

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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: P644341

Luminaire Tested: CRQ4DIP-SR4F0-50D150U835-FLLFLL-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644341  
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-SR4F0-50D150U835-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: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

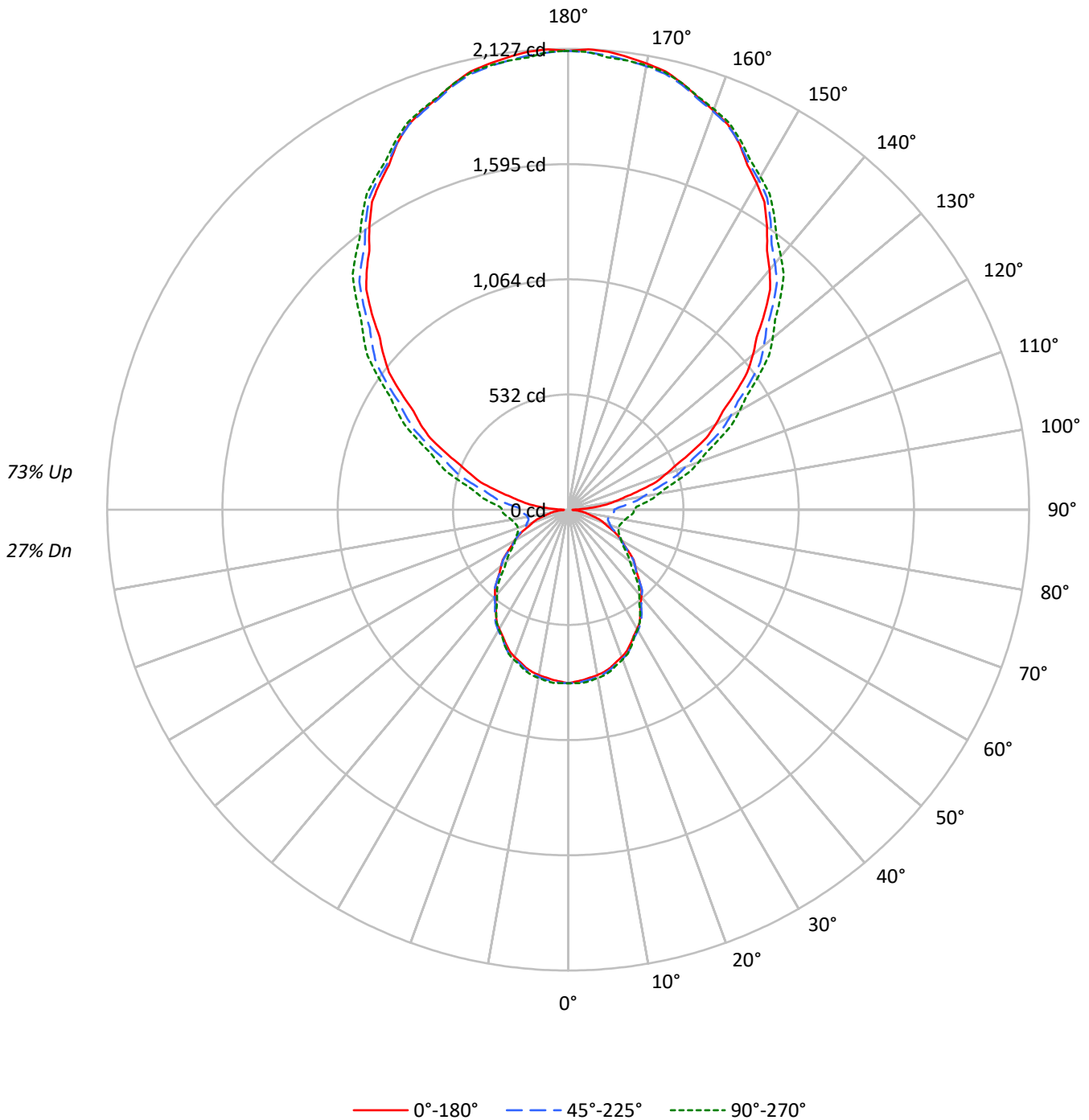
Lumens per Lamp: N/A  
Luminaire Lumens: 8320.4 lumens  
Efficiency: N/A  
Efficacy: 132.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Indirect

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°	12936	12936	12936
5°	12692	11423	11067
10°	12525	10192	9561
15°	12341	9128	8363
20°	12059	8190	7315
25°	11683	7290	6373
30°	11313	6487	5532
35°	10811	5731	4749
40°	10344	4981	4025
45°	9803	4284	3359
50°	9231	3672	2756
55°	8626	3079	2337
60°	8048	2572	2036
65°	7335	2192	1861
70°	6649	1914	1797
75°	5815	1821	1854
80°	4862	1894	2003
85°	3539	2140	2264

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9803 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	75.7	0.9
10°-20°	214.9	2.6
20°-30°	317.6	3.8
30°-40°	366.0	4.4
40°-50°	355.5	4.3
50°-60°	303.4	3.6
60°-70°	243.0	2.9
70°-80°	201.9	2.4
80°-90°	200.8	2.4
90°-100°	277.1	3.3
100°-110°	470.2	5.7
110°-120°	701.5	8.4
120°-130°	909.7	10.9
130°-140°	1030.2	12.4
140°-150°	1018.0	12.2
150°-160°	861.1	10.3
160°-170°	573.3	6.9
170°-180°	200.5	2.4
0°-30°	608.2	7.3
0°-40°	974.2	11.7
0°-60°	1633.0	19.6
0°-90°	2278.7	27.4
90°-120°	1448.7	17.4
90°-150°	4406.7	53.0
90°-180°	6042.0	72.6
0°-180°	8320.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	801	801	801	801	801	
5°	789	803	796	797	802	75
15°	755	770	762	763	768	212
25°	681	697	690	687	691	314
35°	580	596	591	578	578	364
45°	465	476	464	448	441	358
55°	343	356	340	321	320	307
65°	226	241	239	252	258	225
75°	122	140	190	236	252	131
85°	37	98	206	272	292	40
90°	19	97	212	280	303	15
95°	112	158	273	338	352	115
105°	342	366	453	512	521	364
115°	626	657	713	756	767	622
125°	942	977	1024	1061	1070	844
135°	1282	1310	1336	1370	1385	987
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°	801.2	801.2	801.2	801.2	801.2
2.5°	794.0	805.5	800.3	800.3	801.2
5°	788.8	803.2	795.6	796.8	802.3
7.5°	781.5	796.6	790.3	789.6	796.0
10°	775.2	788.5	783.1	783.2	788.8
12.5°	767.0	783.0	774.1	776.0	781.5
15°	754.8	770.3	761.6	762.9	768.4
17.5°	736.7	750.9	743.9	743.6	749.2
20°	723.1	736.4	732.2	730.0	735.6
22.5°	706.8	721.0	717.7	712.9	719.3
25°	681.3	696.7	690.3	687.0	691.4
27.5°	655.9	672.0	662.9	656.9	660.2
30°	636.0	650.3	643.9	636.1	639.4
32.5°	614.3	630.4	622.2	613.4	614.9
35°	580.5	596.0	590.7	578.3	578.3
37.5°	548.6	563.2	552.9	541.1	538.7
40°	525.1	540.5	528.5	514.8	511.5
42.5°	500.6	516.1	504.9	488.5	483.4
45°	465.1	476.1	464.0	448.0	441.3
47.5°	428.4	441.4	425.5	407.2	399.3
50°	404.0	416.1	402.8	380.0	371.2
52.5°	380.5	392.6	376.6	354.7	348.5
55°	342.9	356.1	339.5	321.3	320.2
57.5°	307.8	320.8	304.6	298.1	295.2
60°	285.2	297.3	282.9	282.7	281.5
62.5°	259.8	273.7	262.0	270.0	272.4
65°	226.3	240.6	238.6	252.1	257.6
67.5°	194.9	208.1	216.4	241.7	250.9
70°	173.1	186.3	204.6	236.2	247.2
72.5°	153.2	167.3	199.1	235.3	247.1
75°	122.2	139.8	189.7	236.1	251.5
77.5°	95.1	117.0	188.0	241.9	258.8
80°	77.0	107.7	190.6	247.2	265.9
82.5°	60.7	100.2	194.1	257.0	275.7
85°	37.3	97.8	206.1	271.8	291.6
87.5°	20.1	98.3	212.6	279.7	301.9
90°	19.1	97.3	211.6	279.6	302.7
92.5°	53.3	115.6	233.1	299.2	316.2
95°	112.5	157.5	273.3	337.8	352.1
97.5°	173.2	209.0	318.9	379.8	393.4
100°	218.2	247.8	353.1	412.9	423.9
102.5°	267.6	292.0	392.6	448.9	462.6
105°	341.8	365.9	453.1	511.7	520.6
107.5°	424.1	449.3	524.3	580.8	591.1
110°	478.9	508.6	575.6	627.6	639.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	538.3	567.9	627.7	677.9	690.0
115°	626.2	656.9	712.7	755.7	766.7
117.5°	718.4	749.6	800.6	842.0	852.5
120°	785.8	814.4	864.5	904.0	912.8
122.5°	845.2	878.1	927.4	967.0	975.7
125°	942.1	977.2	1024.1	1061.4	1070.2
127.5°	1041.9	1074.8	1118.1	1155.9	1167.3
130°	1112.9	1141.5	1179.2	1218.9	1232.0
132.5°	1179.4	1208.0	1241.3	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)