

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: P908478

Luminaire Tested: DFN2DIP-PN3F0-050D070US840-RLLFLL

Issue Date: 11/21/2024

**Test Information**

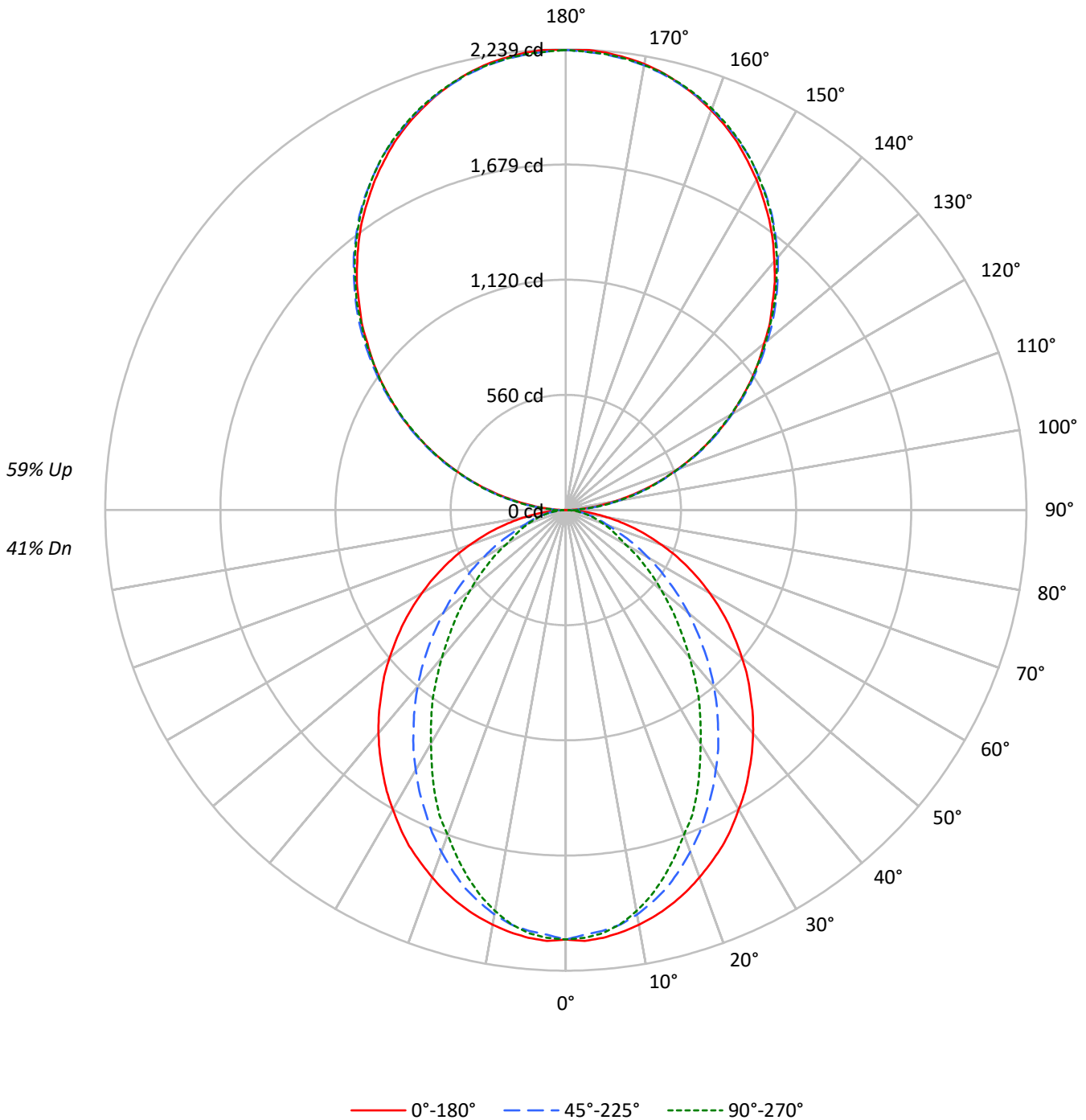
Test Method: LM-79-2019  
Report Number: P908478  
REPORT IS A COMBINATION OF REPORTS P899572 AND P896399  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-PN3F0-050D070US840-RLLFLL  
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10548.1 lumens  
Efficiency: N/A  
Efficacy: 106.2 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): 99.3  
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				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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	48	48	48	48	48	48	41
1	96	92	88	85	87	84	81	78	69	67	65	55	54	53	43	42	41	41	41	41	35
2	88	81	75	70	80	74	69	65	61	57	54	49	47	44	38	36	35	35	35	35	30
3	80	71	64	59	73	65	59	54	54	50	46	44	41	38	34	32	30	30	30	30	26
4	74	63	56	50	67	58	52	46	48	43	40	39	36	33	31	28	26	26	26	26	23
5	68	57	49	43	62	52	45	40	43	38	34	35	32	29	28	25	23	23	23	23	20
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	21	21	21	21	18
7	58	46	38	33	53	42	36	31	36	30	27	29	25	23	23	21	19	19	19	19	16
8	54	42	34	29	49	39	32	27	32	27	24	27	23	20	21	19	17	17	17	17	14
9	50	38	31	26	46	35	29	24	30	25	21	25	21	18	20	17	15	15	15	15	13
10	47	35	28	23	43	32	26	22	27	23	19	23	19	17	18	16	14	14	14	14	12

**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: 90°  
 Vertical Angle: 90°  
 Luminance: 2214 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	195.6	1.9
10°-20°	536.9	5.1
20°-30°	753.8	7.1
30°-40°	821.7	7.8
40°-50°	755.2	7.2
50°-60°	593.1	5.6
60°-70°	386.1	3.7
70°-80°	198.7	1.9
80°-90°	57.1	0.5
90°-100°	138.3	1.3
100°-110°	439.6	4.2
110°-120°	752.2	7.1
120°-130°	989.3	9.4
130°-140°	1110.5	10.5
140°-150°	1088.9	10.3
150°-160°	913.5	8.7
160°-170°	605.8	5.7
170°-180°	211.7	2.0
0°-30°	1486.3	14.1
0°-40°	2308.0	21.9
0°-60°	3656.4	34.7
0°-90°	4298.3	40.7
90°-120°	1330.1	12.6
90°-150°	4518.8	42.8
90°-180°	6250.0	59.3
0°-180°	10548.1	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°	2	24	66	62	64	10
95°	98	117	121	121	117	109
105°	406	411	415	419	419	428
115°	755	766	762	760	755	747
125°	1098	1115	1109	1103	1101	981
135°	1420	1441	1445	1443	1438	1098
145°	1724	1738	1748	1750	1743	1077
155°	1972	1977	1983	1992	1986	907
165°	2145	2143	2143	2156	2147	605
175°	2232	2226	2222	2236	2224	212
180°	2236	2236	2236	2236	2236	



TEST NUMBER: P908478

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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°	2.0	24.2	66.0	62.0	64.0
92.5°	41.8	56.7	58.7	60.7	60.7
95°	98.4	117.2	120.7	120.7	117.2
97.5°	163.8	181.3	188.7	188.7	188.7
100°	239.2	254.8	260.1	260.1	258.1
102.5°	318.8	330.2	337.7	339.7	337.7
105°	405.8	411.1	415.2	418.6	418.6
107.5°	492.0	500.1	500.1	501.5	492.0
110°	575.6	586.4	586.4	586.4	581.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	665.9	677.4	675.4	669.9	665.9
115°	754.9	765.7	762.3	760.3	754.9
117.5°	843.1	858.0	848.6	843.1	837.8
120°	932.1	947.0	932.1	932.1	926.0
122.5°	1013.0	1031.9	1022.5	1017.0	1013.0
125°	1097.9	1114.8	1109.4	1103.4	1101.4
127.5°	1180.8	1201.7	1194.4	1186.3	1180.8
130°	1258.4	1282.6	1279.3	1275.3	1267.8
132.5°	1345.3	1364.2	1365.5	1356.1	1350.7
135°	1420.2	1441.0	1445.1	1443.0	1437.6
137.5°	1503.7	1520.6	1523.9	1522.6	1514.5
140°	1577.2	1594.1	1603.5	1603.5	1596.1
142.5°	1652.6	1669.5	1674.9	1676.9	1669.5
145°	1724.1	1737.6	1748.4	1750.4	1743.0
147.5°	1788.2	1805.0	1813.1	1816.4	1809.1
150°	1854.2	1865.6	1873.1	1879.2	1873.1
152.5°	1912.8	1924.3	1933.7	1941.2	1933.7
155°	1971.5	1976.8	1983.0	1992.4	1986.3
157.5°	2022.1	2026.1	2029.4	2043.0	2033.5
160°	2067.2	2071.2	2073.3	2084.7	2076.6
162.5°	2109.0	2109.0	2111.0	2123.7	2114.4
165°	2144.7	2142.6	2142.6	2156.2	2146.7
167.5°	2177.1	2171.0	2171.0	2184.4	2175.0
170°	2201.3	2196.0	2193.9	2207.4	2196.0
172.5°	2218.2	2212.7	2210.7	2224.2	2212.7
175°	2231.6	2226.2	2222.2	2235.6	2224.2
177.5°	2239.1	2233.6	2229.6	2241.1	2229.6
180°	2235.6	2235.6	2235.6	2235.6	2235.6



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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	9.28	10.04	10.31	11.08	12.48	5.24	6.00	6.28	7.04	8.44
	3H	10.94	11.62	11.99	12.67	14.09	6.42	7.10	7.47	8.15	9.57
	4H	11.54	12.19	12.60	13.24	14.66	6.86	7.50	7.92	8.56	9.98
	6H	11.96	12.55	13.03	13.60	15.04	7.17	7.77	8.24	8.82	10.26
	8H	12.08	12.64	13.15	13.71	15.15	7.26	7.82	8.33	8.89	10.33
	12H	12.13	12.67	13.21	13.73	15.19	7.30	7.83	8.38	8.90	10.35
4H	2H	9.28	9.93	10.35	10.98	12.41	5.82	6.47	6.89	7.52	8.95
	3H	11.10	11.63	12.17	12.71	14.15	7.16	7.70	8.24	8.78	10.22
	4H	11.78	12.27	12.86	13.34	14.81	7.70	8.19	8.78	9.26	10.72
	6H	12.29	12.71	13.38	13.80	15.26	8.11	8.53	9.20	9.62	11.08
	8H	12.46	12.85	13.55	13.94	15.41	8.23	8.63	9.32	9.71	11.18
	12H	12.55	12.90	13.65	14.00	15.48	8.29	8.65	9.40	9.75	11.22
8H	4H	11.74	12.14	12.83	13.22	14.69	7.97	8.37	9.06	9.45	10.92
	6H	12.30	12.63	13.41	13.75	15.22	8.48	8.80	9.59	9.93	11.40
	8H	12.51	12.80	13.63	13.91	15.39	8.67	8.95	9.78	10.06	11.55
	12H	12.64	12.89	13.77	14.00	15.53	8.78	9.03	9.90	10.13	11.66
12H	4H	11.69	12.05	12.80	13.15	14.62	7.97	8.33	9.08	9.43	10.90
	6H	12.28	12.56	13.39	13.67	15.16	8.53	8.81	9.64	9.92	11.41
	8H	12.49	12.74	13.61	13.84	15.37	8.73	8.98	9.85	10.08	11.61