

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: P644194

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

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644194  
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-SR4F0-100D125U940-FLLOOB-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
UPLIGHT - BATWING OPTIC - 1250 LUMENS PER FOOT  
Light Source: 4000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

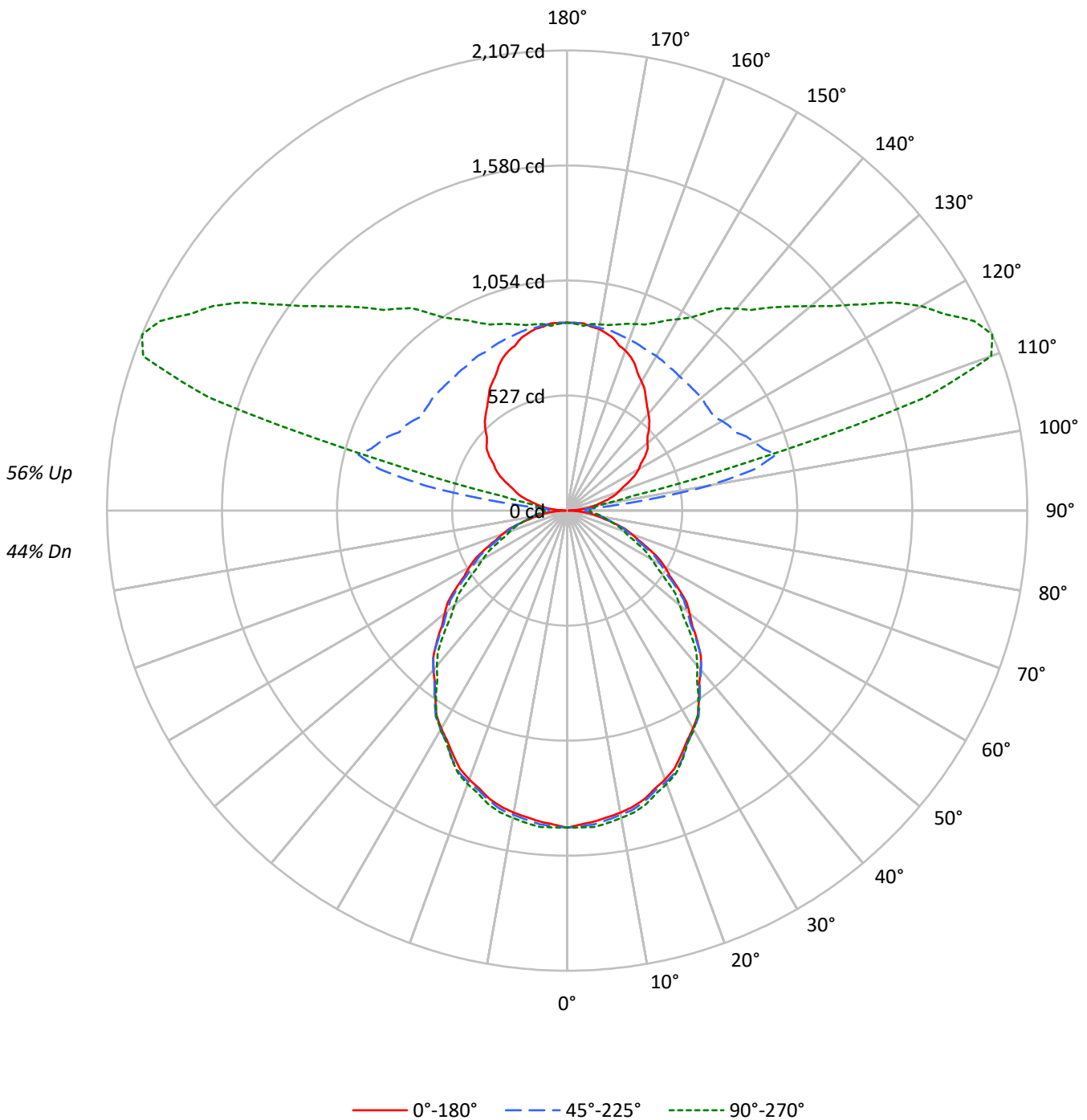
Lumens per Lamp: N/A  
Luminaire Lumens: 8366.5 lumens  
Efficiency: N/A  
Efficacy: 122.9 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: General Diffuse

Input Watts (W): 68.1  
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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44				44
1	96	92	88	84	88	84	81	78	70	67	65	57	55	53	44	43	42	37				37
2	88	80	74	69	80	74	68	64	61	57	54	50	47	45	39	37	36	31				31
3	80	71	63	58	73	65	59	53	54	49	46	44	41	38	35	32	30	26				26
4	73	63	55	49	67	58	51	45	48	43	39	39	36	33	31	28	26	23				23
5	67	56	48	42	61	51	44	39	43	38	34	35	31	28	28	25	23	20				20
6	62	50	42	36	56	46	39	34	39	33	29	32	28	25	26	23	20	17				17
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18	15				15
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	21	18	16	14				14
9	49	37	30	25	45	35	28	23	29	24	20	24	20	18	20	17	15	12				12
10	46	34	27	22	42	32	25	21	27	22	18	23	19	16	18	15	13	11				11

**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	1.6
10°-20°	388.8	4.6
20°-30°	574.0	6.9
30°-40°	659.9	7.9
40°-50°	640.1	7.7
50°-60°	535.9	6.4
60°-70°	386.1	4.6
70°-80°	235.9	2.8
80°-90°	116.6	1.4
90°-100°	151.2	1.8
100°-110°	770.3	9.2
110°-120°	1029.2	12.3
120°-130°	835.4	10.0
130°-140°	670.2	8.0
140°-150°	528.2	6.3
150°-160°	386.2	4.6
160°-170°	239.9	2.9
170°-180°	81.8	1.0
0°-30°	1099.8	13.1
0°-40°	1759.7	21.0
0°-60°	2935.7	35.1
0°-90°	3674.2	43.9
90°-120°	1950.6	23.3
90°-150°	3984.4	47.6
90°-180°	4692.0	56.1
0°-180°	8366.5	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	46	85	102	104	9
95°	64	99	86	106	119	66
105°	188	266	990	1270	850	199
115°	312	368	848	1759	2055	309
125°	436	490	798	1391	1645	387
135°	530	588	801	1146	1315	409
145°	628	681	806	998	1104	394
155°	736	762	823	905	947	338
165°	817	828	844	866	882	229
175°	860	866	860	855	850	81
180°	860	860	860	860	860	

TEST NUMBER: P644194

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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	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	56.3	90.7	102.5	102.9
90°	6.2	45.5	84.6	102.4	104.4
92.5°	25.7	49.0	84.5	106.7	114.6
95°	63.8	98.8	86.4	106.4	119.0
97.5°	101.4	166.3	349.4	137.0	126.7
100°	127.4	203.3	663.2	222.9	163.4
102.5°	151.8	231.9	881.7	524.4	302.4
105°	188.3	266.2	989.8	1269.8	850.5
107.5°	224.8	280.9	940.9	1832.6	1719.3
110°	249.1	302.6	913.3	1921.8	2066.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	275.1	328.6	887.3	1864.5	2106.7
115°	312.0	367.5	848.3	1758.8	2055.1
117.5°	349.6	406.4	838.2	1642.9	1947.7
120°	378.2	432.4	819.2	1554.9	1872.4
122.5°	399.9	456.7	797.6	1480.8	1772.9
125°	435.7	489.9	797.6	1391.2	1645.1
127.5°	464.6	522.3	798.6	1287.2	1538.0
130°	480.3	543.8	803.0	1217.6	1455.7
132.5°	498.7	562.2	801.3	1186.4	1382.1
135°	530.3	588.5	800.9	1145.7	1315.0
137.5°	557.4	619.8	800.9	1100.8	1245.8
140°	579.0	637.3	800.9	1074.5	1206.8
142.5°	600.7	654.7	805.3	1044.0	1167.8
145°	627.8	680.7	806.3	998.1	1104.0
147.5°	660.2	706.8	812.8	965.1	1046.6
150°	681.9	724.2	817.2	943.2	1012.0
152.5°	703.5	741.6	817.2	925.6	981.7
155°	736.0	762.4	822.6	904.7	947.0
157.5°	762.0	787.4	829.1	891.5	922.1
160°	779.3	800.4	833.4	882.7	909.2
162.5°	792.3	813.4	837.7	878.2	896.2
165°	817.2	827.7	844.2	866.2	882.1
167.5°	831.2	840.8	849.6	860.7	870.2
170°	844.2	849.5	849.6	860.6	865.9
172.5°	848.5	858.1	854.0	856.2	861.5
175°	860.5	865.7	860.5	854.9	849.6
177.5°	860.5	864.7	860.5	860.4	856.1
180°	860.5	860.5	860.5	860.5	860.5

(END OF REPORT)