

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: P644197

Luminaire Tested: CRQ4DIP-SR4F0-100D150U835-FLLFLL-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644197  
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-SR4F0-100D150U835-FLLFLL-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
UPLIGHT - CURVED FROSTED LENS - 1500 LUMENS PER FOOT  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

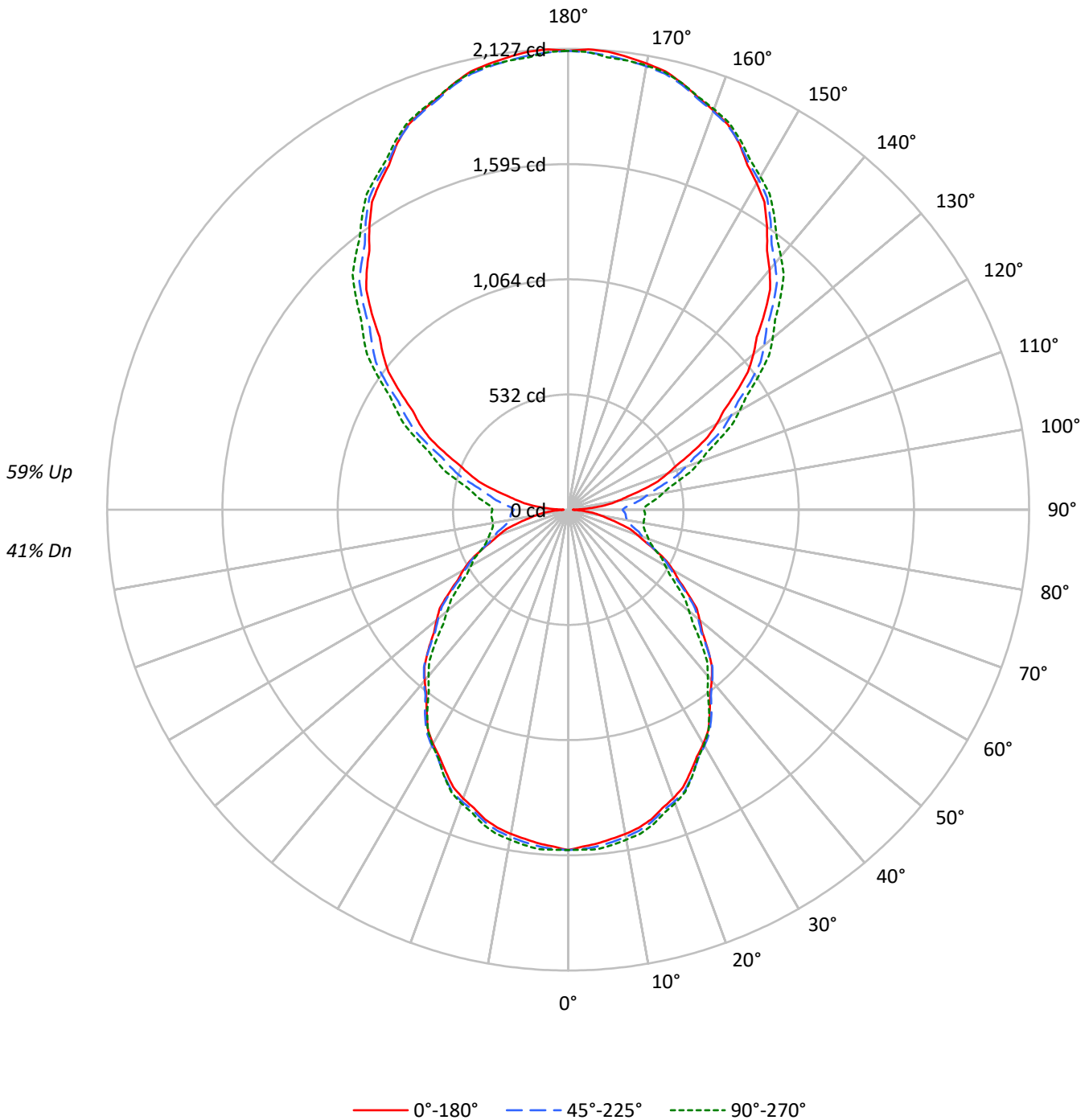
Lumens per Lamp: N/A  
Luminaire Lumens: 10304.3 lumens  
Efficiency: N/A  
Efficacy: 131.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: General Diffuse

Input Watts (W): 78.5  
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									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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48	41																			
1	95	90	86	83	86	82	79	76	68	65	63	54	52	50	41	40	39	33																			
2	86	79	73	67	78	72	67	62	59	55	52	47	44	42	36	34	33	27																			
3	79	69	62	56	71	63	57	52	52	47	43	42	38	35	32	30	28	23																			
4	72	61	53	47	65	56	49	44	46	41	37	37	33	30	29	26	24	20																			
5	66	54	46	40	60	50	43	37	41	36	32	33	29	26	26	23	21	17																			
6	61	49	41	35	55	45	38	33	37	32	28	30	26	23	23	21	18	15																			
7	56	44	36	31	51	40	33	29	34	28	24	27	23	20	21	18	16	14																			
8	52	40	32	27	47	37	30	25	31	25	22	25	21	18	20	17	15	12																			
9	49	36	29	24	44	34	27	22	28	23	19	23	19	16	18	15	13	11																			
10	45	33	26	21	41	31	24	20	26	21	17	21	17	15	17	14	12	10																			

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

	0°	45°	90°
0°	25362	25362	25362
5°	24882	22393	21698
10°	24555	19952	18743
15°	24195	17868	16394
20°	23642	16030	14340
25°	22904	14292	12496
30°	22180	12674	10846
35°	21196	11172	9309
40°	20279	9745	7892
45°	19218	8378	6586
50°	18097	7140	5402
55°	16910	5997	4471
60°	15777	4963	3743
65°	14381	4099	3212
70°	13037	3408	2863
75°	11401	2968	2695
80°	9528	2747	2659
85°	6945	2761	2762

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 19218 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.3	1.4
10°-20°	421.0	4.1
20°-30°	621.8	6.0
30°-40°	715.8	6.9
40°-50°	694.8	6.7
50°-60°	587.4	5.7
60°-70°	447.7	4.3
70°-80°	326.9	3.2
80°-90°	261.5	2.5
90°-100°	301.1	2.9
100°-110°	478.9	4.6
110°-120°	704.5	6.8
120°-130°	911.0	8.8
130°-140°	1030.4	10.0
140°-150°	1018.0	9.9
150°-160°	861.1	8.4
160°-170°	573.3	5.6
170°-180°	200.5	1.9
0°-30°	1191.2	11.6
0°-40°	1907.0	18.5
0°-60°	3189.3	31.0
0°-90°	4225.5	41.0
90°-120°	1484.5	14.4
90°-150°	4443.9	43.1
90°-180°	6079.0	59.0
0°-180°	10304.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1571	1571	1571	1571	1571	
5°	1546	1575	1560	1562	1573	147
15°	1480	1506	1491	1496	1506	416
25°	1336	1362	1353	1347	1356	615
35°	1138	1162	1152	1134	1134	713
45°	912	927	907	878	865	703
55°	672	690	661	623	612	603
65°	444	459	446	444	445	441
75°	240	257	309	352	366	256
85°	73	141	266	336	356	78
90°	22	119	251	325	350	19
95°	123	167	296	368	384	124
105°	353	370	458	522	532	376
115°	634	660	715	758	769	629
125°	946	979	1025	1061	1070	848
135°	1282	1310	1336	1370	1385	988
145°	1598	1618	1628	1639	1657	998
155°	1866	1877	1868	1871	1882	857
165°	2037	2046	2030	2024	2037	574
175°	2122	2131	2104	2095	2095	201
180°	2118	2118	2118	2118	2118	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1570.8	1570.8	1570.8	1570.8	1570.8
2.5°	1556.6	1579.1	1567.2	1569.0	1570.8
5°	1546.4	1574.6	1559.7	1562.1	1573.0
7.5°	1532.2	1560.0	1547.3	1548.0	1560.6
10°	1519.7	1545.8	1533.1	1535.5	1546.4
12.5°	1503.8	1531.6	1517.1	1521.3	1532.2
15°	1479.8	1505.9	1490.9	1495.6	1506.4
17.5°	1444.3	1469.9	1456.3	1457.9	1468.7
20°	1417.7	1441.6	1433.2	1431.2	1442.1
22.5°	1385.7	1411.4	1404.8	1397.6	1410.1
25°	1335.6	1361.7	1353.3	1346.9	1355.6
27.5°	1285.9	1309.9	1297.0	1287.8	1294.3
30°	1246.9	1270.8	1258.0	1247.0	1253.5
32.5°	1204.3	1229.9	1215.4	1202.5	1205.6
35°	1138.1	1162.1	1151.5	1133.7	1133.7
37.5°	1075.6	1095.7	1081.8	1060.8	1056.1
40°	1029.4	1051.2	1033.9	1009.3	1002.8
42.5°	981.5	1003.3	986.0	957.8	947.8
45°	911.8	927.1	907.4	878.3	865.3
47.5°	840.0	857.4	831.1	798.3	782.7
50°	792.0	809.5	783.3	745.1	727.7
52.5°	745.9	761.6	733.5	693.7	679.8
55°	672.2	689.7	661.2	623.3	612.5
57.5°	603.5	620.5	590.2	564.9	554.5
60°	559.1	574.4	545.9	526.0	517.4
62.5°	509.4	526.5	501.6	492.5	487.4
65°	443.7	459.1	446.2	444.4	444.6
67.5°	382.0	395.2	394.4	408.3	413.3
70°	339.4	352.6	364.4	387.2	393.9
72.5°	300.4	313.6	341.4	371.5	379.9
75°	239.6	257.2	309.2	352.4	365.6
77.5°	186.4	206.6	286.9	340.3	356.2
80°	150.9	181.6	276.4	335.2	352.9
82.5°	118.9	160.2	269.5	335.5	353.1
85°	73.2	141.2	265.9	335.9	355.7
87.5°	36.4	127.5	259.5	332.3	354.7
90°	22.4	118.6	250.7	325.3	349.5
92.5°	60.1	131.9	265.3	338.0	356.8
95°	123.4	167.4	296.1	368.2	383.6
97.5°	186.3	215.4	335.4	402.6	417.5
100°	231.2	253.4	366.1	431.5	444.6
102.5°	279.8	296.7	402.2	464.0	478.9
105°	352.7	370.4	458.5	521.6	532.5
107.5°	433.7	452.7	527.4	586.9	598.3
110°	487.6	512.0	577.7	631.9	645.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	547.0	571.3	629.9	680.6	693.7
115°	633.8	660.3	714.9	757.9	768.8
117.5°	724.7	752.9	802.6	842.9	853.4
120°	791.2	817.7	865.6	904.0	912.8
122.5°	850.6	880.6	928.5	967.0	975.7
125°	946.4	979.4	1025.2	1061.4	1070.2
127.5°	1044.9	1077.0	1119.2	1155.9	1167.3
130°	1115.1	1143.7	1180.3	1218.9	1232.0
132.5°	1179.9	1208.5	1241.5	1280.1	1295.0
135°	1281.5	1310.1	1335.5	1369.5	1384.9
137.5°	1379.1	1406.8	1426.3	1453.3	1472.6
140°	1445.6	1469.8	1483.9	1509.0	1526.6
142.5°	1506.8	1531.0	1541.4	1562.9	1580.5
145°	1598.5	1618.3	1627.7	1639.4	1657.0
147.5°	1684.4	1703.7	1707.8	1717.9	1728.9
150°	1740.2	1757.7	1758.1	1762.9	1773.9
152.5°	1792.3	1808.1	1803.1	1806.1	1818.8
155°	1866.1	1877.1	1868.3	1870.8	1881.8
157.5°	1924.5	1935.5	1921.8	1926.1	1934.9
160°	1960.5	1971.5	1956.0	1958.4	1967.2
162.5°	1994.7	2002.1	1988.4	1985.5	1997.8
165°	2036.9	2045.7	2030.2	2023.7	2036.9
167.5°	2072.9	2081.7	2061.2	2054.3	2067.5
170°	2090.9	2099.7	2077.4	2068.7	2081.9
172.5°	2107.1	2115.9	2091.8	2081.2	2090.9
175°	2122.4	2131.2	2104.4	2095.4	2095.4
177.5°	2126.9	2132.1	2112.5	2103.7	2114.3
180°	2117.9	2117.9	2117.9	2117.9	2117.9

(END OF REPORT)