

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: P646692

Luminaire Tested: S123RDR-S560D940-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646692
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-S560D940-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

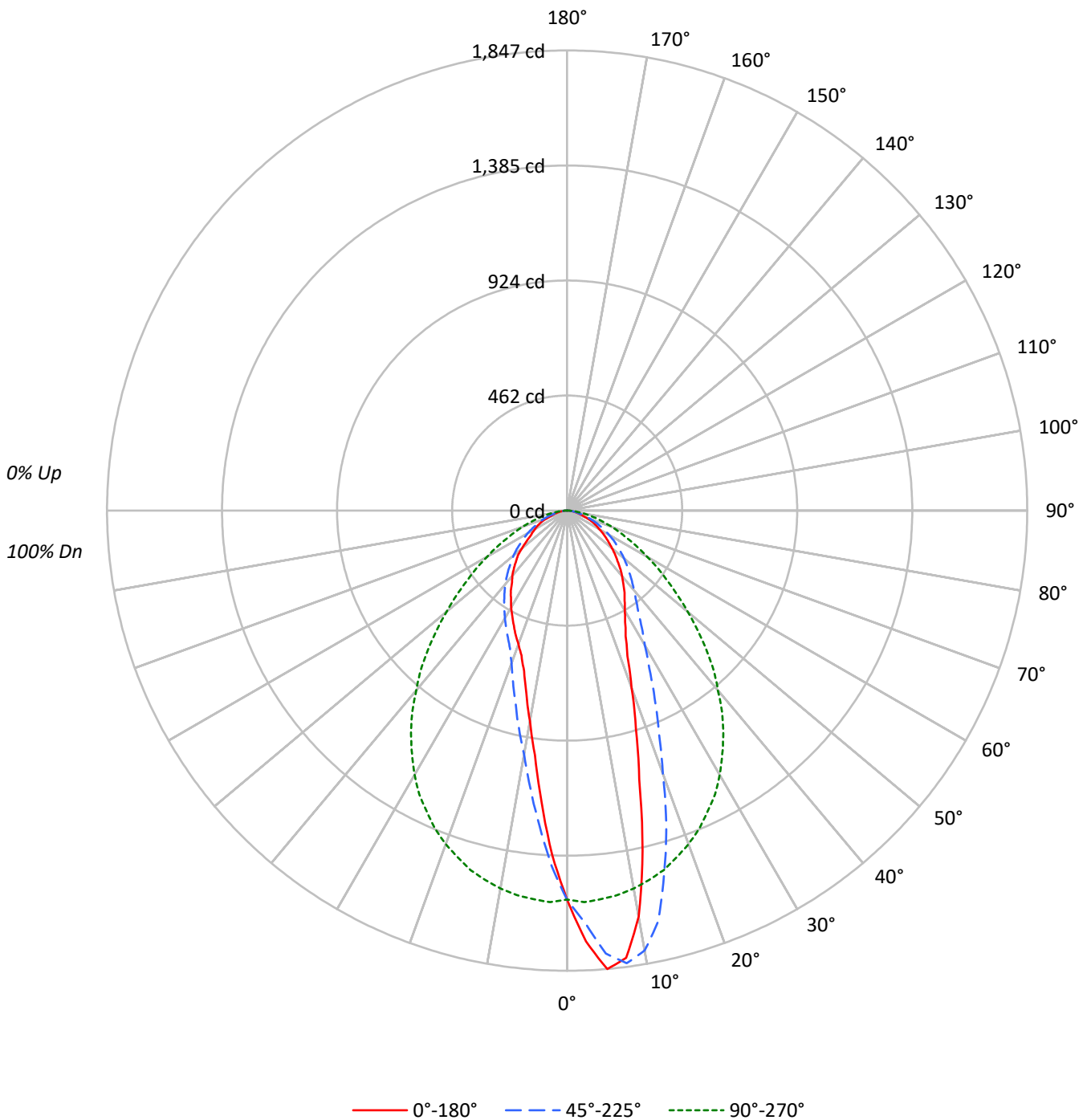
Lumens per Lamp: N/A
Luminaire Lumens: 2068.9 lumens
Efficiency: N/A
Efficacy: 111.2 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 18.6
Input Voltage (V): 120
Input Current (A_{in}): 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	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°	18816	18816	18816	18816	18816
5°	22342	21583	18935	15357	14211
10°	20243	21935	18841	12158	10521
15°	13937	18785	18641	9983	8323
20°	9696	14409	18267	8365	7315
25°	7389	11057	17722	7474	6742
30°	6432	8694	17041	6948	6244
35°	5906	7318	16076	6479	5793
40°	5387	6567	14814	6082	5378
45°	4867	6012	13453	5652	4964
50°	4416	5580	11845	5256	4452
55°	3996	5124	10302	4802	3819
60°	3579	4661	8950	4398	3610
65°	3304	4143	7704	3906	3413
70°	2684	3541	6722	3541	2776
75°	2356	2863	5694	2952	2444
80°	2130	2401	4663	2491	2311
85°	1949	2032	3539	2212	2129

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 14194 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.3	6.9
10°-20°	329.3	15.9
20°-30°	377.8	18.3
30°-40°	372.1	18.0
40°-50°	328.0	15.9
50°-60°	252.4	12.2
60°-70°	166.0	8.0
70°-80°	80.6	3.9
80°-90°	20.3	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°	849.4	41.1
0°-40°	1221.5	59.0
0°-60°	1802.0	87.1
0°-90°	2068.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2068.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1562	1562	1562	1562	1562	
5°	1847	1784	1566	1270	1175	169
15°	1117	1506	1494	800	667	315
25°	556	832	1333	562	507	262
35°	402	498	1093	440	394	250
45°	286	353	790	332	291	222
55°	190	244	490	229	182	171
65°	116	145	270	137	120	114
75°	51	62	122	63	52	54
85°	14	15	26	16	15	16
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°	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6
2.5°	1730.7	1719.8	1716.6	1712.7	1706.3	1683.3	1657.0	1659.6	1656.4	1636.5	1625.7
5°	1847.2	1848.5	1845.3	1842.7	1831.8	1803.6	1784.4	1772.9	1748.6	1711.4	1699.9
7.5°	1811.3	1831.8	1835.7	1840.1	1845.9	1839.5	1832.5	1828.0	1808.1	1767.8	1749.2
10°	1654.5	1653.2	1676.2	1694.8	1744.7	1780.0	1792.8	1811.3	1828.0	1799.8	1779.3
12.5°	1398.4	1400.3	1475.8	1475.8	1540.5	1630.1	1687.8	1726.8	1798.5	1800.4	1788.3
15°	1117.3	1148.6	1215.9	1230.0	1313.2	1433.6	1505.9	1586.6	1725.5	1769.1	1766.5
17.5°	917.5	931.0	995.6	1014.2	1087.8	1224.2	1324.1	1421.4	1616.0	1707.6	1724.3
20°	756.2	768.3	815.1	829.2	903.4	1033.4	1123.7	1228.7	1483.5	1623.7	1653.2
22.5°	631.3	655.0	686.4	708.1	750.4	882.9	960.4	1060.9	1329.8	1529.6	1564.2
25°	555.8	566.6	593.5	603.8	655.0	742.7	831.7	920.1	1193.5	1411.8	1472.6
27.5°	504.5	507.7	527.6	536.5	567.3	648.6	712.6	794.6	1054.5	1290.8	1361.9
30°	462.3	468.0	483.4	485.3	512.2	569.8	624.9	700.5	932.9	1173.6	1246.6
32.5°	429.6	432.8	445.6	449.5	466.8	512.2	557.0	612.1	820.2	1051.3	1135.2
35°	401.5	402.1	411.7	416.8	432.2	470.0	497.5	543.6	729.9	950.2	1023.8
37.5°	369.4	373.9	381.0	385.4	398.9	429.6	454.6	490.4	646.7	854.1	922.6
40°	342.5	346.4	354.7	356.6	368.8	397.0	417.5	449.5	575.0	761.9	831.7
42.5°	315.7	318.2	326.5	330.4	343.8	366.2	384.8	409.8	518.0	680.0	748.5
45°	285.6	292.0	300.9	302.8	315.7	338.7	352.8	375.8	466.8	608.9	669.7
47.5°	260.6	263.8	271.5	274.7	289.4	309.9	324.6	344.5	422.6	544.2	603.8
50°	235.6	236.9	243.9	248.4	260.0	283.6	297.7	315.7	382.2	491.7	533.3
52.5°	211.9	215.1	222.2	225.4	233.1	257.4	270.2	288.8	343.8	437.9	479.6
55°	190.2	192.1	197.2	201.0	210.0	231.1	243.9	260.0	310.5	388.6	425.1
57.5°	169.7	172.2	176.1	179.3	187.6	206.2	219.0	235.0	279.2	343.8	372.0
60°	148.5	151.7	156.2	157.5	165.2	181.8	193.4	207.4	247.1	302.2	327.2
62.5°	133.2	133.8	137.7	139.6	144.1	157.5	169.7	183.1	218.3	261.9	282.4
65°	115.9	117.8	119.7	121.0	124.9	136.4	145.3	155.6	190.2	227.9	242.0
67.5°	98.0	99.9	103.1	104.4	107.6	115.2	122.9	133.2	162.0	194.0	206.8
70°	76.2	76.2	81.3	83.9	89.0	94.8	100.5	109.5	134.5	162.0	171.6
72.5°	62.1	62.7	63.4	63.4	67.9	77.5	80.7	86.4	106.3	132.5	140.9
75°	50.6	51.2	51.9	52.5	53.1	56.3	61.5	66.6	81.3	100.5	108.2
77.5°	40.3	41.0	41.6	41.6	42.9	44.2	45.5	48.0	58.3	72.4	78.8
80°	30.7	31.4	32.0	32.0	32.7	33.9	34.6	35.9	39.1	48.7	51.9
82.5°	22.4	22.4	22.4	23.0	23.7	23.7	25.0	25.0	26.9	29.5	31.4
85°	14.1	14.1	14.7	14.7	14.7	15.4	14.7	15.4	16.0	16.6	17.9
87.5°	6.4	5.8	6.4	6.4	6.4	7.0	7.0	7.0	7.0	7.7	7.7
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):

	80°	90°	100°	110°	112.5°	120°	130°	135°	140°	150°	157.5°
0°	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6	1561.6
2.5°	1595.6	1573.1	1535.4	1511.7	1502.7	1475.2	1448.9	1427.2	1416.3	1415.0	1395.2
5°	1626.9	1565.5	1487.4	1422.0	1406.7	1358.7	1296.6	1269.7	1234.4	1220.4	1203.7
7.5°	1652.5	1556.5	1441.3	1342.6	1313.8	1241.5	1162.1	1126.9	1100.0	1057.7	1032.8
10°	1670.5	1539.9	1384.9	1257.5	1216.5	1132.0	1036.0	993.7	968.7	920.1	900.2
12.5°	1677.5	1518.7	1328.6	1169.1	1133.3	1032.8	938.6	895.1	858.0	813.8	794.6
15°	1675.0	1494.4	1270.9	1087.8	1043.0	941.2	841.3	800.3	765.8	721.6	696.6
17.5°	1657.7	1459.8	1208.2	1009.1	966.2	861.2	760.0	722.2	691.5	648.6	629.4
20°	1628.9	1424.6	1153.1	937.4	888.7	788.2	692.8	652.4	625.5	602.5	588.4
22.5°	1589.2	1383.0	1085.9	866.3	824.0	722.9	631.3	598.7	582.6	564.1	553.8
25°	1529.0	1333.0	1025.1	806.7	764.5	664.0	583.9	562.2	546.2	534.0	523.1
27.5°	1464.3	1285.0	964.2	746.6	706.9	610.8	546.8	530.1	516.1	500.7	491.1
30°	1389.4	1224.8	906.6	693.4	655.0	567.9	514.8	499.4	487.9	471.2	461.6
32.5°	1301.0	1158.9	852.8	642.2	606.3	530.8	485.3	468.7	459.1	443.1	433.5
35°	1209.5	1092.9	793.9	594.8	562.2	498.1	456.5	440.5	430.3	414.3	404.7
37.5°	1119.8	1022.5	741.4	553.2	523.7	465.5	426.4	413.0	403.4	386.7	375.2
40°	1025.1	941.8	690.2	514.1	486.6	436.7	398.9	386.7	373.9	359.2	347.7
42.5°	925.8	870.8	642.8	479.6	454.0	408.5	371.4	358.6	347.7	330.4	325.3
45°	833.0	789.5	592.9	443.1	422.6	380.3	344.5	331.7	319.5	304.8	299.6
47.5°	750.4	710.1	547.4	411.1	390.6	352.8	317.6	304.1	295.2	283.6	276.0
50°	665.2	631.9	497.5	379.7	360.5	323.3	289.4	280.4	270.2	256.1	250.3
52.5°	585.8	560.2	456.5	349.6	331.7	298.4	263.8	254.8	245.2	233.1	224.7
55°	516.1	490.4	409.8	315.7	302.2	270.8	240.1	228.6	220.9	206.8	196.6
57.5°	444.3	432.2	365.0	287.5	274.7	243.3	215.8	206.8	197.2	181.8	171.6
60°	385.4	371.4	323.3	256.7	244.6	218.3	191.4	182.5	173.5	158.8	154.3
62.5°	329.7	319.5	283.0	227.9	217.7	192.1	168.4	160.1	151.1	141.5	138.3
65°	279.2	270.2	242.7	198.5	190.2	167.8	146.0	137.0	131.3	126.8	123.6
67.5°	231.8	226.7	205.5	171.0	164.5	144.7	125.5	118.5	115.2	110.1	107.6
70°	188.9	190.8	171.6	146.0	138.9	122.9	106.3	100.5	96.7	92.2	87.1
72.5°	154.3	153.7	142.1	119.1	114.0	101.2	88.4	84.5	80.0	71.1	65.3
75°	119.7	122.3	111.4	98.6	93.5	80.7	68.5	63.4	58.9	55.7	53.8
77.5°	91.6	92.8	87.7	75.6	71.1	60.2	50.6	48.0	46.1	44.2	43.5
80°	65.3	67.2	62.1	54.4	50.6	41.6	36.5	35.9	35.2	33.9	33.3
82.5°	42.3	44.8	42.3	33.9	32.0	27.5	26.3	26.3	25.6	25.0	24.3
85°	23.0	25.6	24.3	19.8	18.6	17.3	16.6	16.0	16.0	16.0	16.0
87.5°	9.0	12.2	10.2	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
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°	1561.6	1561.6	1561.6
2.5°	1390.7	1384.3	1381.7
5°	1199.2	1179.4	1174.9
7.5°	1025.1	1016.8	989.2
10°	897.0	871.4	859.9
12.5°	781.8	758.1	754.2
15°	689.6	672.9	667.2
17.5°	628.7	617.2	610.2
20°	583.9	575.6	570.5
22.5°	550.0	543.6	539.7
25°	519.9	510.3	507.1
27.5°	489.2	480.8	477.6
30°	460.4	453.3	448.8
32.5°	430.3	421.9	419.4
35°	401.5	396.3	393.8
37.5°	373.3	366.9	363.0
40°	347.0	343.8	341.9
42.5°	323.3	317.6	316.9
45°	298.4	292.6	291.3
47.5°	274.7	269.6	268.9
50°	249.7	242.7	237.5
52.5°	219.6	213.2	208.7
55°	192.7	185.7	181.8
57.5°	170.3	167.1	165.2
60°	153.0	151.1	149.8
62.5°	137.7	135.7	135.7
65°	123.6	121.7	119.7
67.5°	106.3	102.4	101.8
70°	85.2	79.4	78.8
72.5°	64.7	64.0	62.7
75°	53.8	52.5	52.5
77.5°	43.5	42.3	42.3
80°	33.3	32.7	33.3
82.5°	24.3	24.3	23.7
85°	16.0	15.4	15.4
87.5°	7.7	7.7	7.7
90°	0.0	0.0	0.0

(END OF REPORT)