

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: P646617

Luminaire Tested: S123DR-S1000D927-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646617
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-S1000D927-X4F0-XX-UDD-G-W
Description: DEFINE 3 DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3497.9 lumens
Efficiency: N/A
Efficacy: 101.4 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

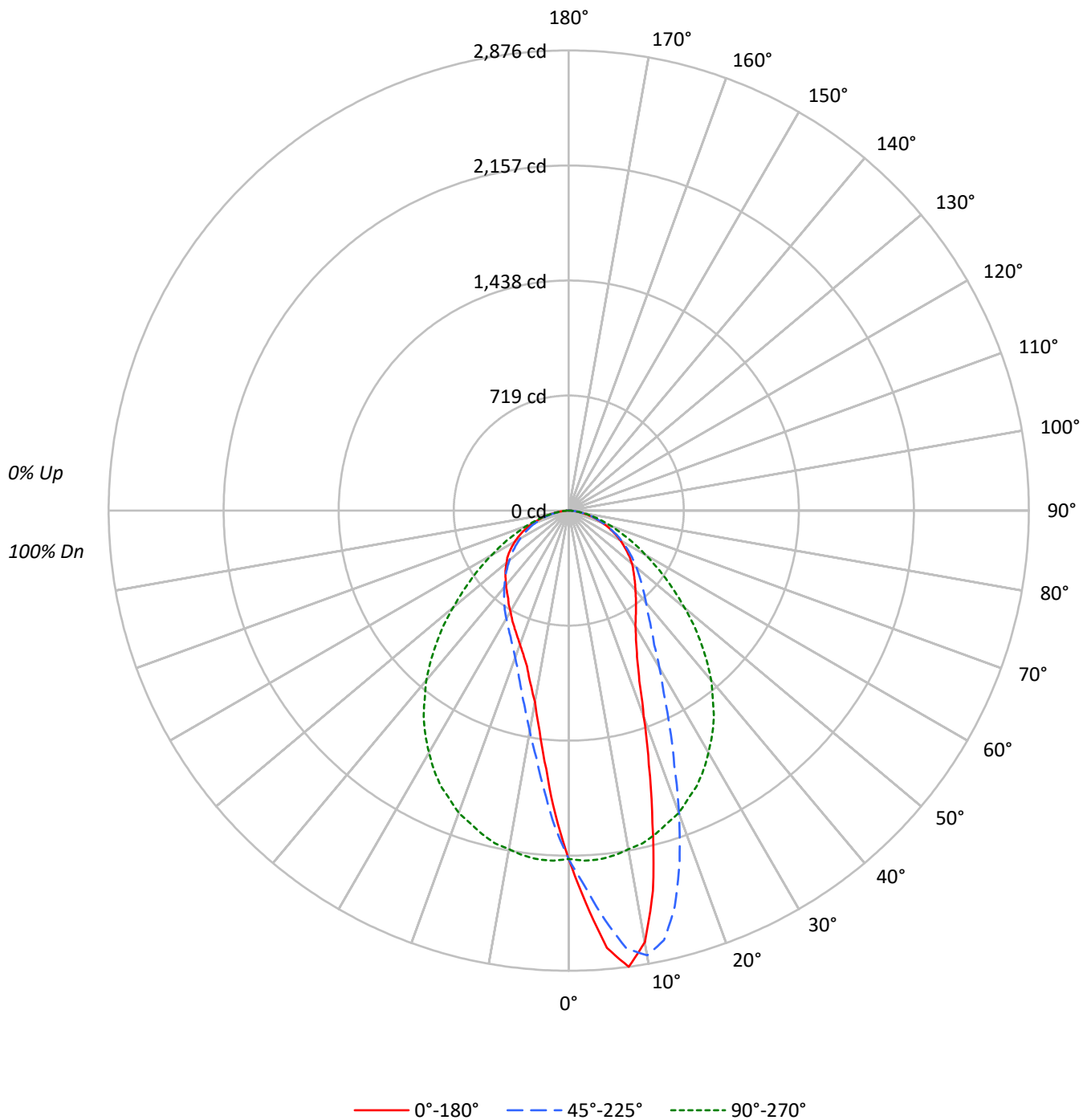
Input Watts (W): 34.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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				
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10		
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							

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	26231	26231	26231	26231	26231
5°	33175	31024	26467	21225	19599
10°	33496	34535	26291	17144	14857
15°	25229	31958	26111	14367	12564
20°	17578	25842	25778	12526	11412
25°	13404	19824	25210	11483	10705
30°	11595	15757	24302	10851	10134
35°	10758	13196	23255	10342	9733
40°	10186	11806	21785	9868	9598
45°	9846	10965	19916	9450	9537
50°	9676	10359	17707	9090	9487
55°	9317	9783	15535	8764	9529
60°	8984	9251	13389	8446	9372
65°	8439	8670	11550	8094	9189
70°	7793	8043	9822	7652	8649
75°	7053	7290	8417	7006	7900
80°	5815	6238	6661	6099	6661
85°	4604	5032	4894	5309	5309

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 22740 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	205.8	5.9
10°-20°	512.1	14.6
20°-30°	606.2	17.3
30°-40°	609.2	17.4
40°-50°	558.7	16.0
50°-60°	461.1	13.2
60°-70°	326.3	9.3
70°-80°	174.3	5.0
80°-90°	44.2	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°	1324.1	37.9
0°-40°	1933.3	55.3
0°-60°	2953.1	84.4
0°-90°	3497.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3497.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2177	2177	2177	2177	2177	
5°	2743	2565	2188	1755	1620	261
15°	2022	2562	2093	1152	1007	559
25°	1008	1491	1896	864	805	476
35°	731	897	1581	703	662	460
45°	578	644	1169	555	560	447
55°	444	466	740	417	454	397
65°	296	304	405	284	322	294
75°	152	157	181	150	170	159
85°	33	36	35	38	38	39
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°	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0
2.5°	2453.8	2448.8	2423.5	2407.4	2411.4	2375.0	2352.8	2334.6	2322.5	2293.2	2278.1
5°	2742.8	2756.9	2740.7	2732.7	2691.2	2625.6	2565.0	2551.8	2495.3	2425.6	2401.3
7.5°	2876.1	2884.2	2874.1	2874.1	2861.0	2802.4	2759.9	2726.6	2629.6	2539.7	2498.3
10°	2737.7	2755.9	2795.3	2813.5	2839.7	2831.7	2822.6	2809.4	2743.8	2639.7	2592.2
12.5°	2433.6	2455.9	2534.7	2545.8	2635.7	2722.6	2750.8	2783.2	2789.2	2701.3	2649.8
15°	2022.5	2084.1	2155.8	2190.2	2304.3	2487.2	2561.9	2649.8	2753.9	2717.5	2677.1
17.5°	1665.9	1689.1	1765.9	1838.6	1952.8	2163.9	2302.3	2433.6	2656.9	2693.3	2668.0
20°	1370.9	1392.1	1493.1	1488.1	1639.6	1877.0	2015.4	2166.9	2496.3	2614.5	2609.4
22.5°	1151.7	1185.0	1241.6	1272.9	1382.0	1593.1	1724.5	1913.4	2313.4	2500.3	2520.5
25°	1008.2	1032.5	1066.8	1094.1	1178.9	1352.7	1491.1	1646.7	2083.1	2350.8	2401.3
27.5°	910.2	920.3	954.7	970.8	1027.4	1176.9	1284.0	1426.4	1869.9	2183.1	2253.8
30°	833.4	840.5	870.8	875.9	920.3	1028.4	1132.5	1248.6	1661.8	2010.4	2091.2
32.5°	779.9	784.9	808.2	810.2	843.5	922.3	995.1	1104.2	1464.8	1825.5	1925.5
35°	731.4	734.4	751.6	756.7	777.9	837.5	897.1	980.9	1308.2	1658.8	1768.9
37.5°	689.0	693.0	703.1	709.2	726.4	773.8	814.2	883.9	1157.7	1485.0	1607.3
40°	647.6	654.6	661.7	661.7	680.9	717.3	750.6	808.2	1028.4	1333.5	1441.6
42.5°	612.2	619.3	622.3	623.3	633.4	666.7	695.0	734.4	930.4	1199.1	1305.2
45°	577.8	580.9	583.9	585.9	593.0	622.3	643.5	680.9	837.5	1074.9	1177.9
47.5°	546.5	546.5	548.6	551.6	556.6	577.8	596.0	623.3	757.7	963.8	1048.6
50°	516.2	516.2	513.2	515.2	518.2	534.4	552.6	574.8	682.9	861.7	937.5
52.5°	479.9	479.9	480.9	477.8	480.9	495.0	509.2	531.4	619.3	767.8	832.4
55°	443.5	447.5	444.5	442.5	446.5	455.6	465.7	484.9	559.7	693.0	744.5
57.5°	407.1	409.1	408.1	411.2	409.1	417.2	426.3	439.4	506.1	609.2	657.7
60°	372.8	372.8	370.8	372.8	372.8	376.8	383.9	397.0	451.6	537.4	577.8
62.5°	334.4	335.4	336.4	335.4	334.4	339.4	345.5	354.6	404.1	467.7	498.0
65°	296.0	297.0	300.0	299.0	298.0	303.1	304.1	314.2	351.6	406.1	428.3
67.5°	261.6	259.6	260.6	262.7	263.7	264.7	266.7	276.8	303.1	347.5	365.7
70°	221.2	223.3	222.2	225.3	223.3	226.3	228.3	235.4	260.6	289.9	302.1
72.5°	184.9	185.9	185.9	188.9	187.9	190.9	193.0	196.0	214.2	240.4	245.5
75°	151.5	151.5	153.6	154.6	154.6	154.6	156.6	158.6	173.8	189.9	195.0
77.5°	115.2	120.2	119.2	120.2	121.2	124.3	122.2	126.3	135.4	144.5	147.5
80°	83.8	83.8	84.9	85.9	87.9	89.9	89.9	94.0	98.0	103.0	106.1
82.5°	53.5	54.6	57.6	58.6	59.6	62.6	62.6	62.6	67.7	69.7	69.7
85°	33.3	31.3	33.3	34.3	35.4	36.4	36.4	38.4	39.4	40.4	40.4
87.5°	16.2	16.2	16.2	16.2	17.2	17.2	17.2	17.2	18.2	18.2	18.2
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°	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0	2177.0
2.5°	2227.6	2190.2	2134.6	2089.1	2091.2	2049.8	2019.4	1980.0	1967.9	1955.8	1939.6
5°	2274.0	2188.2	2073.0	1981.1	1952.8	1884.1	1797.2	1754.8	1729.5	1685.1	1667.9
7.5°	2331.6	2174.0	1998.2	1854.8	1823.5	1709.3	1606.3	1555.7	1508.3	1477.0	1438.6
10°	2369.0	2148.8	1922.5	1732.5	1702.2	1571.9	1437.6	1401.2	1341.6	1303.2	1266.8
12.5°	2397.3	2129.6	1844.7	1623.4	1573.9	1447.7	1312.3	1262.8	1219.3	1163.8	1137.5
15°	2422.5	2093.2	1764.9	1509.3	1457.8	1321.4	1196.1	1151.7	1112.3	1063.8	1040.5
17.5°	2413.4	2048.7	1677.0	1408.3	1356.7	1222.4	1102.2	1051.6	1025.4	983.0	966.8
20°	2402.3	2010.4	1594.1	1312.3	1255.7	1130.4	1013.3	976.9	950.6	923.3	909.2
22.5°	2367.0	1949.7	1510.3	1224.4	1170.9	1045.6	945.6	915.3	895.1	875.9	863.7
25°	2307.4	1896.2	1428.5	1136.5	1094.1	976.9	892.0	863.7	850.6	831.4	820.3
27.5°	2233.6	1825.5	1346.6	1064.8	1016.3	912.2	839.5	821.3	807.2	792.0	780.9
30°	2140.7	1746.7	1266.8	995.1	950.6	858.7	796.1	779.9	766.8	751.6	738.5
32.5°	2022.5	1666.9	1192.1	930.4	893.0	813.2	755.6	742.5	731.4	713.2	706.1
35°	1890.1	1581.0	1118.3	868.8	833.4	763.7	716.3	703.1	692.0	676.9	670.8
37.5°	1755.8	1479.0	1045.6	816.3	784.9	722.3	676.9	663.7	653.6	640.5	637.5
40°	1613.3	1385.0	973.9	762.7	735.4	681.9	637.5	627.4	617.2	609.2	607.1
42.5°	1469.9	1276.9	911.2	718.3	689.0	639.5	599.1	588.0	581.9	577.8	578.9
45°	1334.5	1168.8	846.6	666.7	646.5	601.1	563.7	554.6	549.6	546.5	550.6
47.5°	1188.0	1058.7	786.0	623.3	603.1	562.7	527.3	519.3	517.2	516.2	523.3
50°	1058.7	944.6	720.3	578.9	561.7	520.3	492.0	484.9	482.9	485.9	496.0
52.5°	936.5	838.5	660.7	537.4	520.3	482.9	456.6	451.6	450.6	457.6	467.7
55°	815.3	739.5	596.0	492.0	474.8	442.5	422.3	417.2	416.2	430.4	439.4
57.5°	712.2	643.5	535.4	448.5	435.4	405.1	386.9	382.9	385.9	399.0	408.1
60°	611.2	555.6	479.9	402.1	392.0	365.7	351.6	350.5	353.6	368.7	377.8
62.5°	520.3	477.8	420.3	359.6	352.6	329.3	316.2	318.2	321.3	336.4	344.5
65°	442.5	405.1	361.7	317.2	308.1	292.0	282.9	283.9	289.9	303.1	311.1
67.5°	366.7	336.4	312.2	276.8	269.7	255.6	248.5	252.6	255.6	268.7	276.8
70°	303.1	278.8	260.6	234.4	229.3	217.2	212.1	217.2	220.2	231.3	241.4
72.5°	243.5	228.3	214.2	195.0	189.9	181.8	180.8	182.9	187.9	199.0	203.1
75°	188.9	180.8	168.7	156.6	153.6	149.5	148.5	150.5	155.6	161.6	165.7
77.5°	143.5	136.4	127.3	122.2	118.2	116.2	117.2	120.2	122.2	128.3	131.3
80°	104.1	96.0	94.0	86.9	85.9	84.9	86.9	87.9	90.9	95.0	97.0
82.5°	68.7	62.6	60.6	59.6	58.6	57.6	60.6	61.6	63.6	66.7	67.7
85°	37.4	35.4	35.4	34.3	35.4	37.4	37.4	38.4	38.4	39.4	38.4
87.5°	17.2	15.2	16.2	16.2	16.2	17.2	17.2	18.2	18.2	18.2	17.2
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°	2177.0	2177.0	2177.0
2.5°	1938.6	1931.6	1903.3
5°	1652.7	1628.5	1620.4
7.5°	1434.5	1432.5	1390.1
10°	1249.7	1252.7	1214.3
12.5°	1133.5	1108.2	1105.2
15°	1034.5	1011.2	1007.2
17.5°	960.7	946.6	942.5
20°	905.2	897.1	890.0
22.5°	860.7	850.6	844.5
25°	816.3	807.2	805.2
27.5°	777.9	766.8	766.8
30°	738.5	731.4	728.4
32.5°	703.1	697.1	697.1
35°	668.8	665.7	661.7
37.5°	637.5	637.5	635.4
40°	607.1	610.2	610.2
42.5°	580.9	583.9	583.9
45°	552.6	557.6	559.7
47.5°	524.3	532.4	534.4
50°	499.1	505.1	506.1
52.5°	471.8	478.8	483.9
55°	443.5	450.6	453.6
57.5°	413.2	420.3	421.3
60°	379.8	386.9	388.9
62.5°	349.5	353.6	355.6
65°	312.2	318.2	322.3
67.5°	277.8	282.9	282.9
70°	240.4	242.5	245.5
72.5°	205.1	206.1	206.1
75°	166.7	168.7	169.7
77.5°	131.3	132.3	132.3
80°	97.0	96.0	96.0
82.5°	67.7	64.7	64.7
85°	38.4	37.4	38.4
87.5°	17.2	17.2	17.2
90°	0.0	0.0	0.0

(END OF REPORT)