

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: P925567

Luminaire Tested: DFN2DIP-SQ3F0-070D090US950-RLLONL

Issue Date: 11/21/2024

**Test Information**

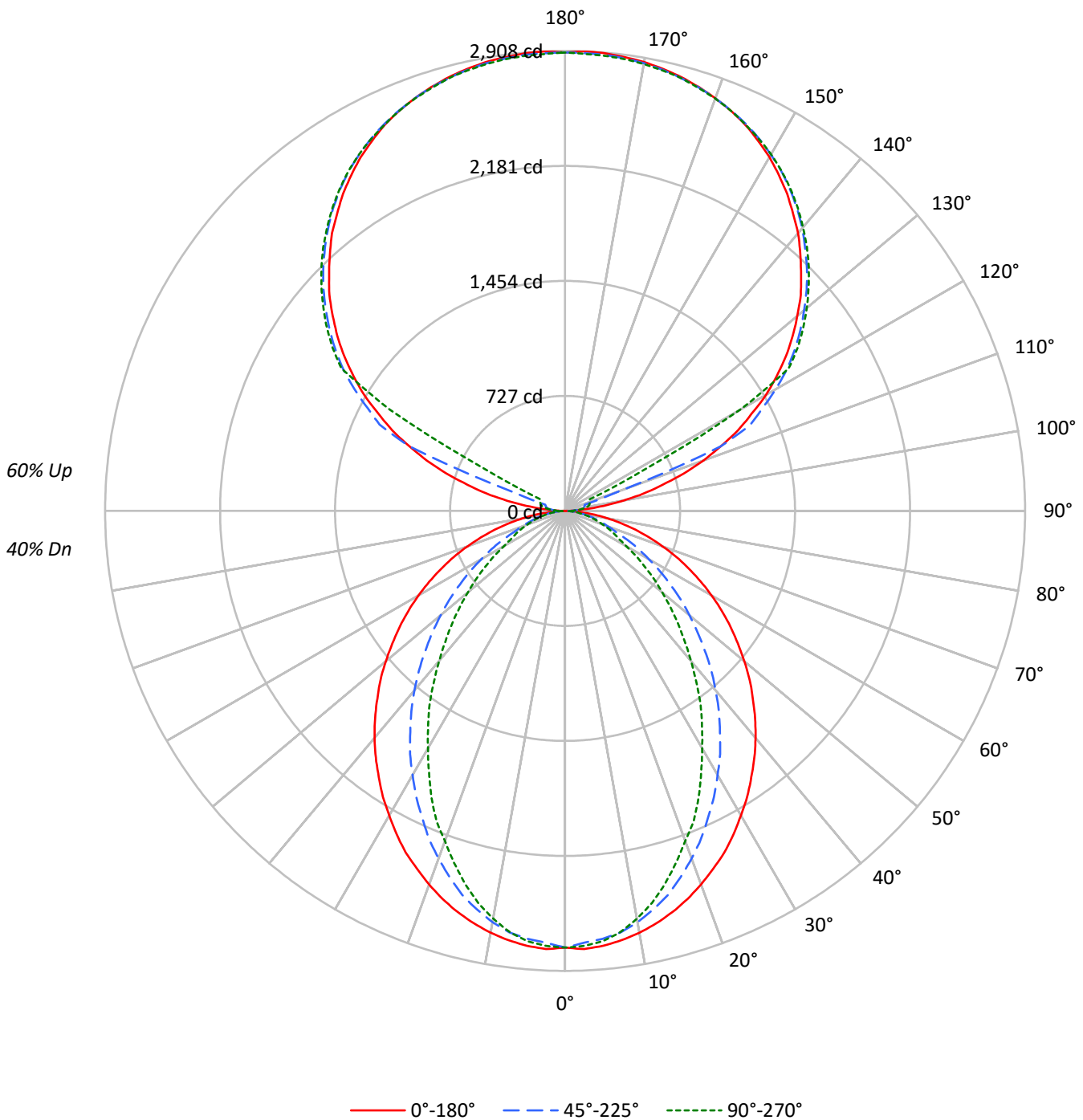
Test Method: LM-79-2019  
Report Number: P925567  
REPORT IS A COMBINATION OF REPORTS P901478 AND P898289  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ3F0-070D090US950-RLLONL  
Description: 3 foot, 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: 14176.4 lumens  
Efficiency: N/A  
Efficacy: 105.7 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: General Diffuse  
  
Input Watts (W): 134.1  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9963  
Total Harmonic Distortion (THDi): 0.065  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				20	
RC	80				70				50				30				10				0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	47	47	47	47	40
1	96	92	88	85	87	84	81	78	69	67	65	55	53	52	42	41	40	40	40	40	40	35
2	88	81	75	70	80	74	69	64	61	57	54	49	46	44	38	36	35	35	35	35	35	30
3	80	71	64	59	73	65	59	54	54	49	46	43	40	38	34	32	30	30	30	30	30	25
4	74	63	56	50	67	58	51	46	48	43	39	39	35	33	30	28	26	26	26	26	26	22
5	68	56	49	43	61	52	45	40	43	38	34	35	31	28	27	25	23	23	23	23	23	20
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	22	20	20	20	20	20	17
7	58	46	38	33	52	42	35	31	35	30	26	29	25	22	23	20	18	18	18	18	18	16
8	54	42	34	29	49	38	32	27	32	27	24	27	23	20	21	18	16	16	16	16	16	14
9	50	38	31	26	45	35	29	24	30	25	21	24	21	18	20	17	15	15	15	15	15	13
10	47	35	28	23	43	32	26	22	27	22	19	23	19	16	18	16	14	14	14	14	14	12

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	3162	3162	3162
5°	3165	3110	3131
10°	3132	3047	3028
15°	3087	2944	2870
20°	3028	2804	2676
25°	2967	2646	2488
30°	2887	2485	2251
35°	2808	2312	2043
40°	2727	2133	1804
45°	2634	1935	1587
50°	2537	1735	1376
55°	2436	1521	1173
60°	2319	1298	965
65°	2183	1072	867
70°	2020	861	783
75°	1813	755	710
80°	1516	627	612
85°	1027	408	454

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2634 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	258.7	1.8
10°-20°	710.1	5.0
20°-30°	997.0	7.0
30°-40°	1086.8	7.7
40°-50°	998.8	7.0
50°-60°	784.4	5.5
60°-70°	510.6	3.6
70°-80°	262.8	1.9
80°-90°	72.2	0.5
90°-100°	95.6	0.7
100°-110°	356.2	2.5
110°-120°	944.7	6.7
120°-130°	1566.8	11.1
130°-140°	1664.3	11.7
140°-150°	1546.8	10.9
150°-160°	1243.6	8.8
160°-170°	801.3	5.7
170°-180°	275.8	1.9
0°-30°	1965.7	13.9
0°-40°	3052.5	21.5
0°-60°	4835.8	34.1
0°-90°	5681.3	40.1
90°-120°	1396.4	9.9
90°-150°	6174.3	43.6
90°-180°	8495.0	59.9
0°-180°	14176.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2760	2760	2760	2760	2760	
5°	2760	2748	2715	2738	2730	262
15°	2625	2598	2513	2465	2440	740
25°	2383	2303	2138	2036	1998	1096
35°	2053	1926	1706	1549	1494	1285
45°	1679	1511	1249	1071	1012	1296
55°	1276	1082	812	662	615	1140
65°	862	659	435	350	342	854
75°	460	285	200	182	180	486
85°	107	55	47	47	47	123
90°	2	25	42	53	56	13
95°	136	67	82	92	90	161
105°	637	700	128	151	159	681
115°	1206	1241	1294	323	172	1187
125°	1704	1732	1772	1786	1793	1520
135°	2109	2143	2162	2183	2179	1629
145°	2447	2445	2480	2495	2485	1530
155°	2694	2676	2701	2713	2696	1242
165°	2839	2826	2833	2847	2833	802
175°	2904	2889	2894	2908	2887	276
180°	2898	2898	2898	2898	2898	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2760.0	2760.0	2760.0	2760.0	2760.0
2.5°	2772.4	2760.0	2732.4	2757.6	2752.6
5°	2760.0	2747.5	2715.0	2737.5	2730.1
7.5°	2737.5	2722.6	2687.7	2697.4	2685.0
10°	2707.5	2690.1	2640.2	2632.6	2617.7
12.5°	2670.2	2647.6	2580.1	2565.2	2537.6
15°	2625.1	2597.6	2512.7	2465.3	2440.4
17.5°	2572.7	2532.7	2427.7	2372.8	2332.8
20°	2512.7	2462.7	2337.9	2275.6	2220.4
22.5°	2447.9	2390.3	2245.3	2160.5	2123.2
25°	2382.9	2302.9	2138.0	2035.7	1998.2
27.5°	2305.5	2220.4	2038.1	1920.8	1863.3
30°	2223.1	2128.0	1928.1	1801.0	1733.4
32.5°	2143.1	2028.1	1823.5	1673.5	1610.9
35°	2053.2	1925.7	1706.1	1548.7	1493.6
37.5°	1965.8	1828.2	1596.1	1423.6	1361.4
40°	1873.3	1723.6	1481.1	1303.8	1238.9
42.5°	1778.4	1618.7	1366.3	1181.3	1119.1
45°	1678.6	1511.0	1249.0	1071.4	1011.5
47.5°	1583.6	1406.4	1136.6	959.1	904.2
50°	1478.7	1301.4	1026.6	854.1	801.9
52.5°	1376.1	1188.8	921.7	756.8	709.4
55°	1276.3	1081.5	811.7	662.0	614.6
57.5°	1174.0	974.1	714.5	574.5	534.5
60°	1069.1	869.2	611.9	484.7	444.7
62.5°	966.7	766.9	524.4	404.7	384.7
65°	861.7	659.3	434.6	349.8	342.1
67.5°	761.9	559.4	349.8	307.1	299.7
70°	656.9	462.1	289.6	264.7	254.6
72.5°	557.0	372.1	242.2	222.4	217.3
75°	459.5	284.6	199.8	182.3	179.9
77.5°	362.2	202.2	157.4	147.3	142.3
80°	272.2	144.9	119.8	110.0	110.0
82.5°	189.8	97.5	82.4	77.4	77.4
85°	107.3	54.9	47.4	47.4	47.4
87.5°	40.0	19.8	19.8	17.5	17.5
90°	2.0	25.2	41.8	52.6	56.5
92.5°	52.6	44.1	50.3	54.6	56.5
95°	136.2	67.0	81.7	92.3	90.2
97.5°	245.3	73.5	106.8	113.2	115.2
100°	371.2	84.0	119.5	136.2	140.4
102.5°	509.4	505.4	123.7	146.6	153.1
105°	637.4	700.4	127.9	150.9	159.3
107.5°	786.3	838.6	132.2	155.1	163.6
110°	928.9	972.8	367.0	157.3	165.6



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1063.1	1100.7	1065.1	161.3	167.8
115°	1205.6	1241.2	1293.7	322.9	172.0
117.5°	1329.3	1371.2	1407.0	1107.0	557.7
120°	1467.7	1499.1	1537.0	1562.1	1279.0
122.5°	1585.1	1618.7	1660.7	1673.1	1675.4
125°	1704.5	1731.9	1771.8	1786.5	1792.7
127.5°	1813.6	1842.9	1874.6	1895.5	1897.5
130°	1916.4	1950.1	1973.0	1996.1	1994.1
132.5°	2021.2	2048.6	2071.5	2090.5	2088.5
135°	2109.4	2143.0	2161.7	2182.8	2178.6
137.5°	2201.5	2226.6	2247.8	2268.7	2262.5
140°	2291.6	2308.6	2331.5	2350.4	2340.0
142.5°	2367.4	2382.0	2409.1	2425.8	2415.4
145°	2447.0	2444.7	2480.4	2495.1	2484.6
147.5°	2516.0	2509.8	2545.4	2555.9	2547.6
150°	2583.2	2568.5	2602.1	2614.5	2604.1
152.5°	2639.7	2623.0	2654.4	2667.1	2652.4
155°	2694.3	2675.6	2700.7	2713.2	2696.5
157.5°	2738.4	2721.7	2740.6	2755.2	2738.4
160°	2776.1	2763.5	2776.1	2788.6	2773.9
162.5°	2809.5	2797.0	2807.5	2822.2	2803.3
165°	2838.9	2826.4	2832.7	2847.4	2832.7
167.5°	2862.1	2849.4	2855.8	2870.5	2851.6
170°	2881.0	2868.3	2872.5	2887.2	2868.3
172.5°	2893.5	2881.0	2885.2	2899.9	2881.0
175°	2903.9	2889.2	2893.5	2908.1	2887.2
177.5°	2908.1	2893.5	2895.7	2910.4	2891.5
180°	2897.7	2897.7	2897.7	2897.7	2897.7



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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	10.11	10.87	11.15	11.91	13.32	6.07	6.83	7.12	7.87	9.28
	3H	11.78	12.45	12.83	13.51	14.93	7.25	7.92	8.30	8.98	10.40
	4H	12.38	13.02	13.45	14.08	15.51	7.69	8.33	8.76	9.39	10.82
	6H	12.79	13.38	13.87	14.44	15.89	8.00	8.59	9.08	9.65	11.10
	8H	12.92	13.48	14.00	14.55	15.99	8.09	8.65	9.17	9.72	11.16
	12H	12.97	13.50	14.06	14.57	16.04	8.12	8.66	9.21	9.73	11.19
4H	2H	10.12	10.76	11.19	11.81	13.25	6.65	7.29	7.73	8.35	9.79
	3H	11.93	12.47	13.01	13.55	15.00	7.99	8.52	9.07	9.61	11.05
	4H	12.62	13.11	13.70	14.18	15.65	8.53	9.02	9.61	10.09	11.56
	6H	13.13	13.54	14.22	14.64	16.10	8.94	9.36	10.03	10.45	11.92
	8H	13.30	13.69	14.39	14.78	16.26	9.06	9.45	10.16	10.54	12.02
	12H	13.39	13.74	14.50	14.84	16.33	9.12	9.47	10.23	10.58	12.06
8H	4H	12.58	12.97	13.67	14.06	15.54	8.80	9.19	9.89	10.28	11.76
	6H	13.14	13.46	14.25	14.59	16.07	9.31	9.63	10.42	10.76	12.24
	8H	13.35	13.63	14.47	14.75	16.24	9.50	9.78	10.62	10.89	12.39
	12H	13.48	13.73	14.61	14.84	16.37	9.61	9.85	10.73	10.96	12.50
12H	4H	12.53	12.88	13.64	13.98	15.47	8.80	9.16	9.91	10.26	11.74
	6H	13.11	13.40	14.23	14.51	16.00	9.36	9.64	10.48	10.75	12.25
	8H	13.33	13.57	14.45	14.68	16.22	9.56	9.81	10.68	10.92	12.45