

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: P908466

Luminaire Tested: DFN2DIP-PN3F0-050D040US840-RLLFLL

Issue Date: 11/21/2024

**Test Information**

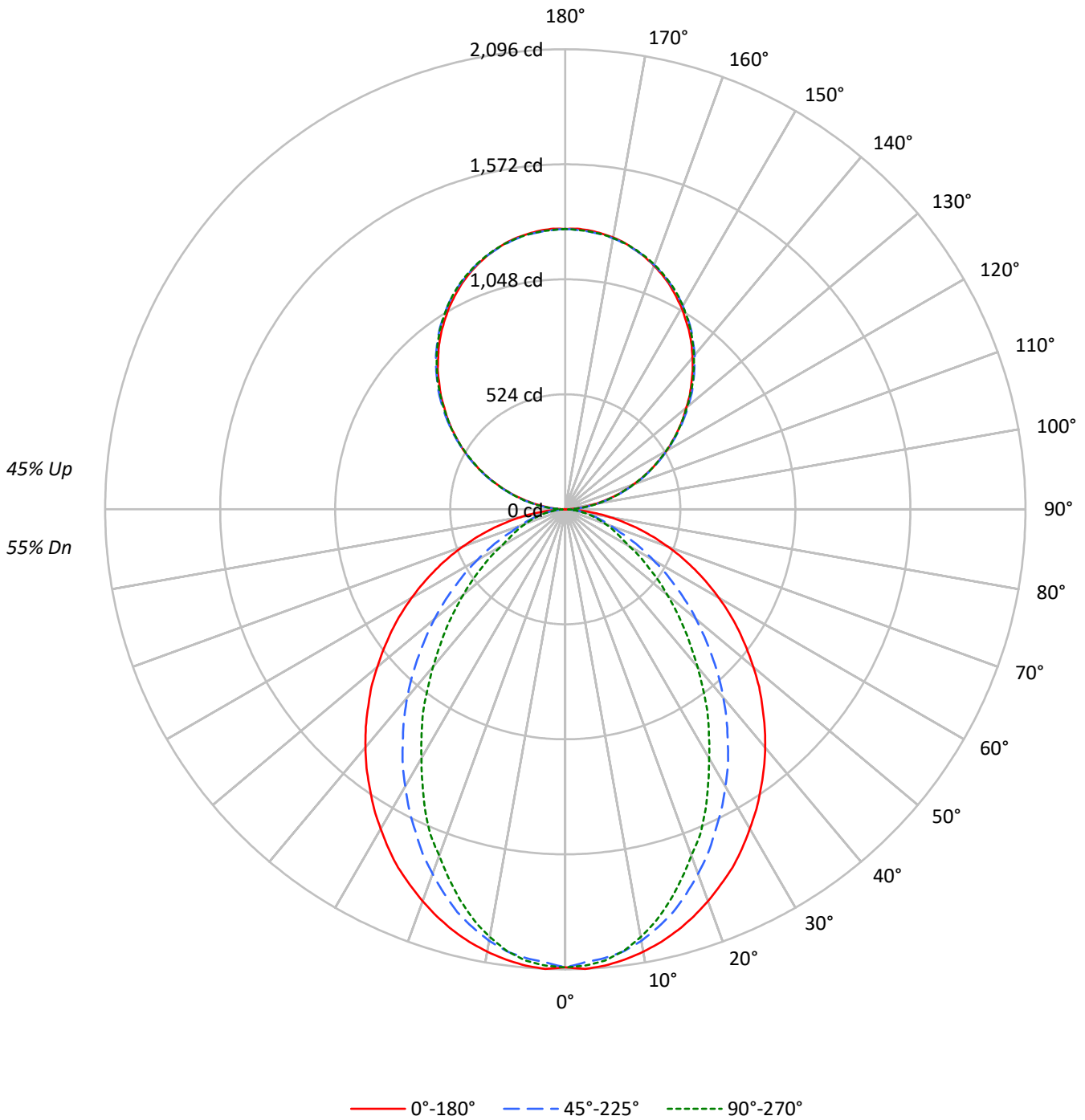
Test Method: LM-79-2019  
Report Number: P908466  
REPORT IS A COMBINATION OF REPORTS P899530 AND P896399  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-PN3F0-050D040US840-RLLFLL  
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7866.9 lumens  
Efficiency: N/A  
Efficacy: 104.9 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: General Diffuse  
  
Input Watts (W): 75  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9613  
Total Harmonic Distortion (THDi): 0.083  
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	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60	60	60	60	55
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	54	53	52	54	53	52	47
2	91	84	78	73	84	78	73	69	67	63	60	57	55	52	48	46	45	48	46	45	40
3	83	74	67	61	77	69	63	58	60	55	51	51	48	45	43	41	39	43	41	39	35
4	76	66	58	52	71	62	55	50	54	48	44	46	42	39	39	36	34	39	36	34	30
5	70	59	51	45	65	55	48	43	48	43	38	42	37	34	35	32	30	35	32	30	27
6	65	53	45	40	60	50	43	38	44	38	34	38	33	30	32	29	26	32	29	26	24
7	60	48	40	35	56	45	38	33	40	34	30	35	30	27	30	26	24	30	26	24	21
8	56	44	36	31	52	41	34	30	36	31	27	32	27	24	27	24	21	27	24	21	19
9	52	40	33	28	49	38	31	27	34	28	24	29	25	22	25	22	19	25	22	19	17
10	49	37	30	25	46	35	28	24	31	26	22	27	23	20	24	20	18	24	20	18	16

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

	0°	45°	90°
0°	2440	2440	2440
5°	2442	2399	2415
10°	2416	2350	2335
15°	2382	2271	2213
20°	2336	2162	2063
25°	2290	2041	1918
30°	2228	1916	1735
35°	2167	1783	1574
40°	2105	1644	1390
45°	2033	1492	1223
50°	1958	1337	1060
55°	1880	1173	903
60°	1790	1001	743
65°	1686	826	667
70°	1560	664	602
75°	1401	581	545
80°	1172	482	469
85°	797	314	347

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2033 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	195.6	2.5
10°-20°	536.9	6.8
20°-30°	753.8	9.6
30°-40°	821.7	10.4
40°-50°	755.2	9.6
50°-60°	593.1	7.5
60°-70°	386.1	4.9
70°-80°	198.7	2.5
80°-90°	54.4	0.7
90°-100°	79.1	1.0
100°-110°	251.2	3.2
110°-120°	429.8	5.5
120°-130°	565.3	7.2
130°-140°	634.5	8.1
140°-150°	622.2	7.9
150°-160°	522.0	6.6
160°-170°	346.2	4.4
170°-180°	121.0	1.5
0°-30°	1486.3	18.9
0°-40°	2308.0	29.3
0°-60°	3656.4	46.5
0°-90°	4295.6	54.6
90°-120°	760.1	9.7
90°-150°	2582.2	32.8
90°-180°	3571.0	45.4
0°-180°	7866.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2087	2087	2087	2087	2087	
5°	2087	2078	2053	2070	2064	198
15°	1985	1964	1900	1864	1845	559
25°	1802	1741	1617	1539	1511	829
35°	1552	1456	1290	1171	1129	972
45°	1269	1143	944	810	765	980
55°	965	818	614	500	465	862
65°	652	499	329	264	259	646
75°	348	215	151	138	136	368
85°	81	42	36	36	36	93
90°	1	14	38	35	37	8
95°	56	67	69	69	67	63
105°	232	235	237	239	239	245
115°	431	438	436	434	431	427
125°	627	637	634	630	629	561
135°	812	823	826	825	822	627
145°	985	993	999	1000	996	616
155°	1126	1130	1133	1138	1135	519
165°	1226	1224	1224	1232	1227	346
175°	1275	1272	1270	1278	1271	121
180°	1278	1278	1278	1278	1278	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2086.9	2086.9	2086.9	2086.9	2086.9
2.5°	2096.3	2086.9	2066.1	2085.1	2081.2
5°	2086.9	2077.5	2052.9	2069.8	2064.3
7.5°	2069.8	2058.6	2032.2	2039.6	2030.1
10°	2047.2	2034.0	1996.3	1990.5	1979.2
12.5°	2018.9	2002.0	1950.9	1939.6	1918.7
15°	1984.9	1964.1	1900.0	1864.1	1845.2
17.5°	1945.2	1915.0	1835.6	1794.1	1763.8
20°	1900.0	1862.1	1767.7	1720.6	1678.9
22.5°	1850.9	1807.4	1697.8	1633.7	1605.4
25°	1801.7	1741.2	1616.6	1539.2	1510.8
27.5°	1743.2	1678.9	1541.1	1452.3	1408.9
30°	1680.9	1609.0	1457.9	1361.7	1310.6
32.5°	1620.4	1533.5	1378.8	1265.4	1218.1
35°	1552.5	1456.1	1290.0	1170.9	1129.3
37.5°	1486.3	1382.4	1206.9	1076.4	1029.4
40°	1416.4	1303.2	1119.8	985.8	936.8
42.5°	1344.7	1223.9	1033.1	893.2	846.2
45°	1269.2	1142.6	944.3	810.1	764.8
47.5°	1197.4	1063.4	859.4	725.2	683.7
50°	1118.1	984.0	776.3	645.8	606.3
52.5°	1040.6	898.9	696.9	572.3	536.4
55°	965.0	817.7	613.7	500.5	464.6
57.5°	887.7	736.6	540.2	434.4	404.1
60°	808.3	657.2	462.6	366.5	336.2
62.5°	730.9	579.9	396.6	306.0	290.9
65°	651.6	498.6	328.6	264.5	258.7
67.5°	576.0	423.0	264.5	232.3	226.6
70°	496.8	349.4	219.0	200.2	192.6
72.5°	421.2	281.3	183.2	168.1	164.3
75°	347.5	215.2	151.1	137.8	136.0
77.5°	273.9	152.9	119.1	111.4	107.6
80°	205.8	109.6	90.6	83.1	83.1
82.5°	143.5	73.7	62.3	58.5	58.5
85°	81.2	41.5	35.9	35.9	35.9
87.5°	30.3	15.0	15.0	13.2	13.2
90°	1.1	13.8	37.8	35.4	36.6
92.5°	23.8	32.3	33.5	34.6	34.6
95°	56.2	67.1	69.0	69.0	67.1
97.5°	93.6	103.6	107.9	107.9	107.9
100°	136.7	145.6	148.7	148.7	147.5
102.5°	182.2	188.7	193.0	194.1	193.0
105°	231.9	234.9	237.2	239.1	239.1
107.5°	281.1	285.8	285.8	286.5	281.1
110°	328.9	335.1	335.1	335.1	332.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	380.5	387.1	385.9	382.8	380.5
115°	431.3	437.6	435.6	434.4	431.3
117.5°	481.8	490.3	484.9	481.8	478.8
120°	532.7	541.1	532.7	532.7	529.2
122.5°	578.9	589.7	584.3	581.2	578.9
125°	627.4	637.0	634.0	630.5	629.3
127.5°	674.8	686.7	682.5	677.8	674.8
130°	719.0	733.0	731.0	728.7	724.5
132.5°	768.7	779.5	780.3	774.9	771.8
135°	811.5	823.4	825.8	824.6	821.5
137.5°	859.3	868.9	870.8	870.0	865.5
140°	901.2	910.9	916.3	916.3	912.0
142.5°	944.4	954.0	957.0	958.3	954.0
145°	985.2	992.9	999.1	1000.3	996.0
147.5°	1021.8	1031.4	1036.0	1037.9	1033.7
150°	1059.6	1066.1	1070.4	1073.8	1070.4
152.5°	1093.1	1099.5	1105.0	1109.2	1105.0
155°	1126.5	1129.6	1133.1	1138.5	1135.0
157.5°	1155.5	1157.7	1159.6	1167.4	1162.0
160°	1181.2	1183.6	1184.7	1191.2	1186.6
162.5°	1205.1	1205.1	1206.3	1213.6	1208.2
165°	1225.6	1224.4	1224.4	1232.0	1226.7
167.5°	1244.1	1240.5	1240.5	1248.3	1242.8
170°	1257.9	1254.8	1253.6	1261.3	1254.8
172.5°	1267.5	1264.5	1263.2	1271.0	1264.5
175°	1275.3	1272.1	1269.8	1277.5	1271.0
177.5°	1279.5	1276.4	1274.0	1280.6	1274.0
180°	1277.5	1277.5	1277.5	1277.5	1277.5



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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	10.63	11.49	11.55	12.43	13.64	6.59	7.46	7.51	8.40	9.60
	3H	12.30	13.08	13.24	14.02	15.25	7.78	8.55	8.71	9.50	10.73
	4H	12.91	13.64	13.86	14.59	15.83	8.22	8.96	9.17	9.91	11.15
	6H	13.32	14.00	14.29	14.96	16.21	8.54	9.22	9.50	10.17	11.43
	8H	13.45	14.09	14.42	15.07	16.32	8.63	9.27	9.60	10.25	11.50
	12H	13.51	14.12	14.48	15.09	16.36	8.67	9.28	9.65	10.25	11.53
4H	2H	10.65	11.38	11.60	12.33	13.57	7.19	7.92	8.14	8.87	10.11
	3H	12.47	13.08	13.44	14.06	15.32	8.54	9.15	9.50	10.13	11.38
	4H	13.16	13.72	14.14	14.69	15.97	9.08	9.64	10.05	10.61	11.89
	6H	13.67	14.15	14.66	15.15	16.43	9.49	9.97	10.48	10.97	12.25
	8H	13.85	14.29	14.83	15.28	16.58	9.62	10.07	10.61	11.06	12.35
	12H	13.94	14.34	14.95	15.35	16.65	9.68	10.09	10.69	11.09	12.39
8H	4H	13.13	13.58	14.12	14.57	15.86	9.36	9.81	10.35	10.80	12.09
	6H	13.69	14.06	14.70	15.09	16.38	9.87	10.24	10.88	11.27	12.56
	8H	13.90	14.23	14.93	15.25	16.56	10.06	10.38	11.08	11.40	12.71
	12H	14.04	14.33	15.06	15.34	16.69	10.17	10.46	11.20	11.47	12.83
12H	4H	13.08	13.49	14.09	14.50	15.79	9.36	9.77	10.37	10.78	12.07
	6H	13.67	13.99	14.69	15.01	16.32	9.92	10.24	10.94	11.26	12.57
	8H	13.88	14.17	14.91	15.19	16.54	10.12	10.41	11.15	11.43	12.78