

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: P644343

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

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644343  
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-SR4F0-50D150U840-FLLFLL-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 500 LUMENS PER FOOT  
UPLIGHT - CURVED FROSTED LENS - 1500 LUMENS PER FOOT  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

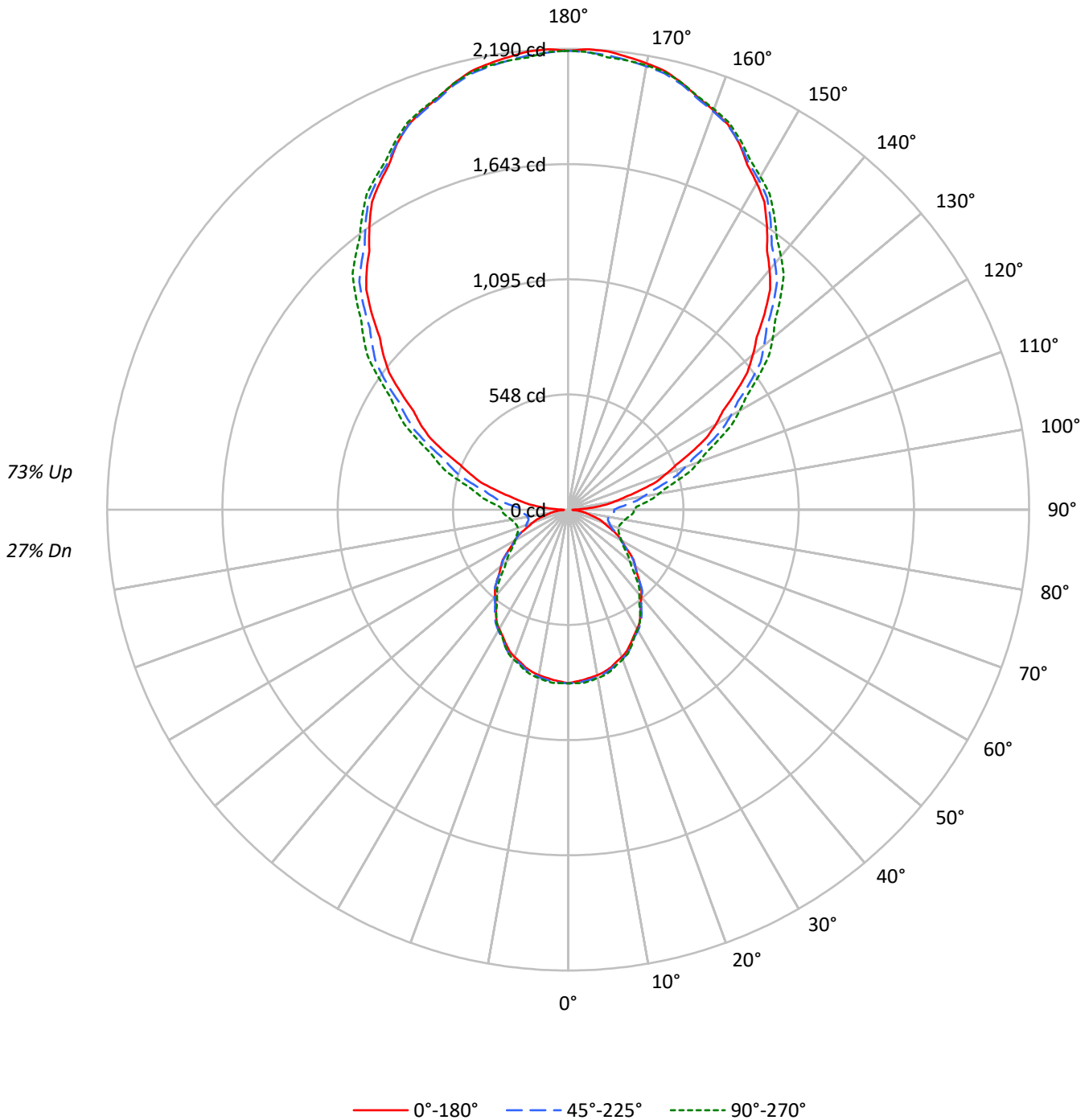
Lumens per Lamp: N/A  
Luminaire Lumens: 8568.4 lumens  
Efficiency: N/A  
Efficacy: 136.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Indirect

Input Watts (W): 62.9  
Input Voltage (V): 120  
Input Current (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	0
RCR																		
0	102	102	102	102	91	91	91	91	71	71	71	52	52	52	35	35	35	27
1	92	87	83	80	82	78	75	72	61	58	56	45	43	42	30	29	28	21
2	83	76	70	65	74	68	63	58	53	49	46	39	37	34	26	25	23	18
3	76	67	59	54	68	60	54	49	47	42	39	34	31	29	23	21	20	15
4	69	59	51	45	62	53	46	41	41	36	33	31	27	25	21	19	17	13
5	64	52	44	38	57	47	40	35	37	32	28	27	24	21	19	16	15	11
6	59	47	39	33	52	42	35	30	33	28	24	25	21	19	17	15	13	10
7	54	42	34	29	48	38	31	26	30	25	21	22	19	16	15	13	12	9
8	50	38	31	25	45	34	28	23	27	22	19	20	17	15	14	12	10	8
9	46	35	27	22	41	31	25	21	25	20	17	19	15	13	13	11	9	7
10	43	32	25	20	39	29	22	18	23	18	15	17	14	12	12	10	8	6

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

	0°	45°	90°
0°	13322	13322	13322
5°	13070	11763	11398
10°	12899	10495	9846
15°	12709	9400	8612
20°	12419	8433	7532
25°	12031	7508	6564
30°	11651	6681	5698
35°	11133	5902	4890
40°	10651	5129	4146
45°	10096	4411	3459
50°	9505	3781	2838
55°	8882	3171	2407
60°	8288	2649	2097
65°	7555	2257	1916
70°	6849	1971	1851
75°	5991	1875	1909
80°	5001	1951	2063
85°	3653	2205	2332

**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°	221.3	2.6
20°-30°	327.0	3.8
30°-40°	376.9	4.4
40°-50°	366.1	4.3
50°-60°	312.4	3.6
60°-70°	250.3	2.9
70°-80°	207.9	2.4
80°-90°	206.8	2.4
90°-100°	285.4	3.3
100°-110°	484.2	5.7
110°-120°	722.4	8.4
120°-130°	936.9	10.9
130°-140°	1060.9	12.4
140°-150°	1048.4	12.2
150°-160°	886.8	10.3
160°-170°	590.4	6.9
170°-180°	206.5	2.4
0°-30°	626.3	7.3
0°-40°	1003.2	11.7
0°-60°	1681.7	19.6
0°-90°	2346.7	27.4
90°-120°	1491.9	17.4
90°-150°	4538.1	53.0
90°-180°	6222.0	72.6
0°-180°	8568.4	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	793	784	786	791	219
25°	702	718	711	708	712	323
35°	598	614	608	596	596	374
45°	479	490	478	461	454	369
55°	353	367	350	331	330	317
65°	233	248	246	260	265	232
75°	126	144	195	243	259	135
85°	38	101	212	280	300	41
90°	20	100	218	288	312	16
95°	116	162	282	348	363	118
105°	352	377	467	527	536	375
115°	645	676	734	778	790	641
125°	970	1006	1055	1093	1102	870
135°	1320	1349	1375	1410	1426	1017
145°	1646	1666	1676	1688	1706	1028
155°	1922	1933	1924	1927	1938	882
165°	2098	2107	2091	2084	2098	591
175°	2186	2195	2167	2158	2158	207
180°	2181	2181	2181	2181	2181	

TEST NUMBER: P644343

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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	824.2	824.2	825.1
5°	812.3	827.1	819.3	820.6	826.3
7.5°	804.8	820.3	813.9	813.1	819.7
10°	798.3	812.0	806.4	806.6	812.3
12.5°	789.9	806.3	797.1	799.1	804.8
15°	777.3	793.2	784.3	785.6	791.3
17.5°	758.7	773.2	766.1	765.8	771.5
20°	744.7	758.3	754.0	751.8	757.5
22.5°	727.9	742.5	739.1	734.1	740.7
25°	701.6	717.5	710.9	707.5	712.1
27.5°	675.5	692.0	682.7	676.5	679.9
30°	655.0	669.7	663.1	655.0	658.5
32.5°	632.6	649.2	640.7	631.7	633.3
35°	597.8	613.8	608.3	595.5	595.5
37.5°	565.0	580.0	569.4	557.2	554.7
40°	540.7	556.6	544.2	530.2	526.8
42.5°	515.6	531.5	520.0	503.1	497.9
45°	479.0	490.3	477.8	461.3	454.5
47.5°	441.2	454.6	438.2	419.4	411.2
50°	416.0	428.5	414.8	391.4	382.3
52.5°	391.8	404.3	387.8	365.3	358.9
55°	353.1	366.7	349.6	330.9	329.7
57.5°	317.0	330.4	313.7	307.0	304.0
60°	293.7	306.2	291.3	291.1	289.9
62.5°	267.6	281.9	269.8	278.1	280.5
65°	233.1	247.8	245.7	259.7	265.3
67.5°	200.7	214.3	222.8	248.9	258.4
70°	178.3	191.9	210.7	243.3	254.6
72.5°	157.8	172.3	205.0	242.3	254.5
75°	125.9	144.0	195.3	243.1	259.0
77.5°	97.9	120.5	193.6	249.1	266.5
80°	79.2	110.9	196.3	254.6	273.8
82.5°	62.5	103.2	199.9	264.7	283.9
85°	38.5	100.8	212.3	279.9	300.3
87.5°	20.7	101.2	218.9	288.0	310.9
90°	19.7	100.2	217.9	288.0	311.7
92.5°	54.9	119.1	240.1	308.1	325.6
95°	115.8	162.2	281.5	347.8	362.6
97.5°	178.4	215.2	328.4	391.1	405.1
100°	224.7	255.2	363.6	425.2	436.6
102.5°	275.6	300.7	404.3	462.3	476.4
105°	352.0	376.9	466.6	527.0	536.1
107.5°	436.7	462.7	539.9	598.1	608.7
110°	493.2	523.7	592.7	646.3	658.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	554.3	584.9	646.4	698.1	710.6
115°	644.9	676.5	734.0	778.2	789.5
117.5°	739.8	771.9	824.5	867.1	878.0
120°	809.2	838.6	890.2	931.0	940.0
122.5°	870.4	904.3	955.1	995.8	1004.8
125°	970.1	1006.3	1054.6	1093.0	1102.1
127.5°	1072.9	1106.9	1151.4	1190.3	1202.1
130°	1146.1	1175.5	1214.4	1255.2	1268.8
132.5°	1214.6	1244.0	1278.3	1318.2	1333.6
135°	1319.7	1349.1	1375.3	1410.4	1426.2
137.5°	1420.2	1448.7	1468.8	1496.6	1516.5
140°	1488.7	1513.6	1528.1	1554.0	1572.1
142.5°	1551.7	1576.6	1587.4	1609.5	1627.6
145°	1646.2	1666.5	1676.3	1688.3	1706.4
147.5°	1734.6	1754.5	1758.7	1769.1	1780.5
150°	1792.0	1810.1	1810.6	1815.4	1826.8
152.5°	1845.8	1862.0	1856.9	1859.9	1873.1
155°	1921.7	1933.0	1924.0	1926.6	1937.9
157.5°	1981.9	1993.2	1979.1	1983.5	1992.5
160°	2018.9	2030.3	2014.3	2016.8	2025.9
162.5°	2054.1	2061.8	2047.6	2044.7	2057.4
165°	2097.7	2106.7	2090.7	2084.1	2097.7
167.5°	2134.7	2143.8	2122.7	2115.6	2129.1
170°	2153.2	2162.3	2139.3	2130.4	2144.0
172.5°	2169.9	2178.9	2154.1	2143.3	2153.2
175°	2185.6	2194.7	2167.1	2157.9	2157.9
177.5°	2190.3	2195.7	2175.4	2166.4	2177.3
180°	2181.0	2181.0	2181.0	2181.0	2181.0

(END OF REPORT)