

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: P646683

Luminaire Tested: S123RDR-S340D940-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646683
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-S340D940-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

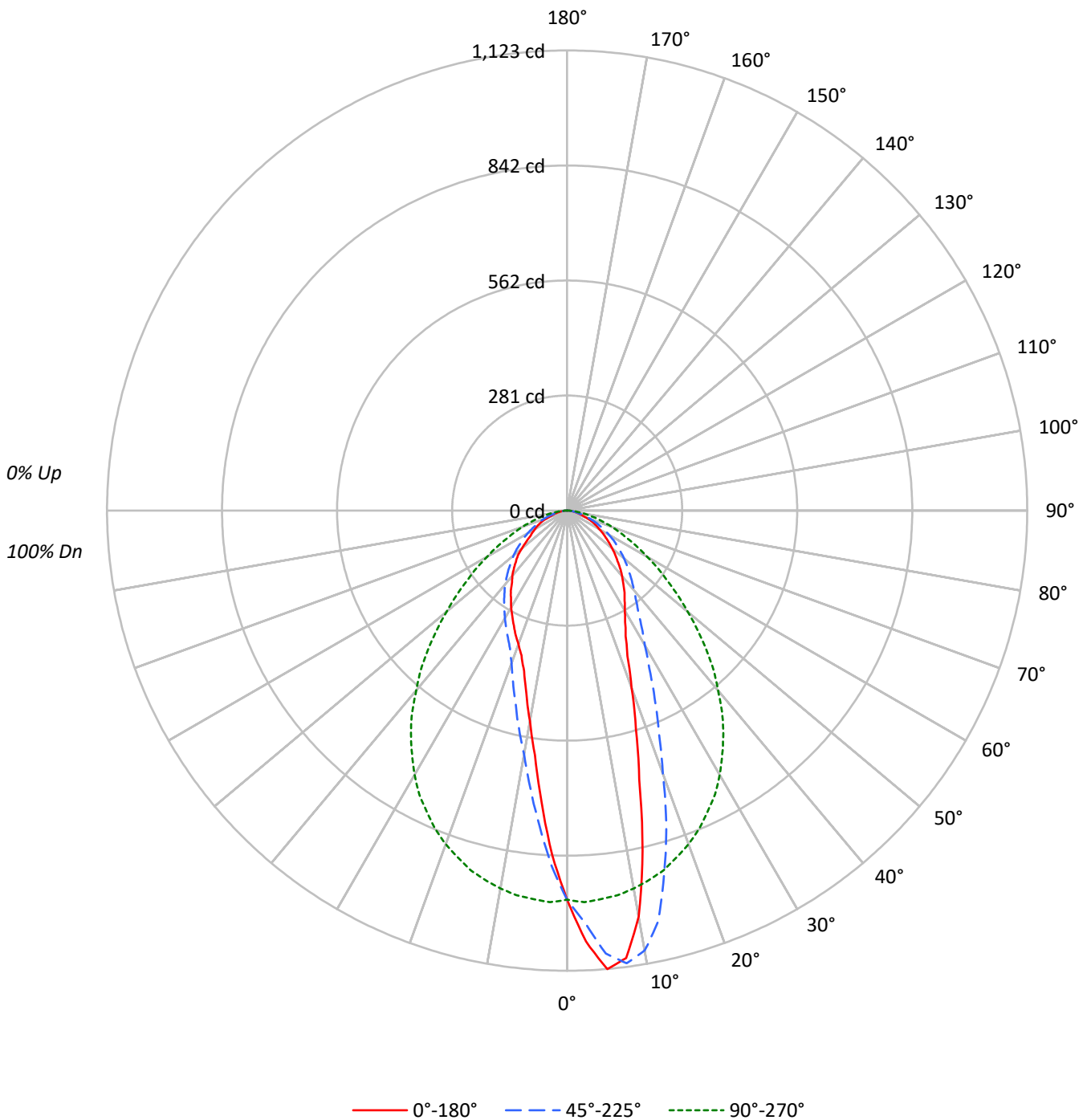
Lumens per Lamp: N/A
Luminaire Lumens: 1258.1 lumens
Efficiency: N/A
Efficacy: 105.7 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')
CIE Type: Direct

Input Watts (W): 11.9
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					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°	11442	11442	11442	11442	11442
5°	13587	13125	11513	9339	8641
10°	12310	13339	11457	7394	6398
15°	8475	11423	11335	6071	5061
20°	5896	8762	11108	5087	4448
25°	4492	6725	10777	4544	4100
30°	3911	5287	10363	4225	3797
35°	3591	4450	9776	3941	3521
40°	3276	3994	9008	3699	3270
45°	2958	3655	8181	3437	3020
50°	2686	3393	7204	3196	2707
55°	2428	3115	6264	2920	2323
60°	2176	2834	5441	2675	2195
65°	2010	2520	4684	2375	2076
70°	1631	2153	4087	2153	1687
75°	1434	1741	3464	1792	1485
80°	1298	1457	2838	1513	1402
85°	1189	1244	2157	1341	1286

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°
 Vertical Angle: 45°
 Luminance: 8631 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.5	6.9
10°-20°	200.2	15.9
20°-30°	229.7	18.3
30°-40°	226.3	18.0
40°-50°	199.5	15.9
50°-60°	153.5	12.2
60°-70°	100.9	8.0
70°-80°	49.0	3.9
80°-90°	12.4	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°	516.5	41.1
0°-40°	742.8	59.0
0°-60°	1095.8	87.1
0°-90°	1258.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1258.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	950	950	950	950	950	
5°	1123	1085	952	772	714	103
15°	679	916	909	487	406	192
25°	338	506	811	342	308	160
35°	244	302	665	268	239	152
45°	174	214	480	202	177	135
55°	116	148	298	139	111	104
65°	70	88	164	83	73	69
75°	31	37	74	38	32	33
85°	9	9	16	10	9	10
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°	949.6	949.6	949.6	949.6	949.6	949.6	949.6	949.6	949.6	949.6	949.6
2.5°	1052.4	1045.8	1043.8	1041.5	1037.6	1023.6	1007.6	1009.2	1007.2	995.2	988.5
5°	1123.3	1124.0	1122.1	1120.5	1113.9	1096.8	1085.1	1078.1	1063.3	1040.7	1033.7
7.5°	1101.4	1113.9	1116.2	1119.0	1122.5	1118.6	1114.3	1111.6	1099.5	1075.0	1063.7
10°	1006.1	1005.3	1019.3	1030.6	1061.0	1082.4	1090.2	1101.4	1111.6	1094.4	1082.0
12.5°	850.3	851.5	897.4	897.4	936.8	991.3	1026.3	1050.1	1093.7	1094.8	1087.4
15°	679.4	698.5	739.4	747.9	798.5	871.7	915.7	964.8	1049.3	1075.8	1074.2
17.5°	557.9	566.1	605.4	616.7	661.5	744.4	805.2	864.3	982.7	1038.4	1048.5
20°	459.8	467.2	495.6	504.2	549.4	628.4	683.3	747.1	902.1	987.4	1005.3
22.5°	383.9	398.3	417.4	430.6	456.3	536.9	584.0	645.1	808.7	930.1	951.2
25°	337.9	344.6	360.9	367.1	398.3	451.6	505.8	559.5	725.7	858.5	895.5
27.5°	306.8	308.7	320.8	326.3	345.0	394.4	433.3	483.2	641.2	784.9	828.1
30°	281.1	284.6	294.0	295.1	311.5	346.5	380.0	425.9	567.3	713.7	758.0
32.5°	261.2	263.2	271.0	273.3	283.8	311.5	338.7	372.2	498.7	639.3	690.3
35°	244.1	244.5	250.3	253.5	262.8	285.8	302.5	330.6	443.8	577.8	622.6
37.5°	224.7	227.4	231.7	234.4	242.6	261.2	276.4	298.2	393.2	519.4	561.0
40°	208.3	210.6	215.7	216.9	224.3	241.4	253.9	273.3	349.6	463.3	505.8
42.5°	191.9	193.5	198.6	200.9	209.1	222.7	234.0	249.2	315.0	413.5	455.1
45°	173.6	177.5	183.0	184.2	191.9	206.0	214.5	228.5	283.8	370.3	407.3
47.5°	158.5	160.4	165.1	167.0	176.0	188.4	197.4	209.5	257.0	330.9	367.1
50°	143.3	144.1	148.3	151.1	158.1	172.5	181.0	191.9	232.4	299.0	324.3
52.5°	128.9	130.8	135.1	137.0	141.7	156.5	164.3	175.6	209.1	266.3	291.6
55°	115.6	116.8	119.9	122.3	127.7	140.6	148.3	158.1	188.8	236.3	258.5
57.5°	103.2	104.7	107.1	109.0	114.1	125.4	133.2	142.9	169.8	209.1	226.2
60°	90.3	92.3	95.0	95.8	100.5	110.6	117.6	126.1	150.3	183.8	199.0
62.5°	81.0	81.4	83.7	84.9	87.6	95.8	103.2	111.4	132.8	159.2	171.7
65°	70.5	71.6	72.8	73.6	75.9	82.9	88.4	94.6	115.6	138.6	147.2
67.5°	59.6	60.7	62.7	63.5	65.4	70.1	74.8	81.0	98.5	118.0	125.8
70°	46.3	46.3	49.4	51.0	54.1	57.6	61.1	66.6	81.8	98.5	104.3
72.5°	37.8	38.2	38.5	38.5	41.3	47.1	49.1	52.6	64.6	80.6	85.7
75°	30.8	31.1	31.5	31.9	32.3	34.3	37.4	40.5	49.4	61.1	65.8
77.5°	24.5	24.9	25.3	25.3	26.1	26.9	27.6	29.2	35.4	44.0	47.9
80°	18.7	19.1	19.5	19.5	19.9	20.6	21.0	21.8	23.7	29.6	31.5
82.5°	13.6	13.6	13.6	14.0	14.4	14.4	15.2	15.2	16.4	17.9	19.1
85°	8.6	8.6	9.0	9.0	9.0	9.3	9.0	9.3	9.7	10.1	10.9
87.5°	3.9	3.5	3.9	3.9	3.9	4.3	4.3	4.3	4.3	4.7	4.7
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°	949.6	949.6	949.6	949.6	949.6	949.6	949.6	949.6	949.6	949.6	949.6
2.5°	970.2	956.6	933.6	919.2	913.8	897.0	881.1	867.8	861.2	860.4	848.4
5°	989.3	951.9	904.4	864.7	855.4	826.2	788.4	772.1	750.7	742.1	732.0
7.5°	1004.9	946.5	876.4	816.5	798.9	754.9	706.7	685.2	668.9	643.2	628.0
10°	1015.8	936.4	842.1	764.7	739.7	688.4	630.0	604.3	589.1	559.5	547.4
12.5°	1020.1	923.5	807.9	710.9	689.1	628.0	570.8	544.3	521.7	494.9	483.2
15°	1018.5	908.7	772.8	661.5	634.2	572.3	511.6	486.7	465.7	438.8	423.6
17.5°	1008.0	887.7	734.7	613.6	587.5	523.7	462.1	439.2	420.5	394.4	382.7
20°	990.5	866.3	701.2	570.0	540.4	479.3	421.3	396.7	380.4	366.4	357.8
22.5°	966.3	841.0	660.3	526.8	501.1	439.6	383.9	364.0	354.3	343.0	336.8
25°	929.7	810.6	623.3	490.6	464.9	403.7	355.1	341.8	332.1	324.7	318.1
27.5°	890.4	781.4	586.3	454.0	429.8	371.4	332.5	322.4	313.8	304.5	298.6
30°	844.9	744.8	551.3	421.7	398.3	345.3	313.0	303.7	296.7	286.6	280.7
32.5°	791.1	704.7	518.6	390.5	368.7	322.8	295.1	285.0	279.2	269.4	263.6
35°	735.5	664.6	482.8	361.7	341.8	302.9	277.6	267.9	261.6	251.9	246.1
37.5°	681.0	621.8	450.9	336.4	318.5	283.1	259.3	251.1	245.3	235.2	228.2
40°	623.3	572.7	419.7	312.6	295.9	265.5	242.6	235.2	227.4	218.4	211.4
42.5°	563.0	529.5	390.9	291.6	276.0	248.4	225.8	218.0	211.4	200.9	197.8
45°	506.5	480.1	360.5	269.4	257.0	231.3	209.5	201.7	194.3	185.3	182.2
47.5°	456.3	431.8	332.9	250.0	237.5	214.5	193.1	184.9	179.5	172.5	167.8
50°	404.5	384.3	302.5	230.9	219.2	196.6	176.0	170.5	164.3	155.7	152.2
52.5°	356.2	340.7	277.6	212.6	201.7	181.4	160.4	155.0	149.1	141.7	136.7
55°	313.8	298.2	249.2	191.9	183.8	164.7	146.0	139.0	134.3	125.8	119.5
57.5°	270.2	262.8	221.9	174.8	167.0	147.9	131.2	125.8	119.9	110.6	104.3
60°	234.4	225.8	196.6	156.1	148.7	132.8	116.4	111.0	105.5	96.6	93.8
62.5°	200.5	194.3	172.1	138.6	132.4	116.8	102.4	97.3	91.9	86.0	84.1
65°	169.8	164.3	147.6	120.7	115.6	102.0	88.8	83.3	79.8	77.1	75.1
67.5°	140.9	137.8	125.0	104.0	100.1	88.0	76.3	72.0	70.1	67.0	65.4
70°	114.9	116.0	104.3	88.8	84.5	74.8	64.6	61.1	58.8	56.1	53.0
72.5°	93.8	93.4	86.4	72.4	69.3	61.5	53.7	51.4	48.7	43.2	39.7
75°	72.8	74.4	67.7	60.0	56.8	49.1	41.7	38.5	35.8	33.9	32.7
77.5°	55.7	56.5	53.3	45.9	43.2	36.6	30.8	29.2	28.0	26.9	26.5
80°	39.7	40.9	37.8	33.1	30.8	25.3	22.2	21.8	21.4	20.6	20.2
82.5°	25.7	27.3	25.7	20.6	19.5	16.7	16.0	16.0	15.6	15.2	14.8
85°	14.0	15.6	14.8	12.1	11.3	10.5	10.1	9.7	9.7	9.7	9.7
87.5°	5.5	7.4	6.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
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):

	160°	170°	180°
0°	949.6	949.6	949.6
2.5°	845.7	841.8	840.2
5°	729.2	717.2	714.4
7.5°	623.3	618.3	601.5
10°	545.5	529.9	522.9
12.5°	475.4	461.0	458.6
15°	419.3	409.2	405.7
17.5°	382.3	375.3	371.0
20°	355.1	350.0	346.9
22.5°	334.4	330.6	328.2
25°	316.1	310.3	308.4
27.5°	297.5	292.4	290.4
30°	279.9	275.7	272.9
32.5°	261.6	256.6	255.0
35°	244.1	241.0	239.4
37.5°	227.0	223.1	220.8
40°	211.0	209.1	207.9
42.5°	196.6	193.1	192.7
45°	181.4	177.9	177.2
47.5°	167.0	163.9	163.5
50°	151.8	147.6	144.4
52.5°	133.5	129.7	126.9
55°	117.2	112.9	110.6
57.5°	103.6	101.6	100.5
60°	93.1	91.9	91.1
62.5°	83.7	82.5	82.5
65°	75.1	74.0	72.8
67.5°	64.6	62.3	61.9
70°	51.8	48.3	47.9
72.5°	39.3	38.9	38.2
75°	32.7	31.9	31.9
77.5°	26.5	25.7	25.7
80°	20.2	19.9	20.2
82.5°	14.8	14.8	14.4
85°	9.7	9.3	9.3
87.5°	4.7	4.7	4.7
90°	0.0	0.0	0.0

(END OF REPORT)