

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: P644225

Luminaire Tested: CRQ4DIP-SR4F0-100D50U930-FLLFLL-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644225  
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-SR4F0-100D50U930-FLLFLL-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
UPLIGHT - CURVED FROSTED LENS - 500 LUMENS PER FOOT  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

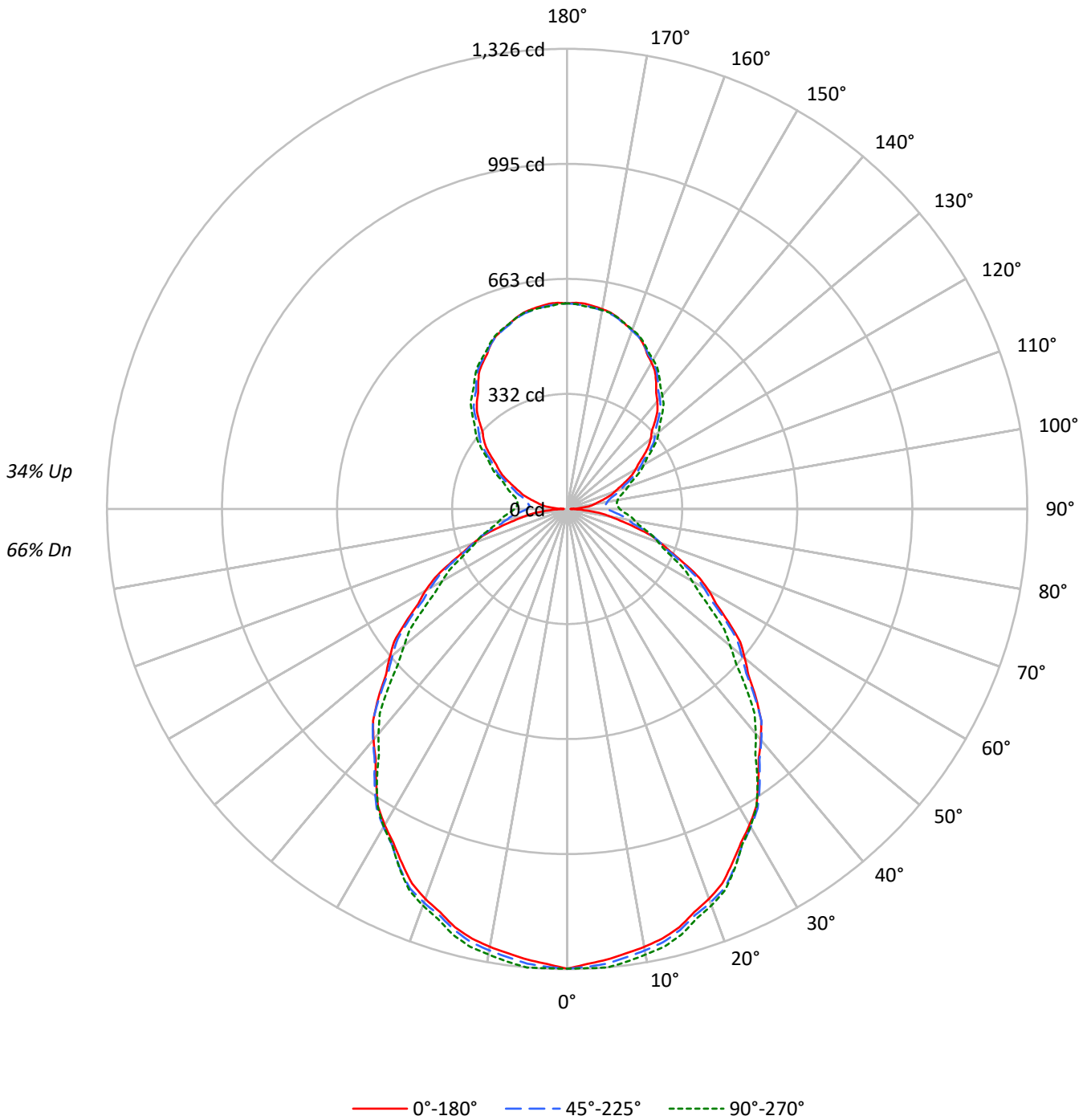
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5163.8 lumens  
Efficiency: N/A  
Efficacy: 116.0 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-Direct

Input Watts (W): 44.5  
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	111	111	111	111	105	105	105	105	92	92	92	81	81	81	71	71	71	66
1	101	96	92	88	95	91	87	84	80	77	75	71	69	67	62	60	59	55
2	92	84	77	72	86	79	73	69	70	66	62	62	59	56	54	52	50	46
3	84	74	66	60	79	70	63	57	62	57	52	55	51	47	48	45	42	39
4	77	66	57	51	72	62	55	49	55	49	45	49	44	41	43	40	37	33
5	71	59	50	44	66	56	48	42	50	43	39	44	39	35	39	35	32	29
6	65	53	44	38	61	50	42	37	45	39	34	40	35	31	36	31	28	26
7	60	48	40	34	57	45	38	32	41	35	30	37	31	28	33	28	25	23
8	56	43	35	30	53	41	34	29	37	31	27	34	28	25	30	26	23	20
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	28	24	20	18
10	49	37	29	24	46	35	28	23	32	26	22	29	24	20	26	22	19	17

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

	0°	45°	90°
0°	21385	21385	21385
5°	20980	18881	18295
10°	20704	16807	15804
15°	20402	15052	13824
20°	19935	13502	12092
25°	19313	12051	10536
30°	18700	10661	9145
35°	17873	9384	7849
40°	17099	8205	6655
45°	16206	7053	5553
50°	15259	5985	4555
55°	14258	5033	3705
60°	13302	4139	3009
65°	12125	3340	2452
70°	10994	2672	2028
75°	9612	2151	1721
80°	8031	1750	1497
85°	5854	1486	1345

**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	2.4
10°-20°	354.8	6.9
20°-30°	523.9	10.1
30°-40°	602.6	11.7
40°-50°	584.6	11.3
50°-60°	491.0	9.5
60°-70°	360.6	7.0
70°-80°	235.3	4.6
80°-90°	143.0	2.8
90°-100°	111.9	2.2
100°-110°	144.0	2.8
110°-120°	200.5	3.9
120°-130°	256.2	5.0
130°-140°	288.3	5.6
140°-150°	284.7	5.5
150°-160°	240.8	4.7
160°-170°	160.3	3.1
170°-180°	56.1	1.1
0°-30°	1003.8	19.4
0°-40°	1606.3	31.1
0°-60°	2682.0	51.9
0°-90°	3420.9	66.2
90°-120°	456.4	8.8
90°-150°	1285.6	24.9
90°-180°	1743.0	33.8
0°-180°	5163.8	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	1267	1256	1261	1270	351
25°	1126	1146	1141	1136	1143	519
35°	960	976	967	956	956	601
45°	769	778	764	740	730	593
55°	567	577	555	522	508	508
65°	374	380	364	345	339	372
75°	202	207	224	232	234	216
85°	62	89	143	168	173	65
90°	10	58	115	144	152	10
95°	47	58	109	138	144	45
105°	111	109	134	157	163	118
115°	186	188	202	214	218	185
125°	270	276	288	297	299	242
135°	358	366	374	383	387	277
145°	447	453	455	458	463	279
155°	522	525	522	523	526	240
165°	570	572	568	566	570	161
175°	594	596	588	586	586	56
180°	592	592	592	592	592	

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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	1320.5	1323.0	1324.5
5°	1303.9	1327.7	1315.1	1317.2	1326.3
7.5°	1291.9	1314.3	1303.4	1305.2	1315.9
10°	1281.4	1303.4	1291.4	1294.7	1303.9
12.5°	1268.0	1289.4	1278.9	1282.8	1291.9
15°	1247.8	1267.3	1255.9	1261.1	1270.2
17.5°	1217.8	1238.2	1226.7	1229.3	1238.4
20°	1195.4	1214.3	1207.2	1206.8	1216.0
22.5°	1168.4	1188.8	1183.3	1178.4	1189.0
25°	1126.2	1145.7	1141.1	1135.7	1143.0
27.5°	1084.3	1100.0	1092.1	1085.9	1091.4
30°	1051.3	1069.0	1058.2	1051.5	1056.9
32.5°	1015.4	1033.6	1022.3	1014.0	1016.5
35°	959.7	976.1	967.2	955.9	955.9
37.5°	906.9	918.9	910.9	894.5	890.5
40°	868.0	881.4	870.5	851.0	845.6
42.5°	827.6	841.0	829.1	807.6	799.2
45°	768.9	778.0	763.9	740.5	729.6
47.5°	708.2	718.3	699.0	673.2	660.0
50°	667.8	678.8	656.6	628.2	613.6
52.5°	628.9	637.5	615.7	583.9	571.2
55°	566.8	576.6	555.0	521.6	507.6
57.5°	508.8	518.2	493.6	464.8	453.4
60°	471.4	479.4	455.2	427.0	416.0
62.5°	429.5	438.0	415.8	393.6	383.6
65°	374.1	379.7	363.6	345.4	339.4
67.5°	322.1	325.8	315.1	305.9	302.4
70°	286.2	289.9	285.7	282.0	279.0
72.5°	253.3	256.0	259.3	260.6	259.0
75°	202.0	207.0	224.0	232.3	233.5
77.5°	157.1	160.9	194.0	208.4	211.6
80°	127.2	135.8	176.1	195.0	198.7
82.5°	100.3	113.8	162.1	184.1	187.8
85°	61.7	89.3	143.1	167.7	173.2
87.5°	28.9	69.3	126.6	153.4	160.0
90°	10.0	57.7	115.1	143.5	151.5
92.5°	24.6	55.6	111.2	139.1	146.5
95°	47.0	58.1	109.1	138.0	143.5
97.5°	67.1	67.7	112.8	138.9	144.5
100°	79.7	77.3	117.4	142.0	148.1
102.5°	92.3	88.4	123.5	147.0	152.7
105°	111.1	108.8	134.5	157.2	162.7
107.5°	132.3	130.5	151.0	171.2	175.6
110°	146.4	147.1	164.1	181.8	186.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	163.0	163.7	178.7	193.4	198.3
115°	186.0	188.5	202.4	214.5	217.5
117.5°	209.9	214.4	226.7	236.7	239.7
120°	227.5	232.5	243.3	252.8	255.3
122.5°	244.1	249.1	260.9	270.4	272.9
125°	269.7	276.5	288.0	296.8	299.3
127.5°	295.7	303.7	314.2	323.3	326.5
130°	314.4	322.3	331.3	340.9	344.6
132.5°	330.5	338.5	347.5	358.0	362.2
135°	358.4	366.4	373.5	383.0	387.3
137.5°	385.7	393.4	398.9	406.4	411.8
140°	404.3	411.1	415.0	422.0	426.9
142.5°	421.4	428.2	431.1	437.1	442.0
145°	447.1	452.6	455.2	458.5	463.4
147.5°	471.1	476.5	477.6	480.5	483.5
150°	486.7	491.6	491.7	493.0	496.1
152.5°	501.3	505.7	504.3	505.1	508.7
155°	521.9	525.0	522.5	523.2	526.3
157.5°	538.2	541.3	537.5	538.7	541.1
160°	548.3	551.4	547.0	547.7	550.2
162.5°	557.8	559.9	556.1	555.3	558.7
165°	569.7	572.1	567.8	566.0	569.7
167.5°	579.7	582.2	576.5	574.5	578.2
170°	584.8	587.2	581.0	578.6	582.2
172.5°	589.3	591.7	585.0	582.1	584.8
175°	593.6	596.0	588.5	586.0	586.0
177.5°	594.8	596.3	590.8	588.3	591.3
180°	592.3	592.3	592.3	592.3	592.3

(END OF REPORT)