

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: P646686

Luminaire Tested: S123RDR-S560D835-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646686
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-S560D835-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

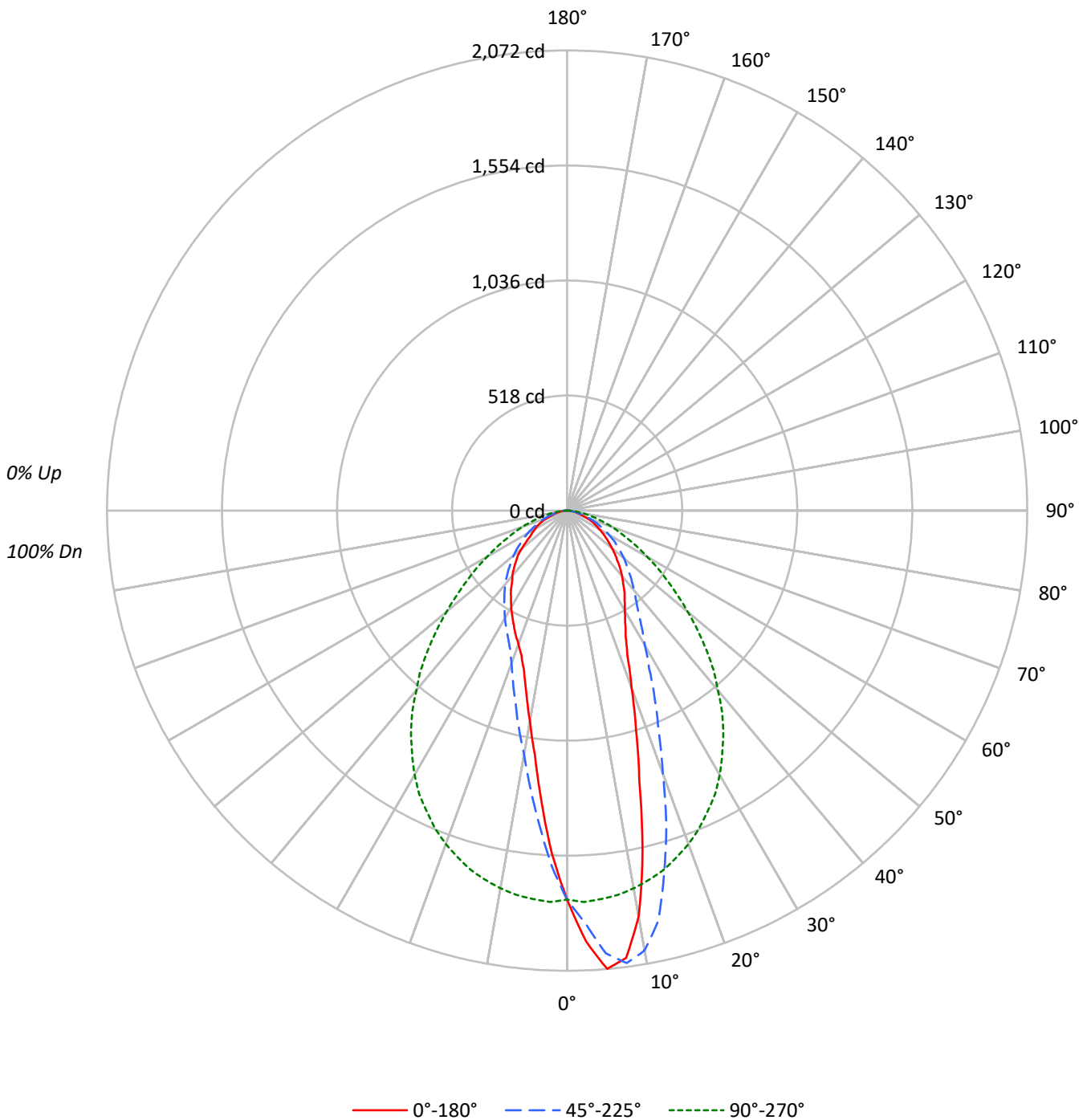
Lumens per Lamp: N/A
Luminaire Lumens: 2320.2 lumens
Efficiency: N/A
Efficacy: 124.7 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	21102	21102	21102	21102	21102
5°	25055	24204	21234	17221	15937
10°	22701	24599	21129	13635	11798
15°	15630	21066	20906	11196	9333
20°	10873	16158	20485	9382	8204
25°	8285	12400	19874	8381	7561
30°	7213	9750	19111	7793	7003
35°	6622	8206	18029	7266	6496
40°	6042	7364	16613	6822	6031
45°	5456	6741	15086	6337	5567
50°	4952	6259	13285	5895	4994
55°	4481	5748	11554	5384	4283
60°	4015	5225	10037	4931	4049
65°	3706	4647	8639	4382	3829
70°	3009	3970	7539	3970	3111
75°	2640	3208	6383	3310	2742
80°	2394	2692	5232	2789	2588
85°	2184	2281	3968	2488	2378

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 15919 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	159.6	6.9
10°-20°	369.3	15.9
20°-30°	423.7	18.3
30°-40°	417.3	18.0
40°-50°	367.8	15.9
50°-60°	283.1	12.2
60°-70°	186.2	8.0
70°-80°	90.4	3.9
80°-90°	22.8	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°	952.6	41.1
0°-40°	1369.9	59.0
0°-60°	2020.8	87.1
0°-90°	2320.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2320.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1751	1751	1751	1751	1751	
5°	2072	2001	1756	1424	1318	189
15°	1253	1689	1676	898	748	354
25°	623	933	1495	630	569	294
35°	450	558	1226	494	442	281
45°	320	396	885	372	327	249
55°	213	274	550	256	204	191
65°	130	163	303	154	134	127
75°	57	69	137	71	59	61
85°	16	16	29	18	17	18
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°	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3
2.5°	1940.8	1928.6	1925.0	1920.7	1913.5	1887.7	1858.3	1861.1	1857.5	1835.3	1823.1
5°	2071.5	2072.9	2069.4	2066.5	2054.3	2022.7	2001.1	1988.2	1960.9	1919.3	1906.4
7.5°	2031.3	2054.3	2058.6	2063.6	2070.1	2062.9	2055.0	2050.0	2027.7	1982.5	1961.6
10°	1855.4	1853.9	1879.8	1900.6	1956.6	1996.1	2010.5	2031.3	2050.0	2018.4	1995.4
12.5°	1568.2	1570.3	1655.1	1655.1	1727.6	1828.1	1892.7	1936.5	2016.9	2019.1	2005.4
15°	1253.0	1288.1	1363.5	1379.3	1472.7	1607.7	1688.8	1779.3	1935.1	1983.9	1981.0
17.5°	1028.9	1044.0	1116.5	1137.4	1219.9	1372.9	1484.9	1594.0	1812.3	1915.0	1933.6
20°	848.0	861.6	914.0	929.8	1013.1	1158.9	1260.1	1377.9	1663.7	1820.9	1853.9
22.5°	708.0	734.5	769.7	794.1	841.5	990.2	1077.0	1189.8	1491.3	1715.4	1754.1
25°	623.2	635.5	665.6	677.1	734.5	832.9	932.7	1031.8	1338.4	1583.2	1651.5
27.5°	565.8	569.4	591.7	601.7	636.2	727.4	799.2	891.1	1182.6	1447.5	1527.2
30°	518.4	524.9	542.1	544.3	574.4	639.0	700.8	785.5	1046.2	1316.1	1398.0
32.5°	481.8	485.4	499.7	504.1	523.4	574.4	624.7	686.4	919.8	1179.0	1273.1
35°	450.2	450.9	461.7	467.4	484.7	527.0	557.9	609.6	818.6	1065.6	1148.1
37.5°	414.3	419.3	427.2	432.3	447.3	481.8	509.8	550.0	725.2	957.8	1034.7
40°	384.1	388.5	397.8	399.9	413.6	445.2	468.2	504.1	644.8	854.5	932.7
42.5°	354.0	356.9	366.2	370.5	385.6	410.7	431.5	459.5	580.9	762.5	839.4
45°	320.2	327.4	337.5	339.6	354.0	379.8	395.6	421.5	523.4	682.8	751.1
47.5°	292.2	295.8	304.4	308.0	324.5	347.5	364.0	386.3	473.9	610.3	677.1
50°	264.2	265.7	273.6	278.6	291.5	318.1	333.9	354.0	428.7	551.4	598.1
52.5°	237.7	241.3	249.2	252.7	261.4	288.6	303.0	323.8	385.6	491.1	537.8
55°	213.3	215.4	221.2	225.5	235.5	259.2	273.6	291.5	348.2	435.8	476.8
57.5°	190.3	193.1	197.5	201.0	210.4	231.2	245.6	263.5	313.1	385.6	417.2
60°	166.6	170.2	175.2	176.6	185.3	203.9	216.8	232.6	277.2	338.9	366.9
62.5°	149.3	150.1	154.4	156.5	161.6	176.6	190.3	205.4	244.8	293.7	316.6
65°	130.0	132.1	134.3	135.7	140.0	152.9	163.0	174.5	213.3	255.6	271.4
67.5°	109.9	112.0	115.6	117.0	120.6	129.2	137.9	149.3	181.7	217.6	231.9
70°	85.4	85.4	91.2	94.1	99.8	106.3	112.7	122.8	150.8	181.7	192.4
72.5°	69.6	70.4	71.1	71.1	76.1	86.9	90.5	96.9	119.2	148.6	158.0
75°	56.7	57.4	58.2	58.9	59.6	63.2	68.9	74.7	91.2	112.7	121.3
77.5°	45.2	46.0	46.7	46.7	48.1	49.5	51.0	53.9	65.3	81.1	88.3
80°	34.5	35.2	35.9	35.9	36.6	38.1	38.8	40.2	43.8	54.6	58.2
82.5°	25.1	25.1	25.1	25.8	26.6	26.6	28.0	28.0	30.2	33.0	35.2
85°	15.8	15.8	16.5	16.5	16.5	17.2	16.5	17.2	18.0	18.7	20.1
87.5°	7.2	6.5	7.2	7.2	7.2	7.9	7.9	7.9	7.9	8.6	8.6
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°	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3
2.5°	1789.3	1764.2	1721.8	1695.3	1685.2	1654.3	1624.9	1600.5	1588.3	1586.8	1564.6
5°	1824.5	1755.6	1668.0	1594.7	1577.5	1523.7	1454.0	1423.8	1384.4	1368.6	1349.9
7.5°	1853.2	1745.5	1616.3	1505.7	1473.4	1392.3	1303.2	1263.7	1233.6	1186.2	1158.2
10°	1873.3	1726.9	1553.1	1410.2	1364.3	1269.5	1161.8	1114.4	1086.4	1031.8	1009.5
12.5°	1881.2	1703.2	1489.9	1311.1	1270.9	1158.2	1052.6	1003.8	962.2	912.6	891.1
15°	1878.4	1675.9	1425.3	1219.9	1169.7	1055.5	943.5	897.5	858.8	809.2	781.2
17.5°	1859.0	1637.1	1354.9	1131.6	1083.5	965.7	852.3	809.9	775.5	727.4	705.8
20°	1826.7	1597.6	1293.2	1051.2	996.6	883.9	776.9	731.7	701.5	675.7	659.9
22.5°	1782.1	1550.9	1217.8	971.5	924.1	810.7	708.0	671.4	653.4	632.6	621.1
25°	1714.6	1494.9	1149.6	904.7	857.3	744.6	654.8	630.4	612.5	598.8	586.6
27.5°	1642.1	1441.1	1081.3	837.2	792.7	685.0	613.2	594.5	578.7	561.5	550.7
30°	1558.1	1373.6	1016.7	777.6	734.5	636.9	577.3	560.1	547.1	528.5	517.7
32.5°	1459.0	1299.6	956.4	720.2	680.0	595.2	544.3	525.6	514.8	496.9	486.1
35°	1356.4	1225.7	890.4	667.0	630.4	558.6	512.0	494.0	482.5	464.6	453.8
37.5°	1255.8	1146.7	831.5	620.4	587.3	522.0	478.2	463.1	452.4	433.7	420.8
40°	1149.6	1056.2	774.0	576.6	545.7	489.7	447.3	433.7	419.3	402.8	389.9
42.5°	1038.3	976.5	720.9	537.8	509.1	458.1	416.5	402.1	389.9	370.5	364.8
45°	934.2	885.3	664.9	496.9	473.9	426.5	386.3	371.9	358.3	341.8	336.0
47.5°	841.5	796.3	613.9	461.0	438.0	395.6	356.1	341.1	331.0	318.1	309.5
50°	746.0	708.7	557.9	425.8	404.2	362.6	324.5	314.5	303.0	287.2	280.7
52.5°	657.0	628.3	512.0	392.0	371.9	334.6	295.8	285.8	275.0	261.4	252.0
55°	578.7	550.0	459.5	354.0	338.9	303.7	269.3	256.3	247.7	231.9	220.4
57.5°	498.3	484.7	409.3	322.4	308.0	272.9	242.0	231.9	221.2	203.9	192.4
60°	432.3	416.5	362.6	287.9	274.3	244.8	214.7	204.6	194.6	178.1	173.0
62.5°	369.8	358.3	317.4	255.6	244.1	215.4	188.8	179.5	169.5	158.7	155.1
65°	313.1	303.0	272.1	222.6	213.3	188.1	163.7	153.7	147.2	142.2	138.6
67.5°	259.9	254.2	230.5	191.7	184.5	162.3	140.7	132.8	129.2	123.5	120.6
70°	211.8	214.0	192.4	163.7	155.8	137.9	119.2	112.7	108.4	103.4	97.7
72.5°	173.0	172.3	159.4	133.6	127.8	113.4	99.1	94.8	89.8	79.7	73.2
75°	134.3	137.1	124.9	110.6	104.8	90.5	76.8	71.1	66.1	62.5	60.3
77.5°	102.7	104.1	98.4	84.7	79.7	67.5	56.7	53.9	51.7	49.5	48.8
80°	73.2	75.4	69.6	61.0	56.7	46.7	40.9	40.2	39.5	38.1	37.3
82.5°	47.4	50.3	47.4	38.1	35.9	30.9	29.4	29.4	28.7	28.0	27.3
85°	25.8	28.7	27.3	22.3	20.8	19.4	18.7	18.0	18.0	18.0	18.0
87.5°	10.1	13.6	11.5	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
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°	1751.3	1751.3	1751.3
2.5°	1559.6	1552.4	1549.5
5°	1344.9	1322.6	1317.6
7.5°	1149.6	1140.2	1109.4
10°	1006.0	977.2	964.3
12.5°	876.7	850.1	845.8
15°	773.3	754.6	748.2
17.5°	705.1	692.2	684.3
20°	654.8	645.5	639.8
22.5°	616.8	609.6	605.3
25°	583.0	572.3	568.7
27.5°	548.6	539.2	535.6
30°	516.3	508.4	503.3
32.5°	482.5	473.2	470.3
35°	450.2	444.5	441.6
37.5°	418.6	411.4	407.1
40°	389.2	385.6	383.4
42.5°	362.6	356.1	355.4
45°	334.6	328.1	326.7
47.5°	308.0	302.3	301.6
50°	280.0	272.1	266.4
52.5°	246.3	239.1	234.1
55°	216.1	208.2	203.9
57.5°	191.0	187.4	185.3
60°	171.6	169.5	168.0
62.5°	154.4	152.2	152.2
65°	138.6	136.4	134.3
67.5°	119.2	114.9	114.2
70°	95.5	89.0	88.3
72.5°	72.5	71.8	70.4
75°	60.3	58.9	58.9
77.5°	48.8	47.4	47.4
80°	37.3	36.6	37.3
82.5°	27.3	27.3	26.6
85°	18.0	17.2	17.2
87.5°	8.6	8.6	8.6
90°	0.0	0.0	0.0

(END OF REPORT)