

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: P914756

Luminaire Tested: DFN2DIP-SQ3F0-100D080US927-FLLFLL

Issue Date: 11/21/2024

**Test Information**

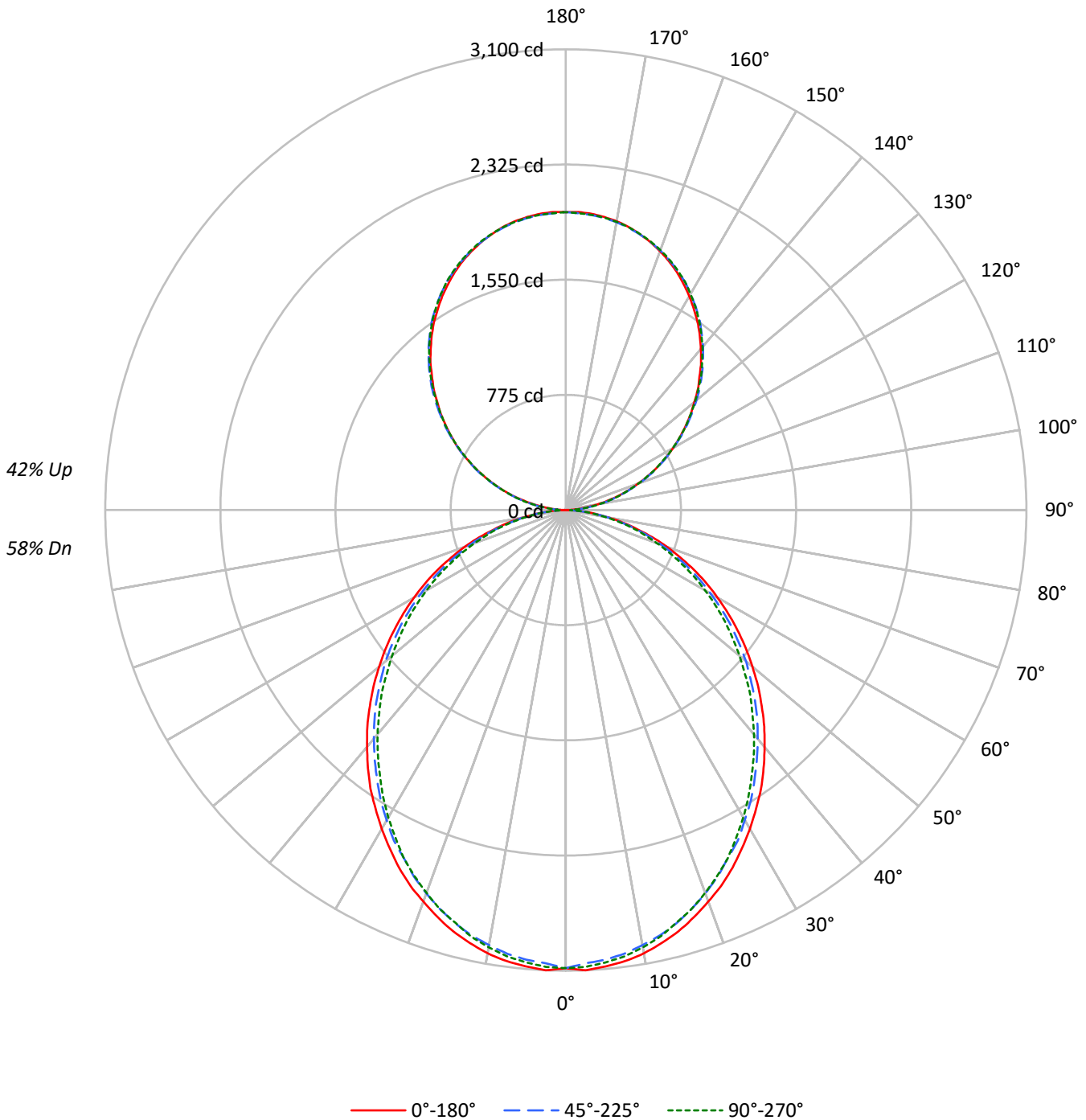
Test Method: LM-79-2019  
Report Number: P914756  
REPORT IS A COMBINATION OF REPORTS P899945 AND P896733  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-SQ3F0-100D080US927-FLLFLL  
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13451.2 lumens  
Efficiency: N/A  
Efficacy: 84.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')  
CIE Type: General Diffuse  
  
Input Watts (W): 158.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9781  
Total Harmonic Distortion (THDi): 0.075  
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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	64	64	64	58		
1	100	95	91	88	93	89	86	82	77	75	72	66	65	63	56	55	54	49		
2	91	83	77	72	84	78	72	68	68	64	60	58	55	52	50	47	45	41		
3	83	73	66	60	77	69	62	57	60	55	50	52	48	44	44	41	39	35		
4	76	65	57	51	70	61	54	48	53	47	43	46	42	38	39	36	33	30		
5	70	58	50	43	65	54	47	41	48	42	37	41	37	33	35	32	29	26		
6	64	52	44	38	60	49	41	36	43	37	32	37	33	29	32	29	26	23		
7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	29	26	23	20		
8	55	43	35	29	51	40	33	28	36	30	26	31	26	23	27	23	20	18		
9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	18	16		
10	48	36	28	24	45	34	27	23	30	25	21	27	22	19	23	19	17	15		

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

	0°	45°	90°
0°	3532	3532	3532
5°	3535	3480	3505
10°	3504	3431	3456
15°	3451	3372	3381
20°	3379	3291	3304
25°	3307	3195	3215
30°	3218	3105	3102
35°	3133	3000	2983
40°	3029	2894	2870
45°	2926	2787	2754
50°	2812	2674	2619
55°	2693	2544	2495
60°	2559	2390	2353
65°	2411	2230	2186
70°	2224	2035	2005
75°	1965	1802	1837
80°	1651	1503	1518
85°	1162	996	994

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2926 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	290.1	2.2
10°-20°	816.3	6.1
20°-30°	1199.6	8.9
30°-40°	1393.3	10.4
40°-50°	1391.5	10.3
50°-60°	1213.4	9.0
60°-70°	897.0	6.7
70°-80°	507.5	3.8
80°-90°	139.6	1.0
90°-100°	124.0	0.9
100°-110°	394.1	2.9
110°-120°	674.4	5.0
120°-130°	886.9	6.6
130°-140°	995.5	7.4
140°-150°	976.2	7.3
150°-160°	818.9	6.1
160°-170°	543.1	4.0
170°-180°	189.8	1.4
0°-30°	2306.0	17.1
0°-40°	3699.3	27.5
0°-60°	6304.2	46.9
0°-90°	7848.3	58.3
90°-120°	1192.5	8.9
90°-150°	4051.1	30.1
90°-180°	5603.0	41.7
0°-180°	13451.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3082	3082	3082	3082	3082	
5°	3082	3071	3038	3062	3056	293
15°	2934	2917	2878	2890	2875	826
25°	2656	2632	2582	2587	2582	1222
35°	2291	2262	2214	2196	2181	1431
45°	1864	1844	1799	1767	1755	1439
55°	1411	1393	1358	1322	1307	1262
65°	952	934	904	877	863	941
75°	498	492	477	460	465	531
85°	121	119	116	107	104	135
90°	2	22	59	56	57	13
95°	88	105	108	108	105	98
105°	364	369	372	375	375	384
115°	677	686	683	682	677	669
125°	984	999	995	989	987	880
135°	1273	1292	1296	1294	1289	984
145°	1546	1558	1567	1569	1563	966
155°	1767	1772	1778	1786	1781	813
165°	1923	1921	1921	1933	1924	542
175°	2001	1996	1992	2004	1994	190
180°	2004	2004	2004	2004	2004	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3082.5	3082.5	3082.5	3082.5	3082.5
2.5°	3100.4	3085.5	3052.8	3082.5	3076.8
5°	3082.5	3070.8	3038.1	3061.7	3056.0
7.5°	3061.7	3044.0	3011.3	3035.2	3029.3
10°	3029.3	3008.5	2973.0	2996.6	2987.8
12.5°	2984.6	2967.0	2931.5	2946.3	2940.3
15°	2934.3	2916.7	2878.0	2890.0	2875.2
17.5°	2872.1	2854.5	2815.7	2830.5	2815.7
20°	2803.8	2786.2	2744.7	2753.5	2741.8
22.5°	2735.9	2709.2	2670.4	2670.4	2664.5
25°	2655.7	2632.1	2581.8	2587.4	2581.8
27.5°	2566.7	2545.9	2507.6	2498.8	2484.0
30°	2478.0	2454.1	2409.7	2400.9	2389.0
32.5°	2383.0	2365.5	2317.9	2300.0	2288.1
35°	2291.2	2261.7	2214.1	2196.2	2181.4
37.5°	2187.4	2160.7	2113.2	2092.5	2077.7
40°	2080.8	2056.9	2009.4	1983.1	1971.1
42.5°	1977.0	1953.1	1906.0	1876.1	1858.5
45°	1864.5	1843.7	1799.0	1766.6	1754.8
47.5°	1754.8	1734.0	1686.5	1653.8	1636.2
50°	1639.0	1624.2	1582.7	1541.2	1526.5
52.5°	1526.5	1505.7	1467.3	1434.6	1413.9
55°	1411.0	1393.1	1357.6	1322.0	1307.3
57.5°	1295.3	1280.5	1241.8	1206.3	1194.4
60°	1179.6	1167.9	1126.4	1093.7	1084.9
62.5°	1067.0	1046.2	1016.7	987.1	975.2
65°	951.6	933.7	904.1	877.3	862.6
67.5°	833.1	817.9	791.5	770.8	758.8
70°	723.3	711.3	684.6	663.8	652.2
72.5°	610.7	598.7	584.0	563.2	554.4
75°	497.8	492.2	477.1	459.5	465.4
77.5°	397.2	385.2	379.2	370.4	361.6
80°	296.5	293.4	287.4	278.6	272.7
82.5°	201.6	201.6	198.8	186.8	186.8
85°	121.4	118.6	115.7	106.6	103.8
87.5°	53.5	47.5	41.5	32.7	29.5
90°	1.8	21.8	59.3	55.6	57.4
92.5°	37.5	50.8	52.6	54.3	54.3
95°	88.2	105.1	108.1	108.1	105.1
97.5°	146.9	162.6	169.2	169.2	169.2
100°	214.5	228.4	233.2	233.2	231.4
102.5°	285.8	296.1	302.7	304.5	302.7
105°	363.8	368.6	372.2	375.3	375.3
107.5°	441.1	448.4	448.4	449.6	441.1
110°	516.0	525.7	525.7	525.7	520.9



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CATALOG NUMBER: DFN2DIP-SQ3F0-100D080US927-FLLFLL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	597.0	607.3	605.5	600.6	597.0
115°	676.8	686.4	683.4	681.6	676.8
117.5°	755.9	769.2	760.7	755.9	751.1
120°	835.7	849.0	835.7	835.7	830.2
122.5°	908.2	925.1	916.6	911.8	908.2
125°	984.3	999.4	994.6	989.1	987.4
127.5°	1058.7	1077.4	1070.7	1063.5	1058.7
130°	1128.1	1149.9	1146.8	1143.3	1136.6
132.5°	1206.1	1223.0	1224.2	1215.8	1210.9
135°	1273.1	1291.9	1295.5	1293.7	1288.9
137.5°	1348.1	1363.2	1366.2	1365.0	1357.7
140°	1414.0	1429.0	1437.5	1437.5	1430.8
142.5°	1481.6	1496.7	1501.6	1503.4	1496.7
145°	1545.7	1557.7	1567.4	1569.2	1562.6
147.5°	1603.1	1618.2	1625.4	1628.5	1621.8
150°	1662.3	1672.5	1679.2	1684.7	1679.2
152.5°	1714.8	1725.1	1733.6	1740.3	1733.6
155°	1767.4	1772.3	1777.7	1786.1	1780.7
157.5°	1812.7	1816.4	1819.4	1831.4	1823.0
160°	1853.2	1856.9	1858.7	1868.9	1861.7
162.5°	1890.7	1890.7	1892.5	1904.0	1895.5
165°	1922.7	1920.9	1920.9	1933.0	1924.5
167.5°	1951.7	1946.3	1946.3	1958.4	1949.9
170°	1973.5	1968.6	1966.8	1978.9	1968.6
172.5°	1988.6	1983.8	1982.0	1994.0	1983.8
175°	2000.7	1995.8	1992.2	2004.3	1994.0
177.5°	2007.3	2002.5	1998.8	2009.1	1998.8
180°	2004.3	2004.3	2004.3	2004.3	2004.3



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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	12.36	13.30	13.24	14.20	15.35	11.91	12.85	12.79	13.76	14.90
	3H	14.02	14.86	14.91	15.78	16.95	13.53	14.37	14.42	15.29	16.46
	4H	14.61	15.41	15.52	16.32	17.51	14.11	14.91	15.02	15.83	17.01
	6H	15.01	15.74	15.93	16.67	17.86	14.51	15.24	15.43	16.17	17.36
	8H	15.11	15.82	16.04	16.76	17.95	14.61	15.31	15.54	16.26	17.45
	12H	15.16	15.83	16.10	16.77	17.99	14.65	15.32	15.59	16.26	17.48
4H	2H	12.82	13.62	13.74	14.54	15.72	12.47	13.27	13.38	14.19	15.37
	3H	14.69	15.36	15.62	16.31	17.50	14.28	14.95	15.21	15.90	17.10
	4H	15.41	16.01	16.34	16.96	18.18	14.98	15.59	15.92	16.53	17.76
	6H	15.92	16.45	16.87	17.41	18.64	15.49	16.01	16.44	16.98	18.20
	8H	16.07	16.56	17.02	17.52	18.76	15.63	16.12	16.58	17.09	18.32
	12H	16.15	16.59	17.12	17.57	18.81	15.70	16.14	16.67	17.12	18.36
8H	4H	15.60	16.10	16.56	17.06	18.29	15.23	15.72	16.18	16.68	17.92
	6H	16.23	16.64	17.21	17.64	18.88	15.85	16.26	16.83	17.26	18.49
	8H	16.45	16.81	17.44	17.80	19.06	16.06	16.42	17.05	17.41	18.66
	12H	16.58	16.90	17.57	17.88	19.18	16.17	16.49	17.16	17.47	18.77
12H	4H	15.59	16.04	16.56	17.01	18.26	15.22	15.67	16.20	16.65	17.89
	6H	16.26	16.62	17.25	17.61	18.87	15.89	16.25	16.88	17.24	18.49
	8H	16.50	16.82	17.49	17.81	19.11	16.12	16.44	17.11	17.42	18.72