

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: P914718

Luminaire Tested: DFN2DIP-SQ3F0-090D070US927-RLLFLL

Issue Date: 11/21/2024

**Test Information**

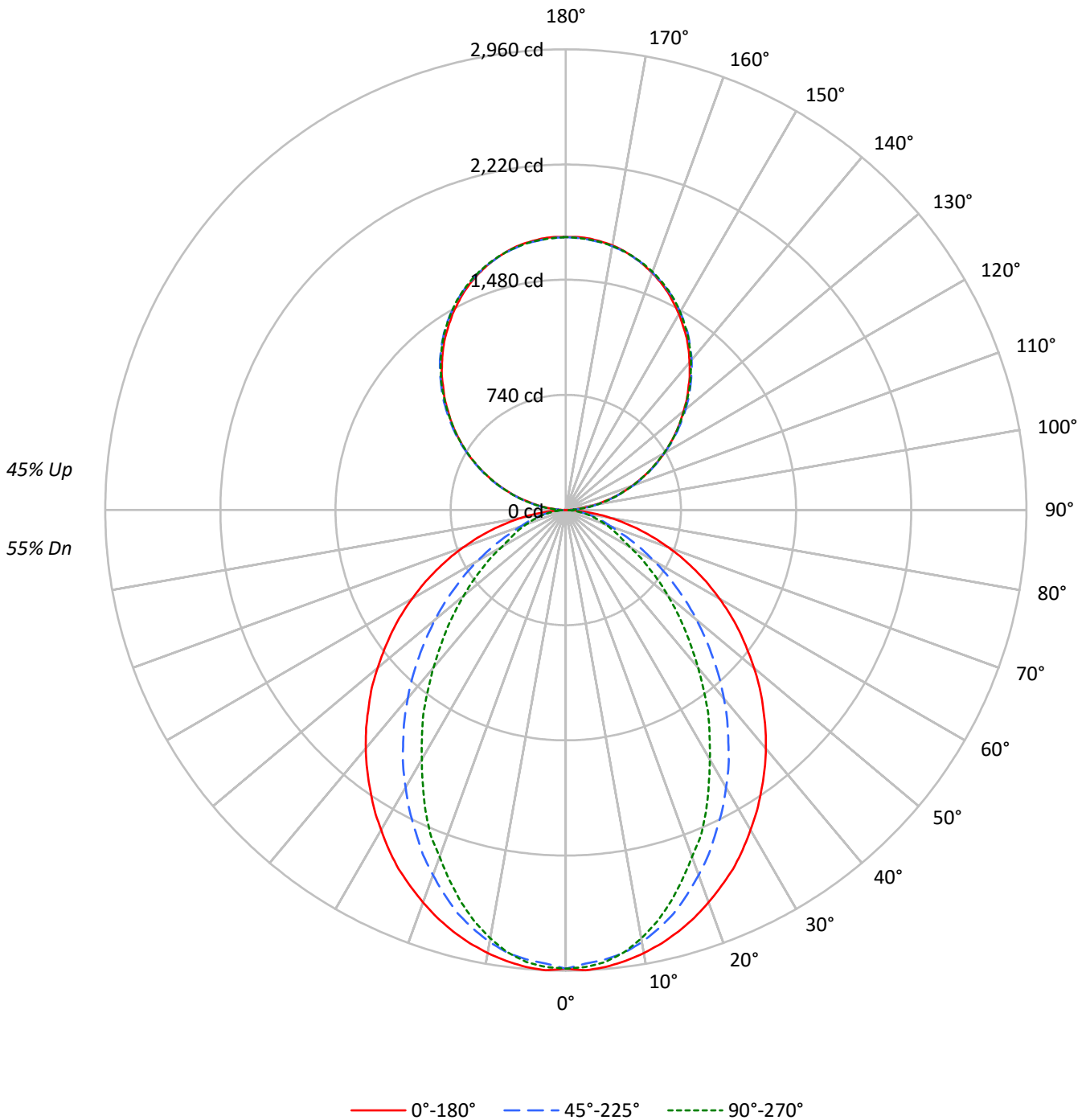
Test Method: LM-79-2019  
Report Number: P914718  
REPORT IS A COMBINATION OF REPORTS P899926 AND P896733  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ3F0-090D070US927-RLLFLL  
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10967.8 lumens  
Efficiency: N/A  
Efficacy: 78.2 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): 140.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.996  
Total Harmonic Distortion (THDi): 0.064  
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			
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
RCR																				
0	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55		
1	99	95	92	88	92	89	86	83	76	74	72	65	63	62	55	54	53	48		
2	91	84	78	73	84	78	73	69	68	64	60	58	55	53	49	47	45	41		
3	83	74	67	61	77	69	63	58	60	55	51	52	48	45	44	41	39	35		
4	77	66	58	52	71	62	55	50	54	49	44	46	42	39	39	36	34	31		
5	71	59	51	45	65	55	48	43	48	43	39	42	38	34	36	33	30	27		
6	65	53	45	40	60	50	43	38	44	38	34	38	34	30	33	29	27	24		
7	60	48	41	35	56	45	38	33	40	34	30	35	30	27	30	27	24	21		
8	56	44	36	31	52	41	35	30	37	31	27	32	28	24	28	24	22	19		
9	52	40	33	28	49	38	31	27	34	28	24	30	25	22	26	22	20	18		
10	49	37	30	25	46	35	29	24	31	26	22	27	23	20	24	20	18	16		

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

	0°	45°	90°
0°	3376	3376	3376
5°	3380	3321	3343
10°	3344	3253	3233
15°	3296	3143	3064
20°	3233	2993	2857
25°	3168	2825	2657
30°	3082	2653	2403
35°	2998	2468	2181
40°	2912	2277	1926
45°	2812	2065	1695
50°	2709	1852	1469
55°	2601	1624	1252
60°	2476	1386	1030
65°	2331	1145	926
70°	2156	920	836
75°	1936	806	758
80°	1618	669	654
85°	1096	436	485

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2812 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	276.2	2.5
10°-20°	758.1	6.9
20°-30°	1064.4	9.7
30°-40°	1160.3	10.6
40°-50°	1066.4	9.7
50°-60°	837.5	7.6
60°-70°	545.1	5.0
70°-80°	280.6	2.6
80°-90°	76.6	0.7
90°-100°	108.5	1.0
100°-110°	344.8	3.1
110°-120°	590.1	5.4
120°-130°	776.1	7.1
130°-140°	871.1	7.9
140°-150°	854.2	7.8
150°-160°	716.6	6.5
160°-170°	475.2	4.3
170°-180°	166.1	1.5
0°-30°	2098.7	19.1
0°-40°	3258.9	29.7
0°-60°	5162.8	47.1
0°-90°	6065.2	55.3
90°-120°	1043.4	9.5
90°-150°	3544.8	32.3
90°-180°	4903.0	44.7
0°-180°	10967.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2947	2947	2947	2947	2947	
5°	2947	2933	2899	2923	2915	279
15°	2803	2773	2683	2632	2606	790
25°	2544	2459	2283	2173	2133	1170
35°	2192	2056	1822	1653	1595	1372
45°	1792	1613	1333	1144	1080	1384
55°	1363	1155	867	707	656	1218
65°	920	704	464	373	365	912
75°	491	304	213	195	192	519
85°	114	58	51	51	51	132
90°	2	19	52	49	50	11
95°	77	92	95	95	92	86
105°	318	322	326	328	328	336
115°	592	601	598	596	592	586
125°	861	874	870	866	864	770
135°	1114	1130	1134	1132	1128	861
145°	1352	1363	1372	1373	1367	845
155°	1546	1551	1556	1563	1558	712
165°	1682	1681	1681	1691	1684	475
175°	1751	1746	1743	1754	1745	166
180°	1754	1754	1754	1754	1754	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2946.7	2946.7	2946.7	2946.7	2946.7
2.5°	2960.0	2946.7	2917.2	2944.1	2938.8
5°	2946.7	2933.4	2898.6	2922.6	2914.7
7.5°	2922.6	2906.8	2869.4	2879.9	2866.6
10°	2890.7	2872.0	2818.8	2810.6	2794.7
12.5°	2850.7	2826.7	2754.6	2738.7	2709.3
15°	2802.7	2773.3	2682.7	2632.0	2605.5
17.5°	2746.7	2704.0	2591.9	2533.3	2490.6
20°	2682.7	2629.2	2495.9	2429.5	2370.6
22.5°	2613.4	2552.0	2397.2	2306.7	2266.8
25°	2544.1	2458.6	2282.7	2173.4	2133.3
27.5°	2461.5	2370.6	2176.0	2050.6	1989.2
30°	2373.5	2271.9	2058.6	1922.8	1850.6
32.5°	2288.0	2165.2	1946.8	1786.7	1719.9
35°	2192.1	2056.0	1821.5	1653.4	1594.6
37.5°	2098.7	1951.9	1704.1	1519.9	1453.4
40°	2000.0	1840.2	1581.3	1392.0	1322.7
42.5°	1898.7	1728.1	1458.7	1261.3	1194.8
45°	1792.1	1613.3	1333.4	1143.8	1079.9
47.5°	1690.8	1501.5	1213.5	1023.9	965.4
50°	1578.7	1389.4	1096.1	911.9	856.1
52.5°	1469.3	1269.2	984.0	808.0	757.4
55°	1362.6	1154.6	866.6	706.8	656.1
57.5°	1253.4	1040.1	762.8	613.4	570.7
60°	1141.3	928.0	653.3	517.5	474.8
62.5°	1032.1	818.8	559.9	432.1	410.8
65°	920.0	703.9	464.0	373.4	365.3
67.5°	813.4	597.2	373.4	327.9	320.0
70°	701.4	493.4	309.3	282.7	271.9
72.5°	594.7	397.2	258.6	237.3	232.0
75°	490.6	303.9	213.3	194.6	192.1
77.5°	386.7	215.9	168.0	157.3	151.9
80°	290.6	154.8	127.9	117.4	117.4
82.5°	202.6	104.1	88.0	82.6	82.6
85°	114.5	58.5	50.6	50.6	50.6
87.5°	42.7	21.2	21.2	18.7	18.7
90°	1.6	19.0	51.8	48.6	50.2
92.5°	32.8	44.4	46.0	47.6	47.6
95°	77.2	92.0	94.7	94.7	92.0
97.5°	128.5	142.2	148.1	148.1	148.1
100°	187.7	199.9	204.1	204.1	202.5
102.5°	250.1	259.0	264.9	266.5	264.9
105°	318.3	322.5	325.7	328.4	328.4
107.5°	386.0	392.3	392.3	393.4	386.0
110°	451.5	460.0	460.0	460.0	455.7



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	522.4	531.4	529.8	525.5	522.4
115°	592.2	600.6	598.0	596.4	592.2
117.5°	661.4	673.0	665.7	661.4	657.2
120°	731.2	742.8	731.2	731.2	726.4
122.5°	794.6	809.5	802.1	797.8	794.6
125°	861.3	874.5	870.3	865.5	864.0
127.5°	926.3	942.7	936.9	930.6	926.3
130°	987.1	1006.1	1003.5	1000.4	994.5
132.5°	1055.3	1070.2	1071.2	1063.8	1059.5
135°	1114.0	1130.4	1133.6	1131.9	1127.7
137.5°	1179.6	1192.8	1195.4	1194.4	1188.0
140°	1237.2	1250.5	1257.8	1257.8	1252.0
142.5°	1296.4	1309.6	1313.8	1315.4	1309.6
145°	1352.5	1363.0	1371.5	1373.1	1367.3
147.5°	1402.7	1415.9	1422.3	1424.9	1419.1
150°	1454.5	1463.5	1469.3	1474.1	1469.3
152.5°	1500.5	1509.5	1516.9	1522.7	1516.9
155°	1546.5	1550.7	1555.5	1562.9	1558.1
157.5°	1586.2	1589.4	1592.0	1602.6	1595.1
160°	1621.6	1624.8	1626.3	1635.3	1629.0
162.5°	1654.4	1654.4	1656.0	1666.0	1658.6
165°	1682.4	1680.8	1680.8	1691.4	1683.9
167.5°	1707.8	1703.0	1703.0	1713.6	1706.2
170°	1726.8	1722.6	1721.0	1731.5	1722.6
172.5°	1740.0	1735.7	1734.2	1744.8	1735.7
175°	1750.6	1746.4	1743.2	1753.7	1744.8
177.5°	1756.4	1752.1	1749.0	1758.0	1749.0
180°	1753.7	1753.7	1753.7	1753.7	1753.7



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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	11.82	12.70	12.74	13.63	14.82	7.78	8.66	8.70	9.59	10.78
	3H	13.50	14.28	14.43	15.22	16.44	8.97	9.75	9.90	10.69	11.91
	4H	14.10	14.84	15.05	15.79	17.02	9.42	10.15	10.36	11.10	12.33
	6H	14.53	15.21	15.48	16.16	17.40	9.73	10.41	10.69	11.36	12.61
	8H	14.65	15.30	15.61	16.27	17.51	9.82	10.47	10.78	11.44	12.68
	12H	14.71	15.33	15.68	16.29	17.55	9.86	10.48	10.83	11.44	12.71
4H	2H	11.84	12.58	12.79	13.53	14.76	8.38	9.12	9.33	10.06	11.29
	3H	13.67	14.29	14.63	15.26	16.50	9.73	10.34	10.69	11.32	12.56
	4H	14.36	14.92	15.33	15.89	17.16	10.27	10.83	11.24	11.80	13.07
	6H	14.87	15.36	15.86	16.35	17.62	10.69	11.17	11.67	12.16	13.43
	8H	15.05	15.50	16.03	16.48	17.77	10.81	11.26	11.79	12.25	13.53
	12H	15.14	15.55	16.14	16.55	17.84	10.88	11.28	11.88	12.28	13.57
8H	4H	14.33	14.78	15.31	15.77	17.05	10.55	11.00	11.53	11.99	13.27
	6H	14.89	15.26	15.90	16.29	17.57	11.06	11.43	12.07	12.46	13.74
	8H	15.11	15.43	16.12	16.45	17.75	11.25	11.58	12.27	12.59	13.89
	12H	15.24	15.53	16.26	16.54	17.89	11.36	11.65	12.38	12.66	14.01
12H	4H	14.28	14.69	15.29	15.69	16.98	10.56	10.96	11.56	11.97	13.25
	6H	14.87	15.20	15.88	16.21	17.51	11.11	11.44	12.13	12.46	13.75
	8H	15.09	15.38	16.11	16.38	17.73	11.32	11.61	12.34	12.62	13.96