

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: P911246

Luminaire Tested: DFN2DIP-PN3F0-070D030US850-RLLFLL

Issue Date: 11/21/2024

**Test Information**

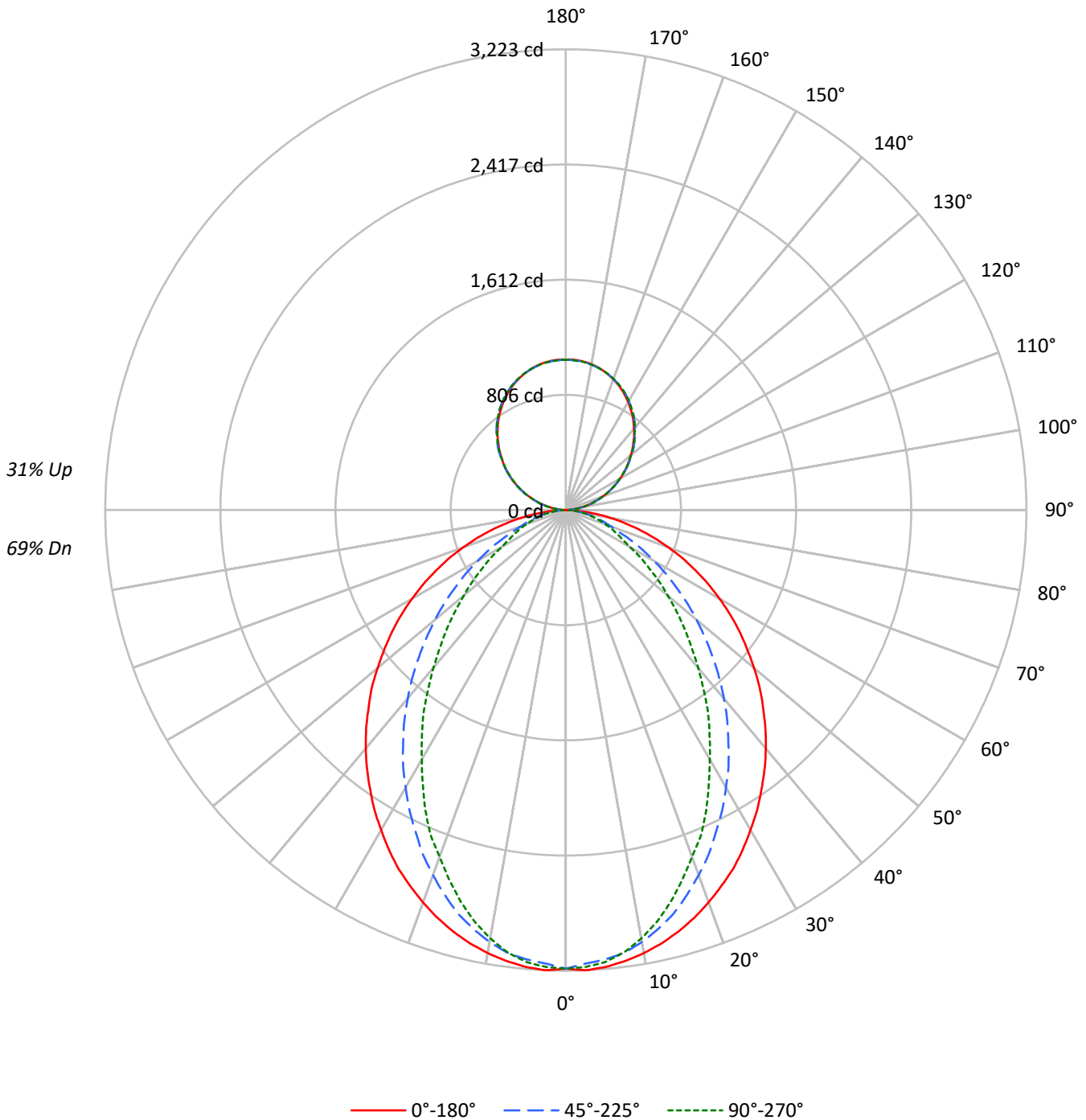
Test Method: LM-79-2019  
Report Number: P911246  
REPORT IS A COMBINATION OF REPORTS P899520 AND P896399  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-PN3F0-070D030US850-RLLFLL  
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9542.9 lumens  
Efficiency: N/A  
Efficacy: 102.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16  
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')  
CIE Type: Semi-Direct  
  
Input Watts (W): 92.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.946  
Total Harmonic Distortion (THDi): 0.132  
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	0
RCR																					
0	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74	69			
1	103	99	95	91	97	93	90	87	84	81	79	75	73	71	66	65	64	60			
2	94	87	81	76	89	82	77	73	74	70	66	66	63	60	59	57	55	51			
3	86	77	70	64	81	73	67	62	66	61	57	59	55	52	53	50	47	44			
4	79	69	61	55	75	65	58	53	59	53	49	53	49	45	48	44	41	38			
5	73	62	54	48	69	59	51	46	53	47	43	48	43	40	43	40	36	34			
6	68	56	48	42	64	53	46	40	48	42	38	44	39	35	40	36	32	30			
7	63	51	43	37	59	48	41	36	44	38	34	40	35	31	36	32	29	27			
8	59	46	39	33	55	44	37	32	41	35	30	37	32	28	34	29	26	24			
9	55	43	35	30	52	41	34	29	37	31	27	34	29	26	31	27	24	22			
10	51	39	32	27	49	38	31	26	35	29	25	32	27	23	29	25	22	20			

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

	0°	45°	90°
0°	3751	3751	3751
5°	3754	3688	3713
10°	3715	3613	3591
15°	3662	3491	3402
20°	3592	3324	3172
25°	3520	3138	2950
30°	3425	2946	2668
35°	3331	2741	2421
40°	3236	2528	2137
45°	3125	2293	1880
50°	3011	2056	1630
55°	2891	1803	1389
60°	2752	1539	1142
65°	2592	1271	1026
70°	2398	1020	926
75°	2154	893	839
80°	1802	742	723
85°	1224	482	533

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3125 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	300.7	3.2
10°-20°	825.5	8.7
20°-30°	1158.9	12.1
30°-40°	1263.3	13.2
40°-50°	1161.1	12.2
50°-60°	911.9	9.6
60°-70°	593.5	6.2
70°-80°	305.5	3.2
80°-90°	81.0	0.8
90°-100°	65.1	0.7
100°-110°	206.9	2.2
110°-120°	354.0	3.7
120°-130°	465.6	4.9
130°-140°	522.6	5.5
140°-150°	512.5	5.4
150°-160°	429.9	4.5
160°-170°	285.1	3.0
170°-180°	99.7	1.0
0°-30°	2285.1	23.9
0°-40°	3548.4	37.2
0°-60°	5621.4	58.9
0°-90°	6601.5	69.2
90°-120°	626.0	6.6
90°-150°	2126.7	22.3
90°-180°	2941.0	30.8
0°-180°	9542.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3208	3208	3208	3208	3208	
5°	3208	3194	3156	3182	3174	304
15°	3052	3020	2921	2866	2837	860
25°	2770	2677	2485	2366	2323	1274
35°	2387	2239	1983	1800	1736	1494
45°	1951	1756	1452	1246	1176	1507
55°	1484	1257	944	770	714	1326
65°	1002	766	505	407	398	993
75°	534	331	232	212	209	565
85°	125	64	55	55	55	143
90°	1	11	31	29	30	9
95°	46	55	57	57	55	52
105°	191	194	195	197	197	202
115°	355	360	359	358	355	351
125°	517	525	522	519	518	462
135°	668	678	680	679	677	517
145°	812	818	823	824	820	507
155°	928	930	933	938	935	427
165°	1009	1008	1008	1015	1010	285
175°	1050	1048	1046	1052	1047	100
180°	1052	1052	1052	1052	1052	



TEST NUMBER: P911246

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3208.4	3208.4	3208.4	3208.4	3208.4
2.5°	3222.9	3208.4	3176.4	3205.7	3199.8
5°	3208.4	3193.9	3156.1	3182.3	3173.6
7.5°	3182.3	3165.0	3124.4	3135.7	3121.3
10°	3147.5	3127.2	3069.2	3060.3	3043.0
12.5°	3104.0	3077.8	2999.3	2982.0	2949.9
15°	3051.6	3019.6	2921.0	2865.9	2836.9
17.5°	2990.6	2944.2	2822.2	2758.3	2711.8
20°	2921.0	2862.8	2717.7	2645.3	2581.2
22.5°	2845.6	2778.7	2610.1	2511.6	2468.2
25°	2770.1	2677.0	2485.4	2366.5	2322.8
27.5°	2680.1	2581.2	2369.3	2232.9	2166.0
30°	2584.3	2473.7	2241.4	2093.6	2015.1
32.5°	2491.3	2357.6	2119.7	1945.4	1872.7
35°	2386.8	2238.6	1983.3	1800.4	1736.3
37.5°	2285.2	2125.3	1855.5	1654.8	1582.5
40°	2177.6	2003.6	1721.7	1515.7	1440.1
42.5°	2067.4	1881.6	1588.3	1373.3	1301.0
45°	1951.3	1756.5	1451.9	1245.5	1175.9
47.5°	1840.9	1634.9	1321.3	1114.9	1051.1
50°	1719.0	1512.9	1193.4	992.9	932.2
52.5°	1599.7	1381.9	1071.4	879.8	824.7
55°	1483.6	1257.2	943.5	769.5	714.4
57.5°	1364.7	1132.4	830.5	667.8	621.4
60°	1242.7	1010.4	711.3	563.5	516.9
62.5°	1123.7	891.5	609.6	470.4	447.3
65°	1001.8	766.4	505.3	406.7	397.7
67.5°	885.6	650.3	406.7	357.0	348.4
70°	763.7	537.2	336.7	307.7	296.0
72.5°	647.5	432.5	281.6	258.5	252.6
75°	534.2	330.8	232.2	211.9	209.2
77.5°	421.1	235.0	183.0	171.2	165.5
80°	316.4	168.5	139.3	127.9	127.9
82.5°	220.6	113.3	95.8	89.9	89.9
85°	124.8	63.8	55.1	55.1	55.1
87.5°	46.5	23.1	23.1	20.3	20.3
90°	1.0	11.4	31.1	29.2	30.2
92.5°	19.6	26.6	27.6	28.5	28.5
95°	46.4	55.2	56.8	56.8	55.2
97.5°	77.1	85.3	88.8	88.8	88.8
100°	112.6	119.9	122.4	122.4	121.5
102.5°	150.0	155.5	158.9	159.9	158.9
105°	191.0	193.5	195.4	197.0	197.0
107.5°	231.6	235.3	235.3	236.0	231.6
110°	270.9	276.0	276.0	276.0	273.5



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	313.4	318.8	317.8	315.3	313.4
115°	355.3	360.3	358.8	357.9	355.3
117.5°	396.8	403.8	399.4	396.8	394.2
120°	438.7	445.7	438.7	438.7	435.8
122.5°	476.8	485.6	481.2	478.6	476.8
125°	516.8	524.7	522.1	519.2	518.3
127.5°	555.7	565.6	562.2	558.3	555.7
130°	592.2	603.6	602.1	600.2	596.6
132.5°	633.1	642.0	642.7	638.2	635.7
135°	668.4	678.2	680.1	679.2	676.6
137.5°	707.7	715.6	717.2	716.6	712.8
140°	742.3	750.2	754.7	754.7	751.1
142.5°	777.9	785.7	788.3	789.3	785.7
145°	811.5	817.8	822.9	823.8	820.3
147.5°	841.6	849.5	853.3	854.9	851.4
150°	872.7	878.1	881.5	884.4	881.5
152.5°	900.3	905.6	910.0	913.6	910.0
155°	927.9	930.3	933.2	937.7	934.9
157.5°	951.6	953.5	955.2	961.5	957.1
160°	972.9	974.8	975.8	981.1	977.4
162.5°	992.6	992.6	993.6	999.5	995.1
165°	1009.4	1008.4	1008.4	1014.7	1010.3
167.5°	1024.6	1021.7	1021.7	1028.0	1023.6
170°	1036.0	1033.5	1032.6	1038.9	1033.5
172.5°	1043.9	1041.5	1040.5	1046.8	1041.5
175°	1050.3	1047.8	1045.9	1052.2	1046.8
177.5°	1053.8	1051.2	1049.3	1054.8	1049.3
180°	1052.2	1052.2	1052.2	1052.2	1052.2



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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	13.33	14.34	14.11	15.14	16.11	9.29	10.31	10.07	11.11	12.08
	3H	15.01	15.92	15.81	16.73	17.73	10.49	11.40	11.28	12.21	13.21
	4H	15.63	16.48	16.44	17.30	18.31	10.95	11.80	11.76	12.62	13.63
	6H	16.05	16.84	16.88	17.67	18.69	11.27	12.06	12.09	12.88	13.91
	8H	16.18	16.93	17.02	17.77	18.80	11.36	12.11	12.20	12.96	13.98
	12H	16.25	16.96	17.09	17.80	18.85	11.41	12.13	12.25	12.96	14.01
4H	2H	13.37	14.22	14.18	15.04	16.05	9.91	10.77	10.72	11.58	12.59
	3H	15.21	15.92	16.03	16.77	17.80	11.27	11.98	12.10	12.83	13.86
	4H	15.90	16.55	16.74	17.39	18.45	11.82	12.47	12.66	13.31	14.37
	6H	16.42	16.98	17.28	17.85	18.91	12.24	12.80	13.10	13.67	14.73
	8H	16.60	17.12	17.46	17.98	19.06	12.37	12.89	13.23	13.76	14.83
	12H	16.70	17.16	17.57	18.05	19.13	12.44	12.91	13.32	13.80	14.87
8H	4H	15.88	16.40	16.74	17.27	18.34	12.11	12.63	12.97	13.50	14.57
	6H	16.45	16.88	17.33	17.79	18.86	12.63	13.06	13.51	13.97	15.04
	8H	16.66	17.04	17.56	17.94	19.04	12.81	13.19	13.71	14.10	15.19
	12H	16.80	17.14	17.70	18.03	19.18	12.94	13.27	13.83	14.17	15.31
12H	4H	15.84	16.31	16.72	17.20	18.27	12.12	12.59	13.00	13.48	14.55
	6H	16.42	16.80	17.32	17.71	18.80	12.67	13.06	13.57	13.96	15.05
	8H	16.65	16.98	17.55	17.88	19.02	12.89	13.22	13.79	14.12	15.26