

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: P905794

Luminaire Tested: DFN2DIP-PN3F0-070D040US835-RLLFLL

Issue Date: 11/21/2024

**Test Information**

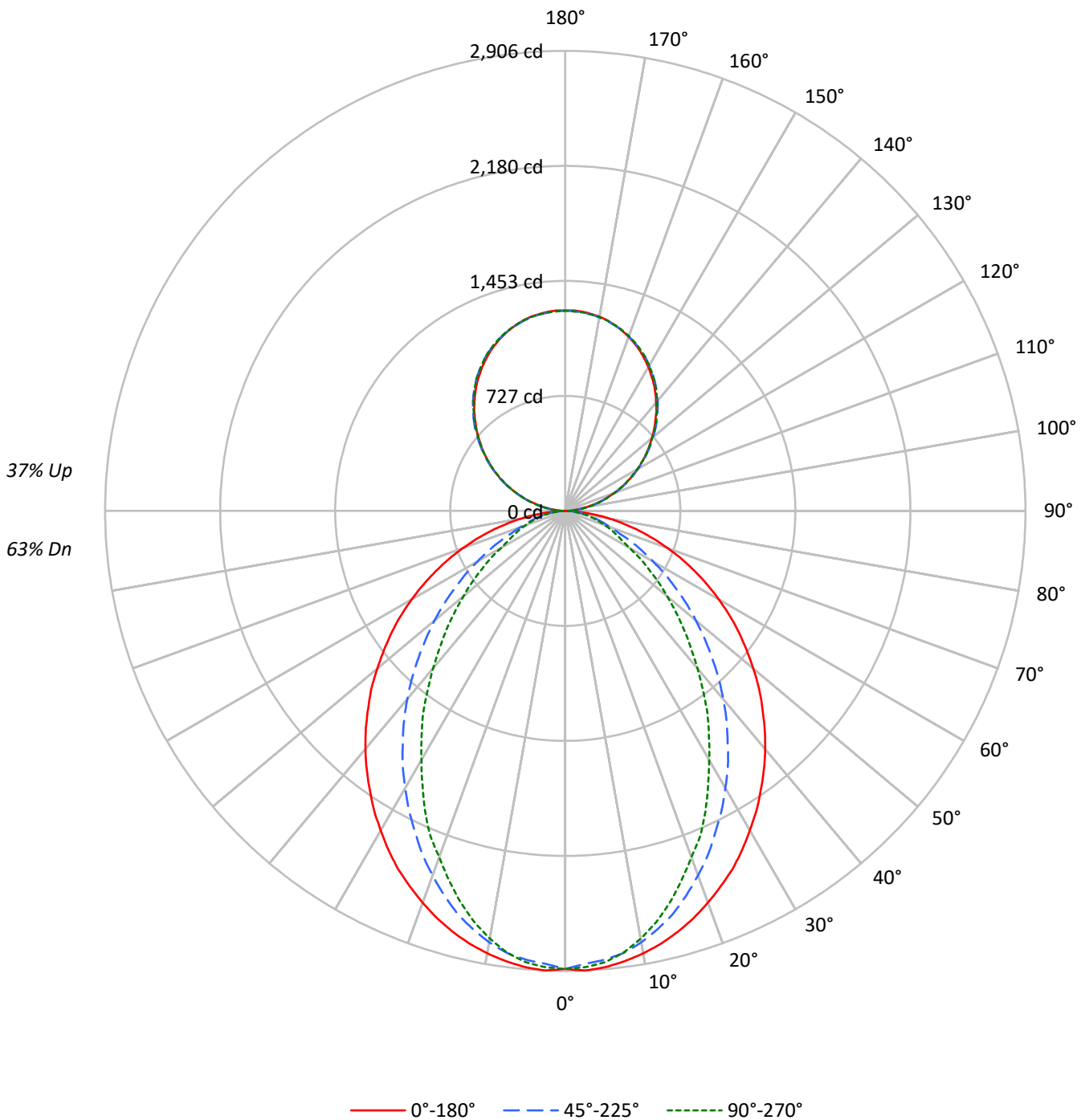
Test Method: LM-79-2019  
Report Number: P905794  
REPORT IS A COMBINATION OF REPORTS P899534 AND P896399  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-PN3F0-070D040US835-RLLFLL  
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9490.0 lumens  
Efficiency: N/A  
Efficacy: 95.4 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): 99.5  
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
RCR																				
0	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68	63		
1	101	97	93	90	95	91	88	85	80	78	76	70	68	67	61	60	58	54		
2	93	85	80	75	87	80	75	71	71	67	64	62	59	57	54	52	50	46		
3	85	76	69	63	79	71	65	60	63	58	54	56	52	49	49	46	43	40		
4	78	67	60	54	73	64	57	51	57	51	47	50	46	42	44	41	38	35		
5	72	61	53	47	67	57	50	45	51	45	41	45	41	37	40	36	33	31		
6	67	55	47	41	62	52	44	39	46	40	36	41	36	33	36	33	30	27		
7	62	50	42	36	58	47	40	35	42	36	32	38	33	29	33	30	27	24		
8	57	45	38	32	54	43	36	31	39	33	29	35	30	26	31	27	24	22		
9	54	42	34	29	50	40	33	28	36	30	26	32	27	24	29	25	22	20		
10	50	38	31	26	47	36	30	25	33	27	24	30	25	22	27	23	20	18		

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

	0°	45°	90°
0°	3382	3382	3382
5°	3385	3326	3348
10°	3350	3258	3238
15°	3302	3148	3068
20°	3239	2998	2860
25°	3174	2829	2660
30°	3088	2657	2406
35°	3004	2471	2183
40°	2918	2280	1927
45°	2818	2068	1696
50°	2715	1854	1470
55°	2607	1626	1252
60°	2482	1388	1029
65°	2337	1146	925
70°	2163	920	835
75°	1943	806	756
80°	1625	669	651
85°	1104	435	481

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2818 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	271.1	2.9
10°-20°	744.3	7.8
20°-30°	1045.0	11.0
30°-40°	1139.2	12.0
40°-50°	1047.0	11.0
50°-60°	822.3	8.7
60°-70°	535.2	5.6
70°-80°	275.5	2.9
80°-90°	73.9	0.8
90°-100°	78.3	0.8
100°-110°	248.7	2.6
110°-120°	425.6	4.5
120°-130°	559.8	5.9
130°-140°	628.3	6.6
140°-150°	616.2	6.5
150°-160°	516.9	5.4
160°-170°	342.8	3.6
170°-180°	119.8	1.3
0°-30°	2060.5	21.7
0°-40°	3199.7	33.7
0°-60°	5068.9	53.4
0°-90°	5953.6	62.7
90°-120°	752.7	7.9
90°-150°	2556.9	26.9
90°-180°	3536.0	37.3
0°-180°	9490.0	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°	1	14	37	35	36	9
95°	56	66	68	68	66	62
105°	230	233	235	237	237	242
115°	427	433	431	430	427	422
125°	621	631	628	624	623	555
135°	804	815	818	816	814	621
145°	976	983	989	990	986	610
155°	1116	1119	1122	1127	1124	513
165°	1214	1212	1212	1220	1215	342
175°	1263	1260	1257	1265	1259	120
180°	1265	1265	1265	1265	1265	



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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°	1.1	13.7	37.4	35.1	36.2
92.5°	23.6	32.0	33.2	34.3	34.3
95°	55.7	66.4	68.3	68.3	66.4
97.5°	92.7	102.6	106.8	106.8	106.8
100°	135.4	144.2	147.2	147.2	146.1
102.5°	180.4	186.9	191.1	192.2	191.1
105°	229.6	232.6	234.9	236.8	236.8
107.5°	278.4	283.0	283.0	283.7	278.4
110°	325.7	331.8	331.8	331.8	328.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	376.8	383.3	382.1	379.1	376.8
115°	427.1	433.3	431.3	430.2	427.1
117.5°	477.1	485.5	480.2	477.1	474.1
120°	527.5	535.8	527.5	527.5	524.0
122.5°	573.2	583.9	578.6	575.5	573.2
125°	621.3	630.8	627.8	624.3	623.2
127.5°	668.2	680.0	675.8	671.2	668.2
130°	712.0	725.8	723.9	721.6	717.4
132.5°	761.2	771.9	772.7	767.3	764.3
135°	803.6	815.4	817.7	816.5	813.5
137.5°	850.9	860.4	862.3	861.5	857.0
140°	892.4	902.0	907.3	907.3	903.1
142.5°	935.2	944.7	947.7	948.9	944.7
145°	975.6	983.2	989.3	990.5	986.3
147.5°	1011.8	1021.3	1025.9	1027.8	1023.6
150°	1049.2	1055.7	1059.9	1063.3	1059.9
152.5°	1082.4	1088.8	1094.2	1098.4	1094.2
155°	1115.5	1118.6	1122.0	1127.4	1123.9
157.5°	1144.2	1146.4	1148.3	1156.0	1150.6
160°	1169.7	1172.0	1173.1	1179.6	1175.0
162.5°	1193.3	1193.3	1194.5	1201.7	1196.4
165°	1213.6	1212.4	1212.4	1220.0	1214.7
167.5°	1231.9	1228.4	1228.4	1236.1	1230.7
170°	1245.6	1242.5	1241.4	1249.0	1242.5
172.5°	1255.1	1252.1	1250.9	1258.6	1252.1
175°	1262.8	1259.7	1257.4	1265.0	1258.6
177.5°	1267.0	1263.9	1261.6	1268.1	1261.6
180°	1265.0	1265.0	1265.0	1265.0	1265.0



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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	12.45	13.40	13.30	14.26	15.34	8.42	9.37	9.27	10.23	11.31
	3H	14.13	14.98	14.99	15.85	16.96	9.61	10.46	10.47	11.33	12.44
	4H	14.74	15.54	15.62	16.42	17.54	10.06	10.86	10.94	11.74	12.86
	6H	15.17	15.90	16.05	16.79	17.92	10.38	11.12	11.27	12.01	13.14
	8H	15.29	15.99	16.19	16.90	18.03	10.47	11.17	11.37	12.08	13.21
	12H	15.36	16.02	16.26	16.92	18.07	10.52	11.19	11.42	12.08	13.24
4H	2H	12.48	13.28	13.36	14.16	15.28	9.03	9.82	9.91	10.70	11.82
	3H	14.32	14.98	15.21	15.89	17.02	10.38	11.04	11.27	11.95	13.09
	4H	15.01	15.61	15.91	16.52	17.68	10.93	11.53	11.83	12.44	13.60
	6H	15.52	16.04	16.44	16.98	18.14	11.35	11.87	12.26	12.80	13.96
	8H	15.70	16.18	16.62	17.11	18.28	11.47	11.96	12.39	12.89	14.06
	12H	15.79	16.23	16.73	17.18	18.35	11.54	11.98	12.48	12.92	14.10
8H	4H	14.98	15.47	15.90	16.39	17.57	11.21	11.70	12.13	12.62	13.80
	6H	15.55	15.95	16.49	16.92	18.09	11.73	12.13	12.67	13.10	14.27
	8H	15.76	16.11	16.72	17.07	18.26	11.91	12.27	12.87	13.23	14.42
	12H	15.90	16.21	16.86	17.16	18.40	12.03	12.34	12.99	13.30	14.54
12H	4H	14.94	15.38	15.88	16.32	17.50	11.22	11.66	12.16	12.60	13.78
	6H	15.52	15.88	16.48	16.84	18.03	11.77	12.13	12.73	13.09	14.28
	8H	15.74	16.06	16.70	17.01	18.25	11.98	12.30	12.94	13.25	14.49