

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: P644214

Luminaire Tested: CRQ4DIP-SR4F0-100D25U930-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



**Test Information**

Test Method: LM-79-2019  
Report Number: P644214  
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-SR4F0-100D25U930-FLLOOB-1DUDD-WW  
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE  
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT  
UPLIGHT - BATWING OPTIC - 250 LUMENS PER FOOT  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

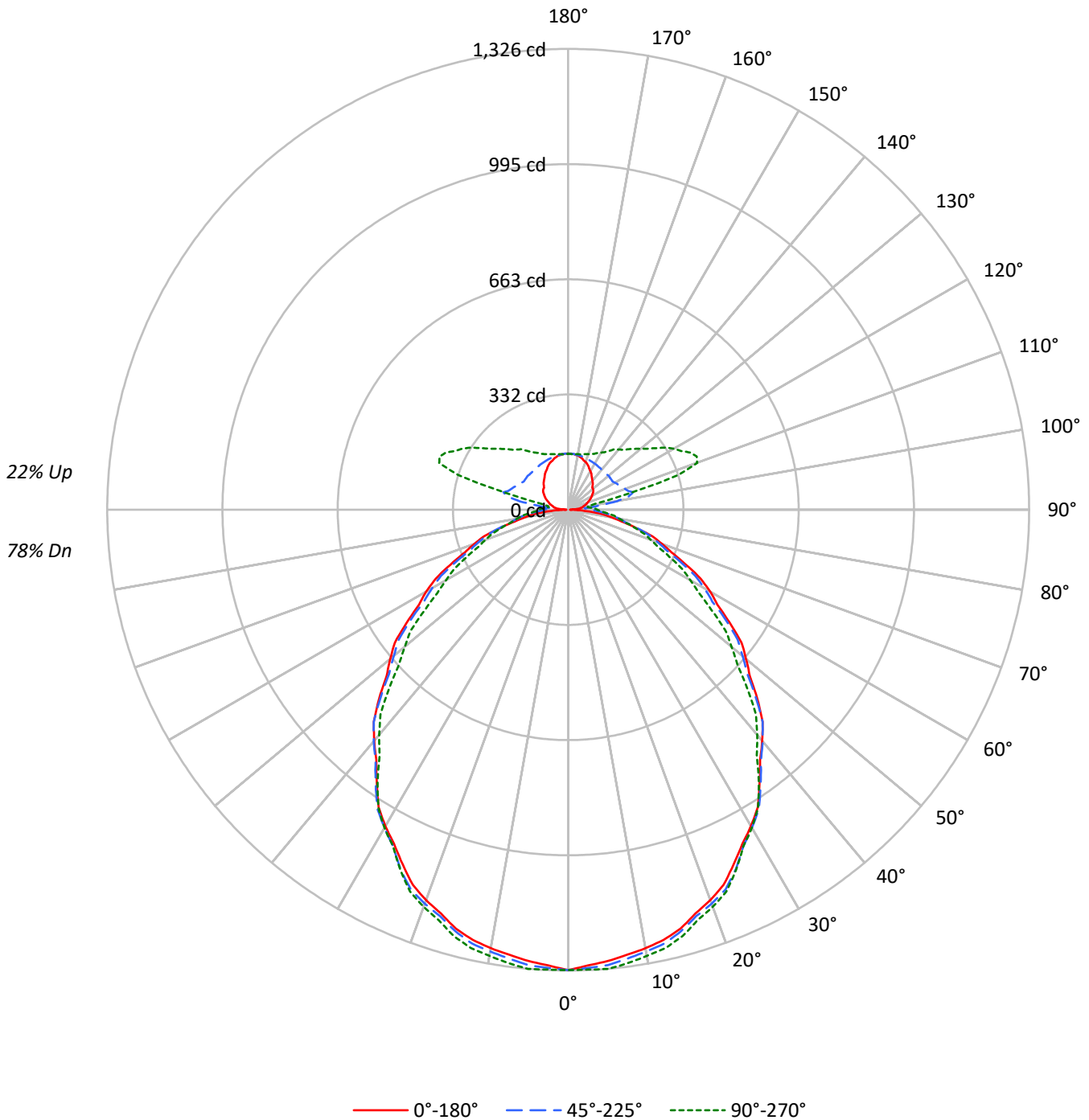
Lumens per Lamp: N/A  
Luminaire Lumens: 4281.4 lumens  
Efficiency: N/A  
Efficacy: 112.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')  
CIE Type: Semi-Direct

Input Watts (W): 38.2  
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	114	114	114	114	109	109	109	109	99	99	99	90	90	90	82	82	82	78
1	104	99	95	91	99	95	91	88	87	84	81	79	77	75	72	70	69	65
2	95	87	80	75	90	83	77	72	76	71	67	70	66	63	64	61	58	55
3	86	76	69	63	82	73	66	61	67	62	57	62	57	53	57	53	50	47
4	79	68	60	53	75	65	58	52	60	54	49	55	50	46	51	46	43	40
5	73	61	52	46	69	58	51	45	54	47	42	50	44	40	46	41	38	35
6	67	55	46	40	64	53	45	39	49	42	37	45	39	35	42	37	33	31
7	63	50	41	36	60	48	40	35	44	38	33	41	36	31	38	33	30	27
8	58	45	37	32	56	44	36	31	41	34	30	38	32	28	35	30	27	25
9	54	42	34	28	52	40	33	28	37	31	27	35	29	25	32	28	24	22
10	51	38	31	26	49	37	30	25	35	28	24	32	27	23	30	25	22	20

**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	2.9
10°-20°	354.7	8.3
20°-30°	523.7	12.2
30°-40°	602.1	14.1
40°-50°	584.0	13.6
50°-60°	488.9	11.4
60°-70°	352.2	8.2
70°-80°	215.2	5.0
80°-90°	104.9	2.5
90°-100°	61.2	1.4
100°-110°	156.3	3.7
110°-120°	197.1	4.6
120°-130°	158.3	3.7
130°-140°	125.9	2.9
140°-150°	99.0	2.3
150°-160°	72.4	1.7
160°-170°	45.0	1.1
170°-180°	15.3	0.4
0°-30°	1003.4	23.4
0°-40°	1605.5	37.5
0°-60°	2678.5	62.6
0°-90°	3350.8	78.3
90°-120°	414.6	9.7
90°-150°	797.8	18.6
90°-180°	931.0	21.7
0°-180°	4281.4	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	38	69	82	84	7
95°	27	32	47	62	65	25
105°	50	56	193	252	176	53
115°	69	74	162	333	388	68
125°	88	95	151	261	308	78
135°	99	110	150	215	246	77
145°	118	128	151	187	207	74
155°	138	143	154	170	178	63
165°	153	155	158	162	165	43
175°	161	162	161	160	159	15
180°	161	161	161	161	161	



TEST NUMBER: P644214

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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	50.6	81.2	91.2	91.5
90°	5.6	37.7	69.4	81.7	83.5
92.5°	14.0	31.5	59.8	73.0	77.1
95°	26.8	31.9	47.4	61.6	65.4
97.5°	36.9	40.0	88.1	56.9	56.7
100°	41.7	45.8	142.2	67.1	58.9
102.5°	45.1	49.9	178.4	118.9	79.0
105°	50.2	56.0	193.0	251.5	175.8
107.5°	55.2	57.3	180.5	351.9	332.1
110°	58.6	61.3	174.2	366.3	394.9

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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	63.5	66.2	169.3	353.1	400.0
115°	68.9	73.5	162.0	332.7	388.2
117.5°	74.2	80.7	159.8	309.2	366.3
120°	78.3	85.6	155.1	291.5	351.0
122.5°	82.4	89.0	151.0	277.6	332.3
125°	87.6	94.9	151.0	260.8	308.4
127.5°	91.3	100.9	151.2	241.3	288.3
130°	93.0	104.9	152.0	228.3	272.9
132.5°	94.1	106.0	150.5	222.4	259.1
135°	99.4	110.3	150.1	214.8	246.5
137.5°	104.5	116.2	150.1	206.4	233.5
140°	108.6	119.5	150.1	201.4	226.2
142.5°	112.6	122.7	151.0	195.7	218.9
145°	117.7	127.6	151.2	187.1	207.0
147.5°	123.8	132.5	152.4	180.9	196.2
150°	127.8	135.8	153.2	176.8	189.7
152.5°	131.9	139.0	153.2	173.5	184.0
155°	138.0	142.9	154.2	169.6	177.5
157.5°	142.8	147.6	155.4	167.1	172.9
160°	146.1	150.1	156.2	165.5	170.4
162.5°	148.5	152.5	157.0	164.6	168.0
165°	153.2	155.2	158.3	162.4	165.4
167.5°	155.8	157.6	159.3	161.3	163.1
170°	158.3	159.3	159.3	161.3	162.3
172.5°	159.1	160.9	160.1	160.5	161.5
175°	161.3	162.3	161.3	160.3	159.3
177.5°	161.3	162.1	161.3	161.3	160.5
180°	161.3	161.3	161.3	161.3	161.3

(END OF REPORT)