

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: P644316

Luminaire Tested: CRQ4DIP-SR4F0-50D100U830-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644316  
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-SR4F0-50D100U830-FLLOOB-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 500 LUMENS PER FOOT  
UPLIGHT - BATWING OPTIC - 1000 LUMENS PER FOOT  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

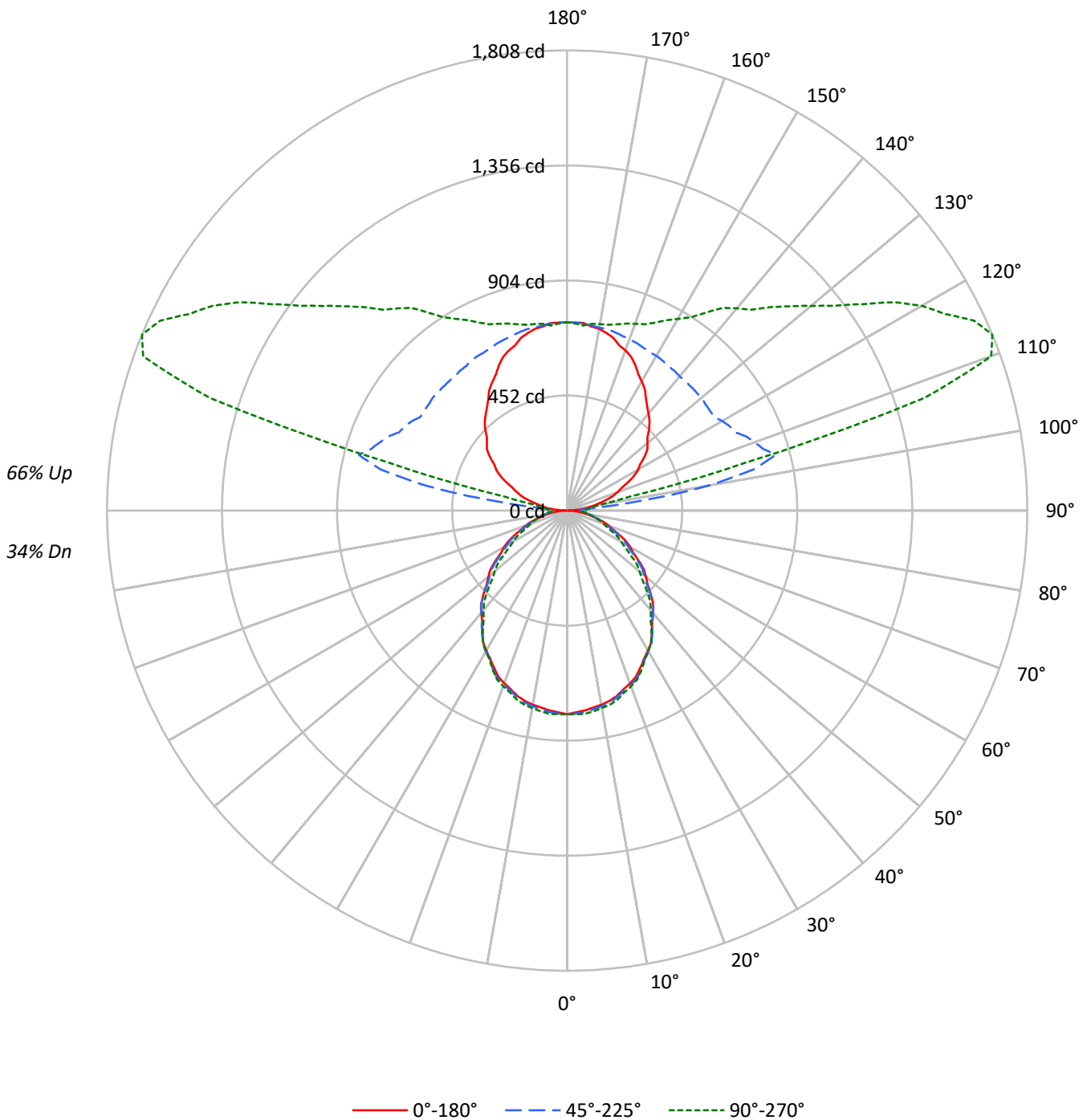
Lumens per Lamp: N/A  
Luminaire Lumens: 6036.8 lumens  
Efficiency: N/A  
Efficacy: 139.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Indirect

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	0
RCR																		
0	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	34
1	94	90	86	82	85	81	78	75	65	63	60	50	48	47	36	35	34	28
2	86	78	72	67	77	71	66	61	57	53	50	44	41	39	32	30	29	24
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25	20
4	71	61	53	47	64	55	49	43	44	40	36	34	31	29	25	23	21	17
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	19	15
6	60	49	41	35	54	44	37	32	36	31	27	28	24	22	21	18	16	13
7	56	44	36	31	50	40	33	28	32	27	24	25	22	19	19	16	15	12
8	52	40	32	27	46	36	29	25	29	24	21	23	20	17	17	15	13	11
9	48	36	29	24	43	33	27	22	27	22	19	21	18	15	16	14	12	10
10	45	33	26	21	40	30	24	20	25	20	17	20	16	14	15	12	11	9

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

	0°	45°	90°
0°	12925	12925	12925
5°	12681	11411	11057
10°	12514	10153	9552
15°	12330	9093	8355
20°	12049	8157	7308
25°	11671	7284	6368
30°	11302	6436	5527
35°	10802	5660	4744
40°	10334	4955	4021
45°	9795	4259	3356
50°	9222	3607	2753
55°	8618	3035	2220
60°	8039	2488	1774
65°	7328	1984	1405
70°	6645	1554	1109
75°	5810	1194	875
80°	4855	888	682
85°	3539	646	518

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 9795 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	75.6	1.3
10°-20°	214.4	3.6
20°-30°	316.5	5.2
30°-40°	363.9	6.0
40°-50°	353.0	5.8
50°-60°	295.5	4.9
60°-70°	212.9	3.5
70°-80°	130.1	2.2
80°-90°	64.9	1.1
90°-100°	115.9	1.9
100°-110°	656.8	10.9
110°-120°	882.5	14.6
120°-130°	717.0	11.9
130°-140°	575.8	9.5
140°-150°	453.8	7.5
150°-160°	331.8	5.5
160°-170°	206.1	3.4
170°-180°	70.3	1.2
0°-30°	606.5	10.0
0°-40°	970.4	16.1
0°-60°	1618.8	26.8
0°-90°	2026.7	33.6
90°-120°	1655.2	27.4
90°-150°	3401.9	56.4
90°-180°	4010.0	66.4
0°-180°	6036.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	800	800	800	800	800	
5°	788	802	795	796	802	75
15°	754	765	759	762	768	212
25°	681	692	690	686	691	314
35°	580	589	583	578	578	363
45°	465	469	461	448	441	358
55°	343	347	335	314	304	307
65°	226	227	216	200	194	225
75°	122	122	124	121	119	131
85°	37	45	62	67	67	39
90°	3	27	50	62	63	6
95°	48	79	61	74	84	51
105°	156	226	847	1085	724	164
115°	264	314	728	1510	1764	262
125°	372	420	685	1195	1414	330
135°	456	506	688	984	1130	351
145°	539	585	693	858	949	339
155°	632	655	707	777	814	290
165°	702	711	725	744	758	197
175°	739	744	739	735	730	70
180°	739	739	739	739	739	



TEST NUMBER: P644316

CATALOG NUMBER: CRQ4DIP-SR4F0-50D100U830-FLLOOB-1DUDD-WW

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	800.5	800.5	800.5	800.5	800.5
2.5°	793.3	804.8	797.8	799.6	800.5
5°	788.1	802.4	794.8	796.1	801.6
7.5°	780.8	794.1	787.4	788.9	795.3
10°	774.5	787.8	780.1	782.5	788.1
12.5°	766.3	778.7	772.9	775.3	780.8
15°	754.1	765.2	758.7	762.2	767.7
17.5°	736.0	748.0	741.0	743.0	748.5
20°	722.5	733.5	729.3	729.4	734.9
22.5°	706.2	718.1	714.8	712.2	718.6
25°	680.6	691.7	689.7	686.4	690.8
27.5°	655.3	663.5	659.6	656.3	659.6
30°	635.4	645.4	638.8	635.5	638.8
32.5°	613.7	623.7	617.1	612.8	614.4
35°	580.0	588.9	583.4	577.8	577.8
37.5°	548.1	553.9	550.2	540.6	538.2
40°	524.6	531.3	525.7	514.4	511.0
42.5°	500.2	506.8	500.4	488.1	483.0
45°	464.7	469.1	461.3	447.6	440.9
47.5°	428.1	432.7	422.0	406.8	398.9
50°	403.6	409.2	395.7	379.7	370.9
52.5°	380.1	383.9	371.3	352.6	344.6
55°	342.6	347.0	334.7	314.1	304.1
57.5°	307.5	311.7	297.1	277.5	269.8
60°	284.9	288.2	273.6	253.1	245.3
62.5°	259.6	262.9	249.2	231.4	223.6
65°	226.1	227.2	216.0	200.0	194.5
67.5°	194.7	194.7	185.2	173.3	168.9
70°	173.0	173.0	166.2	157.1	152.6
72.5°	153.1	152.2	148.1	141.7	138.2
75°	122.1	122.1	124.4	120.9	118.7
77.5°	95.0	93.2	102.9	102.4	101.3
80°	76.9	76.9	89.3	91.6	90.5
82.5°	60.6	62.4	78.5	81.6	80.5
85°	37.3	45.0	62.2	66.7	66.7
87.5°	17.0	31.4	50.7	57.5	57.7
90°	3.4	26.7	50.0	61.5	62.6
92.5°	18.2	32.7	53.9	69.2	74.8
95°	48.5	79.2	60.9	73.7	83.9
97.5°	79.6	139.1	290.6	104.4	94.8
100°	101.9	171.5	562.2	180.8	128.4
102.5°	123.3	196.5	752.1	441.8	250.4
105°	155.5	226.1	847.3	1085.4	723.9
107.5°	187.6	239.4	806.7	1571.1	1473.1
110°	209.0	258.0	783.4	1648.7	1772.6



TEST NUMBER: P644316

CATALOG NUMBER: CRQ4DIP-SR4F0-50D100U830-FLLOOB-1DUDD-WW

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	231.3	280.3	761.1	1600.5	1808.0
115°	263.7	313.8	727.6	1509.9	1764.5
117.5°	296.7	347.3	719.0	1411.1	1673.0
120°	321.8	369.6	703.3	1336.0	1608.8
122.5°	340.4	391.0	684.7	1272.3	1523.3
125°	371.9	419.7	684.7	1195.3	1413.5
127.5°	397.5	447.5	685.6	1106.0	1321.5
130°	411.4	466.0	689.3	1046.2	1250.8
132.5°	428.2	482.8	688.4	1019.3	1187.6
135°	455.7	505.7	688.2	984.4	1129.9
137.5°	478.9	532.6	688.2	945.8	1070.4
140°	497.5	547.5	688.2	923.2	1036.9
142.5°	516.1	562.5	691.9	897.0	1003.4
145°	539.4	584.8	692.8	857.6	948.6
147.5°	567.3	607.3	698.4	829.3	899.3
150°	585.9	622.3	702.1	810.4	869.5
152.5°	604.5	637.2	702.1	795.3	843.5
155°	632.4	655.1	706.8	777.3	813.7
157.5°	654.7	676.5	712.4	766.0	792.3
160°	669.6	687.8	716.1	758.4	781.2
162.5°	680.7	698.9	719.8	754.6	770.0
165°	702.1	711.2	725.4	744.3	757.9
167.5°	714.2	722.4	730.0	739.5	747.7
170°	725.4	729.9	730.0	739.4	744.0
172.5°	729.1	737.3	733.7	735.7	740.3
175°	739.3	743.9	739.3	734.6	730.0
177.5°	739.3	743.0	739.3	739.2	735.6
180°	739.3	739.3	739.3	739.3	739.3

(END OF REPORT)