

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



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: P911731

Luminaire Tested: DFN2DIP-SQ2F0-060D040US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P911731
REPORT IS A COMBINATION OF REPORTS P901310 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-060D040US850-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

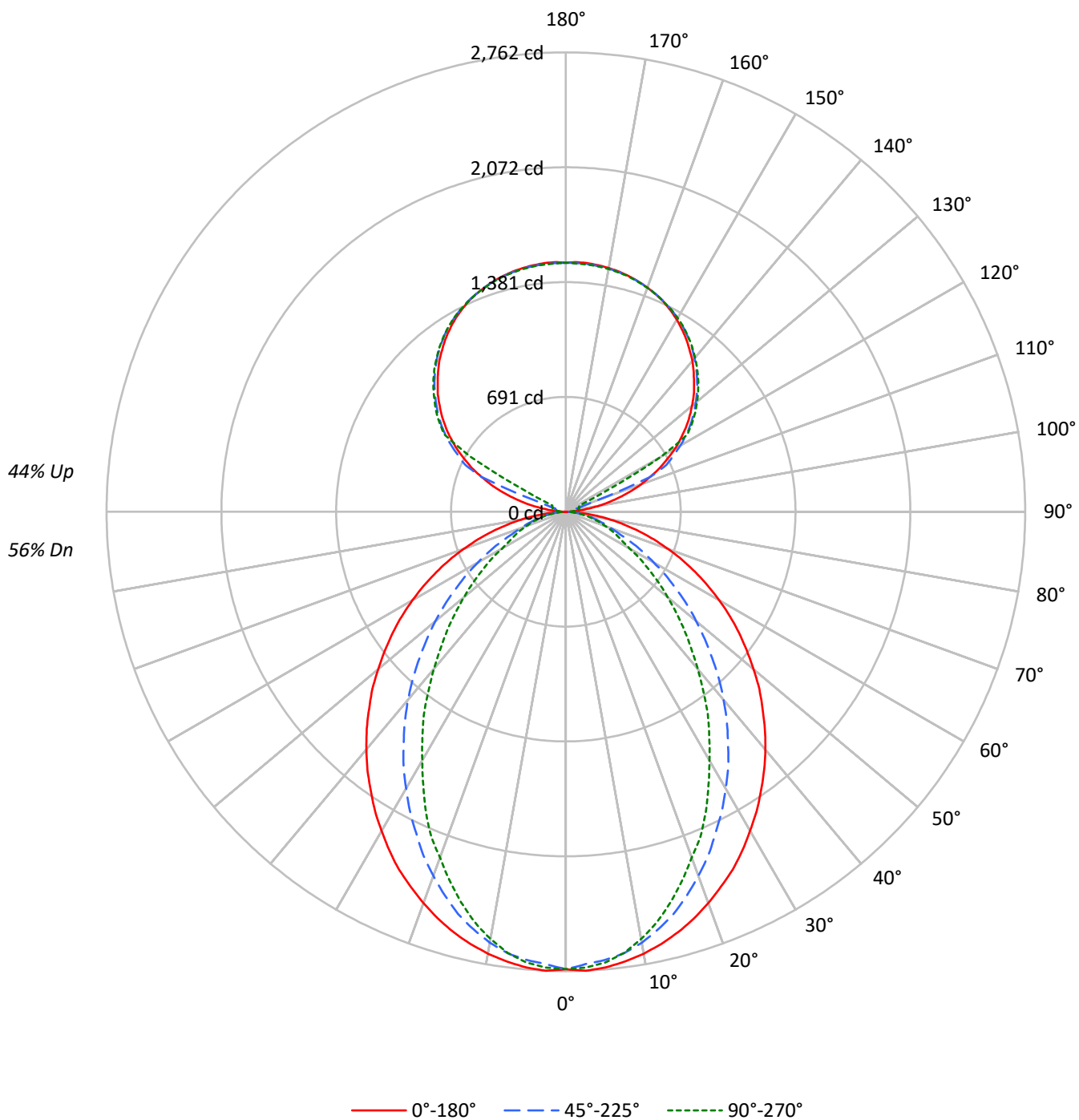
Lumens per Lamp: N/A
Luminaire Lumens: 10047.6 lumens
Efficiency: N/A
Efficacy: 118.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 84.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																					
0	109	109	109	109		101	101	101	101		87	87	87		74	74	74		62	62	62
1	100	96	92	88		93	89	86	83		77	75	72		66	64	63		56	54	53
2	91	84	78	73		85	79	73	69		68	64	61		58	56	53		50	48	46
3	84	74	67	62		78	70	63	58		61	56	52		52	49	46		44	42	40
4	77	66	59	53		71	62	55	50		54	49	45		47	43	40		40	37	35
5	71	59	51	46		66	56	49	43		49	43	39		42	38	35		36	33	31
6	65	54	46	40		61	50	43	38		44	39	34		39	34	31		33	30	27
7	61	49	41	35		56	46	39	34		40	35	30		35	31	27		30	27	24
8	56	44	37	31		52	42	35	30		37	31	27		32	28	25		28	25	22
9	53	41	33	28		49	38	32	27		34	28	25		30	25	22		26	23	20
10	49	37	30	25		46	35	29	24		31	26	22		28	23	20		24	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6047	6047	6047
5°	6046	5938	5981
10°	5976	5809	5778
15°	5883	5604	5469
20°	5764	5327	5093
25°	5642	5019	4731
30°	5481	4704	4274
35°	5323	4368	3872
40°	5162	4020	3414
45°	4976	3638	2999
50°	4783	3252	2594
55°	4580	2841	2205
60°	4344	2414	1807
65°	4073	1982	1617
70°	3743	1578	1451
75°	3329	1366	1303
80°	2734	1109	1105
85°	1778	688	785

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4976 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	257.7	2.6
10°-20°	707.6	7.0
20°-30°	993.4	9.9
30°-40°	1082.8	10.8
40°-50°	995.2	9.9
50°-60°	781.6	7.8
60°-70°	508.8	5.1
70°-80°	261.9	2.6
80°-90°	69.5	0.7
90°-100°	49.4	0.5
100°-110°	184.0	1.8
110°-120°	488.1	4.9
120°-130°	809.5	8.1
130°-140°	859.9	8.6
140°-150°	799.2	8.0
150°-160°	642.5	6.4
160°-170°	414.0	4.1
170°-180°	142.5	1.4
0°-30°	1958.7	19.5
0°-40°	3041.5	30.3
0°-60°	4818.4	48.0
0°-90°	5658.6	56.3
90°-120°	721.5	7.2
90°-150°	3190.0	31.7
90°-180°	4389.0	43.7
0°-180°	10047.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2750	2750	2750	2750	2750	
5°	2750	2738	2705	2728	2720	261
15°	2616	2588	2504	2456	2432	737
25°	2374	2295	2130	2028	1991	1092
35°	2046	1919	1700	1543	1488	1281
45°	1672	1506	1244	1068	1008	1292
55°	1272	1078	809	660	612	1136
65°	859	657	433	349	341	851
75°	458	284	199	182	179	484
85°	107	55	47	47	47	123
90°	1	13	22	27	29	9
95°	70	35	42	48	47	83
105°	329	362	66	78	82	352
115°	623	641	668	167	89	613
125°	881	895	915	923	926	785
135°	1090	1107	1117	1128	1126	842
145°	1264	1263	1281	1289	1284	791
155°	1392	1382	1395	1402	1393	641
165°	1467	1460	1464	1471	1464	414
175°	1500	1493	1495	1502	1492	143
180°	1497	1497	1497	1497	1497	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2750.1	2750.1	2750.1	2750.1	2750.1
2.5°	2762.5	2750.1	2722.6	2747.7	2742.7
5°	2750.1	2737.7	2705.2	2727.7	2720.3
7.5°	2727.7	2712.8	2678.0	2687.8	2675.4
10°	2697.8	2680.3	2630.8	2623.1	2608.3
12.5°	2660.6	2638.1	2570.8	2556.0	2528.5
15°	2615.7	2588.2	2503.7	2456.4	2431.6
17.5°	2563.5	2523.5	2419.0	2364.3	2324.5
20°	2503.7	2453.8	2329.5	2267.4	2212.5
22.5°	2439.0	2381.7	2237.3	2152.8	2115.5
25°	2374.4	2294.6	2130.4	2028.5	1991.0
27.5°	2297.3	2212.5	2030.8	1913.8	1856.6
30°	2215.1	2120.3	1921.2	1794.5	1727.2
32.5°	2135.4	2020.8	1817.0	1667.5	1605.2
35°	2045.9	1918.9	1700.0	1543.1	1488.2
37.5°	1958.7	1821.6	1590.4	1418.5	1356.4
40°	1866.6	1717.4	1475.7	1299.1	1234.4
42.5°	1772.1	1612.8	1361.4	1177.1	1115.1
45°	1672.5	1505.6	1244.5	1067.5	1007.9
47.5°	1578.0	1401.3	1132.5	955.6	901.0
50°	1473.4	1296.8	1022.9	851.0	799.0
52.5°	1371.2	1184.5	918.4	754.1	706.9
55°	1271.7	1077.6	808.8	659.6	612.3
57.5°	1169.8	970.6	711.9	572.5	532.5
60°	1065.2	866.1	609.7	483.0	443.0
62.5°	963.3	764.2	522.6	403.2	383.4
65°	858.7	657.0	433.1	348.6	340.9
67.5°	759.1	557.4	348.6	306.1	298.7
70°	654.5	460.5	288.6	263.8	253.7
72.5°	555.1	370.7	241.3	221.6	216.5
75°	457.9	283.6	199.1	181.7	179.3
77.5°	361.0	201.5	156.8	146.8	141.8
80°	271.2	144.4	119.3	109.6	109.6
82.5°	189.1	97.1	82.1	77.1	77.1
85°	106.9	54.7	47.2	47.2	47.2
87.5°	39.9	19.9	19.9	17.4	17.4
90°	1.0	13.0	21.6	27.2	29.2
92.5°	27.2	22.7	26.0	28.2	29.2
95°	70.3	34.6	42.1	47.7	46.6
97.5°	126.8	37.9	55.2	58.6	59.6
100°	191.7	43.4	61.8	70.3	72.5
102.5°	263.2	261.2	63.9	75.7	79.1
105°	329.3	361.9	66.1	78.0	82.3
107.5°	406.2	433.3	68.3	80.2	84.5
110°	480.0	502.6	189.6	81.3	85.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	549.3	568.7	550.3	83.4	86.7
115°	622.8	641.2	668.4	166.8	88.9
117.5°	686.8	708.4	726.9	571.9	288.1
120°	758.3	774.5	794.0	807.1	660.9
122.5°	818.9	836.3	858.0	864.5	865.6
125°	880.7	894.9	915.4	923.0	926.2
127.5°	937.0	952.2	968.5	979.4	980.4
130°	990.1	1007.5	1019.3	1031.3	1030.3
132.5°	1044.2	1058.4	1070.3	1080.1	1079.1
135°	1089.8	1107.2	1116.9	1127.7	1125.6
137.5°	1137.4	1150.4	1161.3	1172.1	1168.9
140°	1184.0	1192.7	1204.6	1214.4	1208.9
142.5°	1223.1	1230.7	1244.7	1253.3	1248.0
145°	1264.3	1263.2	1281.4	1289.1	1283.7
147.5°	1299.9	1296.6	1315.1	1320.5	1316.3
150°	1334.6	1327.0	1344.4	1350.9	1345.4
152.5°	1363.8	1355.2	1371.4	1377.9	1370.4
155°	1392.0	1382.4	1395.3	1401.8	1393.1
157.5°	1414.8	1406.1	1416.0	1423.5	1414.8
160°	1434.3	1427.7	1434.3	1440.7	1433.2
162.5°	1451.6	1445.1	1450.6	1458.1	1448.4
165°	1466.8	1460.3	1463.5	1471.1	1463.5
167.5°	1478.7	1472.1	1475.5	1483.1	1473.3
170°	1488.5	1482.0	1484.1	1491.7	1482.0
172.5°	1494.9	1488.5	1490.7	1498.3	1488.5
175°	1500.3	1492.7	1494.9	1502.5	1491.7
177.5°	1502.5	1494.9	1496.0	1503.7	1493.9
180°	1497.2	1497.2	1497.2	1497.2	1497.2

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	13.85	14.74	14.76	15.66	16.84	9.82	10.70	10.72	11.62	12.80
	3H	15.52	16.31	16.44	17.24	18.45	10.99	11.78	11.91	12.71	13.92
	4H	16.12	16.86	17.05	17.80	19.01	11.43	12.18	12.37	13.11	14.33
	6H	16.52	17.21	17.47	18.15	19.38	11.74	12.43	12.68	13.37	14.60
	8H	16.64	17.30	17.60	18.26	19.48	11.82	12.48	12.78	13.44	14.66
	12H	16.70	17.32	17.66	18.27	19.52	11.86	12.48	12.82	13.43	14.68
4H	2H	13.88	14.62	14.82	15.56	16.77	10.41	11.15	11.35	12.09	13.31
	3H	15.69	16.31	16.64	17.27	18.50	11.74	12.36	12.69	13.33	14.56
	4H	16.37	16.93	17.33	17.89	19.15	12.28	12.84	13.24	13.80	15.06
	6H	16.87	17.35	17.84	18.34	19.59	12.68	13.17	13.65	14.15	15.40
	8H	17.03	17.48	18.00	18.46	19.73	12.80	13.25	13.77	14.23	15.50
	12H	17.12	17.53	18.11	18.52	19.79	12.86	13.26	13.85	14.26	15.53
8H	4H	16.33	16.79	17.31	17.77	19.03	12.55	13.00	13.52	13.98	15.25
	6H	16.88	17.25	17.88	18.28	19.54	13.04	13.42	14.04	14.44	15.71
	8H	17.08	17.41	18.09	18.42	19.71	13.22	13.55	14.23	14.56	15.85
	12H	17.21	17.50	18.22	18.50	19.83	13.33	13.62	14.34	14.62	15.95
12H	4H	16.29	16.70	17.28	17.69	18.96	12.55	12.96	13.55	13.96	15.23
	6H	16.85	17.18	17.86	18.19	19.48	13.09	13.42	14.10	14.43	15.71
	8H	17.06	17.35	18.07	18.36	19.69	13.29	13.58	14.30	14.58	15.91

END OF REPORT