

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: P644201

Luminaire Tested: CRQ4DIP-SR4F0-100D150U930-FLLFLL-1DUDD-WW

Issue Date: 2/20/2023



Test Information

Test Method: LM-79-2019
Report Number: P644201
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-SR4F0-100D150U930-FLLFLL-1DUDD-WW
Description: NEO-RAY CIRQUE SUSPENDED LED LUMINAIRE
DOWNLIGHT - CURVED FROSTED LENS - 1000 LUMENS PER FOOT
UPLIGHT - CURVED FROSTED LENS - 1500 LUMENS PER FOOT
Light Source: 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

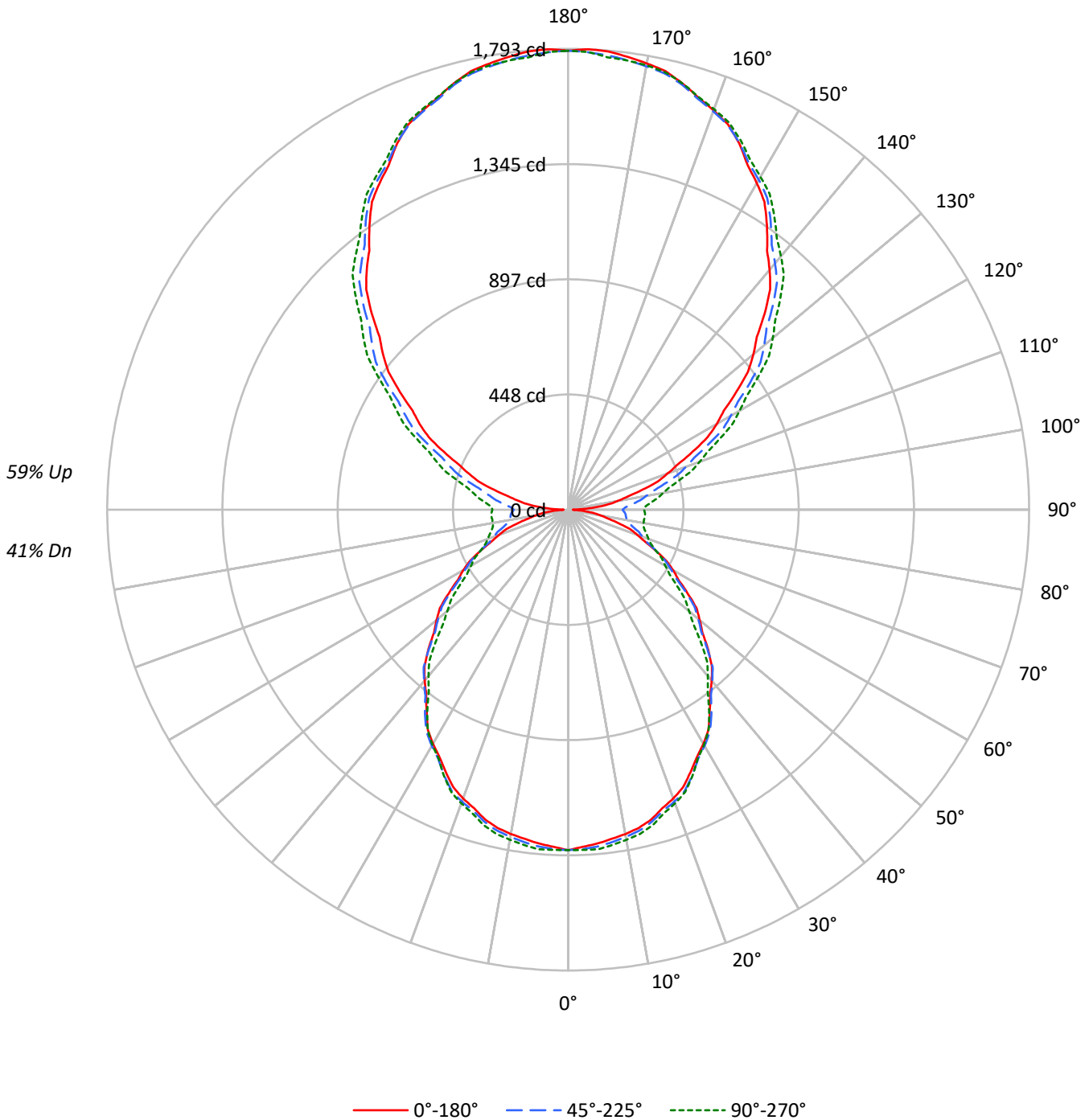
Lumens per Lamp: N/A
Luminaire Lumens: 8688.5 lumens
Efficiency: N/A
Efficacy: 110.7 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.19 / 1.3
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.33')
CIE Type: General Diffuse

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	96	96	96	96	78	78	78	62	62	62	48	48	48	41																				
1	95	90	86	83	86	82	79	76	68	65	63	54	52	50	41	40	39	33																				
2	86	79	73	67	78	72	67	62	59	55	52	47	44	42	36	34	33	27																				
3	79	69	62	56	71	63	57	52	52	47	43	42	38	35	32	30	28	23																				
4	72	61	53	47	65	56	49	44	46	41	37	37	33	30	29	26	24	20																				
5	66	54	46	40	60	50	43	37	41	36	32	33	29	26	26	23	21	17																				
6	61	49	41	35	55	45	38	33	37	32	28	30	26	23	23	21	18	15																				
7	56	44	36	31	51	40	33	29	34	28	24	27	23	20	21	18	16	14																				
8	52	40	32	27	47	37	30	25	31	25	22	25	21	18	20	17	15	12																				
9	49	36	29	24	44	34	27	22	28	23	19	23	19	16	18	15	13	11																				
10	45	33	26	21	41	31	24	20	26	21	17	21	17	15	17	14	12	10																				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	21385	21385	21385
5°	20980	18881	18295
10°	20704	16824	15804
15°	20402	15066	13824
20°	19935	13517	12092
25°	19313	12051	10536
30°	18700	10686	9145
35°	17873	9421	7849
40°	17099	8217	6655
45°	16206	7064	5553
50°	15259	6020	4555
55°	14258	5056	3770
60°	13302	4185	3156
65°	12125	3457	2707
70°	10994	2873	2415
75°	9612	2504	2272
80°	8031	2317	2241
85°	5854	2328	2328

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°	125.1	1.4
10°-20°	355.0	4.1
20°-30°	524.3	6.0
30°-40°	603.6	6.9
40°-50°	585.9	6.7
50°-60°	495.3	5.7
60°-70°	377.5	4.3
70°-80°	275.7	3.2
80°-90°	220.5	2.5
90°-100°	253.9	2.9
100°-110°	403.8	4.6
110°-120°	594.0	6.8
120°-130°	768.1	8.8
130°-140°	868.8	10.0
140°-150°	858.4	9.9
150°-160°	726.1	8.4
160°-170°	483.4	5.6
170°-180°	169.1	1.9
0°-30°	1004.4	11.6
0°-40°	1608.0	18.5
0°-60°	2689.2	31.0
0°-90°	3562.9	41.0
90°-120°	1251.7	14.4
90°-150°	3747.1	43.1
90°-180°	5126.0	59.0
0°-180°	8688.5	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	1270	1257	1261	1270	351
25°	1126	1148	1141	1136	1143	519
35°	960	980	971	956	956	601
45°	769	782	765	740	730	593
55°	567	582	558	526	516	508
65°	374	387	376	375	375	372
75°	202	217	261	297	308	216
85°	62	119	224	283	300	66
90°	19	100	211	274	295	16
95°	104	141	250	310	323	104
105°	297	312	387	440	449	317
115°	534	557	603	639	648	531
125°	798	826	864	895	902	715
135°	1081	1105	1126	1155	1168	833
145°	1348	1364	1372	1382	1397	842
155°	1573	1583	1575	1577	1587	723
165°	1718	1725	1712	1706	1718	484
175°	1790	1797	1774	1767	1767	170
180°	1786	1786	1786	1786	1786	



TEST NUMBER: P644201

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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	1321.5	1323.0	1324.5
5°	1303.9	1327.7	1315.1	1317.2	1326.3
7.5°	1291.9	1315.3	1304.7	1305.2	1315.9
10°	1281.4	1303.4	1292.7	1294.7	1303.9
12.5°	1268.0	1291.4	1279.2	1282.8	1291.9
15°	1247.8	1269.8	1257.1	1261.1	1270.2
17.5°	1217.8	1239.4	1228.0	1229.3	1238.4
20°	1195.4	1215.5	1208.5	1206.8	1216.0
22.5°	1168.4	1190.0	1184.6	1178.4	1189.0
25°	1126.2	1148.2	1141.1	1135.7	1143.0
27.5°	1084.3	1104.5	1093.6	1085.9	1091.4
30°	1051.3	1071.5	1060.7	1051.5	1056.9
32.5°	1015.4	1037.1	1024.8	1014.0	1016.5
35°	959.7	979.9	971.0	955.9	955.9
37.5°	906.9	923.8	912.2	894.5	890.5
40°	868.0	886.4	871.8	851.0	845.6
42.5°	827.6	846.0	831.4	807.6	799.2
45°	768.9	781.7	765.1	740.5	729.6
47.5°	708.2	723.0	700.8	673.2	660.0
50°	667.8	682.5	660.4	628.2	613.6
52.5°	628.9	642.2	618.5	584.9	573.2
55°	566.8	581.6	557.5	525.5	516.5
57.5°	508.8	523.2	497.7	476.3	467.6
60°	471.4	484.3	460.3	443.5	436.3
62.5°	429.5	443.9	422.9	415.2	411.0
65°	374.1	387.1	376.3	374.7	374.8
67.5°	322.1	333.3	332.6	344.3	348.5
70°	286.2	297.3	307.2	326.5	332.2
72.5°	253.3	264.4	287.9	313.2	320.4
75°	202.0	216.9	260.8	297.1	308.3
77.5°	157.1	174.2	241.9	286.9	300.3
80°	127.2	153.2	233.1	282.7	297.5
82.5°	100.3	135.1	227.3	282.9	297.7
85°	61.7	119.0	224.2	283.3	299.9
87.5°	30.7	107.5	218.8	280.2	299.1
90°	18.9	100.0	211.4	274.3	294.7
92.5°	50.7	111.2	223.7	285.0	300.9
95°	104.0	141.1	249.7	310.5	323.4
97.5°	157.0	181.7	282.8	339.5	352.0
100°	195.0	213.7	308.7	363.8	374.9
102.5°	235.9	250.2	339.1	391.2	403.8
105°	297.4	312.4	386.6	439.8	449.0
107.5°	365.7	381.7	444.7	494.9	504.5
110°	411.2	431.7	487.1	532.8	543.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	461.2	481.7	531.1	573.8	584.9
115°	534.4	556.8	602.8	639.0	648.3
117.5°	611.0	634.8	676.7	710.7	719.6
120°	667.2	689.5	729.8	762.2	769.7
122.5°	717.2	742.5	782.9	815.3	822.7
125°	798.0	825.8	864.4	894.9	902.4
127.5°	881.1	908.1	943.7	974.6	984.3
130°	940.2	964.3	995.2	1027.7	1038.9
132.5°	994.9	1019.0	1046.8	1079.3	1091.9
135°	1080.6	1104.7	1126.1	1154.8	1167.8
137.5°	1162.8	1186.2	1202.6	1225.4	1241.7
140°	1218.9	1239.3	1251.2	1272.4	1287.2
142.5°	1270.5	1290.9	1299.7	1317.9	1332.7
145°	1347.9	1364.5	1372.5	1382.3	1397.1
147.5°	1420.3	1436.6	1440.0	1448.5	1457.8
150°	1467.3	1482.1	1482.4	1486.5	1495.7
152.5°	1511.3	1524.6	1520.4	1522.9	1533.6
155°	1573.4	1582.7	1575.3	1577.4	1586.7
157.5°	1622.7	1632.0	1620.5	1624.0	1631.5
160°	1653.1	1662.3	1649.3	1651.3	1658.8
162.5°	1681.9	1688.2	1676.6	1674.2	1684.5
165°	1717.5	1724.9	1711.8	1706.4	1717.5
167.5°	1747.9	1755.3	1738.0	1732.2	1743.3
170°	1763.0	1770.4	1751.6	1744.3	1755.4
172.5°	1776.7	1784.1	1763.8	1754.9	1763.0
175°	1789.6	1797.0	1774.4	1766.8	1766.8
177.5°	1793.3	1797.8	1781.2	1773.8	1782.7
180°	1785.8	1785.8	1785.8	1785.8	1785.8

(END OF REPORT)