

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: P644200

Luminaire Tested: CRQ4DIP-SR4F0-100D150U840-FLLOOB-1DUDD-WW

Issue Date: 2/20/2023



Test Information

Test Method: LM-79-2019
Report Number: P644200
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-SR4F0-100D150U840-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, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

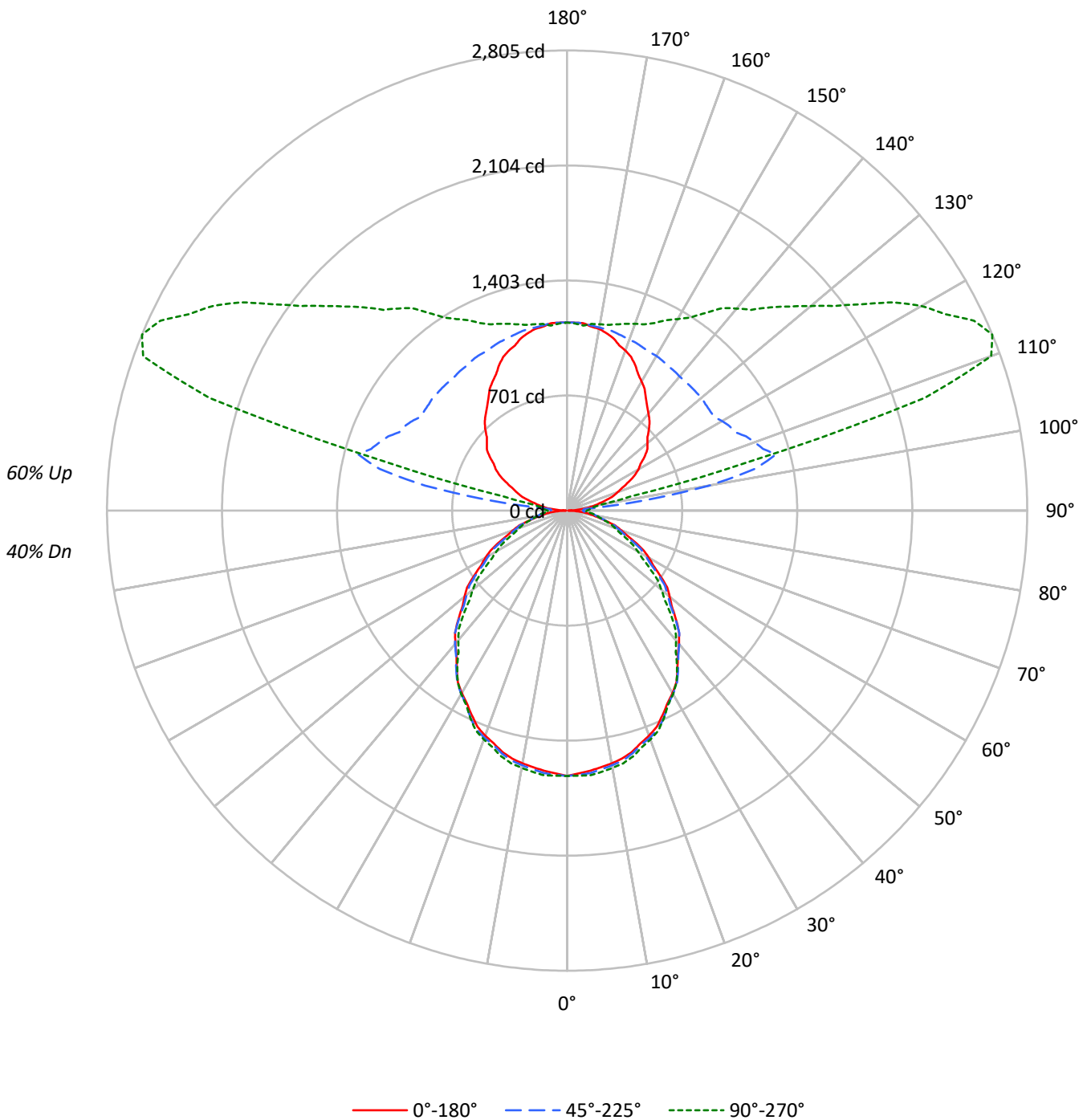
Lumens per Lamp: N/A
Luminaire Lumens: 10330.4 lumens
Efficiency: N/A
Efficacy: 131.6 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')
CIE Type: Semi-Indirect

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										
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°	26118	26118	26118
5°	25624	23060	22345
10°	25286	20517	19302
15°	24916	18374	16883
20°	24346	16483	14767
25°	23586	14718	12868
30°	22840	13006	11170
35°	21829	11438	9587
40°	20883	10014	8127
45°	19792	8607	6782
50°	18638	7290	5563
55°	17415	6133	4486
60°	16248	5027	3586
65°	14809	4009	2839
70°	13429	3142	2242
75°	11744	2413	1768
80°	9812	1794	1377
85°	7154	1305	1047

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 19792 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.7	1.5
10°-20°	433.3	4.2
20°-30°	639.6	6.2
30°-40°	735.3	7.1
40°-50°	713.3	6.9
50°-60°	597.1	5.8
60°-70°	430.2	4.2
70°-80°	262.9	2.5
80°-90°	130.3	1.3
90°-100°	191.5	1.9
100°-110°	1022.6	9.9
110°-120°	1369.8	13.3
120°-130°	1112.3	10.8
130°-140°	892.8	8.6
140°-150°	703.6	6.8
150°-160°	514.5	5.0
160°-170°	319.6	3.1
170°-180°	109.0	1.1
0°-30°	1225.5	11.9
0°-40°	1960.8	19.0
0°-60°	3271.3	31.7
0°-90°	4094.6	39.6
90°-120°	2583.9	25.0
90°-150°	5292.7	51.2
90°-180°	6236.0	60.4
0°-180°	10330.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1618	1618	1618	1618	1618	
5°	1592	1622	1606	1609	1620	151
15°	1524	1546	1533	1540	1551	429
25°	1375	1398	1394	1387	1396	634
35°	1172	1190	1179	1168	1168	734
45°	939	948	932	904	891	724
55°	692	701	676	635	615	621
65°	457	459	436	404	393	454
75°	247	247	251	244	240	264
85°	75	91	126	135	135	80
90°	7	52	97	118	120	11
95°	80	128	106	129	146	84
105°	246	353	1316	1688	1128	260
115°	412	488	1129	2342	2737	409
125°	579	652	1062	1853	2192	514
135°	706	784	1067	1526	1752	544
145°	836	907	1074	1330	1471	525
155°	980	1016	1096	1205	1262	450
165°	1089	1103	1125	1154	1175	306
175°	1146	1153	1146	1139	1132	108
180°	1146	1146	1146	1146	1146	

TEST NUMBER: P644200

CATALOG NUMBER: CRQ4DIP-SR4F0-100D150U840-FLLOOB-1DUDD-WW

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1617.6	1617.6	1617.6	1617.6	1617.6
2.5°	1603.0	1626.2	1612.1	1615.8	1617.6
5°	1592.5	1621.5	1606.2	1608.7	1619.9
7.5°	1577.8	1604.6	1591.1	1594.1	1607.1
10°	1565.0	1591.9	1576.5	1581.3	1592.5
12.5°	1548.6	1573.6	1561.8	1566.7	1577.8
15°	1523.9	1546.3	1533.1	1540.2	1551.3
17.5°	1487.4	1511.5	1497.4	1501.3	1512.5
20°	1459.9	1482.3	1473.7	1473.9	1485.1
22.5°	1427.0	1451.2	1444.4	1439.2	1452.2
25°	1375.4	1397.8	1393.7	1387.0	1396.0
27.5°	1324.2	1340.8	1332.9	1326.2	1332.9
30°	1284.0	1304.1	1290.9	1284.2	1290.9
32.5°	1240.2	1260.3	1247.0	1238.4	1241.5
35°	1172.1	1189.9	1178.9	1167.5	1167.5
37.5°	1107.6	1119.3	1111.8	1092.5	1087.5
40°	1060.1	1073.5	1062.4	1039.4	1032.7
42.5°	1010.8	1024.2	1011.2	986.3	976.0
45°	939.0	948.0	932.2	904.5	891.0
47.5°	865.0	874.4	852.7	822.1	806.1
50°	815.7	826.8	799.7	767.3	749.4
52.5°	768.1	775.7	750.3	712.5	696.4
55°	692.3	701.2	676.3	634.7	614.6
57.5°	621.4	629.9	600.4	560.8	545.1
60°	575.8	582.5	552.9	511.4	495.8
62.5°	524.6	531.3	503.6	467.6	451.9
65°	456.9	459.2	436.4	404.1	393.0
67.5°	393.4	393.4	374.2	350.3	341.3
70°	349.6	349.6	335.9	317.4	308.4
72.5°	309.4	307.6	299.3	286.3	279.2
75°	246.8	246.8	251.3	244.4	239.9
77.5°	191.9	188.3	207.9	206.9	204.7
80°	155.4	155.4	180.5	185.0	182.8
82.5°	122.5	126.0	158.6	164.9	162.7
85°	75.4	91.0	125.7	134.8	134.8
87.5°	34.3	62.9	101.6	114.9	115.4
90°	6.9	51.9	96.7	117.6	119.9
92.5°	31.5	58.6	99.3	126.3	135.9
95°	80.5	127.6	105.7	129.2	145.6
97.5°	129.8	218.9	458.6	173.1	158.9
100°	164.4	268.6	878.1	289.3	209.2
102.5°	197.2	307.0	1170.7	692.4	396.2
105°	246.3	352.8	1316.3	1687.6	1128.2
107.5°	295.5	372.8	1252.2	2438.9	2287.5
110°	328.3	401.7	1215.7	2558.4	2751.0



TEST NUMBER: P644200

CATALOG NUMBER: CRQ4DIP-SR4F0-100D150U840-FLLOOB-1DUDD-WW

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	362.9	436.3	1181.1	2482.7	2805.0
115°	412.5	488.2	1129.2	2342.2	2736.9
117.5°	463.1	540.0	1115.8	2188.3	2594.3
120°	501.7	574.7	1090.9	2071.5	2494.4
122.5°	530.5	607.4	1062.1	1972.7	2361.8
125°	578.7	651.7	1062.1	1853.3	2191.6
127.5°	617.7	694.9	1063.5	1714.8	2048.9
130°	639.0	723.6	1069.3	1622.1	1939.3
132.5°	664.2	748.8	1067.4	1580.4	1841.3
135°	706.5	784.1	1067.0	1526.3	1751.9
137.5°	742.6	825.7	1067.0	1466.4	1659.6
140°	771.4	848.9	1067.0	1431.5	1607.7
142.5°	800.2	872.1	1072.7	1390.8	1555.8
145°	836.3	906.8	1074.2	1329.7	1470.7
147.5°	879.5	941.6	1082.8	1285.7	1394.3
150°	908.4	964.8	1088.6	1256.5	1348.1
152.5°	937.2	988.0	1088.6	1233.1	1307.8
155°	980.5	1015.7	1095.8	1205.2	1261.6
157.5°	1015.1	1048.9	1104.5	1187.6	1228.5
160°	1038.1	1066.3	1110.2	1175.9	1211.2
162.5°	1055.4	1083.6	1116.0	1169.9	1193.9
165°	1088.6	1102.7	1124.7	1154.0	1175.1
167.5°	1107.4	1120.0	1131.9	1146.6	1159.3
170°	1124.7	1131.7	1131.9	1146.4	1153.5
172.5°	1130.4	1143.1	1137.6	1140.7	1147.7
175°	1146.3	1153.3	1146.3	1138.9	1131.9
177.5°	1146.3	1151.9	1146.3	1146.2	1140.5
180°	1146.3	1146.3	1146.3	1146.3	1146.3

(END OF REPORT)