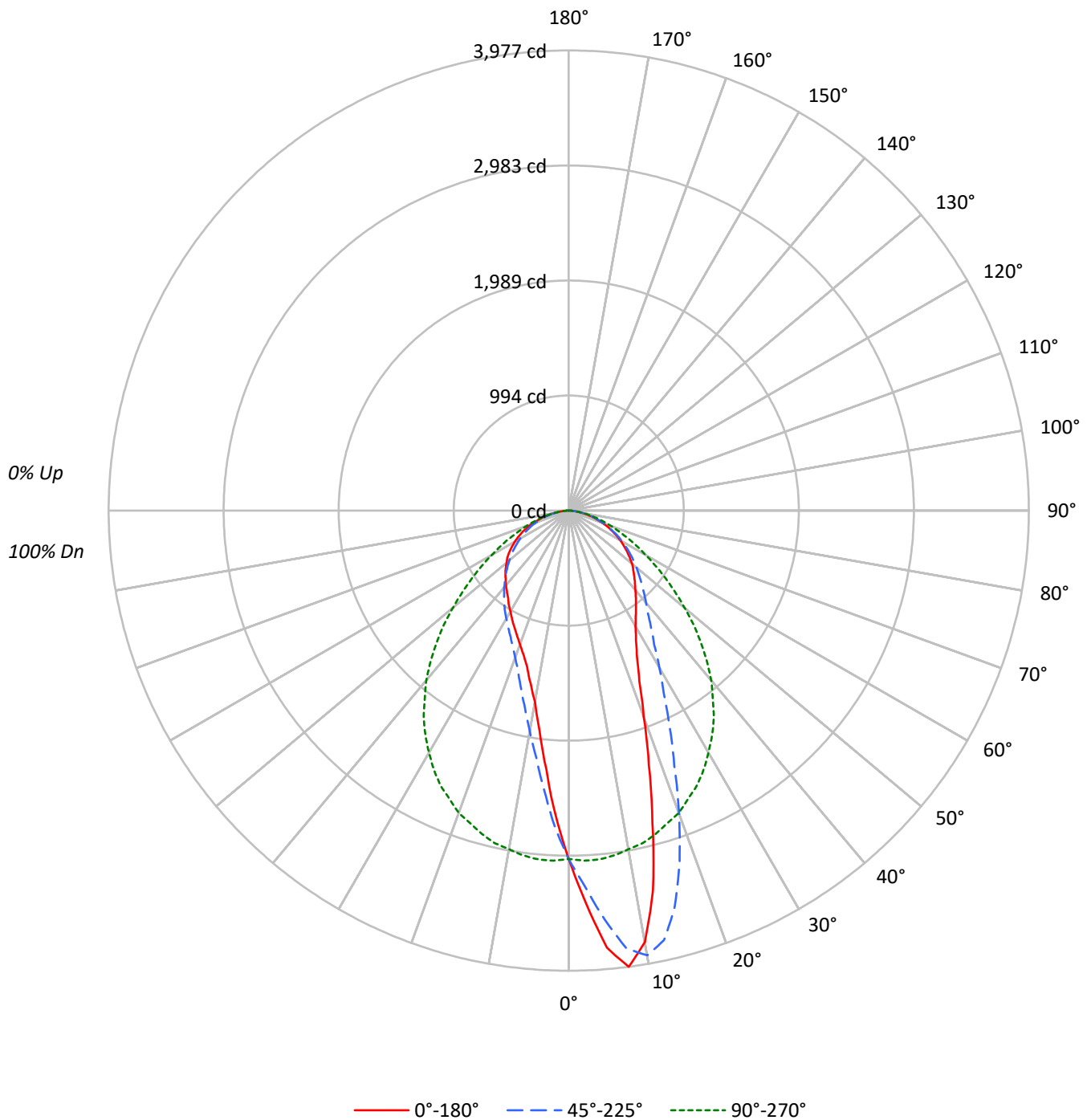
Input Watts (W): 40.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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CATALOG NUMBER: S123DR-S1165D830-X4F0-XX-UDD-G-W

Luminous Intensity Polar Plot



CATALOG NUMBER: S123DR-S1165D830-X4F0-XX-UDD-G-W

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						
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86						
2	101	94	88	82	99	92	86	82	88	84	80	85	81	78	82	79	76	74						
3	93	84	76	70	91	82	75	70	79	73	69	77	72	67	74	70	66	64						
4	86	75	67	61	84	74	67	61	72	65	60	69	64	59	67	62	58	56						
5	80	68	60	54	78	67	59	54	65	58	53	63	57	52	61	56	52	50						
6	74	62	54	48	73	61	53	48	60	53	47	58	52	47	56	51	47	45						
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40						
8	65	53	45	39	64	52	44	39	51	44	39	49	43	39	48	43	39	37						
9	61	49	41	36	60	48	41	36	47	40	36	46	40	36	45	40	35	34						
10	58	45	38	33	57	45	38	33	44	37	33	43	37	33	42	37	33	31						

	0°	45°	90°	135°	180°
0°	36273	36273	36273	36273	36273
5°	45872	42899	36596	29349	27102
10°	46318	47753	36354	23705	20544
15°	34885	44191	36105	19865	17373
20°	24306	35735	35645	17321	15781
25°	18534	27413	34859	15879	14801
30°	16035	21787	33605	15004	14013
35°	14877	18247	32158	14302	13459
40°	14084	16325	30124	13645	13271
45°	13615	15162	27540	13068	13187
50°	13380	14323	24483	12569	13120
55°	12882	13529	21480	12119	13176
60°	12423	12791	18515	11680	12960
65°	11669	11989	15972	11190	12704
70°	10777	11122	13584	10579	11960
75°	9753	10079	11639	9688	10926
80°	8042	8625	9208	8431	9208
85°	6373	6954	6760	7341	7341

Horizontal Angle: 80°
Vertical Angle: 45°
Luminance: 31444 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.6	5.9
10°-20°	708.1	14.6
20°-30°	838.2	17.3
30°-40°	842.4	17.4
40°-50°	772.5	16.0
50°-60°	637.6	13.2
60°-70°	451.2	9.3
70°-80°	241.0	5.0
80°-90°	61.1	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°	1831.0	37.9
0°-40°	2673.3	55.3
0°-60°	4083.5	84.4
0°-90°	4836.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4836.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3010	3010	3010	3010	3010	
5°	3793	3547	3026	2426	2241	361
15°	2797	3543	2894	1592	1393	773
25°	1394	2062	2622	1194	1113	658
35°	1011	1240	2186	972	915	636
45°	799	890	1616	767	774	619
55°	613	644	1022	577	627	549
65°	409	420	560	392	446	407
75°	210	216	250	208	235	220
85°	46	50	49	53	53	55
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°	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4
2.5°	3393.1	3386.1	3351.2	3328.9	3334.5	3284.2	3253.4	3228.3	3211.5	3171.0	3150.1
5°	3792.6	3812.2	3789.8	3778.7	3721.4	3630.6	3546.8	3528.6	3450.4	3354.0	3320.5
7.5°	3977.0	3988.2	3974.2	3974.2	3956.1	3875.1	3816.4	3770.3	3636.2	3511.9	3454.6
10°	3785.7	3810.8	3865.3	3890.4	3926.7	3915.6	3903.0	3884.8	3794.0	3650.2	3584.5
12.5°	3365.2	3395.9	3504.9	3520.2	3644.6	3764.7	3803.8	3848.5	3856.9	3735.4	3664.1
15°	2796.6	2881.9	2981.0	3028.5	3186.4	3439.2	3542.6	3664.1	3808.0	3757.7	3701.8
17.5°	2303.5	2335.7	2441.8	2542.4	2700.3	2992.2	3183.6	3365.2	3673.9	3724.2	3689.3
20°	1895.6	1925.0	2064.7	2057.7	2267.2	2595.5	2786.9	2996.4	3451.8	3615.2	3608.3
22.5°	1592.5	1638.6	1716.8	1760.1	1911.0	2202.9	2384.5	2645.8	3199.0	3457.4	3485.3
25°	1394.1	1427.7	1475.1	1512.9	1630.2	1870.5	2061.9	2277.0	2880.5	3250.6	3320.5
27.5°	1258.6	1272.6	1320.1	1342.4	1420.7	1627.4	1775.5	1972.5	2585.7	3018.7	3116.5
30°	1152.5	1162.2	1204.1	1211.1	1272.6	1422.1	1565.9	1726.6	2297.9	2779.9	2891.6
32.5°	1078.4	1085.4	1117.5	1120.3	1166.4	1275.4	1376.0	1526.8	2025.5	2524.2	2662.5
35°	1011.4	1015.6	1039.3	1046.3	1075.6	1158.0	1240.5	1356.4	1809.0	2293.7	2446.0
37.5°	952.7	958.3	972.3	980.6	1004.4	1070.0	1125.9	1222.3	1600.9	2053.5	2222.5
40°	895.4	905.2	915.0	915.0	941.5	991.8	1037.9	1117.5	1422.1	1843.9	1993.4
42.5°	846.5	856.3	860.5	861.9	875.9	922.0	961.1	1015.6	1286.6	1658.1	1804.8
45°	799.0	803.2	807.4	810.2	820.0	860.5	889.8	941.5	1158.0	1486.3	1628.8
47.5°	755.7	755.7	758.5	762.7	769.7	799.0	824.2	861.9	1047.7	1332.7	1450.0
50°	713.8	713.8	709.6	712.4	716.6	739.0	764.1	794.8	944.3	1191.6	1296.3
52.5°	663.5	663.5	664.9	660.7	664.9	684.5	704.0	734.8	856.3	1061.7	1151.1
55°	613.2	618.8	614.6	611.9	617.4	630.0	644.0	670.5	773.9	958.3	1029.5
57.5°	563.0	565.8	564.4	568.5	565.8	576.9	589.5	607.7	699.9	842.3	909.4
60°	515.5	515.5	512.7	515.5	515.5	521.1	530.8	549.0	624.4	743.2	799.0
62.5°	462.4	463.8	465.2	463.8	462.4	469.4	477.7	490.3	558.8	646.8	688.7
65°	409.3	410.7	414.9	413.5	412.1	419.1	420.5	434.4	486.1	561.6	592.3
67.5°	361.8	359.0	360.4	363.2	364.6	366.0	368.8	382.8	419.1	480.5	505.7
70°	305.9	308.7	307.3	311.5	308.7	312.9	315.7	325.5	360.4	400.9	417.7
72.5°	255.6	257.0	257.0	261.2	259.8	264.0	266.8	271.0	296.1	332.5	339.5
75°	209.5	209.5	212.3	213.7	213.7	213.7	216.5	219.3	240.3	262.6	269.6
77.5°	159.2	166.2	164.8	166.2	167.6	171.8	169.0	174.6	187.2	199.8	204.0
80°	115.9	115.9	117.3	118.7	121.5	124.3	124.3	129.9	135.5	142.5	146.7
82.5°	74.0	75.4	79.6	81.0	82.4	86.6	86.6	86.6	93.6	96.4	96.4
85°	46.1	43.3	46.1	47.5	48.9	50.3	50.3	53.1	54.5	55.9	55.9
87.5°	22.4	22.4	22.4	22.4	23.7	23.7	23.7	23.7	25.1	25.1	25.1
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°	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4	3010.4
2.5°	3080.2	3028.5	2951.7	2888.8	2891.6	2834.4	2792.4	2738.0	2721.2	2704.4	2682.1
5°	3144.5	3025.7	2866.5	2739.4	2700.3	2605.3	2485.1	2426.5	2391.5	2330.1	2306.3
7.5°	3224.1	3006.2	2763.1	2564.7	2521.4	2363.6	2221.1	2151.3	2085.6	2042.3	1989.2
10°	3275.8	2971.3	2658.3	2395.7	2353.8	2173.6	1987.8	1937.5	1855.1	1802.0	1751.7
12.5°	3314.9	2944.7	2550.8	2244.9	2176.4	2001.8	1814.6	1746.2	1686.1	1609.3	1572.9
15°	3349.8	2894.4	2440.4	2087.0	2015.8	1827.2	1654.0	1592.5	1538.0	1471.0	1438.8
17.5°	3337.2	2833.0	2318.9	1947.3	1876.1	1690.3	1524.0	1454.2	1417.9	1359.2	1336.9
20°	3321.9	2779.9	2204.3	1814.6	1736.4	1563.2	1401.1	1350.8	1314.5	1276.8	1257.2
22.5°	3273.0	2696.1	2088.4	1693.1	1619.0	1445.8	1307.5	1265.6	1237.7	1211.1	1194.4
25°	3190.6	2622.0	1975.2	1571.5	1512.9	1350.8	1233.5	1194.4	1176.2	1149.7	1134.3
27.5°	3088.6	2524.2	1862.1	1472.4	1405.3	1261.4	1160.8	1135.7	1116.1	1095.2	1079.8
30°	2960.1	2415.3	1751.7	1376.0	1314.5	1187.4	1100.8	1078.4	1060.3	1039.3	1021.2
32.5°	2796.6	2304.9	1648.4	1286.6	1234.9	1124.5	1044.9	1026.7	1011.4	986.2	976.4
35°	2613.6	2186.2	1546.4	1201.4	1152.5	1056.1	990.4	972.3	956.9	935.9	927.6
37.5°	2427.9	2045.1	1445.8	1128.7	1085.4	998.8	935.9	917.8	903.8	885.6	881.5
40°	2230.9	1915.2	1346.6	1054.7	1017.0	942.9	881.5	867.5	853.5	842.3	839.6
42.5°	2032.5	1765.7	1260.0	993.2	952.7	884.3	828.4	813.0	804.6	799.0	800.4
45°	1845.3	1616.2	1170.6	922.0	894.0	831.2	779.5	766.9	759.9	755.7	761.3
47.5°	1642.8	1464.0	1086.8	861.9	834.0	778.1	729.2	718.0	715.2	713.8	723.6
50°	1464.0	1306.1	996.0	800.4	776.7	719.4	680.3	670.5	667.7	671.9	685.9
52.5°	1294.9	1159.4	913.6	743.2	719.4	667.7	631.4	624.4	623.0	632.8	646.8
55°	1127.3	1022.5	824.2	680.3	656.6	611.9	583.9	576.9	575.5	595.1	607.7
57.5°	984.8	889.8	740.4	620.2	602.1	560.2	535.0	529.4	533.6	551.8	564.4
60°	845.1	768.3	663.5	556.0	542.0	505.7	486.1	484.7	488.9	509.9	522.4
62.5°	719.4	660.7	581.1	497.3	487.5	455.4	437.2	440.0	444.2	465.2	476.4
65°	611.9	560.2	500.1	438.6	426.1	403.7	391.1	392.5	400.9	419.1	430.3
67.5°	507.1	465.2	431.6	382.8	373.0	353.4	343.6	349.2	353.4	371.6	382.8
70°	419.1	385.6	360.4	324.1	317.1	300.3	293.4	300.3	304.5	319.9	333.9
72.5°	336.7	315.7	296.1	269.6	262.6	251.4	250.0	252.8	259.8	275.2	280.8
75°	261.2	250.0	233.3	216.5	212.3	206.7	205.3	208.1	215.1	223.5	229.1
77.5°	198.4	188.6	176.0	169.0	163.4	160.6	162.0	166.2	169.0	177.4	181.6
80°	143.9	132.7	129.9	120.1	118.7	117.3	120.1	121.5	125.7	131.3	134.1
82.5°	95.0	86.6	83.8	82.4	81.0	79.6	83.8	85.2	88.0	92.2	93.6
85°	51.7	48.9	48.9	47.5	48.9	51.7	51.7	53.1	53.1	54.5	53.1
87.5°	23.7	21.0	22.4	22.4	22.4	23.7	23.7	25.1	25.1	25.1	23.7
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°	3010.4	3010.4	3010.4
2.5°	2680.7	2670.9	2631.8
5°	2285.4	2251.8	2240.7
7.5°	1983.6	1980.8	1922.2
10°	1728.0	1732.2	1679.1
12.5°	1567.3	1532.4	1528.2
15°	1430.4	1398.3	1392.7
17.5°	1328.5	1308.9	1303.3
20°	1251.6	1240.5	1230.7
22.5°	1190.2	1176.2	1167.8
25°	1128.7	1116.1	1113.3
27.5°	1075.6	1060.3	1060.3
30°	1021.2	1011.4	1007.2
32.5°	972.3	963.9	963.9
35°	924.8	920.6	915.0
37.5°	881.5	881.5	878.7
40°	839.6	843.7	843.7
42.5°	803.2	807.4	807.4
45°	764.1	771.1	773.9
47.5°	725.0	736.2	739.0
50°	690.1	698.5	699.9
52.5°	652.4	662.1	669.1
55°	613.2	623.0	627.2
57.5°	571.3	581.1	582.5
60°	525.2	535.0	537.8
62.5°	483.3	488.9	491.7
65°	431.6	440.0	445.6
67.5°	384.2	391.1	391.1
70°	332.5	335.3	339.5
72.5°	283.6	285.0	285.0
75°	230.5	233.3	234.7
77.5°	181.6	183.0	183.0
80°	134.1	132.7	132.7
82.5°	93.6	89.4	89.4
85°	53.1	51.7	53.1
87.5°	23.7	23.7	23.7
90°	0.0	0.0	0.0

(END OF REPORT)