

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: P922599

Luminaire Tested: DFN2DIP-SQ2F0-040D050US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922599
REPORT IS A COMBINATION OF REPORTS P901318 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-040D050US940-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

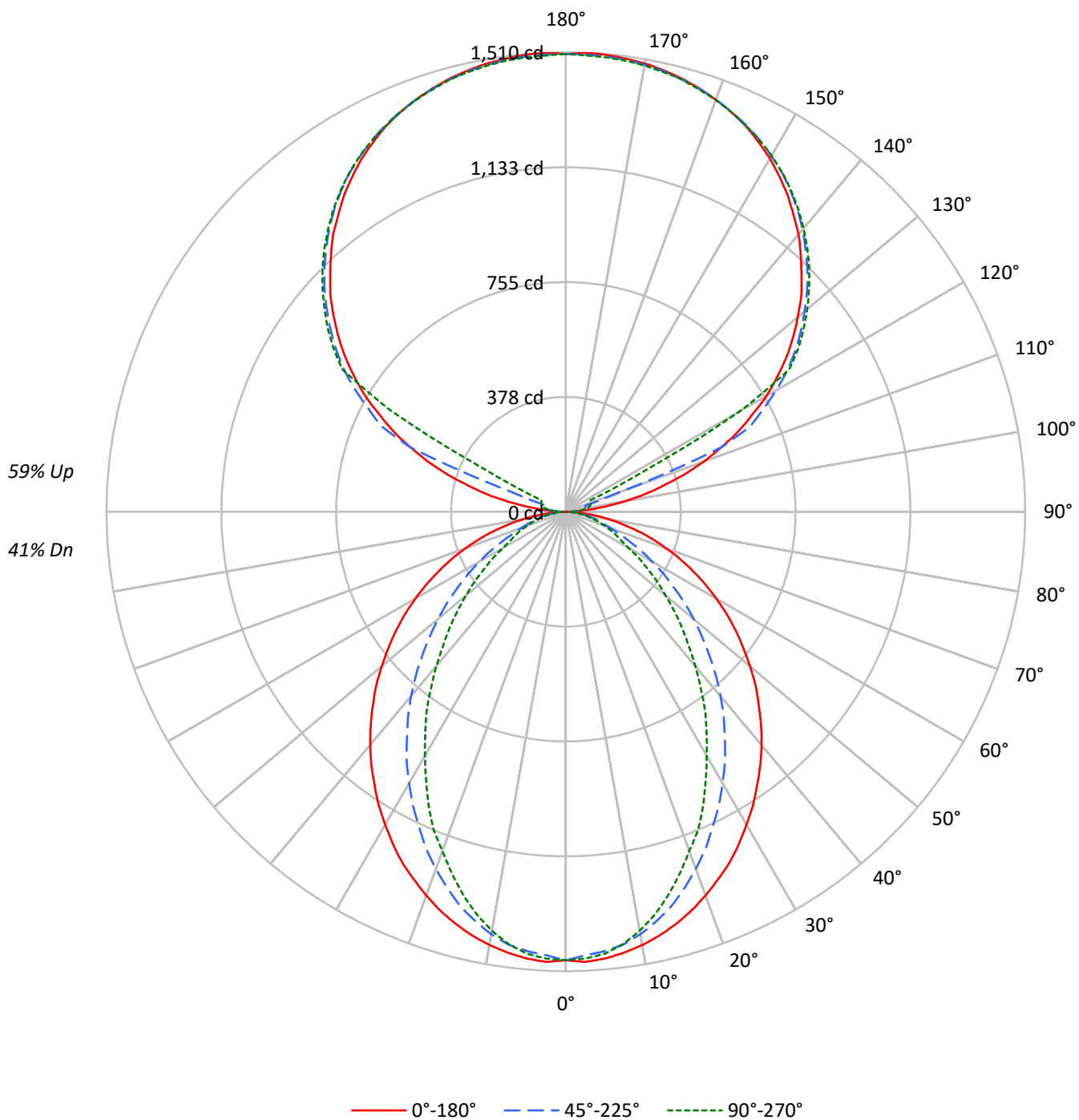
Lumens per Lamp: N/A
Luminaire Lumens: 7445.8 lumens
Efficiency: N/A
Efficacy: 104.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 71.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P922599

CATALOG NUMBER: DFN2DIP-SQ2F0-040D050US940-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P922599

CATALOG NUMBER: DFN2DIP-SQ2F0-040D050US940-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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48
1	96	92	88	85	87	84	81	78	69	67	65	55	54	53	43	42	41
2	88	81	75	70	80	74	69	65	61	57	54	49	47	44	38	36	35
3	80	71	64	59	73	65	59	54	54	50	46	44	41	38	34	32	30
4	74	63	56	50	67	58	52	46	48	43	40	39	36	33	31	28	26
5	68	57	49	43	62	52	45	40	43	38	34	35	32	29	28	25	23
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	21
7	58	46	38	33	53	42	36	31	36	30	27	29	25	23	23	21	19
8	54	42	34	29	49	39	32	27	33	27	24	27	23	20	21	19	17
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15
10	47	35	28	23	43	32	26	22	28	23	19	23	19	17	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3242	3242	3242
5°	3241	3183	3206
10°	3204	3114	3097
15°	3154	3004	2932
20°	3090	2856	2730
25°	3024	2690	2536
30°	2938	2522	2291
35°	2854	2341	2076
40°	2767	2155	1830
45°	2667	1950	1608
50°	2564	1743	1390
55°	2455	1523	1182
60°	2329	1294	969
65°	2183	1062	867
70°	2007	846	778
75°	1784	732	699
80°	1465	594	593
85°	953	369	421

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2667 cd/sqm

TEST NUMBER: P922599

CATALOG NUMBER: DFN2DIP-SQ2F0-040D050US940-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	1.9
10°-20°	379.3	5.1
20°-30°	532.5	7.2
30°-40°	580.5	7.8
40°-50°	533.5	7.2
50°-60°	419.0	5.6
60°-70°	272.7	3.7
70°-80°	140.4	1.9
80°-90°	38.5	0.5
90°-100°	49.6	0.7
100°-110°	185.0	2.5
110°-120°	490.6	6.6
120°-130°	813.6	10.9
130°-140°	864.3	11.6
140°-150°	803.2	10.8
150°-160°	645.8	8.7
160°-170°	416.1	5.6
170°-180°	143.2	1.9
0°-30°	1049.9	14.1
0°-40°	1630.4	21.9
0°-60°	2582.9	34.7
0°-90°	3034.5	40.8
90°-120°	725.2	9.7
90°-150°	3206.2	43.1
90°-180°	4411.0	59.2
0°-180°	7445.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1474	1474	1474	1474	1474	
5°	1474	1468	1450	1462	1458	140
15°	1402	1387	1342	1317	1304	395
25°	1273	1230	1142	1087	1067	585
35°	1097	1029	911	827	798	686
45°	896	807	667	572	540	692
55°	682	578	434	354	328	609
65°	460	352	232	187	183	456
75°	245	152	107	97	96	260
85°	57	29	25	25	25	66
90°	1	13	22	27	29	7
95°	71	35	42	48	47	84
105°	331	364	66	78	83	354
115°	626	644	672	168	89	616
125°	885	899	920	928	931	789
135°	1095	1113	1122	1134	1131	846
145°	1271	1270	1288	1296	1290	795
155°	1399	1389	1402	1409	1400	645
165°	1474	1468	1471	1478	1471	416
175°	1508	1500	1502	1510	1499	144
180°	1505	1505	1505	1505	1505	

TEST NUMBER: P922599

CATALOG NUMBER: DFN2DIP-SQ2F0-040D050US940-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1474.2	1474.2	1474.2	1474.2	1474.2
2.5°	1480.9	1474.2	1459.5	1472.9	1470.2
5°	1474.2	1467.5	1450.1	1462.1	1458.2
7.5°	1462.1	1454.2	1435.6	1440.7	1434.1
10°	1446.2	1436.8	1410.2	1406.0	1398.2
12.5°	1426.2	1414.2	1378.0	1370.1	1355.4
15°	1402.1	1387.4	1342.1	1316.8	1303.5
17.5°	1374.1	1352.7	1296.6	1267.4	1246.0
20°	1342.1	1315.4	1248.7	1215.4	1186.0
22.5°	1307.4	1276.8	1199.3	1154.0	1134.1
25°	1272.7	1230.0	1141.9	1087.4	1067.2
27.5°	1231.5	1186.0	1088.6	1025.9	995.1
30°	1187.4	1136.6	1029.8	961.9	925.9
32.5°	1144.7	1083.2	973.9	893.9	860.4
35°	1096.7	1028.6	911.2	827.2	797.7
37.5°	1050.0	976.5	852.5	760.4	727.1
40°	1000.6	920.6	791.1	696.4	661.7
42.5°	949.8	864.5	729.8	631.0	597.7
45°	896.5	807.1	667.1	572.3	540.3
47.5°	845.9	751.2	607.1	512.3	483.0
50°	789.8	695.1	548.3	456.2	428.3
52.5°	735.0	635.0	492.3	404.2	378.9
55°	681.7	577.6	433.5	353.6	328.2
57.5°	627.1	520.3	381.6	306.8	285.5
60°	571.0	464.2	326.8	258.9	237.6
62.5°	516.4	409.7	280.1	216.2	205.5
65°	460.3	352.1	232.1	186.8	182.7
67.5°	407.0	298.8	186.8	164.1	160.1
70°	350.9	246.8	154.7	141.4	136.0
72.5°	297.6	198.8	129.4	118.8	116.1
75°	245.4	152.0	106.7	97.4	96.1
77.5°	193.5	108.0	84.1	78.7	76.0
80°	145.3	77.4	63.9	58.8	58.8
82.5°	101.4	52.1	44.1	41.3	41.3
85°	57.3	29.3	25.3	25.3	25.3
87.5°	21.4	10.6	10.6	9.4	9.4
90°	1.1	13.0	21.8	27.3	29.3
92.5°	27.3	22.9	26.1	28.4	29.3
95°	70.7	34.8	42.4	48.0	46.8
97.5°	127.3	38.2	55.5	58.9	59.8
100°	192.8	43.6	62.1	70.7	72.9
102.5°	264.6	262.4	64.3	76.2	79.5
105°	331.0	363.7	66.4	78.4	82.8
107.5°	408.3	435.4	68.7	80.5	85.0
110°	482.4	505.2	190.6	81.7	86.0

TEST NUMBER: P922599

CATALOG NUMBER: DFN2DIP-SQ2F0-040D050US940-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	552.1	571.6	553.1	83.8	87.1
115°	626.1	644.5	671.8	167.7	89.3
117.5°	690.3	712.0	730.7	574.8	289.6
120°	762.1	778.5	798.1	811.2	664.1
122.5°	823.0	840.5	862.4	868.9	870.0
125°	885.1	899.4	920.1	927.6	930.9
127.5°	941.7	957.0	973.5	984.3	985.3
130°	995.1	1012.6	1024.5	1036.5	1035.5
132.5°	1049.6	1063.8	1075.7	1085.6	1084.5
135°	1095.4	1112.9	1122.5	1133.5	1131.3
137.5°	1143.2	1156.3	1167.2	1178.1	1174.9
140°	1190.0	1198.8	1210.7	1220.5	1215.1
142.5°	1229.3	1237.0	1251.1	1259.7	1254.3
145°	1270.7	1269.5	1288.0	1295.7	1290.2
147.5°	1306.5	1303.2	1321.8	1327.2	1322.9
150°	1341.4	1333.8	1351.2	1357.7	1352.3
152.5°	1370.7	1362.1	1378.4	1385.0	1377.3
155°	1399.1	1389.4	1402.4	1408.9	1400.3
157.5°	1421.9	1413.3	1423.1	1430.7	1421.9
160°	1441.6	1435.0	1441.6	1448.0	1440.5
162.5°	1458.9	1452.5	1457.9	1465.5	1455.7
165°	1474.2	1467.8	1471.0	1478.5	1471.0
167.5°	1486.2	1479.6	1483.0	1490.6	1480.8
170°	1496.0	1489.4	1491.7	1499.2	1489.4
172.5°	1502.5	1496.0	1498.3	1505.8	1496.0
175°	1508.0	1500.3	1502.5	1510.1	1499.2
177.5°	1510.1	1502.5	1503.7	1511.3	1501.5
180°	1504.7	1504.7	1504.7	1504.7	1504.7



TEST NUMBER: P922599

CATALOG NUMBER: DFN2DIP-SQ2F0-040D050US940-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	10.19	10.95	11.23	11.99	13.39	6.15	6.91	7.19	7.95	9.35
	3H	11.84	12.52	12.89	13.57	14.99	7.31	7.99	8.36	9.04	10.46
	4H	12.43	13.08	13.49	14.13	15.56	7.75	8.39	8.81	9.44	10.87
	6H	12.84	13.43	13.91	14.48	15.92	8.05	8.64	9.12	9.70	11.14
	8H	12.95	13.52	14.03	14.59	16.02	8.13	8.69	9.20	9.76	11.20
	12H	13.00	13.54	14.08	14.60	16.06	8.16	8.70	9.24	9.76	11.22
4H	2H	10.19	10.84	11.26	11.89	13.32	6.73	7.37	7.79	8.42	9.85
	3H	11.99	12.53	13.07	13.61	15.05	8.05	8.58	9.12	9.66	11.10
	4H	12.67	13.16	13.75	14.23	15.69	8.58	9.07	9.66	10.14	11.60
	6H	13.16	13.58	14.25	14.67	16.13	8.97	9.39	10.06	10.49	11.94
	8H	13.32	13.72	14.41	14.80	16.27	9.09	9.48	10.18	10.57	12.04
	12H	13.40	13.76	14.51	14.86	16.33	9.14	9.50	10.25	10.60	12.07
8H	4H	12.63	13.02	13.72	14.10	15.57	8.84	9.23	9.93	10.32	11.79
	6H	13.17	13.49	14.28	14.62	16.09	9.33	9.66	10.44	10.78	12.25
	8H	13.37	13.66	14.49	14.76	16.25	9.51	9.79	10.63	10.90	12.39
	12H	13.49	13.74	14.61	14.85	16.37	9.61	9.86	10.73	10.97	12.49
12H	4H	12.57	12.93	13.68	14.03	15.50	8.84	9.19	9.95	10.29	11.77
	6H	13.14	13.43	14.26	14.54	16.02	9.38	9.66	10.49	10.77	12.26
	8H	13.35	13.59	14.47	14.70	16.23	9.57	9.82	10.69	10.92	12.45

END OF REPORT