

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: P914084

Luminaire Tested: DFN2DIP-PN4F0-040D110US927-FLLFLL

Issue Date: 11/21/2024

**Test Information**

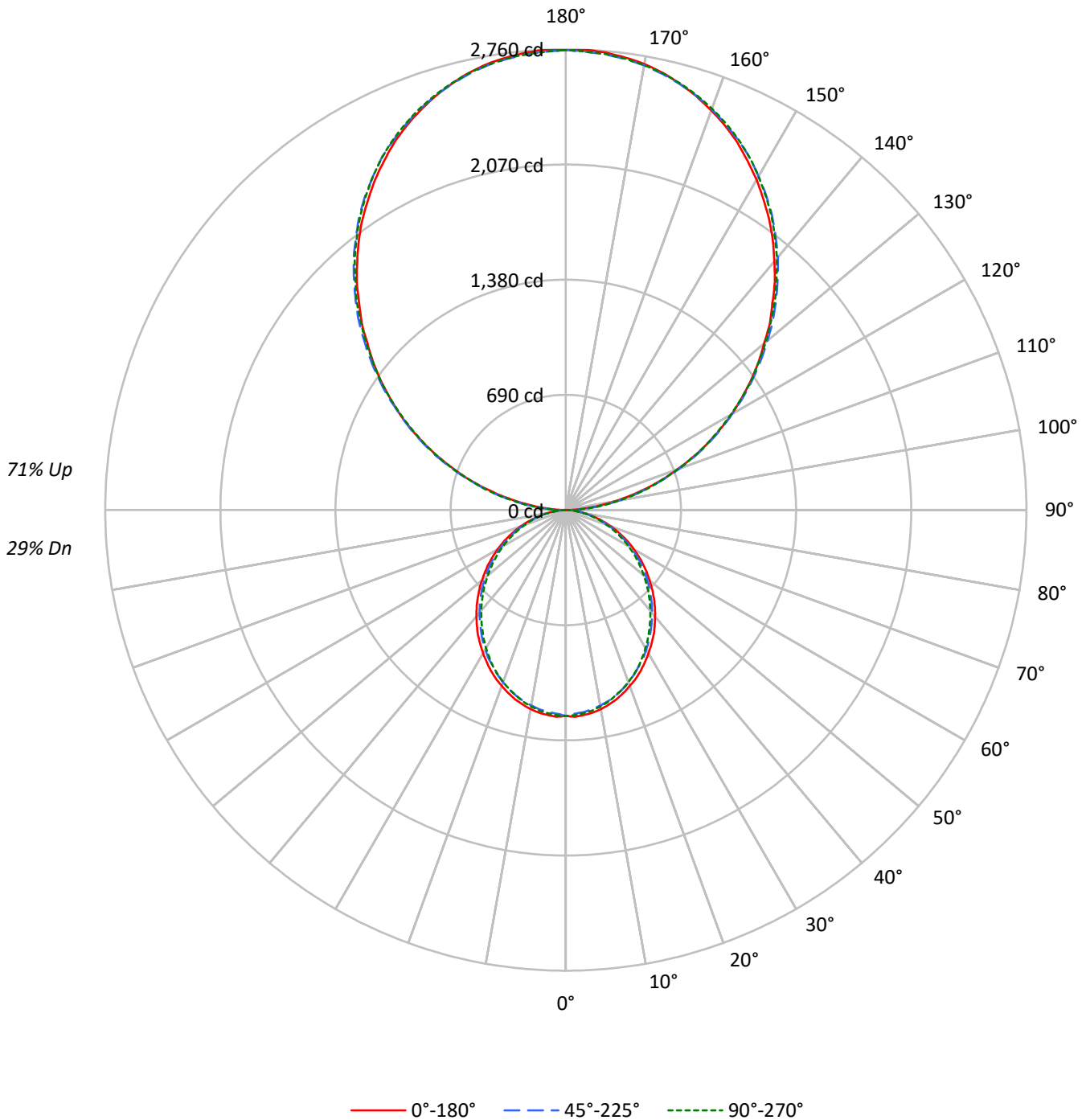
Test Method: LM-79-2019  
Report Number: P914084  
REPORT IS A COMBINATION OF REPORTS P899735 AND P896497  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-PN4F0-040D110US927-FLLFLL  
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10848.9 lumens  
Efficiency: N/A  
Efficacy: 86.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')  
CIE Type: Semi-Indirect  
  
Input Watts (W): 125  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9968  
Total Harmonic Distortion (THDi): 0.064  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P914084  
CATALOG NUMBER: DFN2DIP-PN4F0-040D110US927-FLLFLL

### Luminous Intensity Polar Plot





TEST NUMBER: P914084

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US927-FLLFLL

**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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37	29				29
1	93	89	85	82	83	80	77	74	63	61	59	47	46	44	32	32	31	24				24
2	85	78	72	67	76	70	65	60	55	51	48	41	39	37	29	27	26	20				20
3	77	68	61	55	69	61	55	50	48	44	41	36	34	31	25	24	22	17				17
4	71	60	53	47	63	54	48	43	43	38	35	32	29	27	23	21	19	15				15
5	65	53	46	40	58	48	41	36	38	33	30	29	26	23	20	18	17	13				13
6	59	48	40	34	53	43	36	31	34	29	26	26	23	20	18	16	15	11				11
7	55	43	35	30	49	39	32	27	31	26	23	24	20	18	17	15	13	10				10
8	51	39	31	26	45	35	29	24	28	23	20	22	18	16	15	13	12	9				9
9	47	35	28	23	42	32	26	21	26	21	18	20	16	14	14	12	10	8				8
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	9	7				7

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

	0°	45°	90°
0°	900	900	900
5°	901	888	894
10°	894	876	882
15°	881	861	863
20°	863	842	844
25°	846	818	822
30°	823	796	793
35°	802	769	763
40°	777	743	735
45°	751	716	706
50°	723	689	672
55°	693	657	641
60°	660	618	606
65°	623	579	564
70°	577	531	519
75°	513	473	478
80°	436	400	398
85°	315	273	266

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 90°  
 Luminance: 2157 cd/sqm



TEST NUMBER: P914084

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US927-FLLFLL

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	116.0	1.1
10°-20°	326.5	3.0
20°-30°	479.8	4.4
30°-40°	557.3	5.1
40°-50°	556.6	5.1
50°-60°	485.3	4.5
60°-70°	358.8	3.3
70°-80°	203.0	1.9
80°-90°	61.4	0.6
90°-100°	170.5	1.6
100°-110°	541.8	5.0
110°-120°	927.3	8.5
120°-130°	1219.5	11.2
130°-140°	1368.8	12.6
140°-150°	1342.3	12.4
150°-160°	1126.0	10.4
160°-170°	746.7	6.9
170°-180°	261.0	2.4
0°-30°	922.4	8.5
0°-40°	1479.7	13.6
0°-60°	2521.7	23.2
0°-90°	3144.9	29.0
90°-120°	1639.7	15.1
90°-150°	5570.3	51.3
90°-180°	7704.0	71.0
0°-180°	10848.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1233	1233	1233	1233	1233	
5°	1233	1228	1215	1225	1222	117
15°	1174	1167	1151	1156	1150	331
25°	1062	1053	1033	1035	1033	489
35°	916	905	886	878	873	572
45°	746	738	720	707	702	576
55°	564	557	543	529	523	505
65°	381	373	362	351	345	376
75°	199	197	191	184	186	213
85°	49	48	46	43	42	54
90°	2	30	81	76	79	11
95°	121	145	149	149	145	135
105°	500	507	512	516	516	528
115°	931	944	940	937	931	920
125°	1353	1374	1368	1360	1358	1209
135°	1751	1776	1781	1779	1772	1353
145°	2125	2142	2155	2158	2149	1328
155°	2430	2437	2444	2456	2448	1119
165°	2644	2641	2641	2658	2646	746
175°	2751	2744	2739	2756	2742	261
180°	2756	2756	2756	2756	2756	



TEST NUMBER: P914084

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US927-FLLFLL

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1233.0	1233.0	1233.0	1233.0	1233.0
2.5°	1240.2	1234.2	1221.1	1233.0	1230.7
5°	1233.0	1228.3	1215.2	1224.6	1222.4
7.5°	1224.6	1217.6	1204.5	1214.1	1211.7
10°	1211.7	1203.4	1189.2	1198.6	1195.1
12.5°	1193.8	1186.8	1172.6	1178.5	1176.1
15°	1173.7	1166.6	1151.2	1156.0	1150.1
17.5°	1148.8	1141.8	1126.3	1132.2	1126.3
20°	1121.5	1114.4	1097.9	1101.4	1096.8
22.5°	1094.3	1083.6	1068.2	1068.2	1065.8
25°	1062.2	1052.8	1032.7	1035.0	1032.7
27.5°	1026.7	1018.3	1003.1	999.5	993.6
30°	991.2	981.7	963.9	960.4	955.6
32.5°	953.2	946.2	927.2	920.0	915.2
35°	916.5	904.7	885.7	878.5	872.6
37.5°	875.0	864.3	845.3	837.0	831.1
40°	832.3	822.8	803.7	793.2	788.5
42.5°	790.8	781.2	762.4	750.4	743.4
45°	745.8	737.5	719.6	706.7	701.9
47.5°	701.9	693.6	674.6	661.6	654.5
50°	655.6	649.7	633.1	616.5	610.5
52.5°	610.5	602.3	586.9	573.9	565.5
55°	564.4	557.2	543.0	528.8	522.9
57.5°	518.1	512.2	496.7	482.5	477.8
60°	471.8	467.1	450.6	437.5	434.0
62.5°	426.8	418.5	406.7	394.8	390.1
65°	380.6	373.4	361.6	350.9	345.1
67.5°	333.2	327.2	316.6	308.3	303.6
70°	289.3	284.6	273.9	265.5	260.9
72.5°	244.3	239.5	233.6	225.3	221.7
75°	199.2	196.9	190.8	183.8	186.2
77.5°	158.8	154.1	151.7	148.1	144.7
80°	118.6	117.3	114.9	111.5	109.1
82.5°	80.6	80.6	79.5	74.7	74.7
85°	48.6	47.5	46.3	42.6	41.5
87.5°	21.4	19.0	16.6	13.1	11.8
90°	2.5	29.9	81.4	76.4	78.9
92.5°	51.5	69.8	72.2	74.8	74.8
95°	121.3	144.6	148.7	148.7	144.6
97.5°	201.9	223.5	232.7	232.7	232.7
100°	294.9	314.0	320.7	320.7	318.2
102.5°	393.0	407.1	416.3	418.7	416.3
105°	500.2	506.8	511.8	515.9	515.9
107.5°	606.5	616.5	616.5	618.1	606.5
110°	709.6	722.9	722.9	722.9	716.2



TEST NUMBER: P914084

CATALOG NUMBER: DFN2DIP-PN4F0-040D110US927-FLLFLL

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	820.9	835.0	832.5	825.8	820.9
115°	930.6	943.8	939.7	937.2	930.6
117.5°	1039.4	1057.6	1046.0	1039.4	1032.8
120°	1149.1	1167.4	1149.1	1149.1	1141.6
122.5°	1248.8	1272.0	1260.4	1253.7	1248.8
125°	1353.4	1374.2	1367.5	1360.1	1357.6
127.5°	1455.6	1481.4	1472.3	1462.3	1455.6
130°	1551.2	1581.1	1576.9	1571.9	1562.8
132.5°	1658.4	1681.6	1683.3	1671.7	1665.0
135°	1750.6	1776.3	1781.3	1778.8	1772.2
137.5°	1853.6	1874.4	1878.5	1876.8	1866.9
140°	1944.2	1964.9	1976.6	1976.6	1967.5
142.5°	2037.3	2058.0	2064.7	2067.1	2058.0
145°	2125.3	2141.9	2155.2	2157.7	2148.6
147.5°	2204.2	2225.0	2235.0	2239.1	2230.0
150°	2285.7	2299.8	2308.9	2316.4	2308.9
152.5°	2357.9	2372.0	2383.7	2392.9	2383.7
155°	2430.3	2436.8	2444.4	2456.0	2448.5
157.5°	2492.5	2497.5	2501.6	2518.3	2506.6
160°	2548.2	2553.2	2555.7	2569.8	2559.9
162.5°	2599.7	2599.7	2602.2	2618.0	2606.4
165°	2643.7	2641.2	2641.2	2657.8	2646.2
167.5°	2683.6	2676.1	2676.1	2692.8	2681.1
170°	2713.5	2706.9	2704.4	2721.0	2706.9
172.5°	2734.3	2727.6	2725.2	2741.8	2727.6
175°	2750.9	2744.3	2739.3	2755.9	2741.8
177.5°	2760.0	2753.4	2748.4	2762.6	2748.4
180°	2755.9	2755.9	2755.9	2755.9	2755.9



TEST NUMBER: P914084  
 CATALOG NUMBER: DFN2DIP-PN4F0-040D110US927-FLLFLL

**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	4.56	5.25	5.67	6.37	7.91	4.12	4.82	5.23	5.93	7.47
	3H	6.21	6.83	7.33	7.95	9.51	5.72	6.35	6.85	7.47	9.03
	4H	6.79	7.38	7.93	8.51	10.07	6.30	6.90	7.44	8.02	9.58
	6H	7.18	7.73	8.33	8.85	10.43	6.69	7.24	7.84	8.36	9.94
	8H	7.28	7.80	8.43	8.94	10.51	6.79	7.31	7.94	8.45	10.02
	12H	7.33	7.82	8.48	8.95	10.55	6.83	7.32	7.98	8.46	10.05
4H	2H	5.00	5.59	6.14	6.71	8.28	4.65	5.24	5.79	6.36	7.93
	3H	6.85	7.35	8.00	8.50	10.07	6.45	6.95	7.60	8.09	9.67
	4H	7.56	8.02	8.71	9.15	10.75	7.14	7.60	8.30	8.74	10.33
	6H	8.07	8.46	9.23	9.62	11.21	7.65	8.04	8.80	9.20	10.78
	8H	8.22	8.58	9.37	9.73	11.34	7.79	8.15	8.95	9.30	10.91
	12H	8.28	8.62	9.46	9.78	11.39	7.84	8.18	9.02	9.34	10.95
8H	4H	7.74	8.11	8.90	9.26	10.86	7.37	7.74	8.53	8.89	10.49
	6H	8.37	8.67	9.55	9.87	11.47	8.00	8.30	9.17	9.49	11.09
	8H	8.59	8.86	9.78	10.03	11.65	8.21	8.47	9.39	9.64	11.26
	12H	8.72	8.95	9.91	10.12	11.77	8.32	8.55	9.50	9.72	11.37
12H	4H	7.72	8.05	8.90	9.22	10.82	7.36	7.69	8.53	8.85	10.46
	6H	8.40	8.66	9.58	9.84	11.46	8.04	8.30	9.22	9.47	11.09
	8H	8.64	8.87	9.82	10.04	11.69	8.27	8.50	9.45	9.67	11.32