

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: P644321

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

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644321  
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-SR4F0-50D100U930-FLLFLL-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 500 LUMENS PER FOOT  
UPLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

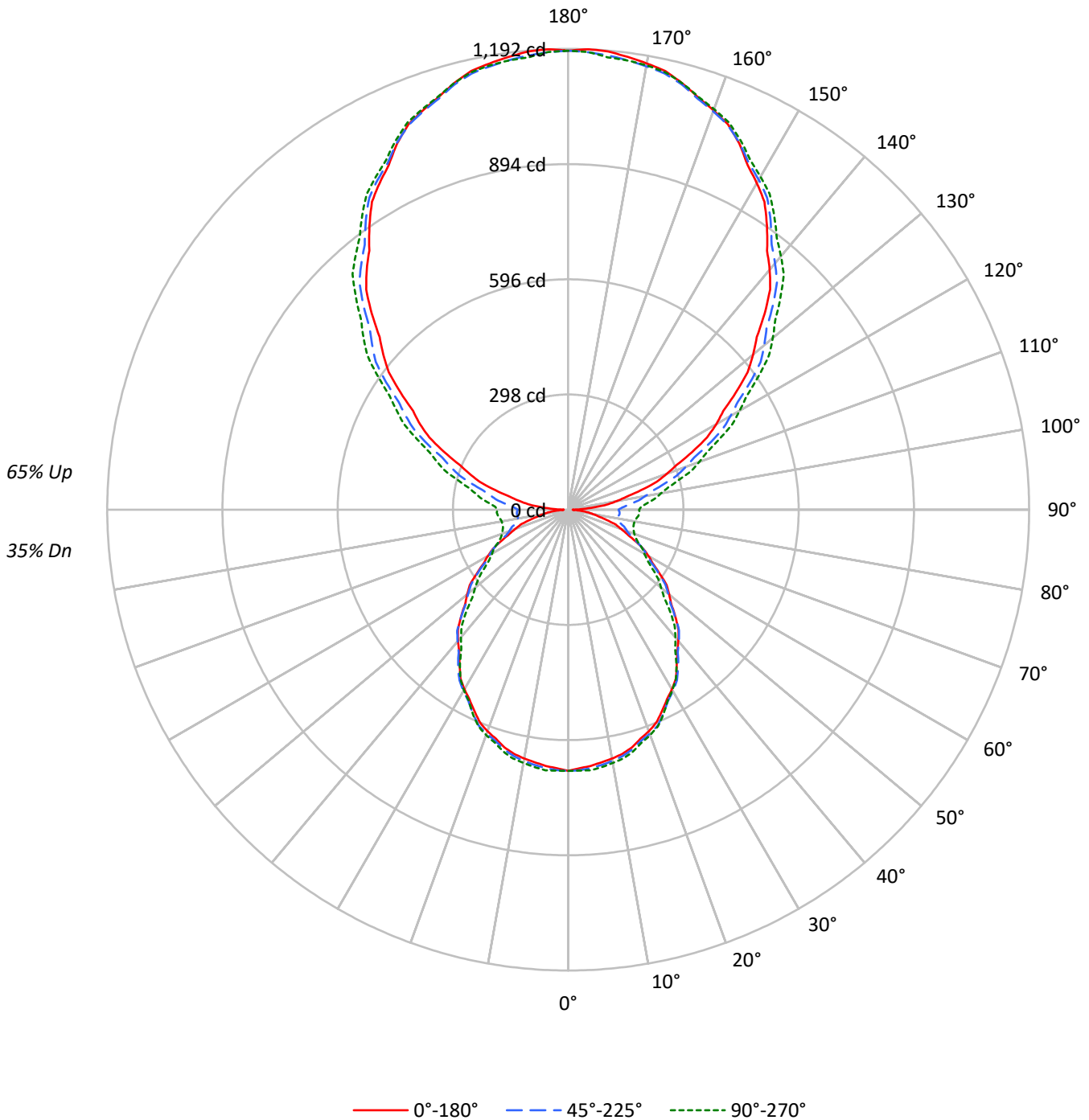
Lumens per Lamp: N/A  
Luminaire Lumens: 5247.9 lumens  
Efficiency: N/A  
Efficacy: 121.2 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Indirect

Input Watts (W): 43.3  
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	50	30	10	0	
RCR																						
0	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43	35				
1	94	89	85	81	84	81	77	74	65	62	60	50	48	47	36	35	34	28				
2	85	78	71	66	77	70	65	60	56	53	49	44	41	39	32	30	29	23				
3	78	68	61	55	70	62	55	50	50	45	41	39	35	33	28	26	24	20				
4	71	60	52	46	64	55	48	43	44	39	35	34	31	28	25	23	21	17				
5	65	54	46	40	58	49	42	36	39	34	30	31	27	24	23	20	18	15				
6	60	48	40	34	54	44	37	32	35	30	26	28	24	21	21	18	16	13				
7	55	43	35	30	50	39	32	28	32	27	23	25	21	19	19	16	14	11				
8	51	39	32	26	46	36	29	24	29	24	20	23	19	17	17	15	13	10				
9	48	36	28	23	43	33	26	22	27	22	18	21	17	15	16	13	12	9				
10	44	33	26	21	40	30	24	19	25	20	16	20	16	13	15	12	10	8				

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

	0°	45°	90°
0°	10908	10908	10908
5°	10702	9631	9332
10°	10561	8586	8061
15°	10407	7688	7051
20°	10168	6898	6167
25°	9850	6147	5374
30°	9540	5457	4665
35°	9116	4814	4004
40°	8723	4194	3394
45°	8266	3606	2832
50°	7785	3079	2324
55°	7272	2585	1938
60°	6787	2146	1643
65°	6184	1790	1440
70°	5608	1512	1321
75°	4906	1358	1286
80°	4098	1313	1315
85°	2989	1382	1415

**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	1.2
10°-20°	181.1	3.5
20°-30°	267.5	5.1
30°-40°	308.1	5.9
40°-50°	299.1	5.7
50°-60°	253.6	4.8
60°-70°	196.5	3.7
70°-80°	150.0	2.9
80°-90°	130.4	2.5
90°-100°	162.4	3.1
100°-110°	266.1	5.1
110°-120°	394.1	7.5
120°-130°	510.3	9.7
130°-140°	577.5	11.0
140°-150°	570.7	10.9
150°-160°	482.7	9.2
160°-170°	321.4	6.1
170°-180°	112.4	2.1
0°-30°	512.5	9.8
0°-40°	820.6	15.6
0°-60°	1373.4	26.2
0°-90°	1850.2	35.3
90°-120°	822.6	15.7
90°-150°	2481.2	47.3
90°-180°	3398.0	64.8
0°-180°	5247.9	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	648	642	643	648	179
25°	574	586	582	579	583	265
35°	490	501	496	488	488	307
45°	392	400	391	378	372	302
55°	289	298	285	269	266	259
65°	191	199	195	198	199	190
75°	103	113	142	167	174	110
85°	32	68	133	171	182	33
90°	12	61	130	170	183	10
95°	66	91	160	198	207	67
105°	195	206	256	290	295	208
115°	353	369	400	424	430	351
125°	529	548	574	595	600	474
135°	718	734	749	768	776	554
145°	896	907	912	919	929	560
155°	1046	1052	1047	1049	1055	480
165°	1142	1147	1138	1134	1142	322
175°	1190	1195	1180	1175	1175	113
180°	1187	1187	1187	1187	1187	

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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	674.3	674.8	675.6
5°	665.1	677.2	670.8	671.9	676.5
7.5°	659.0	671.2	665.8	665.8	671.2
10°	653.6	664.8	659.7	660.4	665.1
12.5°	646.8	659.2	652.5	654.3	659.0
15°	636.5	648.3	641.5	643.2	647.9
17.5°	621.2	632.5	626.6	627.0	631.7
20°	609.7	620.3	616.7	615.6	620.2
22.5°	596.0	607.3	604.5	601.1	606.5
25°	574.4	586.2	582.1	579.3	583.0
27.5°	553.1	564.4	558.2	553.9	556.7
30°	536.3	547.1	541.6	536.3	539.1
32.5°	517.9	529.8	523.3	517.2	518.5
35°	489.5	500.7	496.2	487.6	487.6
37.5°	462.6	472.4	465.6	456.3	454.2
40°	442.8	453.3	445.0	434.1	431.3
42.5°	422.1	432.7	424.6	411.9	407.6
45°	392.2	399.6	390.6	377.7	372.1
47.5°	361.3	369.9	357.9	343.4	336.6
50°	340.7	349.0	337.8	320.4	313.0
52.5°	320.8	328.7	316.1	298.6	292.9
55°	289.1	297.8	285.0	269.0	265.5
57.5°	259.5	268.0	254.8	245.6	241.8
60°	240.5	248.2	236.0	230.1	227.2
62.5°	219.1	227.8	217.4	216.8	216.0
65°	190.8	199.2	194.9	197.9	199.4
67.5°	164.3	171.7	173.7	184.5	188.4
70°	146.0	153.4	161.7	176.9	181.7
72.5°	129.2	136.8	153.5	172.0	177.6
75°	103.1	112.9	141.5	166.6	174.5
77.5°	80.2	92.0	134.5	164.5	173.7
80°	64.9	82.1	132.1	164.5	174.6
82.5°	51.1	73.8	131.0	167.2	177.3
85°	31.5	67.6	133.1	171.2	182.3
87.5°	16.1	63.7	133.0	172.2	184.8
90°	11.7	60.8	130.1	170.2	183.4
92.5°	31.9	69.6	140.2	179.1	189.2
95°	66.3	91.2	159.9	198.3	206.6
97.5°	100.9	119.1	183.6	219.6	227.6
100°	126.1	140.6	201.8	236.9	243.7
102.5°	153.6	165.1	222.9	256.1	264.1
105°	194.8	206.5	255.6	289.8	295.3
107.5°	240.5	252.9	294.8	327.4	333.5
110°	271.0	286.1	323.3	353.1	360.2

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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	304.3	319.4	352.5	380.8	387.9
115°	353.3	369.2	400.2	424.2	430.4
117.5°	404.5	421.1	449.4	472.2	478.2
120°	442.1	457.5	484.9	506.7	511.7
122.5°	475.4	493.0	520.2	542.0	547.0
125°	529.4	548.4	574.4	595.0	599.9
127.5°	584.9	603.1	627.1	647.9	654.3
130°	624.5	640.5	661.3	683.2	690.6
132.5°	661.3	677.3	695.9	717.5	725.9
135°	718.4	734.4	748.6	767.7	776.3
137.5°	773.1	788.6	799.5	814.6	825.5
140°	810.4	823.9	831.8	845.9	855.7
142.5°	844.6	858.2	864.0	876.1	886.0
145°	896.1	907.1	912.4	919.0	928.8
147.5°	944.2	955.0	957.3	963.0	969.2
150°	975.5	985.3	985.5	988.2	994.4
152.5°	1004.7	1013.6	1010.7	1012.4	1019.6
155°	1046.0	1052.2	1047.3	1048.7	1054.8
157.5°	1078.8	1085.0	1077.3	1079.7	1084.6
160°	1099.0	1105.1	1096.4	1097.8	1102.7
162.5°	1118.1	1122.3	1114.6	1113.0	1119.9
165°	1141.8	1146.7	1138.0	1134.4	1141.8
167.5°	1162.0	1166.9	1155.4	1151.6	1158.9
170°	1172.1	1177.0	1164.5	1159.6	1167.0
172.5°	1181.1	1186.1	1172.6	1166.6	1172.1
175°	1189.7	1194.6	1179.6	1174.6	1174.6
177.5°	1192.2	1195.2	1184.2	1179.2	1185.2
180°	1187.2	1187.2	1187.2	1187.2	1187.2

(END OF REPORT)