

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: P644226

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

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644226  
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-SR4F0-100D50U930-FLLOOB-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
UPLIGHT - BATWING OPTIC - 500 LUMENS PER FOOT  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

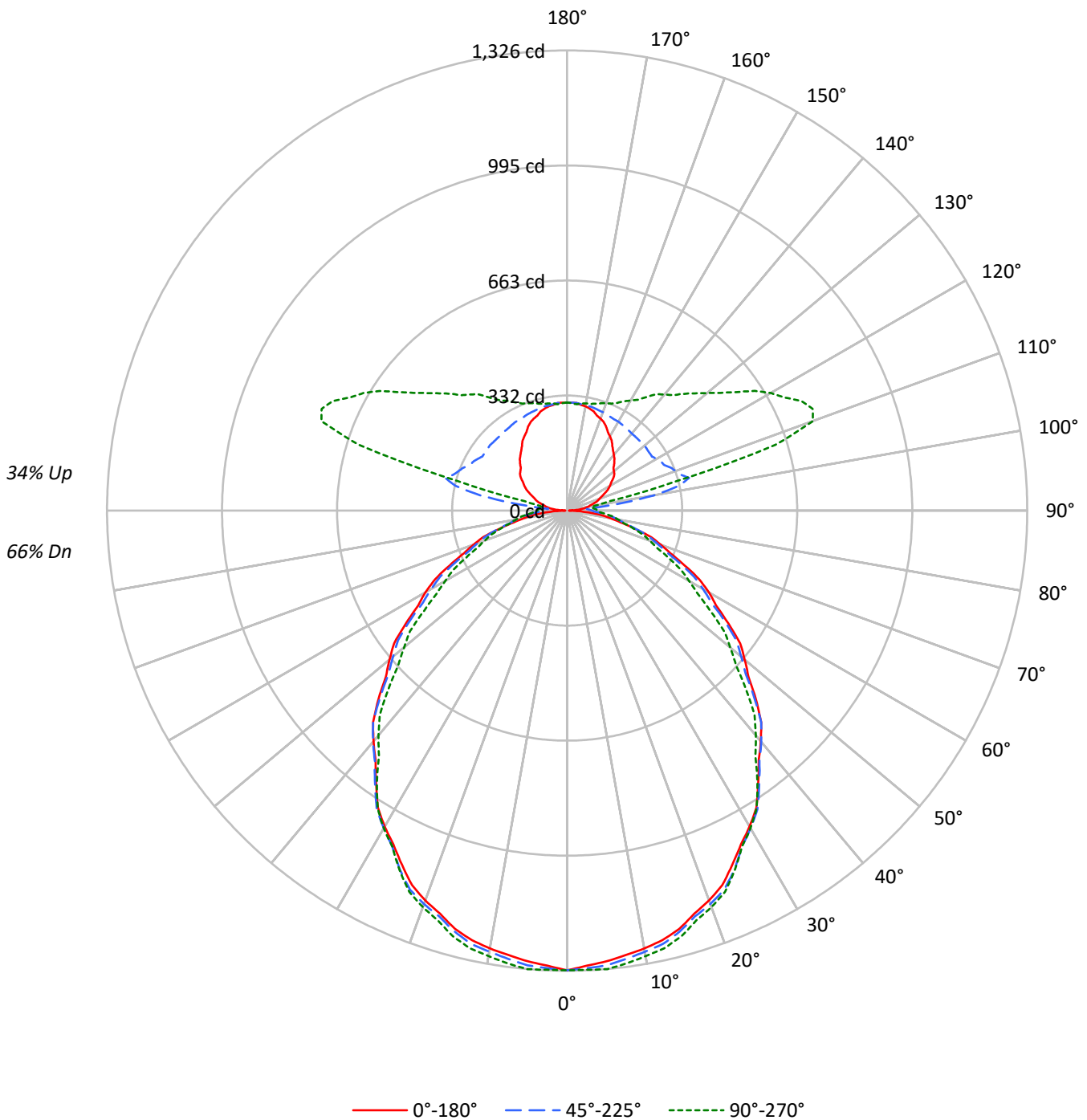
Lumens per Lamp: N/A  
Luminaire Lumens: 5087.5 lumens  
Efficiency: N/A  
Efficacy: 114.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Direct

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	104	104	104	104	92	92	92	81	81	81	71	71	71	66
1	101	97	92	89	95	91	87	84	81	78	75	71	69	67	62	61	59	55
2	92	84	78	73	86	80	74	69	71	66	63	62	59	56	55	52	50	46
3	84	74	67	61	79	70	63	58	62	57	53	55	51	48	49	45	43	39
4	77	66	58	52	72	62	55	49	56	50	45	49	45	41	44	40	37	34
5	71	59	51	44	66	56	48	43	50	44	39	45	40	36	39	35	32	29
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	36	32	29	26
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	25	23
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23	21
9	53	40	32	27	49	38	31	26	35	29	24	31	26	23	28	24	21	19
10	49	37	29	25	46	35	28	24	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	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	2.5
10°-20°	354.7	7.0
20°-30°	523.7	10.3
30°-40°	602.1	11.8
40°-50°	584.0	11.5
50°-60°	488.9	9.6
60°-70°	352.2	6.9
70°-80°	215.2	4.2
80°-90°	105.3	2.1
90°-100°	79.7	1.6
100°-110°	287.7	5.7
110°-120°	375.5	7.4
120°-130°	303.5	6.0
130°-140°	242.6	4.8
140°-150°	191.1	3.8
150°-160°	139.7	2.7
160°-170°	86.8	1.7
170°-180°	29.6	0.6
0°-30°	1003.4	19.7
0°-40°	1605.5	31.6
0°-60°	2678.5	52.6
0°-90°	3351.2	65.9
90°-120°	742.9	14.6
90°-150°	1480.2	29.1
90°-180°	1736.0	34.1
0°-180°	5087.5	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	39	71	84	86	8
95°	34	46	55	70	76	33
105°	79	101	364	470	320	84
115°	121	136	309	639	746	120
125°	162	180	290	503	595	144
135°	192	213	290	414	476	148
145°	227	246	292	361	399	143
155°	266	276	298	327	343	122
165°	296	300	305	313	319	83
175°	311	313	311	309	307	29
180°	311	311	311	311	311	



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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	50.8	81.6	91.7	92.1
90°	5.6	38.6	71.3	84.5	86.3
92.5°	16.3	34.7	64.0	78.8	83.7
95°	34.4	45.9	54.9	70.1	75.8
97.5°	50.3	66.9	143.6	73.3	70.9
100°	59.6	79.4	253.5	99.9	80.6
102.5°	67.5	88.8	328.9	205.3	126.3
105°	79.4	101.0	363.7	469.6	320.1
107.5°	91.3	105.1	343.6	669.4	629.5
110°	99.2	113.0	332.7	699.8	753.3

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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	108.6	122.4	323.3	677.3	766.0
115°	120.8	136.4	309.2	638.6	745.8
117.5°	133.0	150.5	305.3	595.3	705.5
120°	142.5	159.9	297.5	562.6	677.4
122.5°	150.3	167.8	289.7	535.7	641.4
125°	162.2	179.6	289.7	503.3	595.2
127.5°	171.3	191.2	290.1	465.7	556.4
130°	176.0	199.0	291.6	440.5	526.7
132.5°	180.9	203.8	290.1	429.2	500.0
135°	191.9	212.9	289.8	414.5	475.8
137.5°	201.7	224.3	289.8	398.2	450.7
140°	209.5	230.6	289.8	388.7	436.6
142.5°	217.3	236.9	291.3	377.7	422.5
145°	227.1	246.3	291.7	361.1	399.4
147.5°	238.9	255.7	294.1	349.2	378.7
150°	246.7	262.0	295.6	341.2	366.1
152.5°	254.5	268.3	295.6	334.9	355.2
155°	266.3	275.8	297.6	327.3	342.6
157.5°	275.7	284.9	299.9	322.5	333.6
160°	281.9	289.6	301.5	319.4	328.9
162.5°	286.6	294.3	303.1	317.7	324.2
165°	295.6	299.5	305.4	313.4	319.1
167.5°	300.7	304.2	307.4	311.4	314.8
170°	305.4	307.3	307.4	311.3	313.3
172.5°	307.0	310.4	309.0	309.8	311.7
175°	311.3	313.2	311.3	309.3	307.4
177.5°	311.3	312.8	311.3	311.3	309.7
180°	311.3	311.3	311.3	311.3	311.3

(END OF REPORT)