

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: P644206

Luminaire Tested: CRQ4DIP-SR4F0-100D150U940-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



Test Information

Test Method: LM-79-2019
Report Number: P644206
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-SR4F0-100D150U940-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: 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

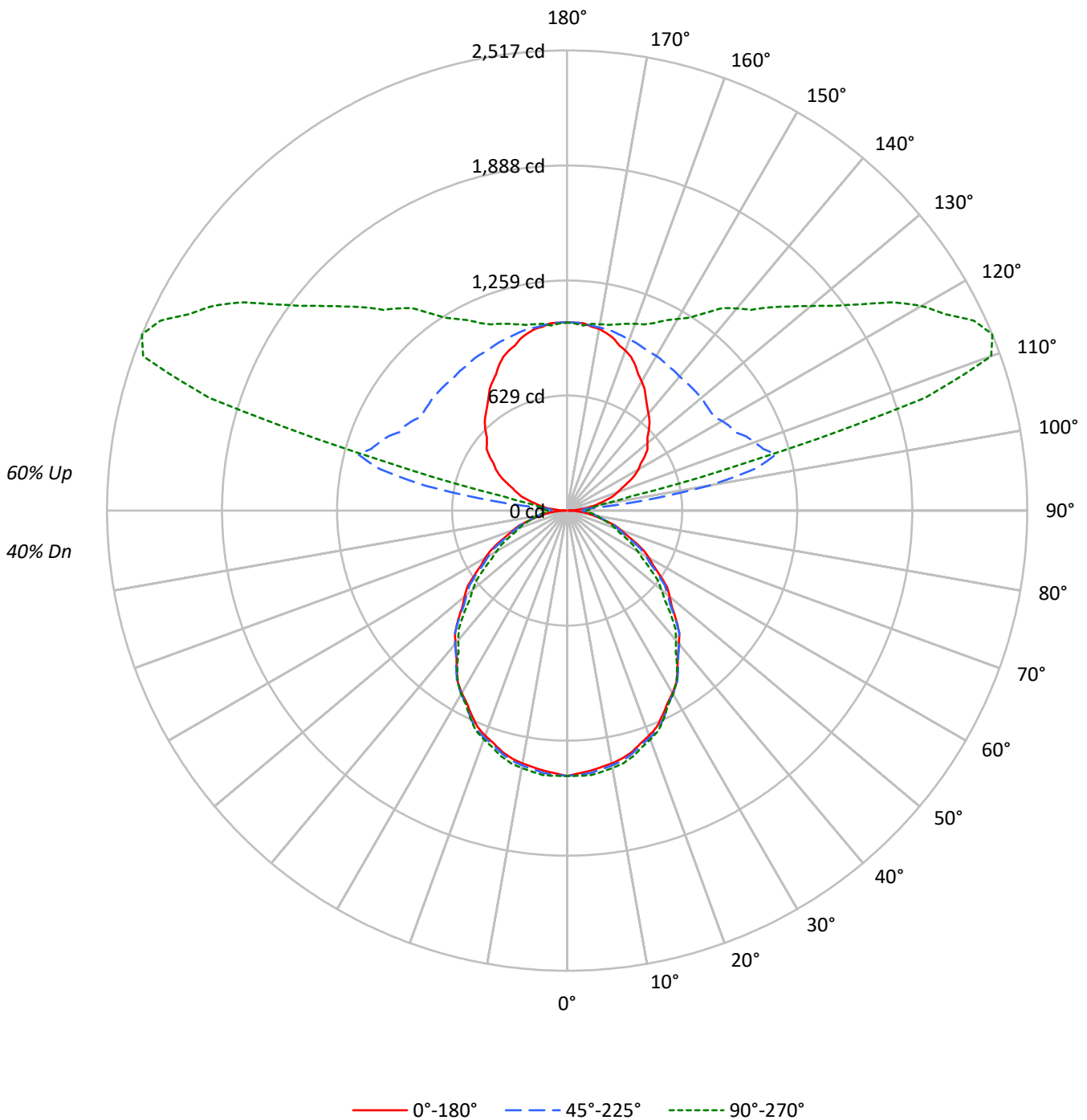
Lumens per Lamp: N/A
Luminaire Lumens: 9270.6 lumens
Efficiency: N/A
Efficacy: 118.1 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')
CIE Type: Semi-Indirect

Input Watts (W): 78.5
Input Voltage (V): 120
Input Current (A_{in}): 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										
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	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°	23439	23439	23439
5°	22995	20694	20052
10°	22693	18411	17321
15°	22361	16489	15152
20°	21849	14792	13252
25°	21167	13208	11548
30°	20497	11672	10024
35°	19588	10265	8603
40°	18742	8986	7294
45°	17762	7723	6086
50°	16726	6541	4993
55°	15629	5504	4026
60°	14581	4512	3218
65°	13292	3597	2548
70°	12050	2819	2012
75°	10535	2165	1587
80°	8802	1610	1235
85°	6423	1171	939

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 17762 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.0	1.5
10°-20°	388.8	4.2
20°-30°	574.0	6.2
30°-40°	659.9	7.1
40°-50°	640.1	6.9
50°-60°	535.9	5.8
60°-70°	386.1	4.2
70°-80°	235.9	2.5
80°-90°	116.9	1.3
90°-100°	171.8	1.9
100°-110°	917.7	9.9
110°-120°	1229.3	13.3
120°-130°	998.2	10.8
130°-140°	801.2	8.6
140°-150°	631.5	6.8
150°-160°	461.7	5.0
160°-170°	286.8	3.1
170°-180°	97.8	1.1
0°-30°	1099.8	11.9
0°-40°	1759.7	19.0
0°-60°	2935.7	31.7
0°-90°	3674.6	39.6
90°-120°	2318.8	25.0
90°-150°	4749.8	51.2
90°-180°	5596.0	60.4
0°-180°	9270.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1452	1452	1452	1452	1452	
5°	1429	1455	1441	1444	1454	136
15°	1368	1388	1376	1382	1392	385
25°	1234	1254	1251	1245	1253	569
35°	1052	1068	1058	1048	1048	659
45°	843	851	836	812	800	650
55°	621	629	607	570	552	557
65°	410	412	392	363	353	408
75°	221	221	226	219	215	237
85°	68	82	113	121	121	71
90°	6	47	87	106	108	10
95°	72	114	95	116	131	75
105°	221	317	1181	1514	1012	233
115°	370	438	1013	2102	2456	367
125°	519	585	953	1663	1967	461
135°	634	704	958	1370	1572	488
145°	750	814	964	1193	1320	471
155°	880	912	983	1082	1132	404
165°	977	990	1009	1036	1055	274
175°	1029	1035	1029	1022	1016	97
180°	1029	1029	1029	1029	1029	

TEST NUMBER: P644206

CATALOG NUMBER: CRQ4DIP-SR4F0-100D150U940-FLLOOB-1DUDD-WW

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1451.7	1451.7	1451.7	1451.7	1451.7
2.5°	1438.5	1459.4	1446.7	1450.1	1451.7
5°	1429.1	1455.2	1441.4	1443.7	1453.7
7.5°	1416.0	1440.0	1427.9	1430.6	1442.2
10°	1404.5	1428.6	1414.7	1419.1	1429.1
12.5°	1389.7	1412.2	1401.6	1406.0	1416.0
15°	1367.6	1387.6	1375.8	1382.2	1392.2
17.5°	1334.8	1356.4	1343.8	1347.3	1357.3
20°	1310.2	1330.2	1322.5	1322.7	1332.7
22.5°	1280.7	1302.3	1296.2	1291.6	1303.2
25°	1234.3	1254.4	1250.7	1244.8	1252.8
27.5°	1188.4	1203.2	1196.2	1190.2	1196.2
30°	1152.3	1170.3	1158.5	1152.4	1158.5
32.5°	1112.9	1131.0	1119.1	1111.4	1114.2
35°	1051.8	1067.9	1058.0	1047.7	1047.7
37.5°	994.0	1004.4	997.7	980.4	976.0
40°	951.4	963.4	953.4	932.8	926.8
42.5°	907.1	919.1	907.5	885.1	875.9
45°	842.7	850.7	836.5	811.7	799.6
47.5°	776.3	784.7	765.2	737.8	723.4
50°	732.0	742.0	717.6	688.6	672.5
52.5°	689.3	696.1	673.3	639.4	625.0
55°	621.3	629.3	606.9	569.6	551.5
57.5°	557.7	565.3	538.8	503.2	489.2
60°	516.7	522.7	496.2	459.0	444.9
62.5°	470.8	476.8	451.9	419.6	405.6
65°	410.1	412.1	391.6	362.7	352.7
67.5°	353.1	353.1	335.8	314.3	306.3
70°	313.7	313.7	301.4	284.8	276.8
72.5°	277.6	276.0	268.6	257.0	250.6
75°	221.4	221.4	225.5	219.3	215.3
77.5°	172.2	169.0	186.6	185.7	183.7
80°	139.4	139.4	162.0	166.0	164.0
82.5°	109.9	113.1	142.3	148.0	146.0
85°	67.7	81.7	112.8	121.0	121.0
87.5°	30.8	56.5	91.2	103.1	103.5
90°	6.2	46.6	86.8	105.6	107.6
92.5°	28.2	52.6	89.2	113.3	122.0
95°	72.3	114.5	94.8	116.0	130.6
97.5°	116.5	196.4	411.6	155.3	142.6
100°	147.5	241.0	788.0	259.7	187.8
102.5°	176.9	275.5	1050.6	621.4	355.5
105°	221.1	316.6	1181.3	1514.5	1012.4
107.5°	265.2	334.5	1123.7	2188.7	2052.8
110°	294.6	360.5	1091.0	2296.0	2468.8

TEST NUMBER: P644206

CATALOG NUMBER: CRQ4DIP-SR4F0-100D150U940-FLLOOB-1DUDD-WW

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	325.7	391.5	1060.0	2228.0	2517.2
115°	370.2	438.1	1013.4	2101.9	2456.1
117.5°	415.6	484.6	1001.3	1963.8	2328.2
120°	450.2	515.8	979.0	1859.0	2238.5
122.5°	476.1	545.1	953.1	1770.3	2119.5
125°	519.3	584.9	953.1	1663.2	1966.8
127.5°	554.4	623.6	954.4	1538.9	1838.7
130°	573.4	649.4	959.6	1455.7	1740.4
132.5°	596.0	672.0	957.9	1418.3	1652.4
135°	634.0	703.6	957.5	1369.7	1572.2
137.5°	666.4	741.0	957.5	1316.0	1489.3
140°	692.3	761.9	957.5	1284.6	1442.8
142.5°	718.1	782.7	962.7	1248.1	1396.2
145°	750.5	813.8	964.0	1193.3	1319.8
147.5°	789.3	845.0	971.8	1153.8	1251.3
150°	815.2	865.8	976.9	1127.6	1209.8
152.5°	841.1	886.6	976.9	1106.6	1173.6
155°	879.9	911.5	983.4	1081.6	1132.2
157.5°	910.9	941.3	991.2	1065.8	1102.4
160°	931.6	957.0	996.3	1055.3	1086.9
162.5°	947.2	972.5	1001.5	1049.9	1071.4
165°	976.9	989.6	1009.3	1035.6	1054.6
167.5°	993.8	1005.1	1015.8	1029.0	1040.3
170°	1009.3	1015.6	1015.8	1028.8	1035.2
172.5°	1014.5	1025.8	1020.9	1023.7	1030.0
175°	1028.7	1035.0	1028.7	1022.1	1015.8
177.5°	1028.7	1033.8	1028.7	1028.6	1023.5
180°	1028.7	1028.7	1028.7	1028.7	1028.7

(END OF REPORT)