

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: P644319

Luminaire Tested: CRQ4DIP-SR4F0-50D100U840-FLLFLL-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644319  
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-SR4F0-50D100U840-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: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

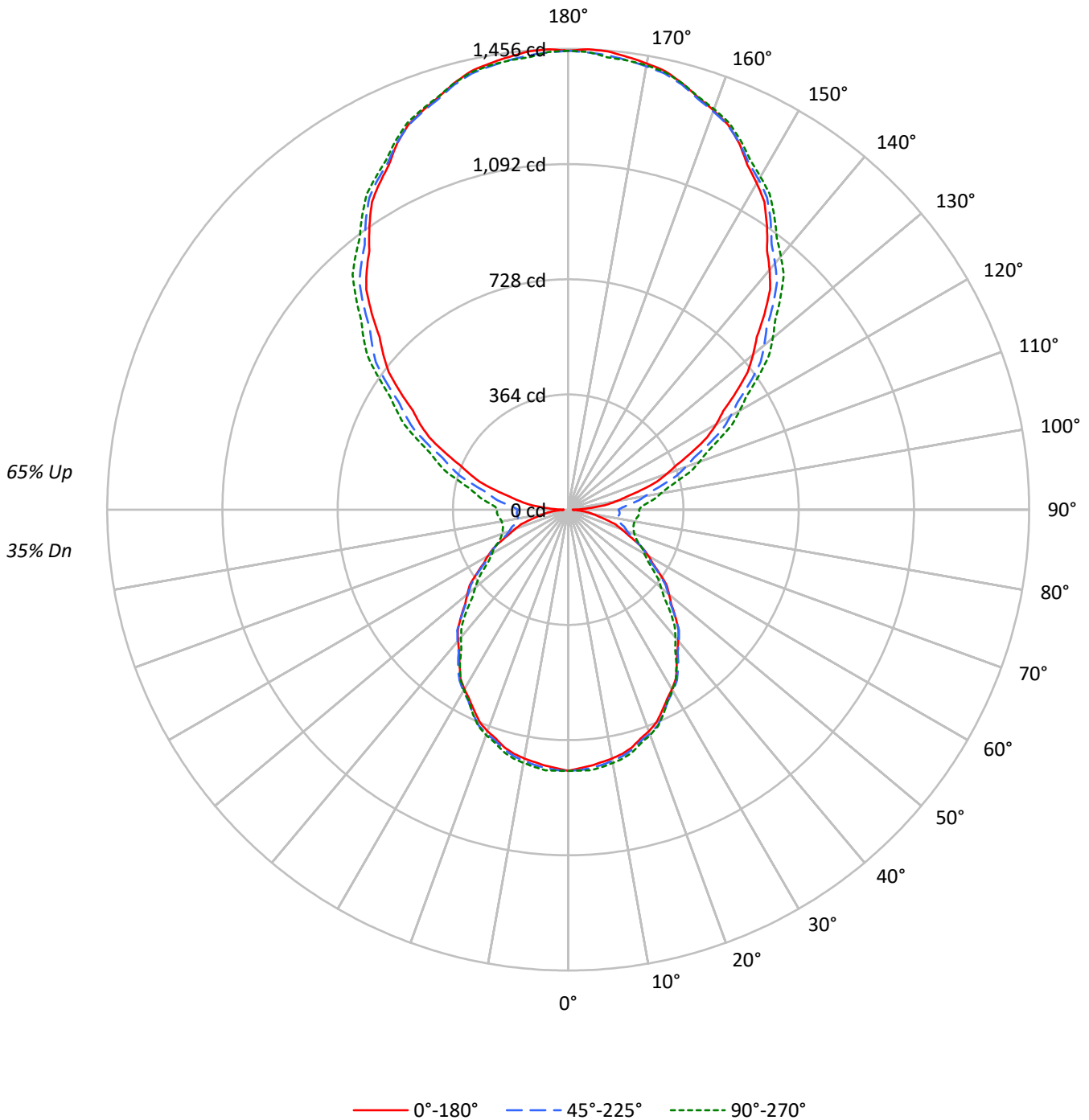
Lumens per Lamp: N/A  
Luminaire Lumens: 6409.3 lumens  
Efficiency: N/A  
Efficacy: 148.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Indirect

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°	13322	13322	13322
5°	13070	11763	11398
10°	12899	10486	9846
15°	12709	9390	8612
20°	12419	8424	7532
25°	12031	7508	6564
30°	11651	6664	5698
35°	11133	5880	4890
40°	10651	5122	4146
45°	10096	4404	3459
50°	9505	3760	2838
55°	8882	3156	2367
60°	8288	2620	2007
65°	7555	2186	1759
70°	6849	1847	1614
75°	5991	1659	1571
80°	5001	1603	1607
85°	3653	1689	1729

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10096 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	77.9	1.2
10°-20°	221.2	3.5
20°-30°	326.8	5.1
30°-40°	376.3	5.9
40°-50°	365.3	5.7
50°-60°	309.8	4.8
60°-70°	239.9	3.7
70°-80°	183.1	2.9
80°-90°	159.3	2.5
90°-100°	198.4	3.1
100°-110°	325.0	5.1
110°-120°	481.3	7.5
120°-130°	623.3	9.7
130°-140°	705.4	11.0
140°-150°	697.0	10.9
150°-160°	589.5	9.2
160°-170°	392.5	6.1
170°-180°	137.3	2.1
0°-30°	625.9	9.8
0°-40°	1002.2	15.6
0°-60°	1677.3	26.2
0°-90°	2259.7	35.3
90°-120°	1004.7	15.7
90°-150°	3030.3	47.3
90°-180°	4150.0	64.7
0°-180°	6409.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	825	825	825	825	825	
5°	812	827	819	821	826	77
15°	777	792	784	786	791	219
25°	702	716	711	708	712	323
35°	598	612	606	596	596	374
45°	479	488	477	461	454	369
55°	353	364	348	328	324	317
65°	233	243	238	242	244	232
75°	126	138	173	203	213	135
85°	38	83	163	209	223	41
90°	14	74	159	208	224	12
95°	81	111	195	242	252	82
105°	238	252	312	354	361	254
115°	431	451	489	518	526	429
125°	646	670	702	727	733	579
135°	877	897	914	938	948	676
145°	1094	1108	1114	1122	1134	684
155°	1278	1285	1279	1281	1288	587
165°	1394	1400	1390	1386	1394	393
175°	1453	1459	1441	1434	1434	138
180°	1450	1450	1450	1450	1450	

TEST NUMBER: P644319

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	825.1	825.1	825.1	825.1	825.1
2.5°	817.6	829.5	823.5	824.2	825.1
5°	812.3	827.1	819.3	820.6	826.3
7.5°	804.8	819.7	813.1	813.1	819.7
10°	798.3	812.0	805.7	806.6	812.3
12.5°	789.9	805.1	797.0	799.1	804.8
15°	777.3	791.7	783.5	785.6	791.3
17.5°	758.7	772.5	765.3	765.8	771.5
20°	744.7	757.6	753.2	751.8	757.5
22.5°	727.9	741.7	738.3	734.1	740.7
25°	701.6	716.0	710.9	707.5	712.1
27.5°	675.5	689.3	681.7	676.5	679.9
30°	655.0	668.2	661.5	655.0	658.5
32.5°	632.6	647.0	639.2	631.7	633.3
35°	597.8	611.5	606.0	595.5	595.5
37.5°	565.0	576.9	568.6	557.2	554.7
40°	540.7	553.6	543.4	530.2	526.8
42.5°	515.6	528.4	518.6	503.1	497.9
45°	479.0	488.1	477.0	461.3	454.5
47.5°	441.2	451.7	437.1	419.4	411.2
50°	416.0	426.3	412.5	391.4	382.3
52.5°	391.8	401.4	386.1	364.7	357.7
55°	353.1	363.7	348.0	328.5	324.3
57.5°	317.0	327.3	311.2	300.0	295.3
60°	293.7	303.1	288.2	281.0	277.5
62.5°	267.6	278.2	265.5	264.8	263.8
65°	233.1	243.2	238.0	241.7	243.5
67.5°	200.7	209.7	212.1	225.4	230.1
70°	178.3	187.3	197.5	216.0	222.0
72.5°	157.8	167.1	187.5	210.0	216.9
75°	125.9	137.9	172.8	203.4	213.2
77.5°	97.9	112.3	164.2	201.0	212.2
80°	79.2	100.3	161.3	200.9	213.3
82.5°	62.5	90.2	160.0	204.2	216.6
85°	38.5	82.6	162.6	209.1	222.7
87.5°	19.6	77.8	162.4	210.4	225.6
90°	14.3	74.3	158.9	207.9	224.0
92.5°	38.9	85.0	171.2	218.8	231.1
95°	80.9	111.4	195.3	242.2	252.4
97.5°	123.3	145.4	224.3	268.2	278.0
100°	154.1	171.7	246.4	289.4	297.7
102.5°	187.6	201.6	272.2	312.8	322.6
105°	237.9	252.2	312.1	353.9	360.7
107.5°	293.8	308.8	360.1	399.8	407.3
110°	331.0	349.4	394.8	431.2	439.9

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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	371.7	390.0	430.5	465.1	473.7
115°	431.4	451.0	488.7	518.1	525.7
117.5°	494.1	514.4	548.8	576.8	584.0
120°	539.9	558.7	592.2	618.9	624.9
122.5°	580.6	602.1	635.3	662.0	668.0
125°	646.5	669.8	701.5	726.6	732.7
127.5°	714.4	736.6	765.8	791.3	799.2
130°	762.7	782.3	807.7	834.5	843.5
132.5°	807.6	827.2	849.9	876.3	886.6
135°	877.3	896.9	914.3	937.6	948.2
137.5°	944.2	963.1	976.5	994.9	1008.2
140°	989.7	1006.3	1015.9	1033.1	1045.1
142.5°	1031.6	1048.1	1055.3	1070.0	1082.1
145°	1094.4	1107.9	1114.4	1122.4	1134.4
147.5°	1153.2	1166.4	1169.2	1176.1	1183.7
150°	1191.3	1203.4	1203.7	1206.9	1214.4
152.5°	1227.1	1237.9	1234.4	1236.5	1245.2
155°	1277.5	1285.1	1279.1	1280.8	1288.3
157.5°	1317.6	1325.1	1315.7	1318.6	1324.6
160°	1342.2	1349.7	1339.1	1340.8	1346.8
162.5°	1365.6	1370.7	1361.3	1359.3	1367.7
165°	1394.5	1400.5	1389.9	1385.5	1394.5
167.5°	1419.1	1425.2	1411.1	1406.4	1415.5
170°	1431.5	1437.5	1422.2	1416.3	1425.3
172.5°	1442.5	1448.6	1432.1	1424.8	1431.5
175°	1453.0	1459.0	1440.7	1434.5	1434.5
177.5°	1456.1	1459.7	1446.2	1440.2	1447.5
180°	1449.9	1449.9	1449.9	1449.9	1449.9

(END OF REPORT)