

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: P644224

Luminaire Tested: CRQ4DIP-SR4F0-100D50U840-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644224  
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-SR4F0-100D50U840-FLLOOB-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
UPLIGHT - BATWING OPTIC - 500 LUMENS PER FOOT  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

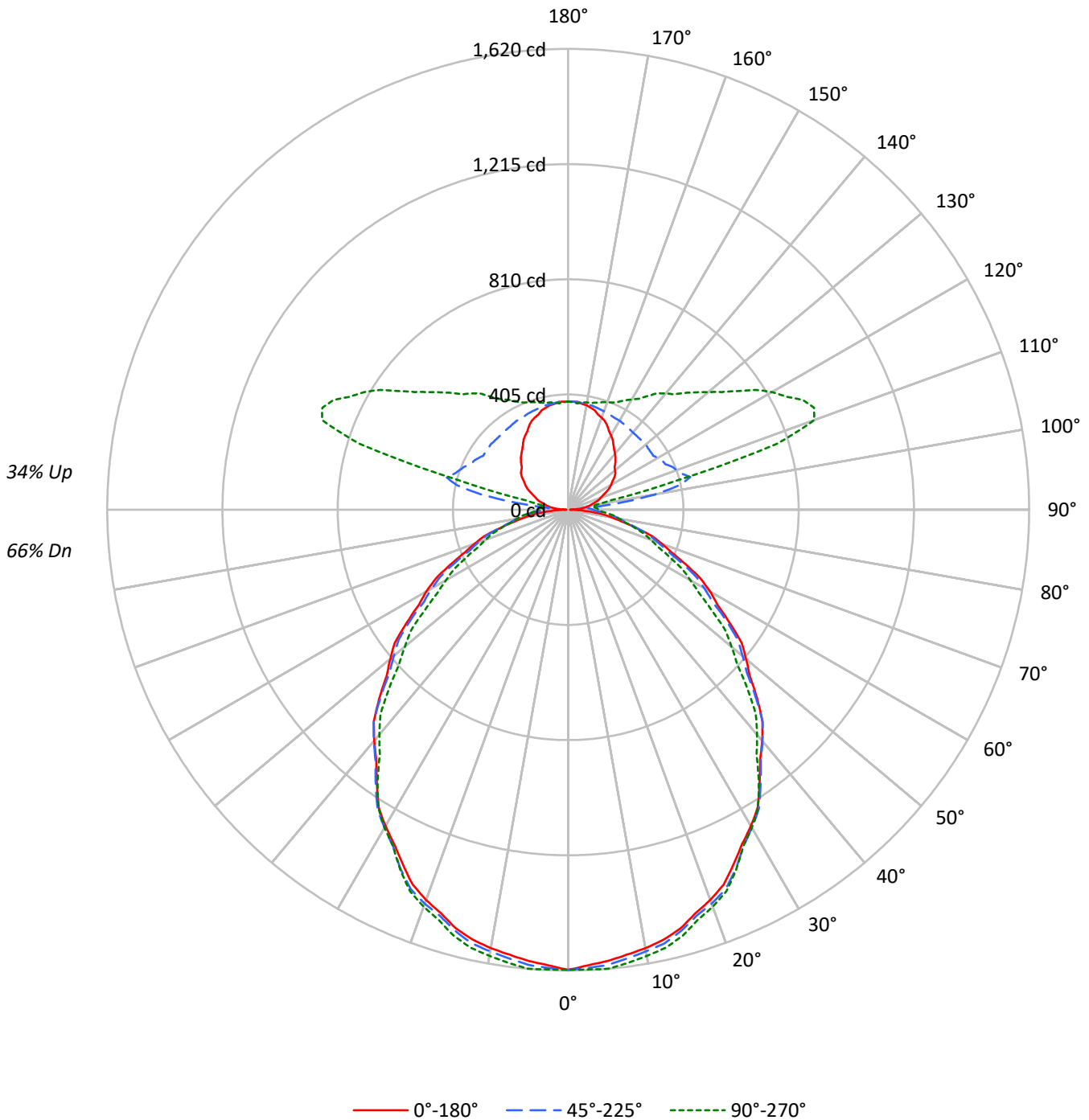
Lumens per Lamp: N/A  
Luminaire Lumens: 6213.5 lumens  
Efficiency: N/A  
Efficacy: 139.6 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Direct

Input Watts (W): 44.5  
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										
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	50	30	10	0														
RCR																																						
0	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71	66																				
1	101	97	92	89	95	91	87	84	81	78	75	71	69	67	62	61	59	55																				
2	92	84	78	73	86	80	74	69	71	66	63	62	59	56	55	52	50	46																				
3	84	74	67	61	79	70	63	58	62	57	53	55	51	48	49	45	43	39																				
4	77	66	58	52	72	62	55	49	56	50	45	49	45	41	44	40	37	34																				
5	71	59	51	44	66	56	48	43	50	44	39	45	40	36	39	35	32	29																				
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	36	32	29	26																				
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	25	23																				
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23	21																				
9	53	40	32	27	49	38	31	26	35	29	24	31	26	23	28	24	21	19																				
10	49	37	29	25	46	35	28	24	32	26	22	29	24	20	26	22	19	17																				

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

	0°	45°	90°
0°	26118	26118	26118
5°	25624	23060	22345
10°	25286	20517	19302
15°	24916	18374	16883
20°	24346	16483	14767
25°	23586	14718	12868
30°	22840	13006	11170
35°	21829	11438	9587
40°	20883	10014	8127
45°	19792	8607	6782
50°	18638	7290	5563
55°	17415	6133	4486
60°	16248	5027	3586
65°	14809	4009	2839
70°	13429	3142	2242
75°	11744	2413	1768
80°	9812	1794	1377
85°	7154	1305	1047

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 19792 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.7	2.5
10°-20°	433.3	7.0
20°-30°	639.6	10.3
30°-40°	735.3	11.8
40°-50°	713.3	11.5
50°-60°	597.1	9.6
60°-70°	430.2	6.9
70°-80°	262.9	4.2
80°-90°	128.6	2.1
90°-100°	97.3	1.6
100°-110°	351.4	5.7
110°-120°	458.6	7.4
120°-130°	370.7	6.0
130°-140°	296.4	4.8
140°-150°	233.4	3.8
150°-160°	170.7	2.7
160°-170°	106.0	1.7
170°-180°	36.1	0.6
0°-30°	1225.5	19.7
0°-40°	1960.8	31.6
0°-60°	3271.3	52.6
0°-90°	4092.9	65.9
90°-120°	907.3	14.6
90°-150°	1807.8	29.1
90°-180°	2121.0	34.1
0°-180°	6213.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1618	1618	1618	1618	1618	
5°	1592	1622	1606	1609	1620	151
15°	1524	1546	1533	1540	1551	429
25°	1375	1398	1394	1387	1396	634
35°	1172	1190	1179	1168	1168	734
45°	939	948	932	904	891	724
55°	692	701	676	635	615	621
65°	457	459	436	404	393	454
75°	247	247	251	244	240	264
85°	75	91	126	135	135	80
90°	7	47	87	103	105	9
95°	42	56	67	86	93	41
105°	97	123	444	574	391	102
115°	148	167	378	780	911	146
125°	198	219	354	615	727	176
135°	234	260	354	506	581	181
145°	277	301	356	441	488	174
155°	325	337	364	400	418	149
165°	361	366	373	383	390	101
175°	380	382	380	378	375	36
180°	380	380	380	380	380	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1617.6	1617.6	1617.6	1617.6	1617.6
2.5°	1603.0	1626.2	1612.1	1615.8	1617.6
5°	1592.5	1621.5	1606.2	1608.7	1619.9
7.5°	1577.8	1604.6	1591.1	1594.1	1607.1
10°	1565.0	1591.9	1576.5	1581.3	1592.5
12.5°	1548.6	1573.6	1561.8	1566.7	1577.8
15°	1523.9	1546.3	1533.1	1540.2	1551.3
17.5°	1487.4	1511.5	1497.4	1501.3	1512.5
20°	1459.9	1482.3	1473.7	1473.9	1485.1
22.5°	1427.0	1451.2	1444.4	1439.2	1452.2
25°	1375.4	1397.8	1393.7	1387.0	1396.0
27.5°	1324.2	1340.8	1332.9	1326.2	1332.9
30°	1284.0	1304.1	1290.9	1284.2	1290.9
32.5°	1240.2	1260.3	1247.0	1238.4	1241.5
35°	1172.1	1189.9	1178.9	1167.5	1167.5
37.5°	1107.6	1119.3	1111.8	1092.5	1087.5
40°	1060.1	1073.5	1062.4	1039.4	1032.7
42.5°	1010.8	1024.2	1011.2	986.3	976.0
45°	939.0	948.0	932.2	904.5	891.0
47.5°	865.0	874.4	852.7	822.1	806.1
50°	815.7	826.8	799.7	767.3	749.4
52.5°	768.1	775.7	750.3	712.5	696.4
55°	692.3	701.2	676.3	634.7	614.6
57.5°	621.4	629.9	600.4	560.8	545.1
60°	575.8	582.5	552.9	511.4	495.8
62.5°	524.6	531.3	503.6	467.6	451.9
65°	456.9	459.2	436.4	404.1	393.0
67.5°	393.4	393.4	374.2	350.3	341.3
70°	349.6	349.6	335.9	317.4	308.4
72.5°	309.4	307.6	299.3	286.3	279.2
75°	246.8	246.8	251.3	244.4	239.9
77.5°	191.9	188.3	207.9	206.9	204.7
80°	155.4	155.4	180.5	185.0	182.8
82.5°	122.5	126.0	158.6	164.9	162.7
85°	75.4	91.0	125.7	134.8	134.8
87.5°	34.3	62.0	99.7	112.0	112.5
90°	6.9	47.2	87.0	103.2	105.4
92.5°	19.9	42.3	78.1	96.3	102.2
95°	42.0	56.1	67.1	85.7	92.6
97.5°	61.4	81.7	175.3	89.5	86.6
100°	72.8	97.0	309.6	122.0	98.4
102.5°	82.5	108.5	401.7	250.8	154.3
105°	97.0	123.3	444.2	573.6	391.0
107.5°	111.4	128.4	419.6	817.5	768.8
110°	121.1	138.0	406.3	854.7	920.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	132.6	149.5	394.8	827.2	935.6
115°	147.5	166.6	377.6	779.9	910.8
117.5°	162.5	183.8	372.8	727.0	861.7
120°	174.0	195.3	363.4	687.1	827.4
122.5°	183.6	204.9	353.8	654.3	783.4
125°	198.0	219.3	353.8	614.7	726.9
127.5°	209.2	233.6	354.3	568.8	679.6
130°	215.0	243.1	356.2	538.0	643.2
132.5°	220.9	249.0	354.4	524.2	610.7
135°	234.3	260.1	353.9	506.2	581.1
137.5°	246.3	273.9	353.9	486.4	550.5
140°	255.9	281.6	353.9	474.8	533.2
142.5°	265.4	289.3	355.8	461.3	516.0
145°	277.4	300.8	356.3	441.0	487.8
147.5°	291.7	312.3	359.2	426.5	462.5
150°	301.3	320.0	361.1	416.8	447.2
152.5°	310.9	327.7	361.1	409.0	433.8
155°	325.2	336.9	363.5	399.8	418.5
157.5°	336.7	347.9	366.3	393.9	407.5
160°	344.3	353.7	368.2	390.0	401.7
162.5°	350.1	359.4	370.2	388.0	396.0
165°	361.1	365.7	373.0	382.8	389.8
167.5°	367.3	371.5	375.4	380.3	384.5
170°	373.0	375.4	375.4	380.3	382.6
172.5°	374.9	379.1	377.3	378.3	380.7
175°	380.2	382.5	380.2	377.8	375.4
177.5°	380.2	382.1	380.2	380.2	378.3
180°	380.2	380.2	380.2	380.2	380.2

(END OF REPORT)