

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: P644193

Luminaire Tested: CRQ4DIP-SR4F0-100D125U940-FLLFLL-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644193  
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-SR4F0-100D125U940-FLLFLL-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
UPLIGHT - CURVED FROSTED LENS - 1250 LUMENS PER FOOT  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

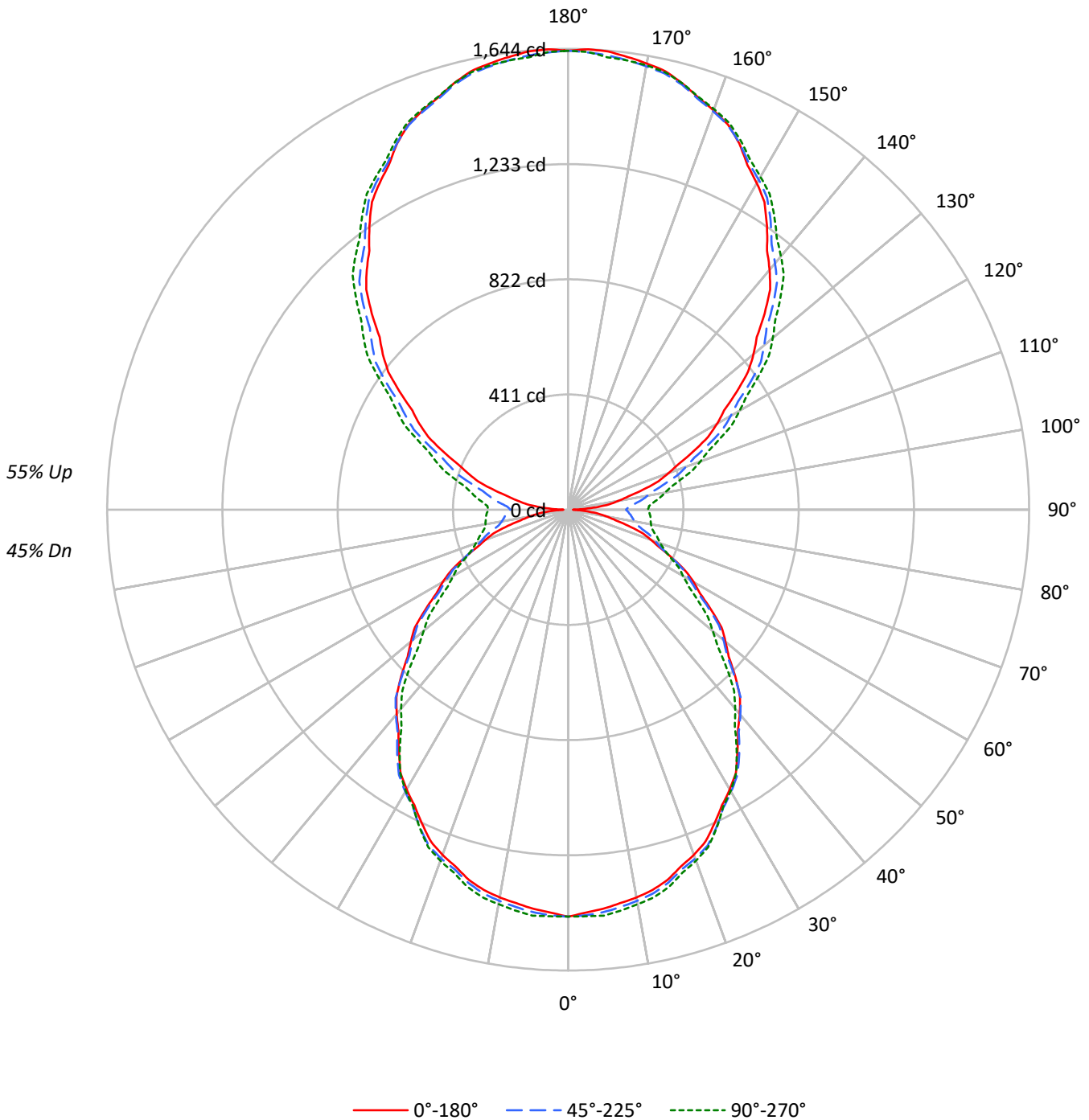
Lumens per Lamp: N/A  
Luminaire Lumens: 8577.6 lumens  
Efficiency: N/A  
Efficacy: 126.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: General Diffuse

Input Watts (W): 68.1  
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	106	106	106	106	97	97	97	97	81	81	81	65	65	65	52	52	52	45				
1	96	91	87	84	88	84	80	77	70	67	65	57	55	53	44	43	42	37				
2	87	80	73	68	80	73	68	63	61	57	53	49	47	44	39	37	35	30				
3	80	70	63	57	73	64	58	53	54	49	45	44	40	37	35	32	30	26				
4	73	62	54	48	66	57	50	45	48	42	38	39	35	32	31	28	26	22				
5	67	55	47	41	61	51	44	38	43	37	33	35	31	28	28	25	23	19				
6	62	49	41	36	56	46	38	33	38	33	29	32	27	24	25	22	20	17				
7	57	45	37	31	52	41	34	29	35	29	25	29	25	21	23	20	18	15				
8	53	41	33	27	48	38	31	26	32	26	22	26	22	19	21	18	16	13				
9	49	37	30	24	45	34	28	23	29	24	20	24	20	17	20	17	14	12				
10	46	34	27	22	42	31	25	21	27	22	18	22	18	16	18	15	13	11				

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

	0°	45°	90°
0°	23439	23439	23439
5°	22995	20694	20052
10°	22693	18435	17321
15°	22361	16509	15152
20°	21849	14811	13252
25°	21167	13208	11548
30°	20497	11706	10024
35°	19588	10316	8603
40°	18742	9003	7294
45°	17762	7740	6086
50°	16726	6589	4993
55°	15629	5536	4115
60°	14581	4574	3419
65°	13292	3757	2899
70°	12050	3095	2542
75°	10535	2649	2342
80°	8802	2387	2257
85°	6423	2326	2289

**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°	137.1	1.6
10°-20°	389.1	4.5
20°-30°	574.6	6.7
30°-40°	661.3	7.7
40°-50°	641.8	7.5
50°-60°	541.7	6.3
60°-70°	409.2	4.8
70°-80°	291.3	3.4
80°-90°	220.9	2.6
90°-100°	240.2	2.8
100°-110°	372.9	4.3
110°-120°	545.5	6.4
120°-130°	704.6	8.2
130°-140°	796.6	9.3
140°-150°	787.0	9.2
150°-160°	665.6	7.8
160°-170°	443.2	5.2
170°-180°	155.0	1.8
0°-30°	1100.7	12.8
0°-40°	1762.0	20.5
0°-60°	2945.5	34.3
0°-90°	3867.0	45.1
90°-120°	1158.6	13.5
90°-150°	3446.7	40.2
90°-180°	4711.0	54.9
0°-180°	8577.6	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	1391	1378	1382	1392	385
25°	1234	1258	1251	1245	1253	569
35°	1052	1073	1063	1048	1048	659
45°	843	856	838	812	800	650
55°	621	636	610	575	564	557
65°	410	422	409	403	401	408
75°	221	235	276	308	318	237
85°	68	122	224	280	295	72
90°	18	98	206	266	285	16
95°	99	132	236	294	306	99
105°	276	288	356	406	415	294
115°	492	512	553	586	595	489
125°	733	758	793	820	827	657
135°	991	1013	1032	1059	1071	764
145°	1236	1251	1258	1267	1281	772
155°	1442	1451	1444	1446	1455	662
165°	1575	1581	1569	1564	1575	444
175°	1641	1647	1627	1620	1620	156
180°	1637	1637	1637	1637	1637	

TEST NUMBER: P644193

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**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	1448.1	1450.1	1451.7
5°	1429.1	1455.2	1441.4	1443.7	1453.7
7.5°	1416.0	1441.4	1429.6	1430.6	1442.2
10°	1404.5	1428.6	1416.5	1419.1	1429.1
12.5°	1389.7	1414.9	1402.0	1406.0	1416.0
15°	1367.6	1391.0	1377.5	1382.2	1392.2
17.5°	1334.8	1358.1	1345.5	1347.3	1357.3
20°	1310.2	1331.9	1324.2	1322.7	1332.7
22.5°	1280.7	1304.0	1298.0	1291.6	1303.2
25°	1234.3	1257.8	1250.7	1244.8	1252.8
27.5°	1188.4	1209.3	1198.3	1190.2	1196.2
30°	1152.3	1173.7	1161.9	1152.4	1158.5
32.5°	1112.9	1135.7	1122.6	1111.4	1114.2
35°	1051.8	1073.0	1063.2	1047.7	1047.7
37.5°	994.0	1011.2	999.4	980.4	976.0
40°	951.4	970.2	955.2	932.8	926.8
42.5°	907.1	925.9	910.6	885.1	875.9
45°	842.7	855.8	838.3	811.7	799.6
47.5°	776.3	791.1	767.6	737.8	723.4
50°	732.0	747.1	722.8	688.6	672.5
52.5°	689.3	702.6	677.2	640.8	627.7
55°	621.3	636.1	610.4	575.0	563.7
57.5°	557.7	572.1	544.4	519.0	508.7
60°	516.7	529.5	503.1	481.7	472.7
62.5°	470.8	484.9	461.6	449.3	443.1
65°	410.1	422.3	409.0	402.9	401.3
67.5°	353.1	363.3	359.8	367.1	369.6
70°	313.7	323.9	330.9	345.9	349.8
72.5°	277.6	287.6	307.9	329.2	334.7
75°	221.4	235.0	275.9	308.2	317.8
77.5°	172.2	187.4	252.3	293.4	305.4
80°	139.4	163.2	240.2	286.3	299.6
82.5°	109.9	142.3	231.6	283.6	296.8
85°	67.7	122.5	224.0	279.5	294.8
87.5°	33.2	107.6	215.1	273.1	290.5
90°	18.3	98.3	205.9	265.6	284.6
92.5°	48.5	107.0	215.0	273.2	288.4
95°	98.7	132.4	236.0	294.1	306.3
97.5°	148.0	168.5	264.4	318.3	330.2
100°	182.8	197.6	287.0	339.2	350.1
102.5°	220.0	230.8	313.8	363.3	375.2
105°	276.0	287.7	356.1	406.2	415.3
107.5°	338.2	351.0	408.6	455.6	464.7
110°	379.6	396.8	447.3	489.9	500.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	425.5	442.7	487.6	526.9	537.4
115°	492.3	511.5	553.3	586.5	595.0
117.5°	562.1	583.0	621.0	651.8	660.0
120°	613.3	633.1	669.4	698.8	705.6
122.5°	659.2	681.5	718.1	747.5	754.3
125°	732.9	757.8	792.8	820.5	827.3
127.5°	808.7	833.2	865.5	893.5	902.4
130°	862.7	884.7	912.7	942.2	952.4
132.5°	912.2	934.3	959.8	989.5	1001.1
135°	990.6	1012.7	1032.4	1058.7	1070.6
137.5°	1066.1	1087.5	1102.6	1123.4	1138.4
140°	1117.5	1136.2	1147.1	1166.5	1180.1
142.5°	1164.8	1183.5	1191.5	1208.2	1221.8
145°	1235.7	1251.0	1258.3	1267.3	1280.9
147.5°	1302.1	1317.0	1320.2	1328.0	1336.5
150°	1345.2	1358.8	1359.1	1362.8	1371.3
152.5°	1385.5	1397.7	1393.8	1396.2	1406.0
155°	1442.5	1451.0	1444.2	1446.2	1454.7
157.5°	1487.7	1496.2	1485.6	1488.9	1495.7
160°	1515.5	1524.0	1512.0	1513.9	1520.7
162.5°	1541.9	1547.7	1537.1	1534.8	1544.4
165°	1574.6	1581.4	1569.4	1564.4	1574.6
167.5°	1602.4	1609.2	1593.4	1588.0	1598.2
170°	1616.3	1623.1	1605.9	1599.2	1609.4
172.5°	1628.8	1635.6	1617.0	1608.8	1616.3
175°	1640.6	1647.4	1626.7	1619.8	1619.8
177.5°	1644.1	1648.2	1633.0	1626.2	1634.4
180°	1637.2	1637.2	1637.2	1637.2	1637.2

(END OF REPORT)