

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: P922739

Luminaire Tested: DFN2DIP-SQ3F0-040D110US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922739
REPORT IS A COMBINATION OF REPORTS P901508 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D110US940-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

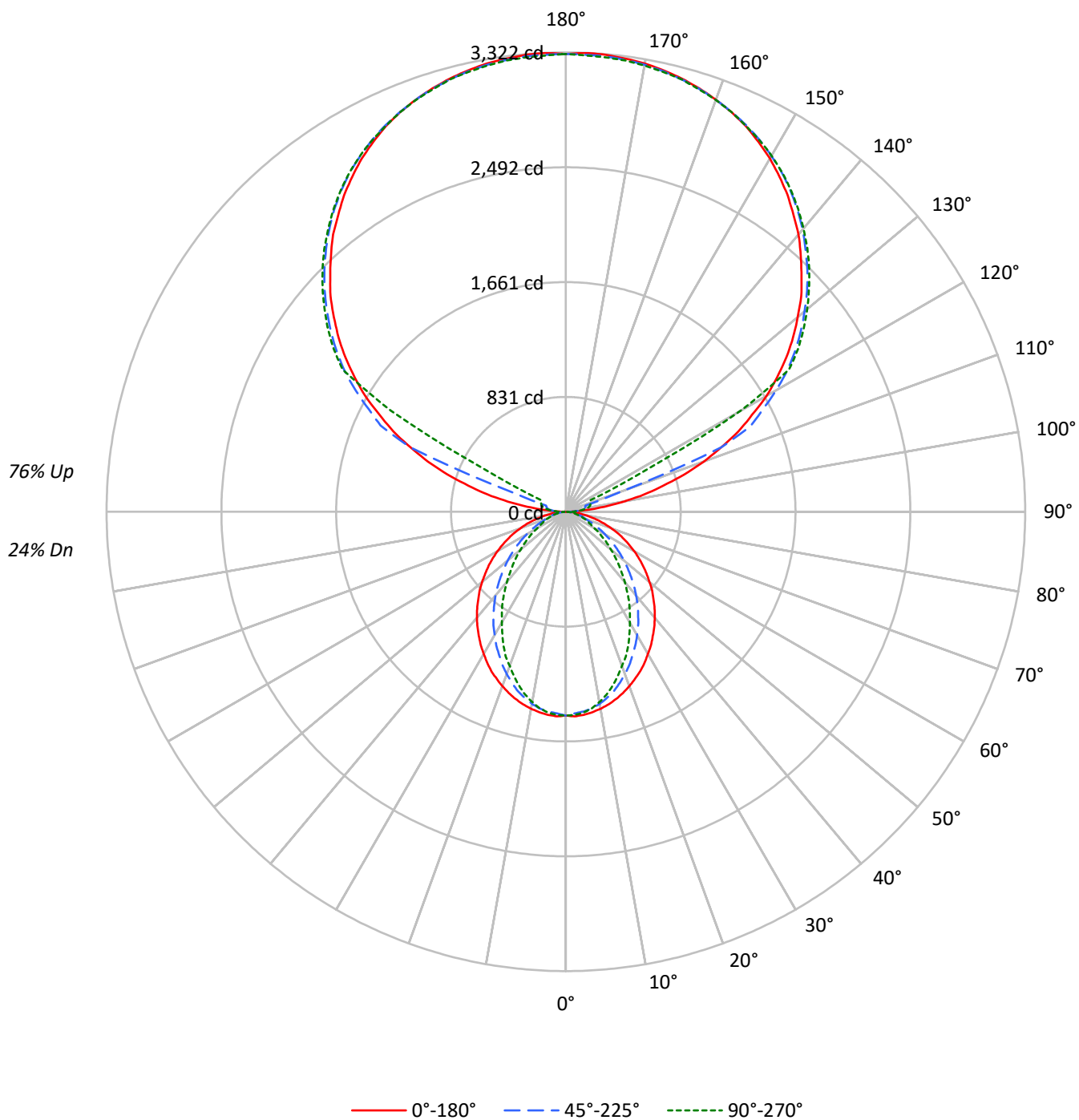
Lumens per Lamp: N/A
Luminaire Lumens: 12742.5 lumens
Efficiency: N/A
Efficacy: 107.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 118.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P922739

CATALOG NUMBER: DFN2DIP-SQ3F0-040D110US940-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P922739

CATALOG NUMBER: DFN2DIP-SQ3F0-040D110US940-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	101	101	101	101		90	90	90	90		69	69	69		50	50	50		32	32	32
1	92	88	84	81		82	78	75	73		60	58	57		44	43	42		29	28	27
2	84	77	71	67		75	69	64	60		53	50	47		39	37	35		25	24	23
3	77	68	61	56		68	61	55	50		47	43	40		34	32	30		23	21	20
4	70	60	53	47		62	54	48	43		42	38	34		31	28	26		20	19	18
5	64	53	46	40		57	48	41	37		37	33	29		28	25	22		19	17	15
6	59	48	40	35		53	43	36	32		34	29	26		25	22	20		17	15	14
7	55	43	36	30		49	39	32	28		30	26	22		23	20	17		15	14	12
8	51	39	32	27		45	35	29	24		28	23	20		21	18	15		14	12	11
9	47	36	28	24		42	32	26	22		25	21	18		19	16	14		13	11	10
10	44	32	26	21		39	29	23	19		23	19	16		18	15	12		12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1689	1689	1689
5°	1691	1661	1672
10°	1673	1627	1617
15°	1649	1573	1533
20°	1617	1497	1429
25°	1585	1413	1329
30°	1542	1327	1202
35°	1500	1235	1091
40°	1457	1139	963
45°	1407	1033	848
50°	1355	926	735
55°	1301	812	626
60°	1239	693	515
65°	1166	573	463
70°	1079	460	418
75°	968	403	379
80°	809	334	327
85°	549	218	242

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2269 cd/sqm

TEST NUMBER: P922739

CATALOG NUMBER: DFN2DIP-SQ3F0-040D110US940-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	1.1
10°-20°	379.3	3.0
20°-30°	532.5	4.2
30°-40°	580.5	4.6
40°-50°	533.5	4.2
50°-60°	419.0	3.3
60°-70°	272.7	2.1
70°-80°	140.4	1.1
80°-90°	41.7	0.3
90°-100°	109.2	0.9
100°-110°	406.9	3.2
110°-120°	1079.2	8.5
120°-130°	1789.9	14.0
130°-140°	1901.3	14.9
140°-150°	1767.1	13.9
150°-160°	1420.7	11.1
160°-170°	915.4	7.2
170°-180°	315.1	2.5
0°-30°	1049.9	8.2
0°-40°	1630.4	12.8
0°-60°	2582.9	20.3
0°-90°	3037.6	23.8
90°-120°	1595.3	12.5
90°-150°	7053.7	55.4
90°-180°	9705.0	76.2
0°-180°	12742.5	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°	2	29	48	60	65	12
95°	156	76	93	106	103	184
105°	728	800	146	172	182	778
115°	1377	1418	1478	369	196	1356
125°	1947	1979	2024	2041	2048	1737
135°	2410	2448	2470	2494	2489	1862
145°	2796	2793	2834	2850	2838	1748
155°	3078	3057	3085	3100	3080	1418
165°	3243	3229	3236	3253	3236	916
175°	3317	3301	3306	3322	3298	316
180°	3310	3310	3310	3310	3310	

TEST NUMBER: P922739

CATALOG NUMBER: DFN2DIP-SQ3F0-040D110US940-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°	2.3	28.7	47.8	60.0	64.6
92.5°	60.0	50.4	57.4	62.3	64.6
95°	155.6	76.5	93.3	105.5	103.0
97.5°	280.2	83.9	122.0	129.4	131.7
100°	424.1	95.9	136.5	155.6	160.4
102.5°	581.9	577.4	141.3	167.6	175.0
105°	728.2	800.1	146.2	172.4	182.1
107.5°	898.3	958.0	151.1	177.2	186.9
110°	1061.2	1111.3	419.3	179.8	189.1

TEST NUMBER: P922739

CATALOG NUMBER: DFN2DIP-SQ3F0-040D110US940-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1214.6	1257.5	1216.8	184.3	191.7
115°	1377.2	1417.9	1478.0	368.9	196.5
117.5°	1518.7	1566.5	1607.4	1264.6	637.1
120°	1676.8	1712.6	1755.9	1784.6	1461.2
122.5°	1810.8	1849.1	1897.2	1911.5	1914.1
125°	1947.3	1978.6	2024.1	2040.9	2048.0
127.5°	2071.9	2105.4	2141.5	2165.4	2167.7
130°	2189.3	2227.8	2253.9	2280.4	2278.1
132.5°	2309.1	2340.4	2366.6	2388.2	2385.9
135°	2409.8	2448.2	2469.5	2493.8	2488.9
137.5°	2515.1	2543.8	2567.9	2591.8	2584.7
140°	2618.1	2637.3	2663.5	2685.1	2673.2
142.5°	2704.5	2721.2	2752.3	2771.3	2759.4
145°	2795.5	2792.9	2833.6	2850.4	2838.5
147.5°	2874.3	2867.2	2907.9	2919.8	2910.5
150°	2951.1	2934.4	2972.7	2987.0	2975.0
152.5°	3015.7	2996.6	3032.4	3047.0	3030.2
155°	3078.0	3056.6	3085.3	3099.6	3080.5
157.5°	3128.3	3109.2	3130.9	3147.6	3128.3
160°	3171.5	3157.0	3171.5	3185.7	3169.0
162.5°	3209.6	3195.4	3207.4	3224.2	3202.6
165°	3243.2	3229.0	3236.1	3252.9	3236.1
167.5°	3269.6	3255.2	3262.6	3279.4	3257.8
170°	3291.3	3276.8	3281.6	3298.4	3276.8
172.5°	3305.5	3291.3	3296.1	3312.9	3291.3
175°	3317.4	3300.7	3305.5	3322.3	3298.4
177.5°	3322.3	3305.5	3308.1	3324.8	3303.3
180°	3310.4	3310.4	3310.4	3310.4	3310.4

TEST NUMBER: P922739

CATALOG NUMBER: DFN2DIP-SQ3F0-040D110US940-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	5.77	6.43	6.93	7.57	9.17	1.73	2.39	2.89	3.53	5.13
	3H	7.43	8.02	8.60	9.17	10.79	2.90	3.49	4.07	4.64	6.25
	4H	8.03	8.59	9.20	9.74	11.36	3.34	3.90	4.51	5.04	6.67
	6H	8.44	8.95	9.62	10.10	11.73	3.65	4.16	4.83	5.31	6.94
	8H	8.56	9.04	9.74	10.21	11.84	3.73	4.21	4.91	5.38	7.01
	12H	8.61	9.07	9.80	10.23	11.88	3.76	4.22	4.95	5.38	7.03
4H	2H	5.77	6.32	6.95	7.47	9.10	2.30	2.86	3.49	4.01	5.63
	3H	7.58	8.04	8.76	9.21	10.85	3.63	4.09	4.82	5.27	6.90
	4H	8.26	8.68	9.44	9.85	11.50	4.17	4.59	5.35	5.76	7.41
	6H	8.76	9.12	9.95	10.31	11.95	4.57	4.93	5.76	6.12	7.76
	8H	8.93	9.27	10.12	10.44	12.10	4.69	5.03	5.88	6.21	7.87
	12H	9.01	9.32	10.22	10.51	12.17	4.74	5.05	5.95	6.24	7.90
8H	4H	8.21	8.55	9.40	9.73	11.39	4.43	4.77	5.62	5.95	7.61
	6H	8.76	9.04	9.97	10.26	11.92	4.93	5.21	6.14	6.43	8.09
	8H	8.98	9.22	10.19	10.42	12.09	5.12	5.36	6.33	6.56	8.24
	12H	9.10	9.32	10.32	10.51	12.22	5.23	5.44	6.44	6.63	8.34
12H	4H	8.15	8.46	9.36	9.65	11.31	4.43	4.74	5.63	5.92	7.59
	6H	8.74	8.98	9.95	10.18	11.85	4.98	5.23	6.20	6.42	8.10
	8H	8.95	9.16	10.16	10.36	12.06	5.18	5.39	6.40	6.59	8.29

END OF REPORT