

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: P644317

Luminaire Tested: CRQ4DIP-SR4F0-50D100U835-FLLFLL-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644317  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2206-689-28, G2-2206-689-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/20/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: CRQ4DIP-SR4F0-50D100U835-FLLFLL-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 500 LUMENS PER FOOT  
UPLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

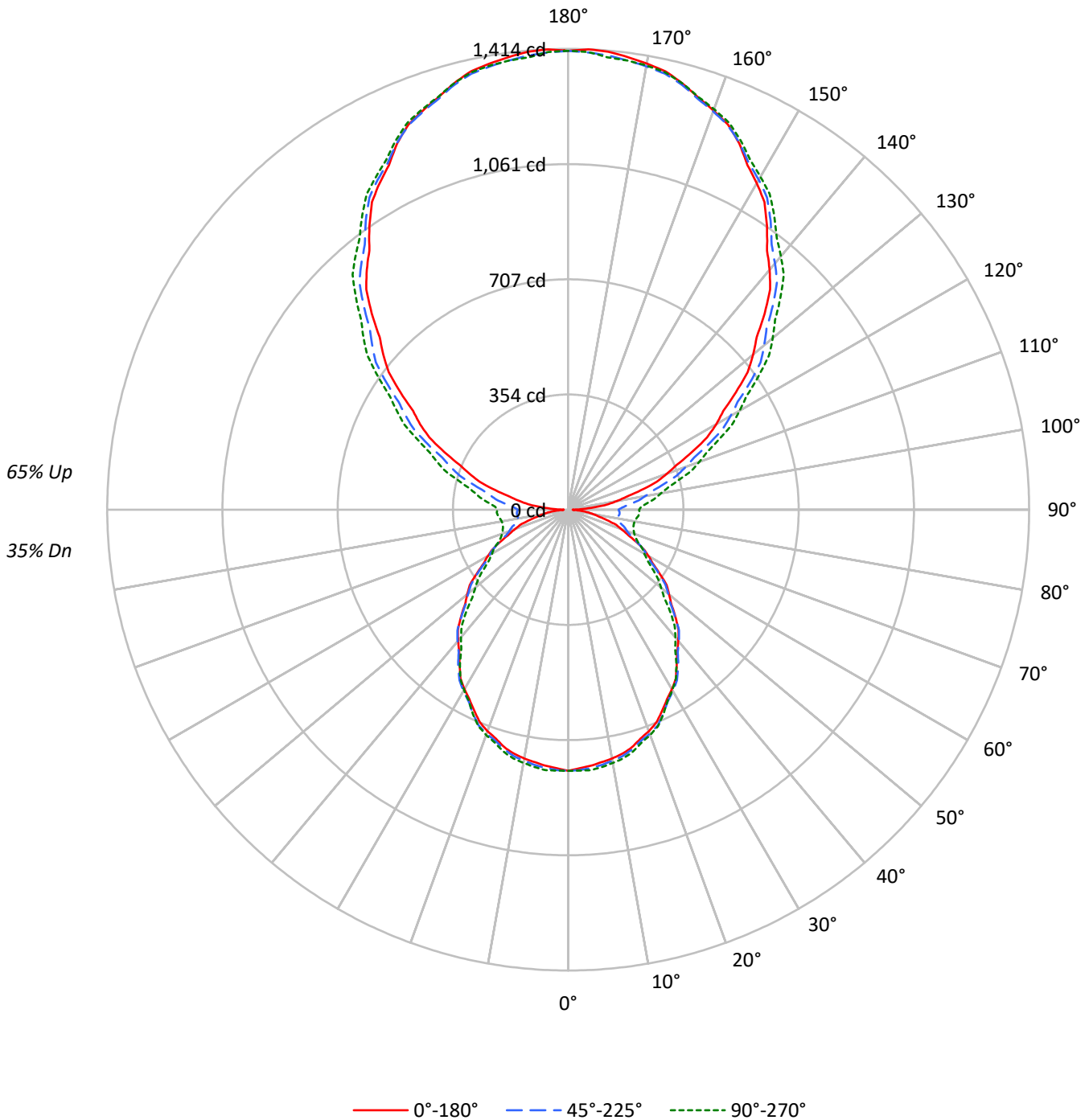
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6223.7 lumens  
Efficiency: N/A  
Efficacy: 143.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Indirect

Input Watts (W): 43.3  
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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43	35				
1	94	89	85	81	84	81	77	74	65	62	60	50	48	47	36	35	34	28				
2	85	78	71	66	77	70	65	60	56	53	49	44	41	39	32	30	29	23				
3	78	68	61	55	70	62	55	50	50	45	41	39	35	33	28	26	24	20				
4	71	60	52	46	64	55	48	43	44	39	35	34	31	28	25	23	21	17				
5	65	54	46	40	58	49	42	36	39	34	30	31	27	24	23	20	18	15				
6	60	48	40	34	54	44	37	32	35	30	26	28	24	21	21	18	16	13				
7	55	43	35	30	50	39	32	28	32	27	23	25	21	19	19	16	14	11				
8	51	39	32	26	46	36	29	24	29	24	20	23	19	17	17	15	13	10				
9	48	36	28	23	43	33	26	22	27	22	18	21	17	15	16	13	12	9				
10	44	33	26	21	40	30	24	19	25	20	16	20	16	13	15	12	10	8				

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	12936	12936	12936
5°	12692	11423	11067
10°	12525	10181	9561
15°	12341	9118	8363
20°	12059	8181	7315
25°	11683	7290	6373
30°	11313	6472	5532
35°	10811	5709	4749
40°	10344	4974	4025
45°	9803	4277	3359
50°	9231	3652	2756
55°	8626	3065	2299
60°	8048	2544	1949
65°	7335	2123	1708
70°	6649	1794	1566
75°	5815	1611	1526
80°	4862	1558	1560
85°	3539	1640	1679

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9803 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	75.7	1.2
10°-20°	214.8	3.5
20°-30°	317.3	5.1
30°-40°	365.4	5.9
40°-50°	354.8	5.7
50°-60°	300.8	4.8
60°-70°	233.0	3.7
70°-80°	177.8	2.9
80°-90°	154.7	2.5
90°-100°	192.6	3.1
100°-110°	315.6	5.1
110°-120°	467.4	7.5
120°-130°	605.2	9.7
130°-140°	684.9	11.0
140°-150°	676.8	10.9
150°-160°	572.5	9.2
160°-170°	381.1	6.1
170°-180°	133.3	2.1
0°-30°	607.8	9.8
0°-40°	973.2	15.6
0°-60°	1628.8	26.2
0°-90°	2194.3	35.3
90°-120°	975.6	15.7
90°-150°	2942.6	47.3
90°-180°	4029.0	64.7
0°-180°	6223.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	801	801	801	801	801	
5°	789	803	796	797	802	75
15°	755	769	761	763	768	212
25°	681	695	690	687	691	314
35°	580	594	588	578	578	364
45°	465	474	463	448	441	358
55°	343	353	338	319	315	307
65°	226	236	231	235	236	225
75°	122	134	168	198	207	131
85°	37	80	158	203	216	40
90°	14	72	154	202	218	12
95°	79	108	190	235	245	79
105°	231	245	303	344	350	246
115°	419	438	475	503	510	416
125°	628	650	681	706	712	563
135°	852	871	888	910	921	657
145°	1063	1076	1082	1090	1102	664
155°	1241	1248	1242	1244	1251	570
165°	1354	1360	1350	1345	1354	382
175°	1411	1417	1399	1393	1393	134
180°	1408	1408	1408	1408	1408	



TEST NUMBER: P644317

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	801.2	801.2	801.2	801.2	801.2
2.5°	794.0	805.5	799.7	800.3	801.2
5°	788.8	803.2	795.6	796.8	802.3
7.5°	781.5	796.0	789.6	789.6	796.0
10°	775.2	788.5	782.3	783.2	788.8
12.5°	767.0	781.8	773.9	776.0	781.5
15°	754.8	768.8	760.8	762.9	768.4
17.5°	736.7	750.1	743.2	743.6	749.2
20°	723.1	735.7	731.4	730.0	735.6
22.5°	706.8	720.2	716.9	712.9	719.3
25°	681.3	695.2	690.3	687.0	691.4
27.5°	655.9	669.4	662.0	656.9	660.2
30°	636.0	648.9	642.4	636.1	639.4
32.5°	614.3	628.3	620.7	613.4	614.9
35°	580.5	593.8	588.4	578.3	578.3
37.5°	548.6	560.2	552.2	541.1	538.7
40°	525.1	537.6	527.7	514.8	511.5
42.5°	500.6	513.1	503.6	488.5	483.4
45°	465.1	473.9	463.2	448.0	441.3
47.5°	428.4	438.6	424.4	407.2	399.3
50°	404.0	413.9	400.6	380.0	371.2
52.5°	380.5	389.8	374.9	354.1	347.3
55°	342.9	353.2	338.0	319.0	314.9
57.5°	307.8	317.9	302.2	291.3	286.8
60°	285.2	294.3	279.8	272.8	269.5
62.5°	259.8	270.2	257.8	257.2	256.1
65°	226.3	236.2	231.1	234.7	236.5
67.5°	194.9	203.6	206.0	218.8	223.5
70°	173.1	181.9	191.8	209.7	215.5
72.5°	153.2	162.3	182.0	203.9	210.6
75°	122.2	133.9	167.8	197.5	207.0
77.5°	95.1	109.1	159.5	195.1	206.0
80°	77.0	97.4	156.7	195.1	207.1
82.5°	60.7	87.6	155.4	198.3	210.3
85°	37.3	80.2	157.9	203.1	216.2
87.5°	19.1	75.5	157.7	204.3	219.1
90°	13.9	72.1	154.3	201.8	217.6
92.5°	37.8	82.5	166.2	212.4	224.4
95°	78.6	108.2	189.7	235.2	245.1
97.5°	119.7	141.2	217.8	260.4	269.9
100°	149.6	166.7	239.3	281.0	289.0
102.5°	182.2	195.8	264.3	303.7	313.2
105°	231.0	244.9	303.1	343.6	350.2
107.5°	285.3	299.9	349.6	388.2	395.5
110°	321.4	339.3	383.4	418.7	427.1

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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	360.9	378.7	418.1	451.6	460.0
115°	419.0	437.9	474.6	503.1	510.4
117.5°	479.8	499.5	532.9	560.1	567.1
120°	524.3	542.5	575.1	601.0	606.8
122.5°	563.8	584.6	616.9	642.8	648.7
125°	627.8	650.4	681.2	705.6	711.5
127.5°	693.7	715.3	743.7	768.4	776.0
130°	740.6	759.6	784.3	810.3	819.1
132.5°	784.2	803.2	825.3	851.0	860.9
135°	852.0	870.9	887.8	910.5	920.7
137.5°	916.8	935.2	948.2	966.1	979.0
140°	961.1	977.1	986.5	1003.2	1014.9
142.5°	1001.7	1017.8	1024.7	1039.0	1050.7
145°	1062.7	1075.8	1082.1	1089.9	1101.6
147.5°	1119.8	1132.7	1135.3	1142.1	1149.4
150°	1156.9	1168.5	1168.8	1172.0	1179.3
152.5°	1191.5	1202.1	1198.7	1200.7	1209.2
155°	1240.6	1247.9	1242.1	1243.7	1251.0
157.5°	1279.4	1286.7	1277.6	1280.4	1286.3
160°	1303.3	1310.6	1300.3	1302.0	1307.8
162.5°	1326.1	1331.0	1321.9	1320.0	1328.1
165°	1354.2	1360.0	1349.7	1345.4	1354.2
167.5°	1378.1	1383.9	1370.3	1365.7	1374.5
170°	1390.0	1395.9	1381.1	1375.3	1384.0
172.5°	1400.8	1406.6	1390.6	1383.6	1390.0
175°	1410.9	1416.8	1399.0	1393.0	1393.0
177.5°	1413.9	1417.4	1404.4	1398.6	1405.6
180°	1408.0	1408.0	1408.0	1408.0	1408.0

(END OF REPORT)