

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: P914801

Luminaire Tested: DFN2DIP-SQ3F0-110D100US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914801
REPORT IS A COMBINATION OF REPORTS P901503 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-110D100US927-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

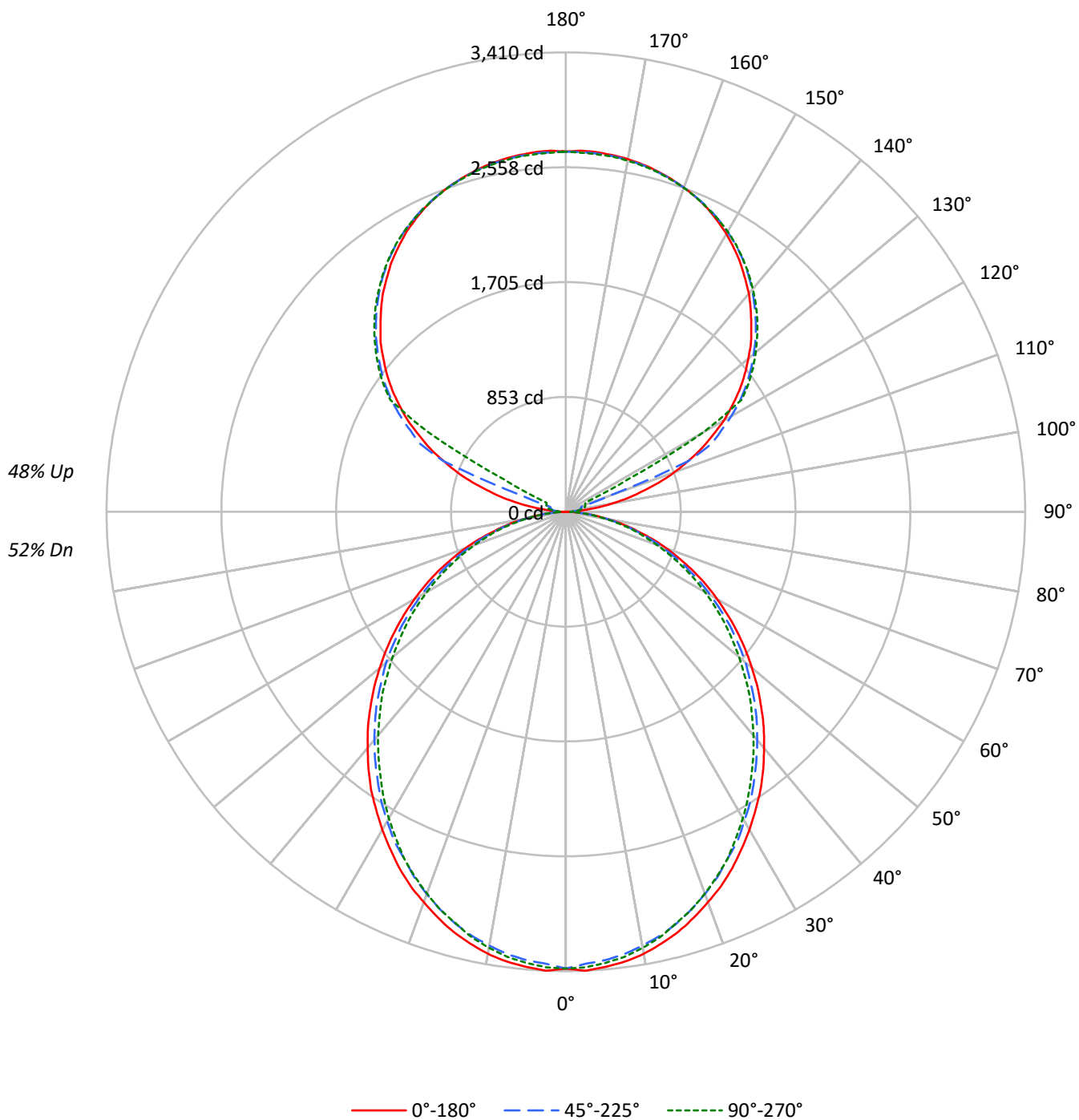
Lumens per Lamp: N/A
Luminaire Lumens: 16469.4 lumens
Efficiency: N/A
Efficacy: 87.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 189.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P914801

CATALOG NUMBER: DFN2DIP-SQ3F0-110D100US927-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P914801

CATALOG NUMBER: DFN2DIP-SQ3F0-110D100US927-FLLONL

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	100	100	100	100	85	85	85	71	71	71	58	58	58
1	98	94	90	87	91	87	84	81	74	72	70	62	61	59	52	50	49
2	90	82	76	71	83	76	71	66	65	61	58	55	52	49	45	43	42
3	82	72	65	59	75	67	61	55	57	53	48	49	45	42	40	38	35
4	75	64	56	50	69	59	52	47	51	46	41	43	39	36	36	33	30
5	69	57	49	43	63	53	46	40	46	40	36	39	34	31	32	29	27
6	63	51	43	37	58	48	40	35	41	35	31	35	31	27	29	26	23
7	58	46	38	33	54	43	36	31	37	32	27	32	27	24	27	23	21
8	54	42	34	29	50	39	32	27	34	28	24	29	25	22	25	21	19
9	51	38	31	26	47	36	29	24	31	26	22	27	22	19	23	19	17
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3885	3885	3885
5°	3889	3828	3855
10°	3855	3774	3802
15°	3796	3709	3719
20°	3717	3621	3634
25°	3638	3515	3537
30°	3540	3416	3413
35°	3447	3300	3282
40°	3332	3183	3157
45°	3218	3065	3029
50°	3093	2942	2881
55°	2963	2799	2745
60°	2814	2629	2589
65°	2652	2454	2404
70°	2446	2239	2206
75°	2161	1982	2021
80°	1816	1654	1670
85°	1279	1096	1094

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3218 cd/sqm

TEST NUMBER: P914801

CATALOG NUMBER: DFN2DIP-SQ3F0-110D100US927-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	319.1	1.9
10°-20°	897.9	5.5
20°-30°	1319.6	8.0
30°-40°	1532.6	9.3
40°-50°	1530.7	9.3
50°-60°	1334.7	8.1
60°-70°	986.7	6.0
70°-80°	558.2	3.4
80°-90°	152.0	0.9
90°-100°	88.1	0.5
100°-110°	328.6	2.0
110°-120°	871.6	5.3
120°-130°	1445.6	8.8
130°-140°	1535.6	9.3
140°-150°	1427.1	8.7
150°-160°	1147.4	7.0
160°-170°	739.3	4.5
170°-180°	254.5	1.5
0°-30°	2536.6	15.4
0°-40°	4069.2	24.7
0°-60°	6934.6	42.1
0°-90°	8631.5	52.4
90°-120°	1288.4	7.8
90°-150°	5696.7	34.6
90°-180°	7838.0	47.6
0°-180°	16469.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3391	3391	3391	3391	3391	
5°	3391	3378	3342	3368	3362	322
15°	3228	3208	3166	3179	3163	909
25°	2921	2895	2840	2846	2840	1344
35°	2520	2488	2436	2416	2400	1574
45°	2051	2028	1979	1943	1930	1583
55°	1552	1532	1493	1454	1438	1388
65°	1047	1027	994	965	949	1035
75°	548	541	525	505	512	585
85°	134	130	127	117	114	149
90°	2	23	39	48	52	15
95°	126	62	75	85	83	149
105°	588	646	118	139	147	628
115°	1112	1145	1194	298	159	1095
125°	1573	1598	1635	1648	1654	1403
135°	1946	1977	1994	2014	2010	1503
145°	2258	2256	2288	2302	2292	1412
155°	2486	2469	2492	2503	2488	1146
165°	2619	2608	2614	2627	2614	740
175°	2679	2666	2670	2683	2664	255
180°	2674	2674	2674	2674	2674	

TEST NUMBER: P914801

CATALOG NUMBER: DFN2DIP-SQ3F0-110D100US927-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3390.7	3390.7	3390.7	3390.7	3390.7
2.5°	3410.3	3394.1	3358.1	3390.7	3384.4
5°	3390.7	3377.9	3341.9	3367.8	3361.6
7.5°	3367.8	3348.5	3312.5	3338.8	3332.2
10°	3332.2	3309.3	3270.3	3296.2	3286.5
12.5°	3283.1	3263.7	3224.7	3240.9	3234.3
15°	3227.7	3208.3	3165.8	3178.9	3162.7
17.5°	3159.2	3139.9	3097.3	3113.6	3097.3
20°	3084.2	3064.8	3019.2	3028.8	3016.1
22.5°	3009.5	2980.0	2937.5	2937.5	2930.9
25°	2921.2	2895.3	2840.0	2846.2	2840.0
27.5°	2823.3	2800.5	2758.3	2748.6	2732.4
30°	2725.8	2699.5	2650.7	2641.1	2627.9
32.5°	2621.3	2602.0	2549.7	2530.0	2516.8
35°	2520.3	2487.8	2435.6	2415.8	2399.6
37.5°	2406.2	2376.8	2324.6	2301.7	2285.4
40°	2288.9	2262.6	2210.4	2181.4	2168.2
42.5°	2174.8	2148.5	2096.6	2063.7	2044.4
45°	2051.0	2028.1	1978.9	1943.4	1930.2
47.5°	1930.2	1907.4	1855.1	1819.2	1799.8
50°	1802.9	1786.7	1741.0	1695.3	1679.1
52.5°	1679.1	1656.2	1614.1	1578.0	1555.2
55°	1552.1	1532.4	1493.3	1454.2	1438.0
57.5°	1424.8	1408.6	1366.0	1326.9	1313.8
60°	1297.5	1284.8	1239.1	1203.1	1193.4
62.5°	1173.7	1150.9	1118.3	1085.8	1072.7
65°	1046.7	1027.0	994.5	965.1	948.9
67.5°	916.3	899.8	870.7	847.9	834.7
70°	795.6	782.4	753.0	730.2	717.4
72.5°	671.8	658.6	642.4	619.6	609.8
75°	547.6	541.4	524.7	505.4	512.0
77.5°	436.9	423.7	417.2	407.5	397.8
80°	326.2	322.7	316.2	306.5	299.9
82.5°	221.7	221.7	218.6	205.5	205.5
85°	133.6	130.4	127.3	117.2	114.2
87.5°	58.8	52.2	45.6	36.0	32.5
90°	1.8	23.2	38.6	48.5	52.1
92.5°	48.5	40.6	46.4	50.3	52.1
95°	125.6	61.8	75.3	85.2	83.2
97.5°	226.2	67.7	98.5	104.5	106.4
100°	342.5	77.4	110.3	125.6	129.6
102.5°	470.0	466.4	114.2	135.3	141.2
105°	588.1	646.2	118.1	139.2	147.0
107.5°	725.5	773.7	122.0	143.1	150.9
110°	857.1	897.5	338.6	145.2	152.7

TEST NUMBER: P914801

CATALOG NUMBER: DFN2DIP-SQ3F0-110D100US927-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	980.9	1015.6	982.8	148.9	154.9
115°	1112.3	1145.2	1193.7	297.9	158.8
117.5°	1226.5	1265.1	1298.1	1021.4	514.6
120°	1354.2	1383.1	1418.1	1441.3	1180.1
122.5°	1462.4	1493.4	1532.2	1543.7	1545.8
125°	1572.7	1598.0	1634.7	1648.3	1654.0
127.5°	1673.3	1700.4	1729.6	1748.9	1750.7
130°	1768.1	1799.2	1820.4	1841.7	1839.8
132.5°	1864.9	1890.1	1911.3	1928.7	1926.9
135°	1946.2	1977.2	1994.5	2014.0	2010.1
137.5°	2031.2	2054.4	2073.9	2093.3	2087.5
140°	2114.3	2130.0	2151.1	2168.6	2158.9
142.5°	2184.2	2197.7	2222.8	2238.1	2228.6
145°	2257.7	2255.7	2288.5	2302.1	2292.4
147.5°	2321.3	2315.6	2348.4	2358.1	2350.6
150°	2383.4	2369.8	2400.9	2412.4	2402.7
152.5°	2435.5	2420.1	2449.1	2460.8	2447.2
155°	2485.9	2468.6	2491.8	2503.3	2487.9
157.5°	2526.5	2511.1	2528.6	2542.1	2526.5
160°	2561.4	2549.7	2561.4	2572.9	2559.4
162.5°	2592.2	2580.7	2590.4	2603.9	2586.5
165°	2619.3	2607.8	2613.6	2627.1	2613.6
167.5°	2640.7	2628.9	2635.0	2648.5	2631.0
170°	2658.1	2646.4	2650.3	2663.9	2646.4
172.5°	2669.6	2658.1	2662.0	2675.6	2658.1
175°	2679.2	2665.7	2669.6	2683.2	2663.9
177.5°	2683.2	2669.6	2671.7	2685.3	2667.7
180°	2673.5	2673.5	2673.5	2673.5	2673.5

TEST NUMBER: P914801

CATALOG NUMBER: DFN2DIP-SQ3F0-110D100US927-FLLONL

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	12.17	13.06	13.11	14.01	15.25	11.73	12.61	12.66	13.57	14.80
	3H	13.83	14.62	14.78	15.59	16.85	13.34	14.13	14.29	15.10	16.36
	4H	14.42	15.17	15.38	16.13	17.40	13.92	14.67	14.88	15.64	16.91
	6H	14.81	15.51	15.79	16.48	17.76	14.31	15.00	15.29	15.98	17.26
	8H	14.92	15.58	15.90	16.57	17.84	14.42	15.07	15.40	16.06	17.34
	12H	14.97	15.59	15.95	16.57	17.88	14.46	15.08	15.44	16.07	17.37
4H	2H	12.63	13.38	13.60	14.35	15.62	12.28	13.03	13.25	14.00	15.26
	3H	14.50	15.12	15.47	16.12	17.40	14.09	14.71	15.07	15.71	16.99
	4H	15.21	15.78	16.19	16.77	18.08	14.78	15.36	15.77	16.35	17.65
	6H	15.72	16.21	16.72	17.23	18.53	15.29	15.78	16.29	16.79	18.10
	8H	15.87	16.33	16.87	17.33	18.65	15.43	15.89	16.43	16.90	18.22
	12H	15.94	16.35	16.96	17.38	18.70	15.49	15.91	16.51	16.93	18.25
8H	4H	15.40	15.86	16.40	16.87	18.19	15.02	15.48	16.02	16.49	17.81
	6H	16.03	16.41	17.05	17.46	18.77	15.64	16.02	16.67	17.07	18.39
	8H	16.24	16.58	17.28	17.62	18.95	15.85	16.19	16.89	17.22	18.56
	12H	16.37	16.67	17.41	17.70	19.08	15.96	16.26	17.00	17.29	18.67
12H	4H	15.39	15.80	16.41	16.83	18.15	15.02	15.43	16.04	16.46	17.78
	6H	16.06	16.39	17.09	17.43	18.76	15.68	16.02	16.72	17.05	18.39
	8H	16.29	16.59	17.33	17.62	19.00	15.91	16.21	16.95	17.24	18.62