

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: P646680

Luminaire Tested: S123RDR-S340D927-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P646680  
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-S340D927-X4F0-XX-UDD-G-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC  
STANDARD LIGHT ENGINE  
Light Source: 2700K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

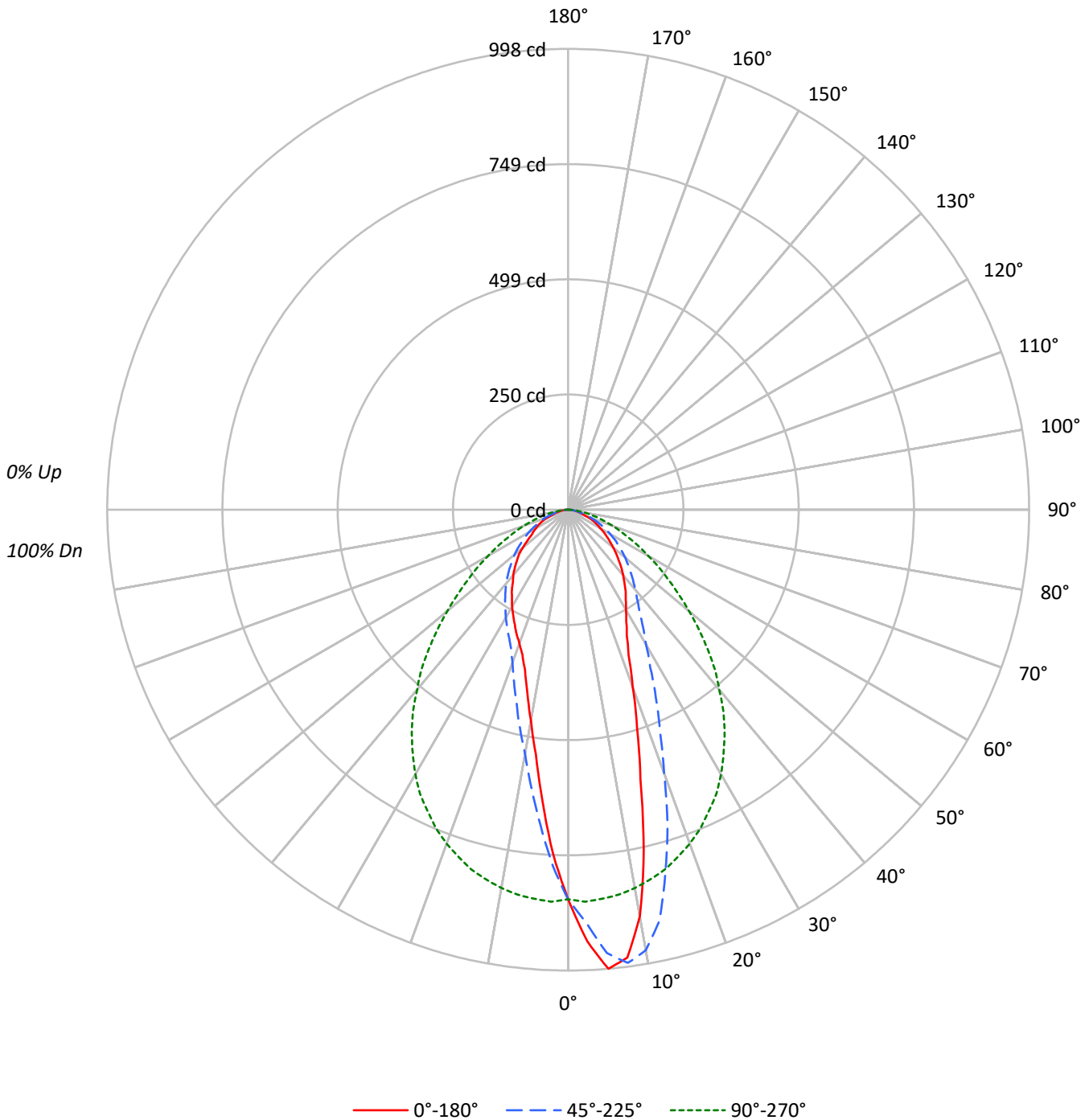
Lumens per Lamp: N/A  
Luminaire Lumens: 1117.7 lumens  
Efficiency: N/A  
Efficacy: 93.9 lumens/watt  
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79  
Luminous Opening: Rectangular (W 4' x L: 0.22' x H: 0')  
CIE Type: Direct

Input Watts (W): 11.9  
Input Voltage (V): 120  
Input Current (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°	10165	10165	10165	10165	10165
5°	12070	11660	10229	8296	7677
10°	10936	11850	10178	6568	5683
15°	7529	10148	10070	5394	4496
20°	5238	7783	9868	4520	3952
25°	3991	5973	9574	4038	3641
30°	3474	4697	9206	3754	3374
35°	3190	3954	8684	3501	3129
40°	2910	3547	8003	3286	2905
45°	2629	3248	7268	3054	2682
50°	2386	3014	6400	2840	2405
55°	2157	2769	5565	2594	2063
60°	1933	2518	4834	2376	1950
65°	1785	2238	4163	2110	1845
70°	1451	1913	3632	1913	1497
75°	1271	1546	3077	1592	1322
80°	1152	1298	2519	1346	1249
85°	1051	1106	1908	1189	1147

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 80°  
 Vertical Angle: 45°  
 Luminance: 7668 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	76.9	6.9
10°-20°	177.9	15.9
20°-30°	204.1	18.3
30°-40°	201.0	18.0
40°-50°	177.2	15.9
50°-60°	136.4	12.2
60°-70°	89.7	8.0
70°-80°	43.5	3.9
80°-90°	11.0	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°	458.9	41.1
0°-40°	659.9	59.0
0°-60°	973.5	87.1
0°-90°	1117.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1117.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	844	844	844	844	844	
5°	998	964	846	686	635	91
15°	604	814	807	432	360	170
25°	300	449	720	304	274	142
35°	217	269	590	238	213	135
45°	154	191	426	179	157	120
55°	103	132	265	124	98	92
65°	63	78	146	74	65	61
75°	27	33	66	34	28	29
85°	8	8	14	9	8	9
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°	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6
2.5°	934.9	929.0	927.3	925.2	921.8	909.3	895.2	896.5	894.8	884.1	878.2
5°	997.9	998.6	996.8	995.5	989.6	974.4	964.0	957.8	944.6	924.6	918.3
7.5°	978.5	989.6	991.7	994.1	997.2	993.7	989.9	987.5	976.8	955.0	945.0
10°	893.8	893.1	905.5	915.6	942.5	961.6	968.5	978.5	987.5	972.3	961.2
12.5°	755.4	756.5	797.3	797.3	832.2	880.6	911.8	932.9	971.6	972.6	966.1
15°	603.6	620.5	656.8	664.4	709.4	774.4	813.5	857.1	932.2	955.7	954.3
17.5°	495.7	502.9	537.9	547.9	587.7	661.3	715.3	767.9	873.0	922.5	931.5
20°	408.5	415.1	440.3	447.9	488.0	558.3	607.0	663.8	801.4	877.2	893.1
22.5°	341.0	353.8	370.8	382.5	405.4	477.0	518.8	573.1	718.4	826.3	845.0
25°	300.2	306.1	320.6	326.2	353.8	401.2	449.3	497.0	644.7	762.7	795.5
27.5°	272.6	274.3	285.0	289.9	306.5	350.4	385.0	429.2	569.7	697.3	735.7
30°	249.7	252.8	261.1	262.2	276.7	307.8	337.6	378.4	504.0	634.0	673.4
32.5°	232.1	233.8	240.7	242.8	252.2	276.7	300.9	330.7	443.1	567.9	613.3
35°	216.9	217.2	222.4	225.2	233.5	253.9	268.8	293.7	394.3	513.3	553.1
37.5°	199.6	202.0	205.8	208.2	215.5	232.1	245.6	264.9	349.3	461.4	498.4
40°	185.0	187.1	191.6	192.7	199.2	214.4	225.5	242.8	310.6	411.6	449.3
42.5°	170.5	171.9	176.4	178.5	185.7	197.8	207.9	221.4	279.8	367.3	404.3
45°	154.3	157.7	162.6	163.6	170.5	183.0	190.6	203.0	252.2	328.9	361.8
47.5°	140.8	142.5	146.7	148.4	156.3	167.4	175.4	186.1	228.3	294.0	326.2
50°	127.3	128.0	131.8	134.2	140.4	153.2	160.8	170.5	206.5	265.6	288.1
52.5°	114.5	116.2	120.0	121.8	125.9	139.0	146.0	156.0	185.7	236.6	259.1
55°	102.7	103.8	106.5	108.6	113.5	124.9	131.8	140.4	167.8	210.0	229.7
57.5°	91.7	93.0	95.1	96.8	101.3	111.4	118.3	126.9	150.8	185.7	201.0
60°	80.2	82.0	84.4	85.1	89.2	98.2	104.5	112.1	133.5	163.3	176.7
62.5°	71.9	72.3	74.4	75.4	77.8	85.1	91.7	98.9	117.9	141.5	152.5
65°	62.6	63.6	64.7	65.4	67.4	73.7	78.5	84.1	102.7	123.1	130.7
67.5°	52.9	54.0	55.7	56.4	58.1	62.3	66.4	71.9	87.5	104.8	111.7
70°	41.2	41.2	43.9	45.3	48.1	51.2	54.3	59.1	72.6	87.5	92.7
72.5°	33.6	33.9	34.2	34.2	36.7	41.9	43.6	46.7	57.4	71.6	76.1
75°	27.3	27.7	28.0	28.4	28.7	30.4	33.2	36.0	43.9	54.3	58.5
77.5°	21.8	22.1	22.5	22.5	23.2	23.9	24.6	25.9	31.5	39.1	42.5
80°	16.6	16.9	17.3	17.3	17.6	18.3	18.7	19.4	21.1	26.3	28.0
82.5°	12.1	12.1	12.1	12.5	12.8	12.8	13.5	13.5	14.5	15.9	16.9
85°	7.6	7.6	8.0	8.0	8.0	8.3	8.0	8.3	8.6	9.0	9.7
87.5°	3.5	3.1	3.5	3.5	3.5	3.8	3.8	3.8	3.8	4.2	4.2
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°	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6	843.6
2.5°	861.9	849.8	829.4	816.6	811.8	796.9	782.7	771.0	765.1	764.4	753.7
5°	878.9	845.7	803.5	768.2	759.9	734.0	700.4	685.9	666.9	659.3	650.3
7.5°	892.7	840.8	778.6	725.3	709.8	670.7	627.8	608.8	594.2	571.4	557.9
10°	902.4	831.9	748.1	679.3	657.2	611.5	559.6	536.8	523.3	497.0	486.3
12.5°	906.2	820.4	717.7	631.6	612.2	557.9	507.1	483.5	463.5	439.6	429.2
15°	904.8	807.3	686.6	587.7	563.4	508.5	454.5	432.4	413.7	389.8	376.3
17.5°	895.5	788.6	652.7	545.1	521.9	465.2	410.6	390.2	373.6	350.4	340.0
20°	879.9	769.6	622.9	506.4	480.1	425.8	374.2	352.5	337.9	325.5	317.9
22.5°	858.5	747.1	586.6	468.0	445.2	390.5	341.0	323.4	314.8	304.7	299.2
25°	826.0	720.1	553.8	435.8	413.0	358.7	315.4	303.7	295.0	288.5	282.6
27.5°	791.0	694.2	520.9	403.3	381.9	330.0	295.4	286.4	278.8	270.5	265.3
30°	750.6	661.7	489.8	374.6	353.8	306.8	278.1	269.8	263.6	254.6	249.4
32.5°	702.8	626.1	460.7	346.9	327.6	286.7	262.2	253.2	248.0	239.4	234.2
35°	653.4	590.4	428.9	321.3	303.7	269.1	246.6	238.0	232.4	223.8	218.6
37.5°	605.0	552.4	400.5	298.8	282.9	251.5	230.4	223.1	217.9	208.9	202.7
40°	553.8	508.8	372.9	277.7	262.9	235.9	215.5	208.9	202.0	194.0	187.8
42.5°	500.1	470.4	347.3	259.1	245.2	220.7	200.6	193.7	187.8	178.5	175.7
45°	450.0	426.5	320.3	239.4	228.3	205.5	186.1	179.2	172.6	164.6	161.9
47.5°	405.4	383.6	295.7	222.1	211.0	190.6	171.6	164.3	159.5	153.2	149.1
50°	359.4	341.4	268.8	205.1	194.7	174.7	156.3	151.5	146.0	138.4	135.2
52.5°	316.5	302.6	246.6	188.9	179.2	161.2	142.5	137.7	132.5	125.9	121.4
55°	278.8	264.9	221.4	170.5	163.3	146.3	129.7	123.5	119.3	111.7	106.2
57.5°	240.0	233.5	197.2	155.3	148.4	131.4	116.6	111.7	106.5	98.2	92.7
60°	208.2	200.6	174.7	138.7	132.1	117.9	103.4	98.6	93.7	85.8	83.4
62.5°	178.1	172.6	152.9	123.1	117.6	103.8	91.0	86.5	81.6	76.4	74.7
65°	150.8	146.0	131.1	107.2	102.7	90.6	78.9	74.0	70.9	68.5	66.8
67.5°	125.2	122.4	111.0	92.4	88.9	78.2	67.8	64.0	62.3	59.5	58.1
70°	102.0	103.1	92.7	78.9	75.1	66.4	57.4	54.3	52.2	49.8	47.0
72.5°	83.4	83.0	76.8	64.3	61.6	54.6	47.7	45.7	43.2	38.4	35.3
75°	64.7	66.1	60.2	53.3	50.5	43.6	37.0	34.2	31.8	30.1	29.1
77.5°	49.5	50.2	47.4	40.8	38.4	32.5	27.3	25.9	24.9	23.9	23.5
80°	35.3	36.3	33.6	29.4	27.3	22.5	19.7	19.4	19.0	18.3	18.0
82.5°	22.8	24.2	22.8	18.3	17.3	14.9	14.2	14.2	13.8	13.5	13.1
85°	12.5	13.8	13.1	10.7	10.0	9.3	9.0	8.6	8.6	8.6	8.6
87.5°	4.8	6.6	5.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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°	843.6	843.6	843.6
2.5°	751.3	747.8	746.4
5°	647.8	637.1	634.7
7.5°	553.8	549.3	534.4
10°	484.6	470.7	464.5
12.5°	422.3	409.5	407.5
15°	372.5	363.5	360.4
17.5°	339.7	333.4	329.6
20°	315.4	311.0	308.2
22.5°	297.1	293.7	291.6
25°	280.9	275.7	273.9
27.5°	264.3	259.8	258.0
30°	248.7	244.9	242.5
32.5°	232.4	227.9	226.6
35°	216.9	214.1	212.7
37.5°	201.7	198.2	196.1
40°	187.5	185.7	184.7
42.5°	174.7	171.6	171.2
45°	161.2	158.1	157.4
47.5°	148.4	145.6	145.3
50°	134.9	131.1	128.3
52.5°	118.6	115.2	112.8
55°	104.1	100.3	98.2
57.5°	92.0	90.3	89.2
60°	82.7	81.6	80.9
62.5°	74.4	73.3	73.3
65°	66.8	65.7	64.7
67.5°	57.4	55.3	55.0
70°	46.0	42.9	42.5
72.5°	34.9	34.6	33.9
75°	29.1	28.4	28.4
77.5°	23.5	22.8	22.8
80°	18.0	17.6	18.0
82.5°	13.1	13.1	12.8
85°	8.6	8.3	8.3
87.5°	4.2	4.2	4.2
90°	0.0	0.0	0.0

(END OF REPORT)