

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: P910513

Luminaire Tested: DFN2DIP-4P4F0-050D040US850-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910513
REPORT IS A COMBINATION OF REPORTS P900616 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-050D040US850-RLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open
No Lens
Light Source: -
Ballast/Driver: -

Summary

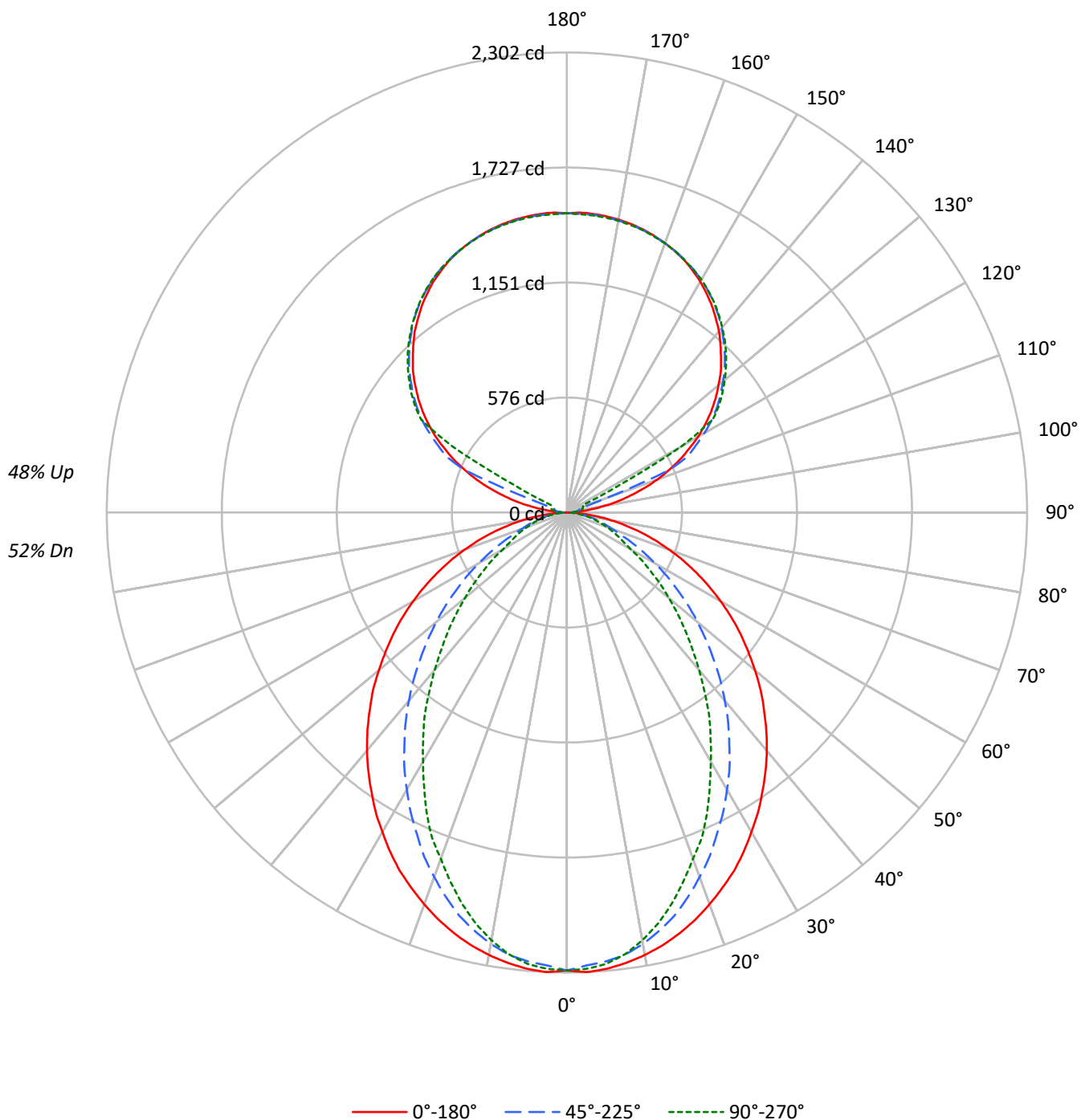
Lumens per Lamp: N/A
Luminaire Lumens: 9104.9 lumens
Efficiency: N/A
Efficacy: 112.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 80.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P910513

CATALOG NUMBER: DFN2DIP-4P4F0-050D040US850-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P910513

CATALOG NUMBER: DFN2DIP-4P4F0-050D040US850-RLLONL

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	108	108	108	108	99	99	99	99	84	84	84	70	70	70	58	58	58
1	99	95	91	87	91	88	84	82	75	72	70	63	61	60	52	51	50
2	90	83	77	72	83	77	72	68	66	62	59	56	53	51	46	44	43
3	83	74	66	61	76	68	62	57	59	54	50	50	46	43	41	39	37
4	76	65	58	52	70	61	54	49	52	47	43	45	41	38	37	35	32
5	70	59	51	45	64	55	48	42	47	42	38	40	36	33	34	31	28
6	65	53	45	39	60	49	42	37	43	37	33	37	32	29	31	28	25
7	60	48	40	35	55	45	38	33	39	33	29	33	29	26	28	25	23
8	56	44	36	31	51	41	34	29	36	30	26	31	26	23	26	23	20
9	52	40	32	28	48	37	31	26	33	27	24	28	24	21	24	21	19
10	48	37	30	25	45	34	28	24	30	25	21	26	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1487	1487	1487
5°	1489	1464	1473
10°	1475	1435	1426
15°	1454	1388	1352
20°	1428	1323	1262
25°	1400	1251	1174
30°	1363	1176	1063
35°	1327	1095	966
40°	1291	1012	854
45°	1248	919	752
50°	1204	826	653
55°	1158	726	558
60°	1105	622	459
65°	1043	516	414
70°	969	416	376
75°	876	368	343
80°	741	311	299
85°	518	210	229

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1248 cd/sqm

TEST NUMBER: P910513

CATALOG NUMBER: DFN2DIP-4P4F0-050D040US850-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	2.4
10°-20°	589.6	6.5
20°-30°	827.8	9.1
30°-40°	902.4	9.9
40°-50°	829.4	9.1
50°-60°	651.3	7.2
60°-70°	424.0	4.7
70°-80°	218.2	2.4
80°-90°	58.4	0.6
90°-100°	49.4	0.5
100°-110°	184.0	2.0
110°-120°	488.1	5.4
120°-130°	809.5	8.9
130°-140°	859.9	9.4
140°-150°	799.2	8.8
150°-160°	642.5	7.1
160°-170°	414.0	4.5
170°-180°	142.5	1.6
0°-30°	1632.2	17.9
0°-40°	2534.6	27.8
0°-60°	4015.3	44.1
0°-90°	4715.9	51.8
90°-120°	721.5	7.9
90°-150°	3190.0	35.0
90°-180°	4389.0	48.2
0°-180°	9104.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2281	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
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	

TEST NUMBER: P910513

CATALOG NUMBER: DFN2DIP-4P4F0-050D040US850-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.7	2291.7	2291.7	2291.7	2291.7
2.5°	2302.1	2291.7	2268.9	2289.8	2285.5
5°	2291.7	2281.4	2254.4	2273.0	2266.9
7.5°	2273.0	2260.7	2231.6	2239.8	2229.4
10°	2248.2	2233.6	2192.3	2185.9	2173.5
12.5°	2217.1	2198.5	2142.4	2130.1	2107.1
15°	2179.7	2156.9	2086.5	2047.1	2026.4
17.5°	2136.2	2103.0	2015.8	1970.2	1937.0
20°	2086.5	2044.9	1941.2	1889.5	1843.7
22.5°	2032.6	1984.8	1864.5	1794.0	1763.0
25°	1978.6	1912.1	1775.3	1690.3	1659.1
27.5°	1914.4	1843.7	1692.3	1594.9	1547.2
30°	1845.9	1767.0	1601.1	1495.4	1439.3
32.5°	1779.5	1684.0	1514.1	1389.6	1337.7
35°	1704.9	1599.1	1416.6	1285.9	1240.2
37.5°	1632.2	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.8	1082.6	1028.7
42.5°	1476.7	1344.0	1134.5	980.9	929.2
45°	1393.8	1254.7	1037.0	889.6	839.8
47.5°	1314.9	1167.8	943.8	796.4	750.8
50°	1227.9	1080.6	852.5	709.2	665.8
52.5°	1142.7	987.1	765.3	628.5	589.1
55°	1059.8	898.0	673.9	549.6	510.3
57.5°	974.8	808.9	593.2	477.1	443.8
60°	887.6	721.7	508.0	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.5	547.5	360.9	290.4	284.1
67.5°	632.6	464.6	290.4	255.1	248.9
70°	545.5	383.7	240.5	219.8	211.5
72.5°	462.6	309.0	201.2	184.6	180.4
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.8	122.3	118.1
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.2	45.6	39.4	39.4	39.4
87.5°	33.3	16.5	16.5	14.5	14.5
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

TEST NUMBER: P910513

CATALOG NUMBER: DFN2DIP-4P4F0-050D040US850-RLLONL

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

TEST NUMBER: P910513

CATALOG NUMBER: DFN2DIP-4P4F0-050D040US850-RLONL

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	8.71	9.56	9.66	10.52	11.76	4.67	5.52	5.62	6.48	7.72
	3H	10.40	11.15	11.36	12.12	13.39	5.86	6.62	6.82	7.59	8.86
	4H	11.01	11.72	11.98	12.70	13.98	6.32	7.03	7.29	8.00	9.28
	6H	11.44	12.09	12.42	13.07	14.36	6.64	7.30	7.62	8.27	9.57
	8H	11.57	12.19	12.56	13.19	14.47	6.73	7.36	7.72	8.35	9.64
	12H	11.63	12.22	12.63	13.21	14.53	6.77	7.37	7.77	8.36	9.67
4H	2H	8.73	9.45	9.71	10.42	11.70	5.27	5.99	6.25	6.96	8.24
	3H	10.57	11.16	11.56	12.16	13.46	6.63	7.22	7.61	8.22	9.52
	4H	11.27	11.81	12.26	12.80	14.12	7.18	7.72	8.17	8.71	10.03
	6H	11.79	12.25	12.80	13.27	14.59	7.60	8.06	8.61	9.08	10.40
	8H	11.97	12.40	12.98	13.41	14.74	7.73	8.16	8.74	9.17	10.50
	12H	12.06	12.46	13.09	13.48	14.82	7.79	8.19	8.82	9.21	10.55
8H	4H	11.23	11.67	12.24	12.68	14.01	7.46	7.90	8.47	8.91	10.24
	6H	11.81	12.17	12.84	13.22	14.55	7.98	8.34	9.02	9.40	10.72
	8H	12.03	12.34	13.07	13.38	14.73	8.17	8.49	9.22	9.53	10.88
	12H	12.17	12.45	13.22	13.48	14.87	8.30	8.57	9.34	9.61	11.00
12H	4H	11.19	11.58	12.22	12.61	13.94	7.47	7.86	8.50	8.89	10.22
	6H	11.78	12.10	12.82	13.14	14.49	8.03	8.35	9.07	9.39	10.74
	8H	12.01	12.29	13.05	13.32	14.71	8.25	8.52	9.29	9.56	10.95

END OF REPORT