

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: P646696

Luminaire Tested: S123RDR-S775D840-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P646696  
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-S775D840-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**

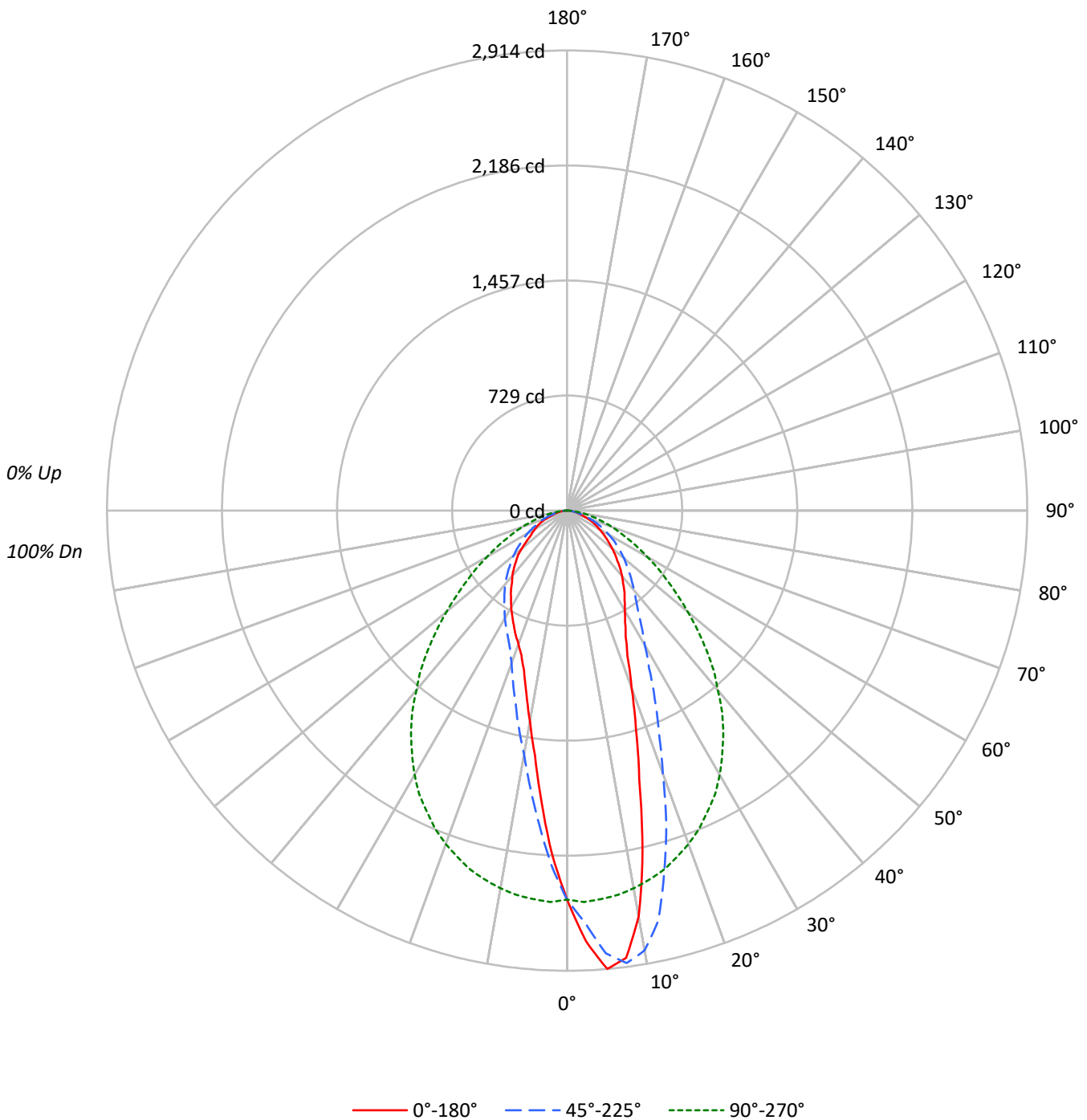
Lumens per Lamp: N/A  
Luminaire Lumens: 3263.2 lumens  
Efficiency: N/A  
Efficacy: 125.5 lumens/watt  
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79  
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')  
CIE Type: Direct

Input Watts (W): 26  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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°	29678	29678	29678	29678	29678
5°	35239	34042	29864	24222	22414
10°	31927	34596	29715	19176	16594
15°	21982	29629	29402	15746	13127
20°	15293	22725	28812	13196	11538
25°	11654	17440	27952	11788	10633
30°	10144	13713	26879	10959	9849
35°	9314	11542	25356	10220	9136
40°	8498	10356	23366	9595	8483
45°	7675	9481	21218	8914	7830
50°	6966	8803	18683	8291	7024
55°	6300	8084	16251	7573	6025
60°	5646	7350	14114	6936	5694
65°	5212	6535	12151	6161	5383
70°	4235	5584	10601	5584	4375
75°	3715	4511	8980	4655	3855
80°	3365	3782	7355	3927	3643
85°	3069	3207	5585	3484	3346

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 22387 cd/sqm



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CATALOG NUMBER: S123RDR-S775D840-X4F0-XX-UDD-G-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	224.5	6.9
10°-20°	519.4	15.9
20°-30°	595.9	18.3
30°-40°	586.9	18.0
40°-50°	517.3	15.9
50°-60°	398.1	12.2
60°-70°	261.8	8.0
70°-80°	127.1	3.9
80°-90°	32.1	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°	1339.7	41.1
0°-40°	1926.7	59.0
0°-60°	2842.2	87.1
0°-90°	3263.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3263.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2463	2463	2463	2463	2463	
5°	2914	2814	2469	2003	1853	266
15°	1762	2375	2357	1262	1052	497
25°	877	1312	2102	887	800	414
35°	633	785	1724	695	621	395
45°	450	556	1245	523	460	350
55°	300	385	774	360	287	269
65°	183	229	426	216	189	179
75°	80	97	193	100	83	86
85°	22	23	40	25	24	25
90°	0	0	0	0	0	



TEST NUMBER: P646696

CATALOG NUMBER: S123RDR-S775D840-X4F0-XX-UDD-G-W

**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	22.5°	30°	40°	45°	50°	60°	67.5°	70°
0°	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1
2.5°	2729.7	2712.5	2707.5	2701.4	2691.3	2654.9	2613.5	2617.6	2612.5	2581.2	2564.1
5°	2913.5	2915.5	2910.4	2906.4	2889.2	2844.8	2814.5	2796.3	2757.9	2699.4	2681.2
7.5°	2856.9	2889.2	2895.3	2902.4	2911.4	2901.3	2890.2	2883.2	2851.9	2788.2	2759.0
10°	2609.5	2607.5	2643.8	2673.1	2751.9	2807.4	2827.6	2856.9	2883.2	2838.7	2806.4
12.5°	2205.5	2208.6	2327.7	2327.7	2429.7	2571.1	2662.0	2723.6	2836.7	2839.7	2820.6
15°	1762.2	1811.7	1917.7	1940.0	2071.2	2261.1	2375.2	2502.4	2721.6	2790.3	2786.2
17.5°	1447.1	1468.3	1570.3	1599.6	1715.8	1930.9	2088.4	2241.9	2548.9	2693.3	2719.6
20°	1192.7	1211.8	1285.6	1307.8	1424.9	1629.9	1772.3	1937.9	2339.9	2561.0	2607.5
22.5°	995.7	1033.1	1082.6	1116.9	1183.6	1392.6	1514.8	1673.3	2097.5	2412.6	2467.1
25°	876.6	893.7	936.1	952.3	1033.1	1171.4	1311.8	1451.2	1882.4	2226.8	2322.7
27.5°	795.8	800.8	832.1	846.3	894.7	1023.0	1124.0	1253.2	1663.2	2035.9	2148.0
30°	729.1	738.2	762.4	765.5	807.9	898.8	985.6	1104.8	1471.4	1851.1	1966.2
32.5°	677.6	682.7	702.9	708.9	736.2	807.9	878.6	965.4	1293.6	1658.2	1790.5
35°	633.2	634.2	649.3	657.4	681.7	741.2	784.7	857.4	1151.2	1498.6	1614.8
37.5°	582.7	589.8	600.9	607.9	629.1	677.6	717.0	773.6	1020.0	1347.2	1455.2
40°	540.3	546.3	559.5	562.5	581.7	626.1	658.4	708.9	906.9	1201.7	1311.8
42.5°	497.9	501.9	515.0	521.1	542.3	577.6	606.9	646.3	817.0	1072.5	1180.5
45°	450.4	460.5	474.6	477.7	497.9	534.2	556.4	592.8	736.2	960.4	1056.3
47.5°	411.0	416.1	428.2	433.2	456.5	488.8	512.0	543.3	666.5	858.4	952.3
50°	371.6	373.7	384.8	391.8	410.0	447.4	469.6	497.9	602.9	775.6	841.2
52.5°	334.3	339.3	350.4	355.5	367.6	406.0	426.2	455.4	542.3	690.7	756.4
55°	299.9	303.0	311.0	317.1	331.2	364.6	384.8	410.0	489.8	613.0	670.6
57.5°	267.6	271.7	277.7	282.8	295.9	325.2	345.4	370.6	440.3	542.3	586.7
60°	234.3	239.3	246.4	248.4	260.5	286.8	305.0	327.2	389.8	476.7	516.0
62.5°	210.1	211.1	217.1	220.2	227.2	248.4	267.6	288.8	344.4	413.0	445.4
65°	182.8	185.8	188.8	190.9	196.9	215.1	229.2	245.4	299.9	359.5	381.7
67.5°	154.5	157.5	162.6	164.6	169.7	181.8	193.9	210.1	255.5	306.0	326.2
70°	120.2	120.2	128.3	132.3	140.4	149.5	158.5	172.7	212.1	255.5	270.6
72.5°	98.0	99.0	100.0	100.0	107.0	122.2	127.2	136.3	167.6	209.0	222.2
75°	79.8	80.8	81.8	82.8	83.8	88.9	96.9	105.0	128.3	158.5	170.7
77.5°	63.6	64.6	65.6	65.6	67.7	69.7	71.7	75.7	91.9	114.1	124.2
80°	48.5	49.5	50.5	50.5	51.5	53.5	54.5	56.6	61.6	76.7	81.8
82.5°	35.3	35.3	35.3	36.4	37.4	37.4	39.4	39.4	42.4	46.5	49.5
85°	22.2	22.2	23.2	23.2	23.2	24.2	23.2	24.2	25.2	26.3	28.3
87.5°	10.1	9.1	10.1	10.1	10.1	11.1	11.1	11.1	11.1	12.1	12.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P646696

CATALOG NUMBER: S123RDR-S775D840-X4F0-XX-UDD-G-W

**CANDELA DISTRIBUTION (continued):**

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1	2463.1
2.5°	2516.6	2481.2	2421.7	2384.3	2370.2	2326.7	2285.3	2251.0	2233.8	2231.8	2200.5
5°	2566.1	2469.1	2345.9	2242.9	2218.7	2142.9	2045.0	2002.6	1947.0	1924.8	1898.5
7.5°	2606.5	2455.0	2273.2	2117.7	2072.2	1958.1	1832.9	1777.4	1735.0	1668.3	1628.9
10°	2634.7	2428.7	2184.3	1983.4	1918.7	1785.4	1634.0	1567.3	1527.9	1451.2	1419.9
12.5°	2645.8	2395.4	2095.5	1844.0	1787.5	1628.9	1480.5	1411.8	1353.2	1283.5	1253.2
15°	2641.8	2357.0	2004.6	1715.8	1645.1	1484.5	1327.0	1262.3	1207.8	1138.1	1098.7
17.5°	2614.5	2302.5	1905.6	1591.5	1523.9	1358.3	1198.7	1139.1	1090.7	1023.0	992.7
20°	2569.1	2247.0	1818.8	1478.4	1401.7	1243.1	1092.7	1029.1	986.6	950.3	928.1
22.5°	2506.5	2181.3	1712.7	1366.3	1299.7	1140.1	995.7	944.2	919.0	889.7	873.5
25°	2411.6	2102.5	1616.8	1272.4	1205.8	1047.2	921.0	886.7	861.4	842.2	825.1
27.5°	2309.6	2026.8	1520.9	1177.5	1114.9	963.4	862.4	836.2	814.0	789.7	774.6
30°	2191.4	1931.9	1430.0	1093.7	1033.1	895.8	811.9	787.7	769.5	743.3	728.1
32.5°	2052.0	1827.9	1345.1	1012.9	956.3	837.2	765.5	739.2	724.1	698.8	683.7
35°	1907.6	1723.8	1252.2	938.2	886.7	785.7	720.0	694.8	678.6	653.4	638.2
37.5°	1766.3	1612.8	1169.4	872.5	826.1	734.2	672.6	651.4	636.2	610.0	591.8
40°	1616.8	1485.5	1088.6	810.9	767.5	688.7	629.1	610.0	589.8	566.5	548.4
42.5°	1460.3	1373.4	1013.9	756.4	716.0	644.3	585.7	565.5	548.4	521.1	513.0
45°	1313.8	1245.2	935.1	698.8	666.5	599.9	543.3	523.1	503.9	480.7	472.6
47.5°	1183.6	1119.9	863.4	648.3	616.0	556.4	500.9	479.7	465.5	447.4	435.3
50°	1049.3	996.7	784.7	598.9	568.6	510.0	456.5	442.3	426.2	403.9	394.9
52.5°	924.0	883.6	720.0	551.4	523.1	470.6	416.1	401.9	386.8	367.6	354.5
55°	814.0	773.6	646.3	497.9	476.7	427.2	378.7	360.5	348.4	326.2	310.0
57.5°	700.8	681.7	575.6	453.4	433.2	383.7	340.3	326.2	311.0	286.8	270.6
60°	607.9	585.7	510.0	405.0	385.8	344.4	302.0	287.8	273.7	250.4	243.4
62.5°	520.1	503.9	446.4	359.5	343.4	303.0	265.6	252.5	238.3	223.2	218.1
65°	440.3	426.2	382.7	313.1	299.9	264.6	230.2	216.1	207.0	200.0	194.9
67.5°	365.6	357.5	324.2	269.6	259.5	228.2	197.9	186.8	181.8	173.7	169.7
70°	297.9	300.9	270.6	230.2	219.1	193.9	167.6	158.5	152.5	145.4	137.3
72.5°	243.4	242.4	224.2	187.8	179.8	159.6	139.4	133.3	126.2	112.1	103.0
75°	188.8	192.9	175.7	155.5	147.4	127.2	108.1	100.0	92.9	87.9	84.8
77.5°	144.4	146.4	138.4	119.2	112.1	94.9	79.8	75.7	72.7	69.7	68.7
80°	103.0	106.0	98.0	85.8	79.8	65.6	57.6	56.6	55.5	53.5	52.5
82.5°	66.7	70.7	66.7	53.5	50.5	43.4	41.4	41.4	40.4	39.4	38.4
85°	36.4	40.4	38.4	31.3	29.3	27.3	26.3	25.2	25.2	25.2	25.2
87.5°	14.1	19.2	16.2	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P646696

CATALOG NUMBER: S123RDR-S775D840-X4F0-XX-UDD-G-W

**CANDELA DISTRIBUTION (continued):**

	160°	170°	180°
0°	2463.1	2463.1	2463.1
2.5°	2193.4	2183.3	2179.3
5°	1891.5	1860.2	1853.1
7.5°	1616.8	1603.7	1560.2
10°	1414.8	1374.4	1356.3
12.5°	1233.0	1195.7	1189.6
15°	1087.6	1061.4	1052.3
17.5°	991.7	973.5	962.4
20°	921.0	907.9	899.8
22.5°	867.5	857.4	851.3
25°	820.0	804.9	799.8
27.5°	771.5	758.4	753.4
30°	726.1	715.0	707.9
32.5°	678.6	665.5	661.5
35°	633.2	625.1	621.1
37.5°	588.8	578.7	572.6
40°	547.3	542.3	539.3
42.5°	510.0	500.9	499.9
45°	470.6	461.5	459.5
47.5°	433.2	425.2	424.1
50°	393.8	382.7	374.7
52.5°	346.4	336.3	329.2
55°	304.0	292.9	286.8
57.5°	268.6	263.6	260.5
60°	241.4	238.3	236.3
62.5°	217.1	214.1	214.1
65°	194.9	191.9	188.8
67.5°	167.6	161.6	160.6
70°	134.3	125.2	124.2
72.5°	102.0	101.0	99.0
75°	84.8	82.8	82.8
77.5°	68.7	66.7	66.7
80°	52.5	51.5	52.5
82.5°	38.4	38.4	37.4
85°	25.2	24.2	24.2
87.5°	12.1	12.1	12.1
90°	0.0	0.0	0.0

(END OF REPORT)