

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: P906474

Luminaire Tested: DFN2DIP-SQ3F0-070D100US835-RLLFLL

Issue Date: 11/21/2024

**Test Information**

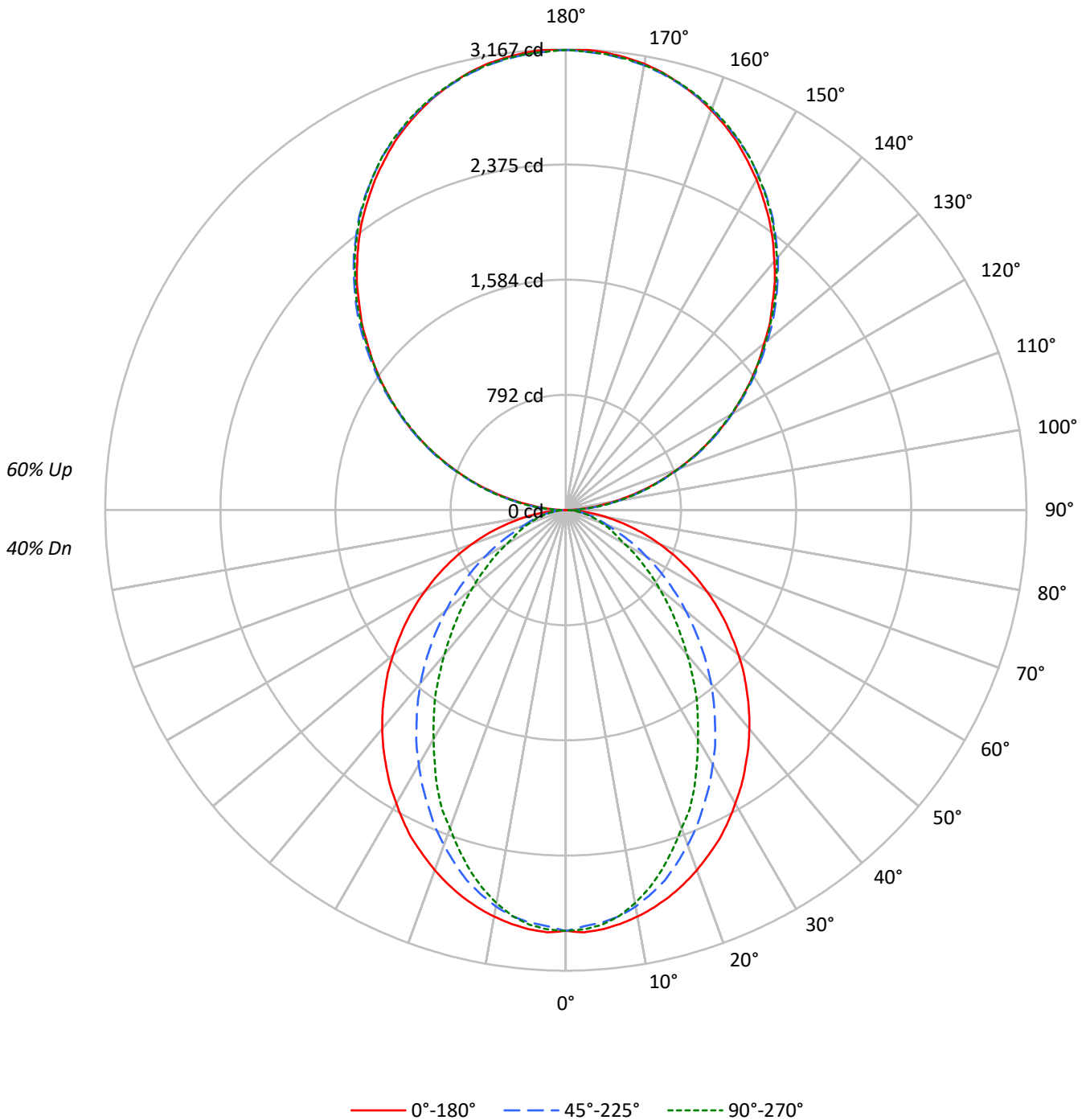
Test Method: LM-79-2019  
Report Number: P906474  
REPORT IS A COMBINATION OF REPORTS P899976 AND P896733  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ3F0-070D100US835-RLLFLL  
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 14800.0 lumens  
Efficiency: N/A  
Efficacy: 103.4 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): 143.1  
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	40
1	96	92	88	85	87	84	81	78	69	67	65	55	54	52	42	41	41	41	41	41	35
2	88	81	75	70	80	74	69	65	61	57	54	49	46	44	38	36	35	35	35	35	30
3	80	71	64	59	73	65	59	54	54	50	46	43	40	38	34	32	30	30	30	30	26
4	74	63	56	50	67	58	51	46	48	43	39	39	35	33	30	28	26	26	26	26	22
5	68	56	49	43	61	52	45	40	43	38	34	35	31	29	28	25	23	23	23	23	20
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	20	20	20	20	17
7	58	46	38	33	53	42	35	31	35	30	27	29	25	22	23	20	18	18	18	18	16
8	54	42	34	29	49	38	32	27	32	27	24	27	23	20	21	19	17	17	17	17	14
9	50	38	31	26	45	35	29	24	30	25	21	25	21	18	20	17	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	12

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

	0°	45°	90°
0°	3315	3315	3315
5°	3318	3260	3282
10°	3283	3194	3174
15°	3236	3086	3008
20°	3174	2939	2805
25°	3111	2774	2608
30°	3026	2605	2360
35°	2943	2423	2141
40°	2859	2236	1891
45°	2761	2028	1664
50°	2660	1818	1442
55°	2553	1595	1230
60°	2431	1361	1011
65°	2289	1124	909
70°	2117	903	821
75°	1901	791	744
80°	1589	657	642
85°	1077	428	476

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 3182 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	271.1	1.8
10°-20°	744.3	5.0
20°-30°	1045.0	7.1
30°-40°	1139.2	7.7
40°-50°	1047.0	7.1
50°-60°	822.3	5.6
60°-70°	535.2	3.6
70°-80°	275.5	1.9
80°-90°	79.3	0.5
90°-100°	195.7	1.3
100°-110°	621.8	4.2
110°-120°	1064.1	7.2
120°-130°	1399.5	9.5
130°-140°	1570.9	10.6
140°-150°	1540.4	10.4
150°-160°	1292.2	8.7
160°-170°	856.9	5.8
170°-180°	299.5	2.0
0°-30°	2060.5	13.9
0°-40°	3199.7	21.6
0°-60°	5068.9	34.2
0°-90°	5958.9	40.3
90°-120°	1881.6	12.7
90°-150°	6392.4	43.2
90°-180°	8841.0	59.7
0°-180°	14800.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2893	2893	2893	2893	2893	
5°	2893	2880	2846	2870	2862	274
15°	2752	2723	2634	2584	2558	775
25°	2498	2414	2241	2134	2094	1149
35°	2152	2019	1788	1623	1566	1347
45°	1760	1584	1309	1123	1060	1359
55°	1338	1134	851	694	644	1195
65°	903	691	456	367	359	896
75°	482	298	209	191	189	509
85°	112	58	50	50	50	129
90°	3	34	93	88	91	15
95°	139	166	171	171	166	155
105°	574	582	587	592	592	606
115°	1068	1083	1078	1076	1068	1056
125°	1553	1577	1569	1561	1558	1388
135°	2009	2038	2044	2041	2034	1553
145°	2439	2458	2473	2476	2466	1524
155°	2789	2796	2805	2818	2810	1284
165°	3034	3031	3031	3050	3037	856
175°	3157	3149	3144	3163	3146	300
180°	3163	3163	3163	3163	3163	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2893.1	2893.1	2893.1	2893.1	2893.1
2.5°	2906.1	2893.1	2864.2	2890.6	2885.3
5°	2893.1	2880.0	2845.9	2869.5	2861.7
7.5°	2869.5	2853.9	2817.3	2827.5	2814.5
10°	2838.1	2819.8	2767.5	2759.5	2743.9
12.5°	2798.9	2775.3	2704.5	2688.9	2660.0
15°	2751.7	2722.8	2633.9	2584.2	2558.1
17.5°	2696.7	2654.8	2544.8	2487.2	2445.3
20°	2633.9	2581.4	2450.6	2385.3	2327.5
22.5°	2565.9	2505.6	2353.6	2264.7	2225.6
25°	2497.8	2413.9	2241.1	2133.9	2094.5
27.5°	2416.7	2327.5	2136.4	2013.4	1953.1
30°	2330.3	2230.6	2021.1	1887.8	1817.0
32.5°	2246.4	2125.9	1911.4	1754.2	1688.6
35°	2152.2	2018.6	1788.4	1623.4	1565.6
37.5°	2060.6	1916.4	1673.1	1492.2	1427.0
40°	1963.6	1806.7	1552.5	1366.7	1298.6
42.5°	1864.2	1696.7	1432.2	1238.3	1173.1
45°	1759.5	1583.9	1309.2	1123.1	1060.3
47.5°	1660.0	1474.2	1191.4	1005.3	947.8
50°	1550.0	1364.2	1076.1	895.3	840.6
52.5°	1442.5	1246.1	966.1	793.3	743.6
55°	1337.8	1133.6	850.8	693.9	644.2
57.5°	1230.6	1021.1	748.9	602.2	560.3
60°	1120.6	911.1	641.4	508.1	466.1
62.5°	1013.3	803.9	549.7	424.2	403.3
65°	903.3	691.1	455.6	366.7	358.6
67.5°	798.6	586.4	366.7	321.9	314.2
70°	688.6	484.4	303.6	277.5	266.9
72.5°	583.9	390.0	253.9	233.1	227.8
75°	481.7	298.3	209.4	191.1	188.6
77.5°	379.7	211.9	165.0	154.4	149.2
80°	285.3	151.9	125.6	115.3	115.3
82.5°	198.9	102.2	86.4	81.1	81.1
85°	112.5	57.5	49.7	49.7	49.7
87.5°	41.9	20.8	20.8	18.3	18.3
90°	2.9	34.3	93.4	87.7	90.6
92.5°	59.1	80.1	83.0	85.8	85.8
95°	139.2	165.9	170.7	170.7	165.9
97.5°	231.7	256.5	267.0	267.0	267.0
100°	338.5	360.4	368.0	368.0	365.2
102.5°	451.0	467.2	477.7	480.5	477.7
105°	574.0	581.6	587.3	592.1	592.1
107.5°	696.0	707.5	707.5	709.4	696.0
110°	814.3	829.5	829.5	829.5	821.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	942.0	958.2	955.4	947.7	942.0
115°	1067.9	1083.1	1078.4	1075.5	1067.9
117.5°	1192.8	1213.8	1200.4	1192.8	1185.1
120°	1318.6	1339.6	1318.6	1318.6	1310.1
122.5°	1433.0	1459.7	1446.4	1438.8	1433.0
125°	1553.2	1577.0	1569.4	1560.8	1558.0
127.5°	1670.5	1700.0	1689.5	1678.1	1670.5
130°	1780.1	1814.4	1809.7	1803.9	1793.5
132.5°	1903.1	1929.8	1931.7	1918.4	1910.7
135°	2008.9	2038.5	2044.2	2041.4	2033.7
137.5°	2127.2	2151.0	2155.8	2153.9	2142.4
140°	2231.1	2254.9	2268.3	2268.3	2257.8
142.5°	2337.9	2361.7	2369.3	2372.2	2361.7
145°	2438.9	2458.0	2473.3	2476.1	2465.6
147.5°	2529.5	2553.4	2564.8	2569.6	2559.1
150°	2623.0	2639.2	2649.7	2658.2	2649.7
152.5°	2705.9	2722.1	2735.5	2746.0	2735.5
155°	2788.9	2796.5	2805.1	2818.4	2809.8
157.5°	2860.4	2866.1	2870.9	2889.9	2876.6
160°	2924.3	2930.0	2932.8	2949.0	2937.6
162.5°	2983.4	2983.4	2986.2	3004.3	2991.0
165°	3033.9	3031.0	3031.0	3050.1	3036.8
167.5°	3079.7	3071.1	3071.1	3090.2	3076.8
170°	3114.0	3106.4	3103.5	3122.6	3106.4
172.5°	3137.8	3130.2	3127.3	3146.4	3130.2
175°	3156.9	3149.3	3143.6	3162.6	3146.4
177.5°	3167.4	3159.8	3154.0	3170.2	3154.0
180°	3162.6	3162.6	3162.6	3162.6	3162.6



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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	10.29	11.05	11.33	12.09	13.50	6.25	7.01	7.30	8.05	9.46
	3H	11.96	12.64	13.01	13.69	15.11	7.43	8.11	8.48	9.16	10.58
	4H	12.56	13.20	13.63	14.26	15.69	7.87	8.51	8.94	9.57	11.00
	6H	12.98	13.57	14.05	14.62	16.07	8.18	8.77	9.26	9.83	11.28
	8H	13.10	13.66	14.18	14.73	16.17	8.27	8.83	9.35	9.90	11.34
	12H	13.16	13.69	14.24	14.76	16.22	8.31	8.84	9.39	9.91	11.37
4H	2H	10.30	10.94	11.37	12.00	13.43	6.84	7.48	7.91	8.53	9.97
	3H	12.12	12.65	13.19	13.73	15.18	8.17	8.71	9.25	9.79	11.23
	4H	12.80	13.29	13.89	14.36	15.83	8.71	9.20	9.80	10.27	11.74
	6H	13.31	13.73	14.40	14.82	16.28	9.12	9.54	10.21	10.64	12.10
	8H	13.48	13.87	14.57	14.96	16.44	9.24	9.64	10.34	10.72	12.20
	12H	13.57	13.92	14.68	15.02	16.50	9.30	9.66	10.41	10.76	12.24
8H	4H	12.76	13.15	13.85	14.24	15.72	8.98	9.38	10.08	10.46	11.94
	6H	13.32	13.64	14.43	14.77	16.25	9.49	9.81	10.61	10.94	12.42
	8H	13.53	13.82	14.65	14.93	16.42	9.68	9.96	10.80	11.07	12.57
	12H	13.67	13.91	14.79	15.02	16.55	9.79	10.04	10.91	11.14	12.68
12H	4H	12.71	13.06	13.82	14.17	15.65	8.99	9.34	10.09	10.44	11.92
	6H	13.30	13.58	14.42	14.69	16.18	9.54	9.82	10.66	10.93	12.43
	8H	13.51	13.76	14.63	14.87	16.40	9.74	9.99	10.86	11.10	12.63