

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: P644322

Luminaire Tested: CRQ4DIP-SR4F0-50D100U930-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644322  
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-SR4F0-50D100U930-FLLOOB-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 500 LUMENS PER FOOT  
UPLIGHT - BATWING OPTIC - 1000 LUMENS PER FOOT  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

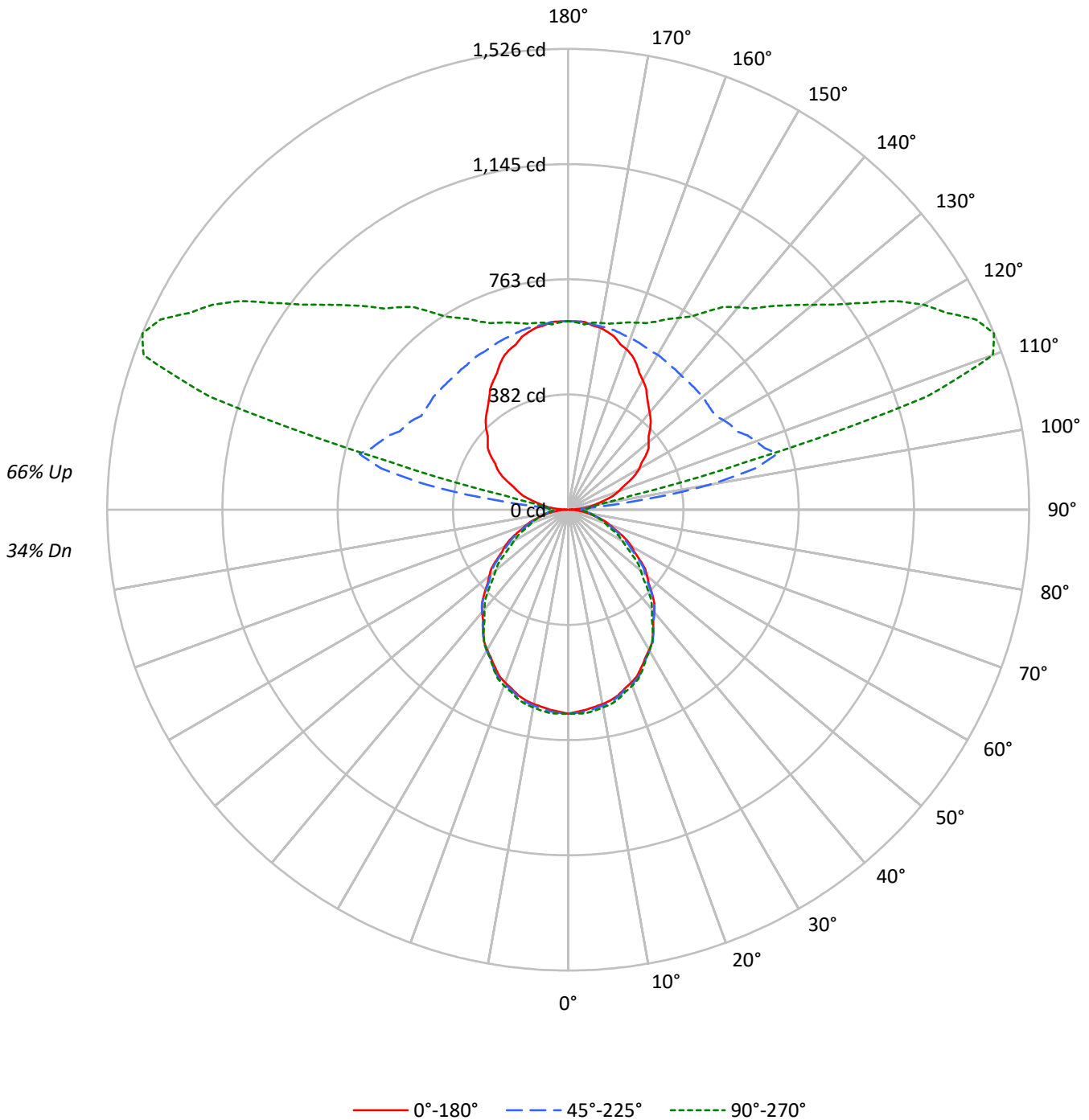
Lumens per Lamp: N/A  
Luminaire Lumens: 5094.8 lumens  
Efficiency: N/A  
Efficacy: 117.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Indirect

Input Watts (W): 43.3  
Input Voltage (V): 120  
Input Current (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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	34				
1	94	90	86	82	85	81	78	75	65	63	60	50	48	47	36	35	34	28				
2	86	78	72	67	77	71	66	61	57	53	50	44	41	39	32	30	29	24				
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25	20				
4	71	61	53	47	64	55	49	43	44	40	36	34	31	29	25	23	21	17				
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	19	15				
6	60	49	41	35	54	44	37	32	36	31	27	28	24	22	21	18	16	13				
7	56	44	36	31	50	40	33	28	32	27	24	25	22	19	19	16	15	12				
8	52	40	32	27	46	36	29	25	29	24	21	23	20	17	17	15	13	11				
9	48	36	29	24	43	33	27	22	27	22	19	21	18	15	16	14	12	10				
10	45	33	26	21	40	30	24	20	25	20	17	20	16	14	15	12	11	9				

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

	0°	45°	90°
0°	10908	10908	10908
5°	10702	9631	9332
10°	10561	8569	8061
15°	10407	7674	7051
20°	10168	6884	6167
25°	9850	6147	5374
30°	9540	5431	4665
35°	9116	4777	4004
40°	8723	4182	3394
45°	8266	3594	2832
50°	7785	3045	2324
55°	7272	2561	1874
60°	6787	2099	1498
65°	6184	1675	1185
70°	5608	1312	936
75°	4906	1008	739
80°	4098	749	575
85°	2989	545	437

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8266 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	63.8	1.3
10°-20°	180.9	3.6
20°-30°	267.1	5.2
30°-40°	307.1	6.0
40°-50°	297.9	5.8
50°-60°	249.4	4.9
60°-70°	179.7	3.5
70°-80°	109.8	2.2
80°-90°	54.7	1.1
90°-100°	97.8	1.9
100°-110°	554.3	10.9
110°-120°	744.8	14.6
120°-130°	605.1	11.9
130°-140°	486.0	9.5
140°-150°	383.0	7.5
150°-160°	280.1	5.5
160°-170°	173.9	3.4
170°-180°	59.3	1.2
0°-30°	511.8	10.0
0°-40°	818.9	16.1
0°-60°	1366.2	26.8
0°-90°	1710.5	33.6
90°-120°	1396.9	27.4
90°-150°	2871.1	56.4
90°-180°	3384.0	66.4
0°-180°	5094.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	676	676	676	676	676	
5°	665	677	671	672	676	63
15°	636	646	640	643	648	179
25°	574	584	582	579	583	265
35°	490	497	492	488	488	307
45°	392	396	389	378	372	302
55°	289	293	282	265	257	259
65°	191	192	182	169	164	190
75°	103	103	105	102	100	110
85°	32	38	52	56	56	33
90°	3	23	42	52	53	5
95°	41	67	51	62	71	43
105°	131	191	715	916	611	138
115°	222	265	614	1274	1489	221
125°	314	354	578	1009	1193	279
135°	385	427	581	831	954	296
145°	455	494	585	724	800	286
155°	534	553	596	656	687	245
165°	593	600	612	628	640	166
175°	624	628	624	620	616	59
180°	624	624	624	624	624	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	675.6	675.6	675.6	675.6	675.6
2.5°	669.5	679.2	673.3	674.8	675.6
5°	665.1	677.2	670.8	671.9	676.5
7.5°	659.0	670.2	664.5	665.8	671.2
10°	653.6	664.8	658.4	660.4	665.1
12.5°	646.8	657.2	652.3	654.3	659.0
15°	636.5	645.8	640.3	643.2	647.9
17.5°	621.2	631.3	625.4	627.0	631.7
20°	609.7	619.1	615.5	615.6	620.2
22.5°	596.0	606.1	603.2	601.1	606.5
25°	574.4	583.8	582.1	579.3	583.0
27.5°	553.1	560.0	556.7	553.9	556.7
30°	536.3	544.7	539.1	536.3	539.1
32.5°	517.9	526.3	520.8	517.2	518.5
35°	489.5	497.0	492.4	487.6	487.6
37.5°	462.6	467.5	464.3	456.3	454.2
40°	442.8	448.3	443.7	434.1	431.3
42.5°	422.1	427.7	422.3	411.9	407.6
45°	392.2	395.9	389.3	377.7	372.1
47.5°	361.3	365.2	356.1	343.4	336.6
50°	340.7	345.3	334.0	320.4	313.0
52.5°	320.8	324.0	313.4	297.6	290.8
55°	289.1	292.9	282.4	265.1	256.7
57.5°	259.5	263.1	250.8	234.2	227.7
60°	240.5	243.3	230.9	213.6	207.1
62.5°	219.1	221.9	210.3	195.3	188.7
65°	190.8	191.8	182.3	168.8	164.1
67.5°	164.3	164.3	156.3	146.3	142.6
70°	146.0	146.0	140.3	132.5	128.8
72.5°	129.2	128.5	125.0	119.6	116.6
75°	103.1	103.1	105.0	102.1	100.2
77.5°	80.2	78.7	86.8	86.4	85.5
80°	64.9	64.9	75.4	77.3	76.3
82.5°	51.1	52.6	66.2	68.9	67.9
85°	31.5	38.0	52.5	56.3	56.3
87.5°	14.3	26.5	42.8	48.5	48.7
90°	2.9	22.6	42.2	51.9	52.8
92.5°	15.3	27.6	45.5	58.4	63.2
95°	40.9	66.9	51.4	62.2	70.8
97.5°	67.2	117.4	245.2	88.1	80.0
100°	86.0	144.7	474.5	152.6	108.4
102.5°	104.1	165.9	634.7	372.9	211.3
105°	131.2	190.8	715.1	916.0	610.9
107.5°	158.3	202.0	680.8	1325.9	1243.2
110°	176.4	217.8	661.2	1391.4	1496.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	195.2	236.6	642.3	1350.7	1525.8
115°	222.5	264.8	614.1	1274.3	1489.2
117.5°	250.4	293.1	606.8	1190.9	1411.9
120°	271.6	312.0	593.5	1127.6	1357.8
122.5°	287.3	330.0	577.8	1073.8	1285.6
125°	313.8	354.2	577.8	1008.8	1193.0
127.5°	335.4	377.7	578.6	933.4	1115.3
130°	347.2	393.3	581.7	883.0	1055.6
132.5°	361.4	407.5	581.0	860.3	1002.2
135°	384.6	426.8	580.8	830.8	953.6
137.5°	404.2	449.5	580.8	798.2	903.4
140°	419.9	462.1	580.8	779.2	875.1
142.5°	435.6	474.7	583.9	757.1	846.8
145°	455.2	493.6	584.7	723.8	800.5
147.5°	478.8	512.5	589.4	699.9	758.9
150°	494.5	525.1	592.6	683.9	733.8
152.5°	510.1	537.8	592.6	671.2	711.9
155°	533.7	552.9	596.5	656.0	686.7
157.5°	552.5	570.9	601.2	646.4	668.7
160°	565.1	580.4	604.3	640.1	659.3
162.5°	574.5	589.9	607.5	636.8	649.9
165°	592.6	600.2	612.2	628.1	639.6
167.5°	602.8	609.7	616.1	624.1	631.0
170°	612.2	616.0	616.1	624.0	627.9
172.5°	615.3	622.2	619.2	620.9	624.7
175°	624.0	627.8	624.0	619.9	616.1
177.5°	624.0	627.0	624.0	623.9	620.8
180°	624.0	624.0	624.0	624.0	624.0

(END OF REPORT)