

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: P644202

Luminaire Tested: CRQ4DIP-SR4F0-100D150U930-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644202  
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-SR4F0-100D150U930-FLLOOB-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
UPLIGHT - BATWING OPTIC - 1500 LUMENS PER FOOT  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

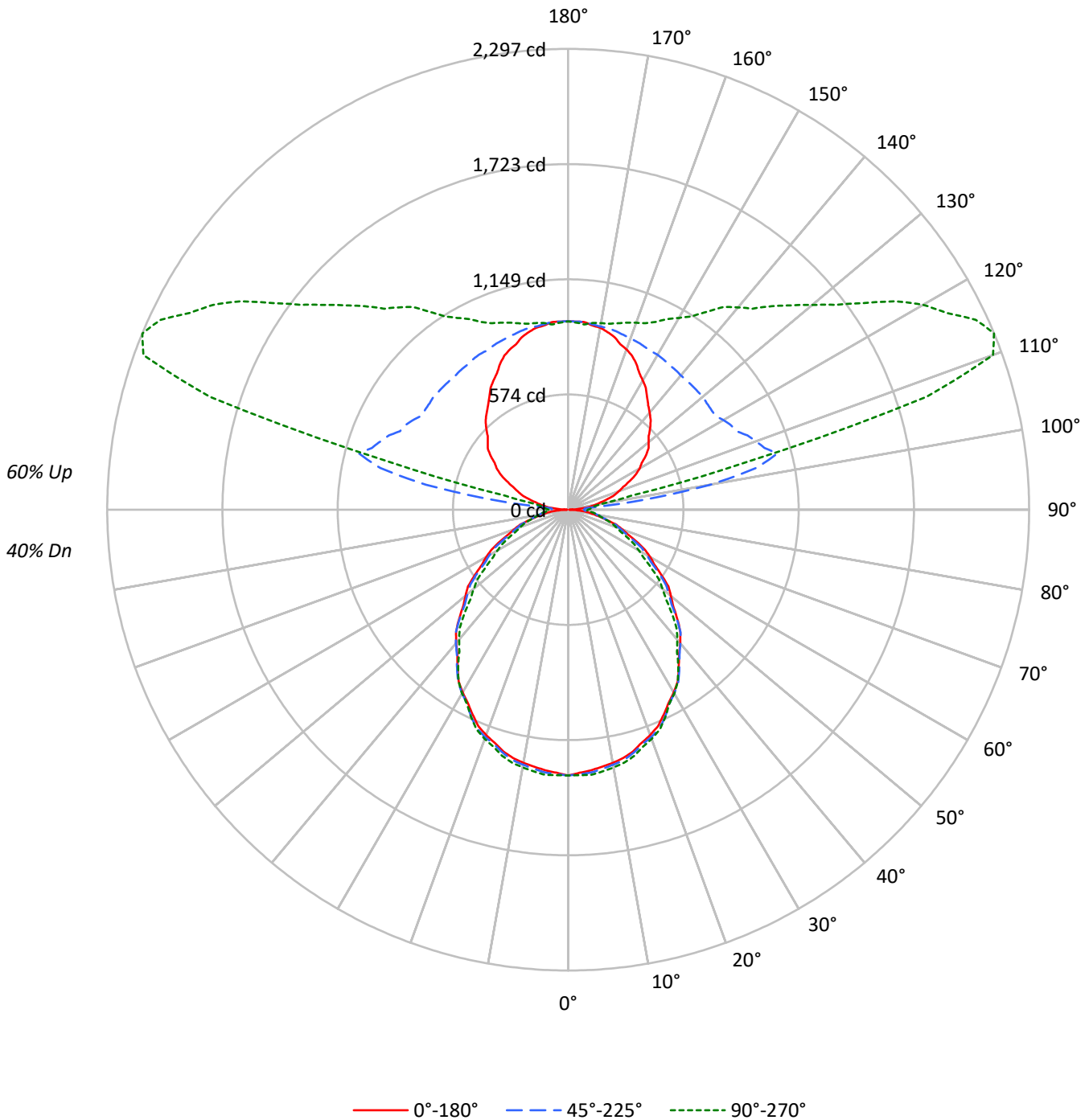
Lumens per Lamp: N/A  
Luminaire Lumens: 8458.3 lumens  
Efficiency: N/A  
Efficacy: 107.7 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Indirect

Input Watts (W): 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				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	105	105	105	105	95	95	95	95	78	78	78		61	61	61		47	47	47	40
1	95	91	87	84	87	83	80	77	68	65	63		54	52	51		41	40	39	33
2	87	79	73	68	79	72	67	63	59	56	52		47	45	42		36	34	33	28
3	79	70	63	57	72	64	58	53	52	48	44		42	39	36		32	30	28	24
4	72	62	54	48	66	57	50	45	47	42	38		37	34	31		29	26	24	20
5	66	55	47	41	60	50	43	38	42	36	32		33	30	27		26	23	21	18
6	61	49	41	36	56	45	38	33	38	32	28		30	26	23		23	21	19	16
7	57	45	37	31	51	41	34	29	34	29	25		28	24	21		21	19	17	14
8	52	40	33	28	48	37	30	26	31	26	22		25	21	18		20	17	15	12
9	49	37	29	25	44	34	27	23	28	23	20		23	19	17		18	15	13	11
10	46	34	27	22	41	31	25	21	26	21	18		21	18	15		17	14	12	10

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

	0°	45°	90°
0°	21385	21385	21385
5°	20980	18881	18295
10°	20704	16799	15804
15°	20402	15043	13824
20°	19935	13496	12092
25°	19313	12051	10536
30°	18700	10648	9145
35°	17873	9366	7849
40°	17099	8199	6655
45°	16206	7046	5553
50°	15259	5968	4555
55°	14258	5022	3673
60°	13302	4116	2936
65°	12125	3282	2324
70°	10994	2572	1835
75°	9612	1976	1448
80°	8031	1469	1128
85°	5854	1069	857

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 16206 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	125.0	1.5
10°-20°	354.7	4.2
20°-30°	523.7	6.2
30°-40°	602.1	7.1
40°-50°	584.0	6.9
50°-60°	488.9	5.8
60°-70°	352.2	4.2
70°-80°	215.2	2.5
80°-90°	106.7	1.3
90°-100°	156.8	1.9
100°-110°	837.3	9.9
110°-120°	1121.6	13.3
120°-130°	910.8	10.8
130°-140°	731.0	8.6
140°-150°	576.1	6.8
150°-160°	421.3	5.0
160°-170°	261.7	3.1
170°-180°	89.2	1.1
0°-30°	1003.4	11.9
0°-40°	1605.5	19.0
0°-60°	2678.5	31.7
0°-90°	3352.6	39.6
90°-120°	2115.7	25.0
90°-150°	4333.6	51.2
90°-180°	5106.0	60.4
0°-180°	8458.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1324	1324	1324	1324	1324	
5°	1304	1328	1315	1317	1326	124
15°	1248	1266	1255	1261	1270	351
25°	1126	1144	1141	1136	1143	519
35°	960	974	965	956	956	601
45°	769	776	763	740	730	593
55°	567	574	554	520	503	508
65°	374	376	357	331	322	372
75°	202	202	206	200	196	216
85°	62	74	103	110	110	65
90°	6	42	79	96	98	9
95°	66	104	86	106	119	69
105°	202	289	1078	1382	924	213
115°	338	400	925	1918	2241	335
125°	474	534	870	1517	1794	421
135°	578	642	874	1250	1434	446
145°	685	742	880	1089	1204	430
155°	803	832	897	987	1033	369
165°	891	903	921	945	962	250
175°	939	944	939	932	927	89
180°	939	939	939	939	939	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1324.5	1324.5	1324.5	1324.5	1324.5
2.5°	1312.5	1331.5	1320.0	1323.0	1324.5
5°	1303.9	1327.7	1315.1	1317.2	1326.3
7.5°	1291.9	1313.9	1302.8	1305.2	1315.9
10°	1281.4	1303.4	1290.8	1294.7	1303.9
12.5°	1268.0	1288.4	1278.8	1282.8	1291.9
15°	1247.8	1266.0	1255.2	1261.1	1270.2
17.5°	1217.8	1237.6	1226.1	1229.3	1238.4
20°	1195.4	1213.7	1206.6	1206.8	1216.0
22.5°	1168.4	1188.2	1182.7	1178.4	1189.0
25°	1126.2	1144.5	1141.1	1135.7	1143.0
27.5°	1084.3	1097.8	1091.4	1085.9	1091.4
30°	1051.3	1067.8	1056.9	1051.5	1056.9
32.5°	1015.4	1031.9	1021.0	1014.0	1016.5
35°	959.7	974.3	965.3	955.9	955.9
37.5°	906.9	916.4	910.3	894.5	890.5
40°	868.0	879.0	869.9	851.0	845.6
42.5°	827.6	838.6	828.0	807.6	799.2
45°	768.9	776.2	763.2	740.5	729.6
47.5°	708.2	715.9	698.1	673.2	660.0
50°	667.8	677.0	654.7	628.2	613.6
52.5°	628.9	635.1	614.3	583.4	570.2
55°	566.8	574.1	553.7	519.7	503.2
57.5°	508.8	515.8	491.6	459.2	446.3
60°	471.4	476.9	452.7	418.7	405.9
62.5°	429.5	435.0	412.3	382.8	370.0
65°	374.1	376.0	357.3	330.9	321.8
67.5°	322.1	322.1	306.4	286.8	279.5
70°	286.2	286.2	275.0	259.9	252.5
72.5°	253.3	251.8	245.1	234.5	228.6
75°	202.0	202.0	205.8	200.1	196.4
77.5°	157.1	154.2	170.2	169.4	167.6
80°	127.2	127.2	147.8	151.5	149.7
82.5°	100.3	103.2	129.8	135.0	133.2
85°	61.7	74.5	102.9	110.4	110.4
87.5°	28.1	51.5	83.2	94.1	94.5
90°	5.6	42.5	79.2	96.3	98.1
92.5°	25.8	48.0	81.3	103.4	111.3
95°	65.9	104.5	86.5	105.8	119.2
97.5°	106.3	179.2	375.5	141.7	130.1
100°	134.6	219.9	719.0	236.9	171.3
102.5°	161.4	251.4	958.6	566.9	324.4
105°	201.7	288.8	1077.8	1381.8	923.7
107.5°	242.0	305.2	1025.3	1996.9	1872.9
110°	268.8	328.9	995.4	2094.8	2252.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	297.1	357.2	967.1	2032.8	2296.7
115°	337.8	399.7	924.6	1917.7	2240.9
117.5°	379.2	442.2	913.6	1791.7	2124.2
120°	410.7	470.6	893.2	1696.1	2042.4
122.5°	434.4	497.3	869.6	1615.2	1933.8
125°	473.8	533.6	869.6	1517.4	1794.5
127.5°	505.8	569.0	870.8	1404.0	1677.6
130°	523.2	592.5	875.5	1328.1	1587.9
132.5°	543.8	613.1	874.0	1294.0	1507.6
135°	578.5	642.0	873.6	1249.7	1434.4
137.5°	608.0	676.1	873.6	1200.7	1358.8
140°	631.6	695.1	873.6	1172.0	1316.3
142.5°	655.2	714.1	878.3	1138.8	1273.8
145°	684.7	742.4	879.5	1088.8	1204.2
147.5°	720.1	770.9	886.6	1052.7	1141.6
150°	743.8	789.9	891.3	1028.8	1103.8
152.5°	767.4	808.9	891.3	1009.6	1070.8
155°	802.8	831.6	897.2	986.8	1033.0
157.5°	831.1	858.8	904.3	972.4	1005.8
160°	850.0	873.1	909.0	962.8	991.7
162.5°	864.2	887.3	913.8	957.9	977.5
165°	891.3	902.9	920.8	944.9	962.2
167.5°	906.7	917.1	926.7	938.8	949.2
170°	920.8	926.6	926.7	938.7	944.5
172.5°	925.6	936.0	931.5	934.0	939.7
175°	938.6	944.3	938.6	932.5	926.7
177.5°	938.6	943.2	938.6	938.5	933.8
180°	938.6	938.6	938.6	938.6	938.6

(END OF REPORT)