

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: P644182

Luminaire Tested: CRQ4DIP-SR4F0-100D100U940-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644182  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2203-563-26, G2-2206-689-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/20/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: CRQ4DIP-SR4F0-100D100U940-FLLOOB-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
UPLIGHT - BATWING OPTIC - 1000 LUMENS PER FOOT  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

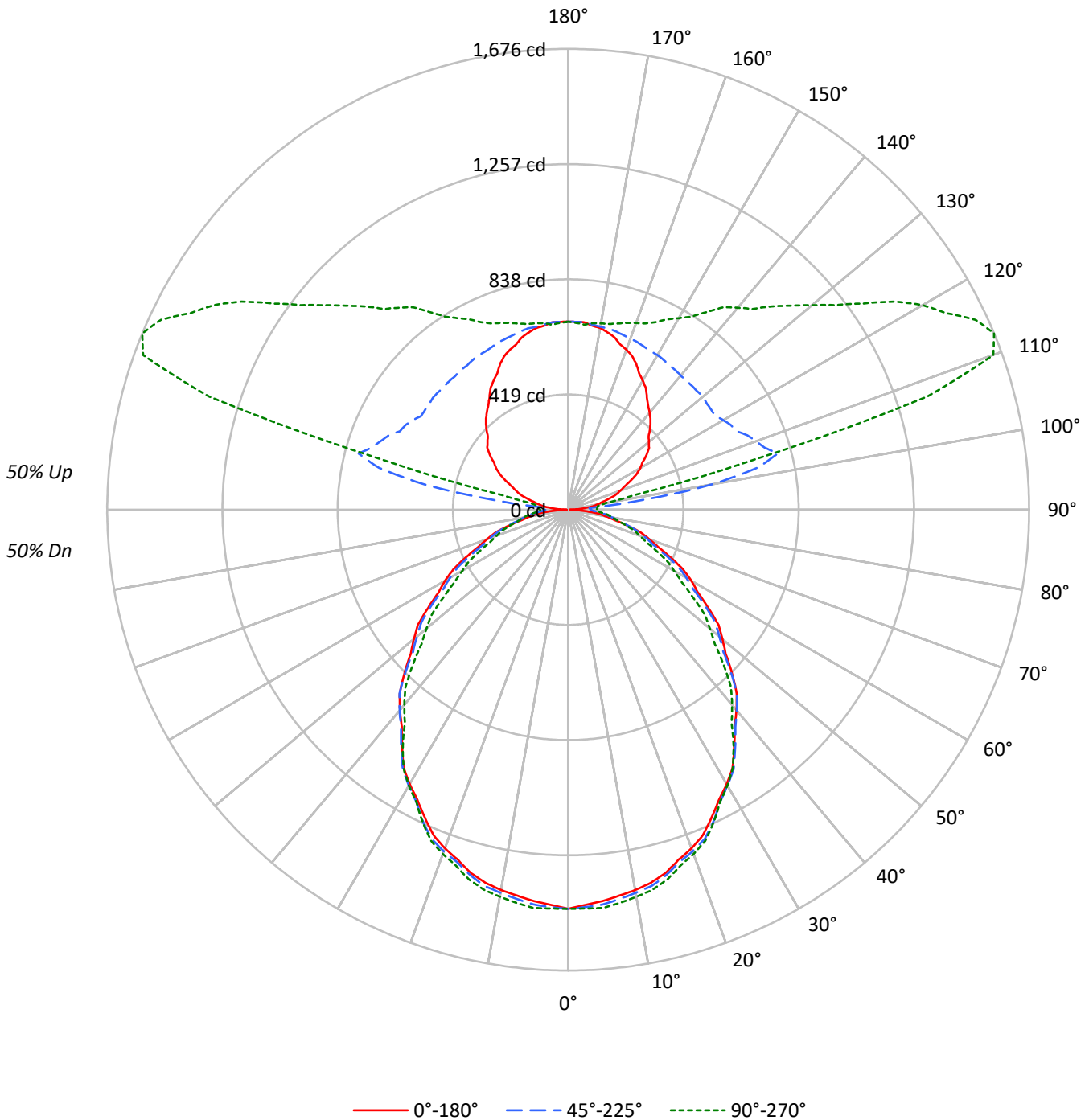
Lumens per Lamp: N/A  
Luminaire Lumens: 7417.6 lumens  
Efficiency: N/A  
Efficacy: 125.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: General Diffuse

Input Watts (W): 58.9  
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	0	
RCR																						
0	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50				
1	97	93	89	86	90	86	83	79	73	70	68	60	59	57	49	48	47	41				
2	89	81	75	70	82	75	70	65	64	60	56	53	50	48	43	41	39	35				
3	81	72	64	58	74	66	60	55	56	51	47	47	43	40	38	36	34	29				
4	74	63	56	49	68	59	52	46	50	45	40	42	38	35	34	31	29	25				
5	68	57	48	42	63	52	45	40	45	39	35	38	33	30	31	28	25	22				
6	63	51	43	37	58	47	40	35	40	35	31	34	30	26	28	25	22	19				
7	58	46	38	32	53	43	36	31	37	31	27	31	27	23	26	22	20	17				
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18	16				
9	50	38	31	26	46	36	29	24	31	25	21	26	22	19	22	19	16	14				
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15	13				

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

	0°	45°	90°
0°	23439	23439	23439
5°	22995	20694	20052
10°	22693	18411	17321
15°	22361	16489	15152
20°	21849	14792	13252
25°	21167	13208	11548
30°	20497	11672	10024
35°	19588	10265	8603
40°	18742	8986	7294
45°	17762	7723	6086
50°	16726	6541	4993
55°	15629	5504	4026
60°	14581	4512	3218
65°	13292	3597	2548
70°	12050	2819	2012
75°	10535	2165	1587
80°	8802	1610	1235
85°	6423	1171	939

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 17762 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	137.0	1.8
10°-20°	388.8	5.2
20°-30°	574.0	7.7
30°-40°	659.9	8.9
40°-50°	640.1	8.6
50°-60°	535.9	7.2
60°-70°	386.1	5.2
70°-80°	235.9	3.2
80°-90°	116.2	1.6
90°-100°	129.4	1.7
100°-110°	615.6	8.3
110°-120°	819.2	11.0
120°-130°	664.4	9.0
130°-140°	532.8	7.2
140°-150°	419.8	5.7
150°-160°	306.9	4.1
160°-170°	190.7	2.6
170°-180°	65.0	0.9
0°-30°	1099.8	14.8
0°-40°	1759.7	23.7
0°-60°	2935.7	39.6
0°-90°	3673.8	49.5
90°-120°	1564.2	21.1
90°-150°	3181.2	42.9
90°-180°	3744.0	50.5
0°-180°	7417.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1452	1452	1452	1452	1452	
5°	1429	1455	1441	1444	1454	136
15°	1368	1388	1376	1382	1392	385
25°	1234	1254	1251	1245	1253	569
35°	1052	1068	1058	1048	1048	659
45°	843	851	836	812	800	650
55°	621	629	607	570	552	557
65°	410	412	392	363	353	408
75°	221	221	226	219	215	237
85°	68	82	113	121	121	71
90°	6	44	82	99	101	9
95°	55	82	78	96	107	56
105°	154	213	789	1013	681	162
115°	251	293	675	1399	1634	249
125°	348	390	634	1106	1308	309
135°	422	468	637	911	1045	325
145°	499	541	641	793	877	313
155°	585	606	654	719	753	269
165°	650	658	671	688	701	182
175°	684	688	684	680	675	65
180°	684	684	684	684	684	

TEST NUMBER: P644182

CATALOG NUMBER: CRQ4DIP-SR4F0-100D100U940-FLLOOB-1DUDD-WW

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1451.7	1451.7	1451.7	1451.7	1451.7
2.5°	1438.5	1459.4	1446.7	1450.1	1451.7
5°	1429.1	1455.2	1441.4	1443.7	1453.7
7.5°	1416.0	1440.0	1427.9	1430.6	1442.2
10°	1404.5	1428.6	1414.7	1419.1	1429.1
12.5°	1389.7	1412.2	1401.6	1406.0	1416.0
15°	1367.6	1387.6	1375.8	1382.2	1392.2
17.5°	1334.8	1356.4	1343.8	1347.3	1357.3
20°	1310.2	1330.2	1322.5	1322.7	1332.7
22.5°	1280.7	1302.3	1296.2	1291.6	1303.2
25°	1234.3	1254.4	1250.7	1244.8	1252.8
27.5°	1188.4	1203.2	1196.2	1190.2	1196.2
30°	1152.3	1170.3	1158.5	1152.4	1158.5
32.5°	1112.9	1131.0	1119.1	1111.4	1114.2
35°	1051.8	1067.9	1058.0	1047.7	1047.7
37.5°	994.0	1004.4	997.7	980.4	976.0
40°	951.4	963.4	953.4	932.8	926.8
42.5°	907.1	919.1	907.5	885.1	875.9
45°	842.7	850.7	836.5	811.7	799.6
47.5°	776.3	784.7	765.2	737.8	723.4
50°	732.0	742.0	717.6	688.6	672.5
52.5°	689.3	696.1	673.3	639.4	625.0
55°	621.3	629.3	606.9	569.6	551.5
57.5°	557.7	565.3	538.8	503.2	489.2
60°	516.7	522.7	496.2	459.0	444.9
62.5°	470.8	476.8	451.9	419.6	405.6
65°	410.1	412.1	391.6	362.7	352.7
67.5°	353.1	353.1	335.8	314.3	306.3
70°	313.7	313.7	301.4	284.8	276.8
72.5°	277.6	276.0	268.6	257.0	250.6
75°	221.4	221.4	225.5	219.3	215.3
77.5°	172.2	169.0	186.6	185.7	183.7
80°	139.4	139.4	162.0	166.0	164.0
82.5°	109.9	113.1	142.3	148.0	146.0
85°	67.7	81.7	112.8	121.0	121.0
87.5°	30.8	56.1	90.3	101.8	102.2
90°	6.2	44.4	82.4	99.1	101.1
92.5°	23.0	45.3	79.6	99.8	106.8
95°	54.9	82.3	77.5	96.4	106.8
97.5°	85.7	134.7	284.1	117.7	110.0
100°	106.3	163.8	532.1	184.3	137.9
102.5°	125.3	186.2	704.5	422.6	246.7
105°	153.8	213.3	788.8	1013.1	680.6
107.5°	182.3	224.5	749.0	1458.9	1369.2
110°	201.4	241.8	726.7	1529.1	1644.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	222.0	262.4	706.0	1482.9	1675.8
115°	250.9	293.4	675.1	1398.7	1634.2
117.5°	280.3	324.3	666.9	1306.1	1548.3
120°	302.7	345.0	651.5	1235.9	1488.2
122.5°	319.9	363.9	634.3	1176.9	1409.0
125°	348.0	390.2	634.3	1105.7	1307.5
127.5°	370.5	416.0	635.2	1023.0	1222.4
130°	382.6	433.1	638.6	967.7	1157.0
132.5°	396.5	447.0	637.0	942.9	1098.5
135°	421.5	467.8	636.6	910.6	1045.2
137.5°	443.0	492.6	636.6	874.9	990.1
140°	460.2	506.5	636.6	854.0	959.1
142.5°	477.4	520.3	640.0	829.8	928.2
145°	498.9	541.0	640.9	793.3	877.4
147.5°	524.7	561.7	646.0	767.1	831.8
150°	541.9	575.6	649.5	749.6	804.3
152.5°	559.1	589.4	649.5	735.6	780.2
155°	585.0	606.0	653.8	719.0	752.7
157.5°	605.6	625.8	658.9	708.5	732.9
160°	619.4	636.2	662.4	701.6	722.6
162.5°	629.7	646.5	665.8	698.0	712.3
165°	649.5	657.9	671.0	688.5	701.1
167.5°	660.7	668.2	675.3	684.0	691.6
170°	671.0	675.2	675.3	684.0	688.2
172.5°	674.4	682.0	678.7	680.5	684.7
175°	683.9	688.1	683.9	679.5	675.3
177.5°	683.9	687.2	683.9	683.8	680.4
180°	683.9	683.9	683.9	683.9	683.9

(END OF REPORT)