

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: P915047

Luminaire Tested: DFN2DIP-SQ4F0-110D100US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915047
REPORT IS A COMBINATION OF REPORTS P901662 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-110D100US927-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

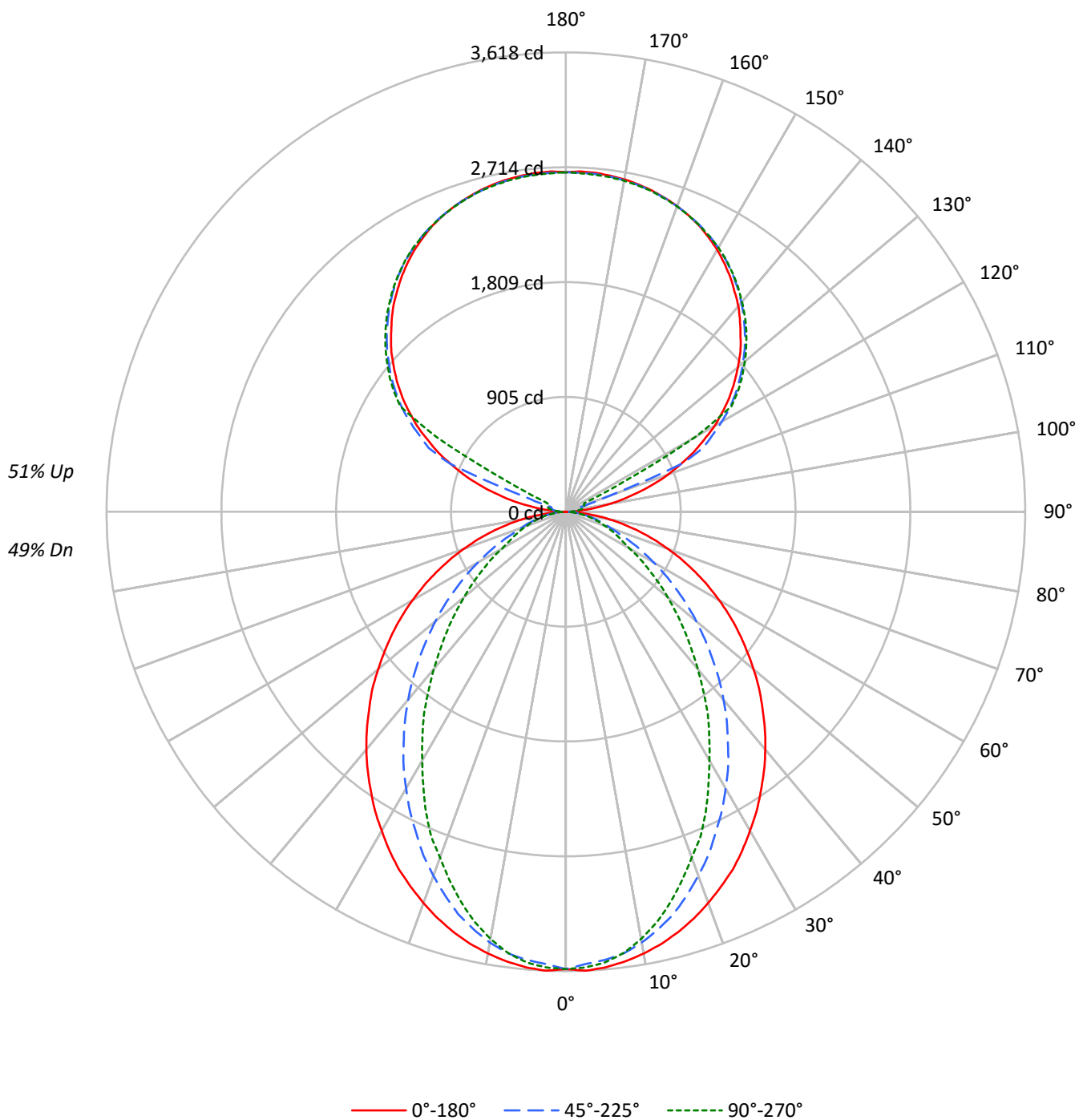
Lumens per Lamp: N/A
Luminaire Lumens: 15249.5 lumens
Efficiency: N/A
Efficacy: 84.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 179.8
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: P915047

CATALOG NUMBER: DFN2DIP-SQ4F0-110D100US927-RLLONL

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	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	83	81	73	71	69	61	59	58	49	48	47
2	90	82	77	72	82	76	71	67	65	61	58	54	51	49	44	42	40
3	82	73	66	60	75	68	61	56	57	53	49	48	45	42	39	37	35
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	35	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	36	42	36	32	35	31	28	29	26	24
7	59	47	39	34	55	44	37	32	38	33	29	32	28	25	27	24	21
8	55	43	35	30	51	40	33	29	35	29	26	30	25	22	25	22	19
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	27	23	29	24	21	25	21	18	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2527	2527	2527
5°	2531	2487	2504
10°	2506	2439	2423
15°	2471	2359	2298
20°	2426	2248	2144
25°	2379	2124	1995
30°	2316	1997	1806
35°	2255	1860	1640
40°	2192	1718	1450
45°	2119	1561	1277
50°	2044	1402	1109
55°	1966	1232	946
60°	1875	1054	780
65°	1770	874	703
70°	1643	705	637
75°	1484	623	581
80°	1253	524	507
85°	873	353	386

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2119 cd/sqm

TEST NUMBER: P915047

CATALOG NUMBER: DFN2DIP-SQ4F0-110D100US927-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	337.5	2.2
10°-20°	926.6	6.1
20°-30°	1300.9	8.5
30°-40°	1418.1	9.3
40°-50°	1303.4	8.5
50°-60°	1023.6	6.7
60°-70°	666.3	4.4
70°-80°	343.0	2.2
80°-90°	92.3	0.6
90°-100°	88.1	0.6
100°-110°	328.6	2.2
110°-120°	871.6	5.7
120°-130°	1445.6	9.5
130°-140°	1535.6	10.1
140°-150°	1427.1	9.4
150°-160°	1147.4	7.5
160°-170°	739.3	4.8
170°-180°	254.5	1.7
0°-30°	2565.1	16.8
0°-40°	3983.1	26.1
0°-60°	6310.1	41.4
0°-90°	7411.6	48.6
90°-120°	1288.4	8.4
90°-150°	5696.7	37.4
90°-180°	7838.0	51.4
0°-180°	15249.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3602	3602	3602	3602	3602	
5°	3602	3585	3543	3572	3562	341
15°	3426	3390	3279	3217	3184	965
25°	3109	3005	2790	2656	2607	1430
35°	2679	2513	2226	2021	1949	1677
45°	2190	1972	1630	1398	1320	1691
55°	1665	1411	1059	864	802	1488
65°	1124	860	567	456	446	1115
75°	600	371	261	238	235	634
85°	140	72	62	62	62	161
90°	2	23	39	48	52	14
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: P915047

CATALOG NUMBER: DFN2DIP-SQ4F0-110D100US927-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3601.5	3601.5	3601.5	3601.5	3601.5
2.5°	3617.7	3601.5	3565.5	3598.4	3591.8
5°	3601.5	3585.3	3542.7	3572.1	3562.4
7.5°	3572.1	3552.7	3507.1	3519.9	3503.6
10°	3533.0	3510.2	3445.2	3435.1	3415.8
12.5°	3484.3	3454.9	3366.7	3347.3	3311.3
15°	3425.5	3389.5	3278.8	3217.0	3184.4
17.5°	3357.0	3304.8	3167.9	3096.2	3044.0
20°	3278.8	3213.5	3050.6	2969.3	2897.4
22.5°	3194.2	3119.1	2930.0	2819.3	2770.5
25°	3109.4	3005.0	2789.9	2656.4	2607.3
27.5°	3008.5	2897.4	2659.5	2506.3	2431.3
30°	2900.9	2776.8	2516.0	2350.0	2261.8
32.5°	2796.5	2646.4	2379.4	2183.7	2102.1
35°	2679.2	2512.9	2226.3	2020.9	1948.9
37.5°	2565.2	2385.7	2082.7	1857.6	1776.4
40°	2444.4	2249.1	1932.7	1701.3	1616.6
42.5°	2320.6	2112.1	1783.0	1541.6	1460.3
45°	2190.3	1971.7	1629.8	1398.0	1319.9
47.5°	2066.5	1835.2	1483.1	1251.4	1179.9
50°	1929.5	1698.2	1339.7	1114.5	1046.4
52.5°	1795.7	1551.2	1202.7	987.6	925.7
55°	1665.3	1411.2	1059.1	863.8	801.9
57.5°	1531.9	1271.1	932.2	749.7	697.4
60°	1395.0	1134.2	798.4	632.5	580.3
62.5°	1261.5	1000.8	684.4	528.1	502.1
65°	1124.5	860.3	567.1	456.5	446.4
67.5°	994.2	730.0	456.5	400.8	391.1
70°	857.2	603.1	377.9	345.5	332.3
72.5°	726.8	485.5	316.1	290.1	283.5
75°	599.6	371.4	260.7	237.9	234.8
77.5°	472.7	263.9	205.4	192.3	185.7
80°	355.1	189.2	156.3	143.5	143.5
82.5°	247.6	127.2	107.6	101.0	101.0
85°	140.1	71.6	61.9	61.9	61.9
87.5°	52.2	25.9	25.9	22.8	22.8
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: P915047

CATALOG NUMBER: DFN2DIP-SQ4F0-110D100US927-RLLONL

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



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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	10.25	11.07	11.22	12.05	13.35	6.21	7.03	7.18	8.01	9.31
	3H	11.93	12.66	12.92	13.66	14.97	7.40	8.13	8.38	9.12	10.44
	4H	12.54	13.23	13.54	14.23	15.55	7.85	8.54	8.85	9.54	10.86
	6H	12.97	13.60	13.98	14.60	15.94	8.17	8.81	9.18	9.81	11.14
	8H	13.09	13.70	14.11	14.72	16.05	8.26	8.87	9.28	9.88	11.22
	12H	13.16	13.73	14.18	14.74	16.10	8.30	8.88	9.32	9.89	11.25
4H	2H	10.26	10.96	11.27	11.95	13.28	6.81	7.50	7.81	8.50	9.82
	3H	12.10	12.67	13.11	13.70	15.04	8.16	8.73	9.17	9.76	11.09
	4H	12.79	13.32	13.82	14.34	15.70	8.70	9.23	9.73	10.25	11.61
	6H	13.31	13.76	14.34	14.81	16.16	9.12	9.57	10.16	10.62	11.97
	8H	13.49	13.91	14.52	14.95	16.32	9.25	9.67	10.29	10.71	12.08
	12H	13.59	13.97	14.64	15.02	16.39	9.32	9.70	10.37	10.75	12.12
8H	4H	12.76	13.18	13.79	14.22	15.59	8.99	9.41	10.02	10.44	11.81
	6H	13.33	13.68	14.39	14.76	16.12	9.51	9.85	10.56	10.93	12.30
	8H	13.55	13.86	14.62	14.92	16.31	9.70	10.00	10.76	11.06	12.45
	12H	13.69	13.96	14.76	15.02	16.45	9.82	10.09	10.88	11.14	12.57
12H	4H	12.71	13.09	13.76	14.14	15.52	8.99	9.37	10.04	10.42	11.80
	6H	13.31	13.61	14.37	14.67	16.06	9.56	9.86	10.62	10.92	12.31
	8H	13.53	13.80	14.60	14.85	16.29	9.77	10.04	10.83	11.09	12.52

END OF REPORT