

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: P644344

Luminaire Tested: CRQ4DIP-SR4F0-50D150U840-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644344  
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-SR4F0-50D150U840-FLLOOB-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 500 LUMENS PER FOOT  
UPLIGHT - BATWING OPTIC - 1500 LUMENS PER FOOT  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

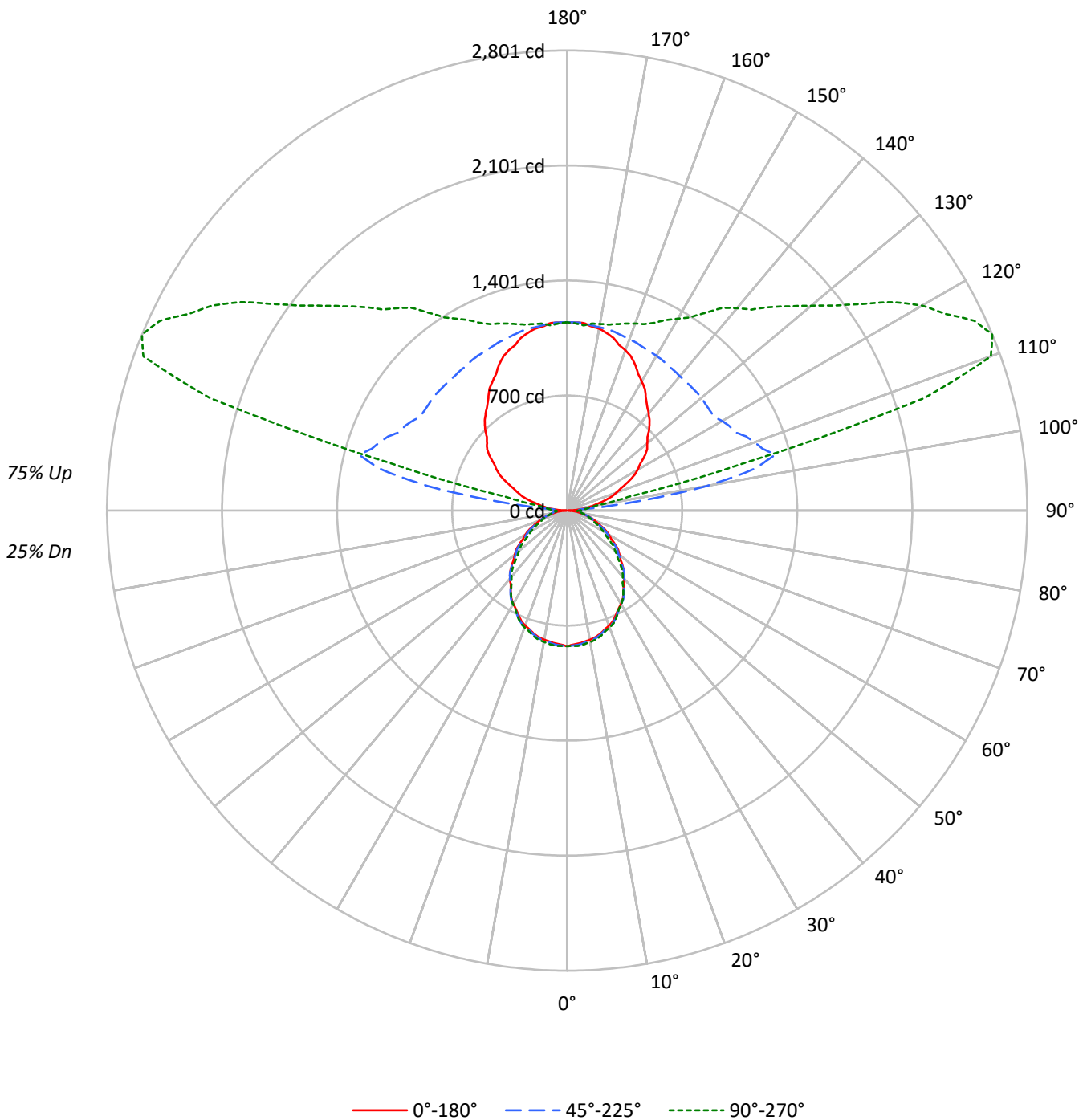
Lumens per Lamp: N/A  
Luminaire Lumens: 8287.3 lumens  
Efficiency: N/A  
Efficacy: 131.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Indirect

Input Watts (W): 62.9  
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	0
RCR																		
0	101	101	101	101	90	90	90	90	70	70	70	51	51	51	33	33	33	25
1	92	88	84	81	82	78	75	72	61	59	57	44	43	42	29	29	28	21
2	84	77	71	66	74	69	64	59	53	50	47	39	37	35	26	25	24	18
3	76	67	60	55	68	60	54	50	47	43	39	34	32	30	23	21	20	15
4	70	60	52	46	62	53	47	42	42	37	33	31	28	25	20	19	17	13
5	64	53	45	39	57	47	41	36	37	32	29	27	24	22	18	17	15	11
6	59	47	40	34	52	42	36	31	33	29	25	25	22	19	17	15	13	10
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12	9
8	50	39	31	26	45	35	28	24	27	23	19	20	17	15	14	12	11	8
9	47	35	28	23	42	32	25	21	25	20	17	19	16	13	13	11	9	7
10	44	32	25	20	39	29	23	19	23	18	15	17	14	12	12	10	9	6

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

	0°	45°	90°
0°	13322	13322	13322
5°	13070	11763	11398
10°	12899	10465	9846
15°	12709	9372	8612
20°	12419	8408	7532
25°	12031	7508	6564
30°	11651	6634	5698
35°	11133	5834	4890
40°	10651	5108	4146
45°	10096	4390	3459
50°	9505	3718	2838
55°	8882	3129	2288
60°	8288	2564	1829
65°	7555	2045	1448
70°	6849	1602	1143
75°	5991	1231	902
80°	5001	915	702
85°	3653	666	534

**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	0.9
10°-20°	221.0	2.7
20°-30°	326.2	3.9
30°-40°	375.1	4.5
40°-50°	363.8	4.4
50°-60°	304.6	3.7
60°-70°	219.4	2.6
70°-80°	134.1	1.6
80°-90°	67.7	0.8
90°-100°	166.7	2.0
100°-110°	1013.6	12.2
110°-120°	1366.7	16.5
120°-130°	1111.0	13.4
130°-140°	892.7	10.8
140°-150°	703.6	8.5
150°-160°	514.5	6.2
160°-170°	319.6	3.9
170°-180°	109.0	1.3
0°-30°	625.1	7.5
0°-40°	1000.2	12.1
0°-60°	1668.6	20.1
0°-90°	2089.9	25.2
90°-120°	2547.0	30.7
90°-150°	5254.4	63.4
90°-180°	6197.0	74.8
0°-180°	8287.3	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	789	782	786	791	219
25°	702	713	711	708	712	323
35°	598	607	601	596	596	374
45°	479	484	476	461	454	369
55°	353	358	345	324	314	317
65°	233	234	223	206	200	232
75°	126	126	128	125	122	135
85°	38	46	64	69	69	41
90°	4	30	56	71	72	7
95°	69	118	82	98	113	74
105°	235	348	1311	1678	1116	248
115°	405	485	1127	2340	2735	402
125°	574	650	1061	1853	2192	510
135°	706	784	1067	1526	1752	544
145°	836	907	1074	1330	1471	525
155°	980	1016	1096	1205	1262	450
165°	1089	1103	1125	1154	1175	306
175°	1146	1153	1146	1139	1132	108
180°	1146	1146	1146	1146	1146	



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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	822.3	824.2	825.1
5°	812.3	827.1	819.3	820.6	826.3
7.5°	804.8	818.5	811.6	813.1	819.7
10°	798.3	812.0	804.1	806.6	812.3
12.5°	789.9	802.7	796.7	799.1	804.8
15°	777.3	788.7	782.0	785.6	791.3
17.5°	758.7	771.0	763.8	765.8	771.5
20°	744.7	756.1	751.7	751.8	757.5
22.5°	727.9	740.2	736.8	734.1	740.7
25°	701.6	713.0	710.9	707.5	712.1
27.5°	675.5	683.9	679.9	676.5	679.9
30°	655.0	665.2	658.5	655.0	658.5
32.5°	632.6	642.8	636.1	631.7	633.3
35°	597.8	607.0	601.3	595.5	595.5
37.5°	565.0	570.9	567.1	557.2	554.7
40°	540.7	547.6	541.9	530.2	526.8
42.5°	515.6	522.4	515.8	503.1	497.9
45°	479.0	483.5	475.5	461.3	454.5
47.5°	441.2	446.0	434.9	419.4	411.2
50°	416.0	421.7	407.9	391.4	382.3
52.5°	391.8	395.7	382.7	363.4	355.2
55°	353.1	357.7	345.0	323.7	313.5
57.5°	317.0	321.3	306.3	286.0	278.1
60°	293.7	297.1	282.0	260.9	252.9
62.5°	267.6	271.0	256.9	238.5	230.5
65°	233.1	234.2	222.6	206.1	200.4
67.5°	200.7	200.7	190.9	178.7	174.1
70°	178.3	178.3	171.3	161.9	157.3
72.5°	157.8	156.9	152.7	146.1	142.4
75°	125.9	125.9	128.2	124.6	122.4
77.5°	97.9	96.1	106.1	105.6	104.4
80°	79.2	79.2	92.1	94.4	93.2
82.5°	62.5	64.3	80.9	84.1	83.0
85°	38.5	46.4	64.1	68.8	68.8
87.5°	17.5	32.8	53.2	60.7	61.0
90°	3.5	29.9	56.4	70.6	71.7
92.5°	24.5	41.8	66.2	86.4	94.1
95°	69.3	117.5	82.1	97.9	113.1
97.5°	116.4	212.2	441.6	149.6	134.0
100°	151.0	262.8	864.7	270.3	188.0
102.5°	184.6	302.1	1160.9	676.9	379.4
105°	235.1	348.1	1310.7	1677.5	1115.8
107.5°	285.7	369.3	1249.0	2432.6	2280.1
110°	319.3	398.2	1213.5	2553.9	2745.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	353.9	432.8	1178.9	2480.0	2801.2
115°	404.7	484.7	1127.0	2339.9	2734.7
117.5°	456.6	536.6	1113.8	2187.4	2593.4
120°	496.1	571.3	1089.8	2071.5	2494.4
122.5°	524.9	604.9	1060.9	1972.7	2361.8
125°	574.2	649.5	1060.9	1853.3	2191.6
127.5°	614.6	692.7	1062.4	1714.8	2048.9
130°	636.8	721.3	1068.1	1622.1	1939.3
132.5°	663.7	748.3	1067.2	1580.4	1841.3
135°	706.5	784.1	1067.0	1526.3	1751.9
137.5°	742.6	825.7	1067.0	1466.4	1659.6
140°	771.4	848.9	1067.0	1431.5	1607.7
142.5°	800.2	872.1	1072.7	1390.8	1555.8
145°	836.3	906.8	1074.2	1329.7	1470.7
147.5°	879.5	941.6	1082.8	1285.7	1394.3
150°	908.4	964.8	1088.6	1256.5	1348.1
152.5°	937.2	988.0	1088.6	1233.1	1307.8
155°	980.5	1015.7	1095.8	1205.2	1261.6
157.5°	1015.1	1048.9	1104.5	1187.6	1228.5
160°	1038.1	1066.3	1110.2	1175.9	1211.2
162.5°	1055.4	1083.6	1116.0	1169.9	1193.9
165°	1088.6	1102.7	1124.7	1154.0	1175.1
167.5°	1107.4	1120.0	1131.9	1146.6	1159.3
170°	1124.7	1131.7	1131.9	1146.4	1153.5
172.5°	1130.4	1143.1	1137.6	1140.7	1147.7
175°	1146.3	1153.3	1146.3	1138.9	1131.9
177.5°	1146.3	1151.9	1146.3	1146.2	1140.5
180°	1146.3	1146.3	1146.3	1146.3	1146.3

(END OF REPORT)