

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: P925826

Luminaire Tested: DFN2DIP-SQ4F0-070D140US950-RLLFLL

Issue Date: 11/21/2024

**Test Information**

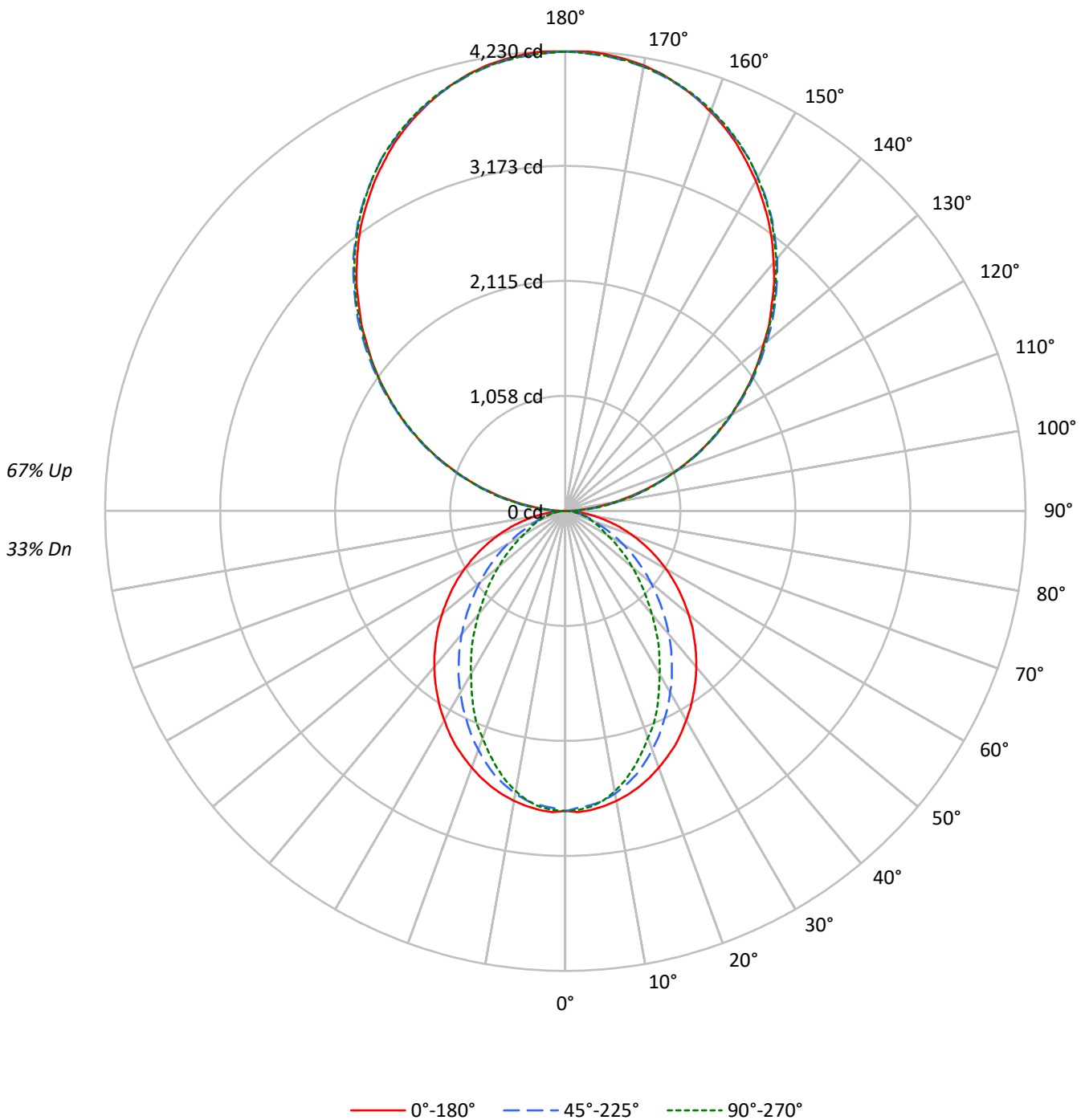
Test Method: LM-79-2019  
Report Number: P925826  
REPORT IS A COMBINATION OF REPORTS P900188 AND P896915  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ4F0-070D140US950-RLLFLL  
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 17496.3 lumens  
Efficiency: N/A  
Efficacy: 104.7 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: Semi-Indirect  
  
Input Watts (W): 167.1  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9967  
Total Harmonic Distortion (THDi): 0.063  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P925826  
CATALOG NUMBER: DFN2DIP-SQ4F0-070D140US950-RLFL

### Luminous Intensity Polar Plot





TEST NUMBER: P925826

CATALOG NUMBER: DFN2DIP-SQ4F0-070D140US950-RLFL

**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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40	33				33
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34	28				28
2	86	79	73	68	77	71	67	62	57	54	51	44	42	40	32	31	29	24				24
3	79	70	63	57	71	63	57	52	51	46	43	39	36	34	29	27	25	21				21
4	72	62	54	49	65	56	50	45	45	41	37	35	32	29	26	24	22	18				18
5	66	55	47	42	59	50	43	38	40	36	32	32	28	26	23	21	19	16				16
6	61	49	42	36	55	45	38	33	36	32	28	29	25	23	21	19	17	14				14
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	19	17	15	13				13
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14	11				11
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13	10				10
10	45	34	27	22	41	31	25	21	25	21	18	20	17	15	15	13	11	9				9

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

	0°	45°	90°
0°	1937	1937	1937
5°	1940	1906	1919
10°	1920	1869	1857
15°	1894	1808	1761
20°	1859	1723	1643
25°	1823	1628	1529
30°	1775	1530	1384
35°	1728	1425	1257
40°	1680	1317	1111
45°	1624	1196	979
50°	1567	1074	850
55°	1506	944	725
60°	1437	808	598
65°	1356	670	539
70°	1259	541	488
75°	1137	477	445
80°	961	402	388
85°	669	270	295

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 3325 cd/sqm



TEST NUMBER: P925826

CATALOG NUMBER: DFN2DIP-SQ4F0-070D140US950-RLFL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	258.7	1.5
10°-20°	710.1	4.1
20°-30°	997.0	5.7
30°-40°	1086.8	6.2
40°-50°	998.8	5.7
50°-60°	784.4	4.5
60°-70°	510.6	2.9
70°-80°	262.8	1.5
80°-90°	79.1	0.5
90°-100°	261.4	1.5
100°-110°	830.5	4.7
110°-120°	1421.2	8.1
120°-130°	1869.1	10.7
130°-140°	2098.0	12.0
140°-150°	2057.4	11.8
150°-160°	1725.8	9.9
160°-170°	1144.5	6.5
170°-180°	400.0	2.3
0°-30°	1965.7	11.2
0°-40°	3052.5	17.4
0°-60°	4835.8	27.6
0°-90°	5688.3	32.5
90°-120°	2513.1	14.4
90°-150°	8537.6	48.8
90°-180°	11808.0	67.5
0°-180°	17496.3	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°	4	46	125	117	121	17
95°	186	222	228	228	222	207
105°	767	777	784	791	791	809
115°	1426	1447	1440	1436	1426	1411
125°	2074	2106	2096	2085	2081	1854
135°	2683	2723	2730	2726	2716	2074
145°	3257	3283	3303	3307	3293	2035
155°	3725	3735	3746	3764	3753	1714
165°	4052	4048	4048	4074	4056	1143
175°	4216	4206	4199	4224	4202	401
180°	4224	4224	4224	4224	4224	



TEST NUMBER: P925826

CATALOG NUMBER: DFN2DIP-SQ4F0-070D140US950-RLFL

**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°	3.8	45.9	124.8	117.2	121.0
92.5°	79.0	106.9	110.8	114.6	114.6
95°	185.9	221.6	227.9	227.9	221.6
97.5°	309.5	342.6	356.6	356.6	356.6
100°	452.1	481.4	491.5	491.5	487.7
102.5°	602.4	624.0	638.0	641.9	638.0
105°	766.6	776.8	784.5	790.8	790.8
107.5°	929.6	944.9	944.9	947.4	929.6
110°	1087.6	1107.9	1107.9	1107.9	1097.7



TEST NUMBER: P925826

CATALOG NUMBER: DFN2DIP-SQ4F0-070D140US950-RLFL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	1258.1	1279.8	1276.0	1265.8	1258.1
115°	1426.2	1446.6	1440.3	1436.4	1426.2
117.5°	1593.1	1621.1	1603.3	1593.1	1582.9
120°	1761.2	1789.2	1761.2	1761.2	1749.7
122.5°	1914.0	1949.6	1931.8	1921.6	1914.0
125°	2074.5	2106.2	2096.0	2084.6	2080.8
127.5°	2231.0	2270.5	2256.5	2241.2	2231.0
130°	2377.5	2423.4	2417.0	2409.3	2395.3
132.5°	2541.7	2577.4	2580.0	2562.2	2552.0
135°	2683.1	2722.6	2730.3	2726.4	2716.2
137.5°	2841.0	2872.9	2879.3	2876.7	2861.4
140°	2979.8	3011.7	3029.5	3029.5	3015.5
142.5°	3122.4	3154.3	3164.5	3168.3	3154.3
145°	3257.4	3282.9	3303.3	3307.1	3293.1
147.5°	3378.4	3410.3	3425.5	3431.9	3417.9
150°	3503.2	3524.8	3538.9	3550.3	3538.9
152.5°	3614.0	3635.7	3653.5	3667.5	3653.5
155°	3724.8	3735.0	3746.5	3764.3	3752.8
157.5°	3820.3	3827.9	3834.3	3859.8	3841.9
160°	3905.7	3913.3	3917.1	3938.8	3923.4
162.5°	3984.6	3984.6	3988.4	4012.6	3994.8
165°	4052.1	4048.3	4048.3	4073.8	4055.9
167.5°	4113.2	4101.7	4101.7	4127.2	4109.4
170°	4159.1	4148.9	4145.0	4170.5	4148.9
172.5°	4190.9	4180.7	4176.9	4202.4	4180.7
175°	4216.4	4206.2	4198.6	4224.0	4202.4
177.5°	4230.3	4220.2	4212.6	4234.1	4212.6
180°	4224.0	4224.0	4224.0	4224.0	4224.0



TEST NUMBER: P925826  
 CATALOG NUMBER: DFN2DIP-SQ4F0-070D140US950-RLLFLL

**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	7.55	8.26	8.65	9.35	10.86	3.52	4.22	4.61	5.31	6.82
	3H	9.23	9.86	10.33	10.96	12.48	4.69	5.32	5.80	6.43	7.95
	4H	9.83	10.43	10.95	11.53	13.06	5.14	5.74	6.26	6.84	8.37
	6H	10.25	10.80	11.38	11.91	13.44	5.45	6.00	6.58	7.11	8.65
	8H	10.38	10.90	11.51	12.02	13.55	5.54	6.07	6.67	7.19	8.72
	12H	10.44	10.93	11.57	12.05	13.60	5.58	6.08	6.72	7.19	8.75
4H	2H	7.56	8.16	8.68	9.26	10.78	4.10	4.70	5.22	5.80	7.32
	3H	9.38	9.88	10.51	11.01	12.54	5.44	5.93	6.57	7.06	8.60
	4H	10.07	10.53	11.20	11.65	13.20	5.98	6.44	7.11	7.56	9.11
	6H	10.58	10.97	11.72	12.12	13.67	6.39	6.79	7.53	7.93	9.48
	8H	10.76	11.12	11.90	12.26	13.82	6.52	6.89	7.66	8.02	9.58
	12H	10.85	11.18	12.01	12.33	13.90	6.58	6.91	7.74	8.06	9.63
8H	4H	10.03	10.39	11.17	11.53	13.09	6.25	6.62	7.39	7.75	9.32
	6H	10.60	10.90	11.76	12.07	13.63	6.77	7.07	7.93	8.25	9.81
	8H	10.81	11.08	11.98	12.23	13.81	6.96	7.22	8.13	8.38	9.96
	12H	10.95	11.18	12.12	12.33	13.95	7.08	7.31	8.24	8.46	10.07
12H	4H	9.98	10.31	11.13	11.45	13.02	6.25	6.58	7.41	7.73	9.30
	6H	10.57	10.83	11.74	11.99	13.57	6.82	7.08	7.99	8.24	9.82
	8H	10.79	11.02	11.96	12.17	13.79	7.03	7.26	8.20	8.41	10.03