

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: P919478

Luminaire Tested: DFN2DIP-PN3F0-080D080US935-RLLFLL

Issue Date: 11/21/2024

**Test Information**

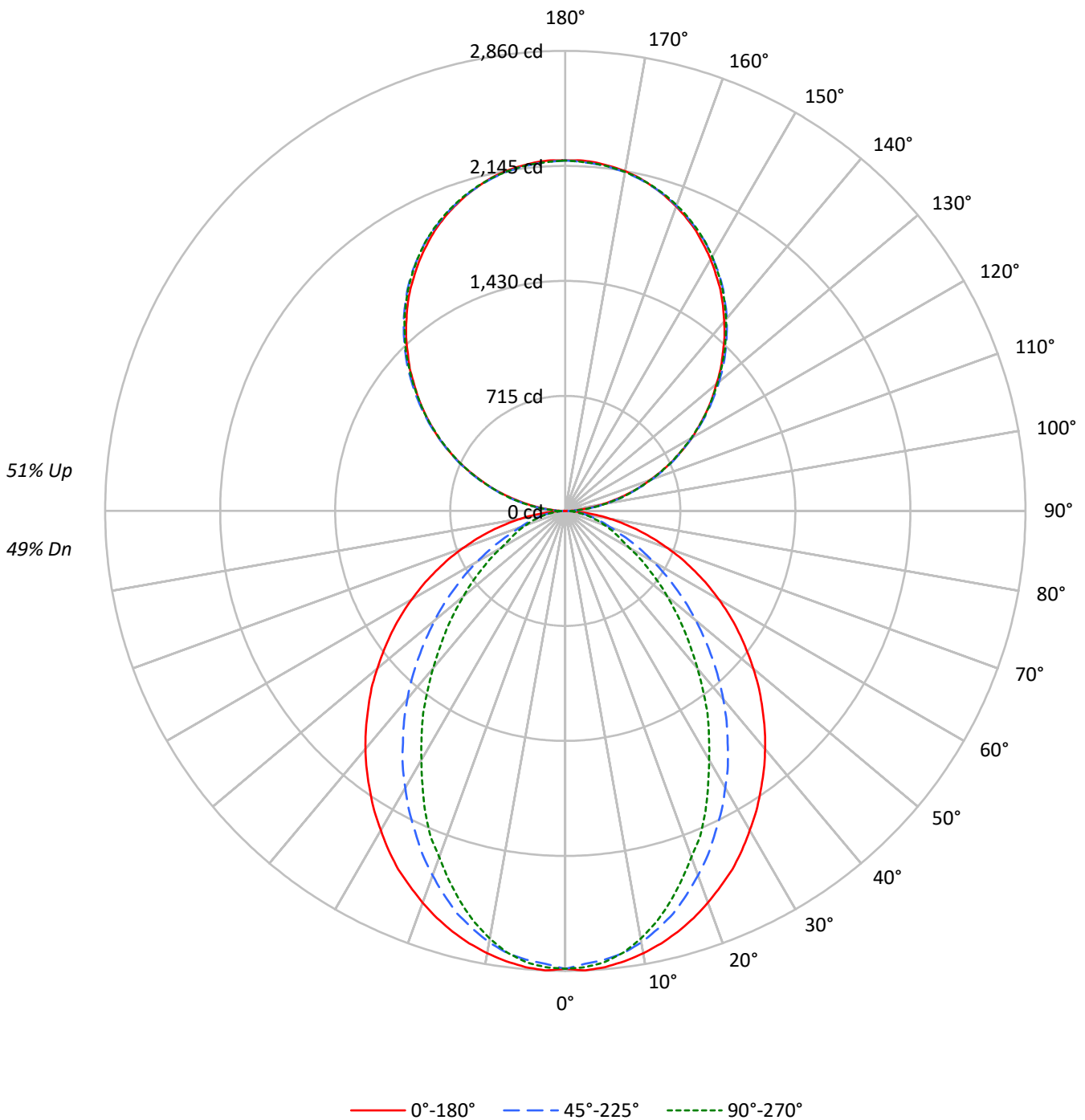
Test Method: LM-79-2019  
Report Number: P919478  
REPORT IS A COMBINATION OF REPORTS P899592 AND P896399  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-PN3F0-080D080US935-RLLFLL  
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11950.7 lumens  
Efficiency: N/A  
Efficacy: 84.6 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): 141.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9967  
Total Harmonic Distortion (THDi): 0.063  
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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55	49			49
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48				42
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41				36
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35				31
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31				27
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27				24
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24				21
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22				19
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20				17
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18				16
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16				14

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

	0°	45°	90°
0°	3328	3328	3328
5°	3331	3273	3295
10°	3296	3206	3186
15°	3249	3098	3019
20°	3187	2950	2815
25°	3123	2784	2617
30°	3039	2614	2367
35°	2956	2432	2148
40°	2871	2244	1896
45°	2773	2035	1669
50°	2671	1824	1446
55°	2565	1600	1232
60°	2442	1365	1013
65°	2300	1127	910
70°	2128	905	822
75°	1912	793	744
80°	1598	658	641
85°	1086	428	473

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2773 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	266.8	2.2
10°-20°	732.4	6.1
20°-30°	1028.3	8.6
30°-40°	1120.9	9.4
40°-50°	1030.3	8.6
50°-60°	809.1	6.8
60°-70°	526.6	4.4
70°-80°	271.1	2.3
80°-90°	75.4	0.6
90°-100°	134.8	1.1
100°-110°	428.3	3.6
110°-120°	733.0	6.1
120°-130°	964.0	8.1
130°-140°	1082.0	9.1
140°-150°	1061.0	8.9
150°-160°	890.1	7.4
160°-170°	590.3	4.9
170°-180°	206.3	1.7
0°-30°	2027.6	17.0
0°-40°	3148.5	26.3
0°-60°	4987.8	41.7
0°-90°	5861.0	49.0
90°-120°	1296.1	10.8
90°-150°	4403.1	36.8
90°-180°	6090.0	51.0
0°-180°	11950.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2847	2847	2847	2847	2847	
5°	2847	2834	2800	2824	2816	270
15°	2708	2679	2592	2543	2517	763
25°	2458	2375	2205	2100	2061	1130
35°	2118	1986	1760	1597	1540	1326
45°	1731	1559	1288	1105	1043	1337
55°	1316	1116	837	683	634	1176
65°	889	680	448	361	353	881
75°	474	294	206	188	186	501
85°	111	57	49	49	49	127
90°	2	24	64	60	62	12
95°	96	114	118	118	114	107
105°	395	401	405	408	408	417
115°	736	746	743	741	736	728
125°	1070	1086	1081	1075	1073	956
135°	1384	1404	1408	1406	1401	1070
145°	1680	1693	1704	1706	1698	1050
155°	1921	1926	1932	1941	1935	884
165°	2090	2088	2088	2101	2092	590
175°	2174	2169	2165	2178	2167	207
180°	2178	2178	2178	2178	2178	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2846.8	2846.8	2846.8	2846.8	2846.8
2.5°	2859.6	2846.8	2818.4	2844.3	2839.1
5°	2846.8	2834.0	2800.3	2823.6	2815.9
7.5°	2823.6	2808.2	2772.2	2782.3	2769.4
10°	2792.6	2774.7	2723.3	2715.3	2700.0
12.5°	2754.2	2730.9	2661.2	2645.8	2617.4
15°	2707.7	2679.3	2591.8	2542.9	2517.1
17.5°	2653.5	2612.3	2504.0	2447.5	2406.1
20°	2591.8	2540.1	2411.4	2347.2	2290.3
22.5°	2524.8	2465.5	2316.0	2228.5	2189.9
25°	2457.8	2375.3	2205.3	2099.8	2061.0
27.5°	2378.0	2290.3	2102.2	1981.2	1921.8
30°	2293.0	2194.9	1988.8	1857.6	1787.9
32.5°	2210.4	2091.9	1880.8	1726.1	1661.6
35°	2117.8	1986.3	1759.7	1597.4	1540.5
37.5°	2027.6	1885.8	1646.3	1468.3	1404.1
40°	1932.3	1777.8	1527.7	1344.8	1277.8
42.5°	1834.4	1669.6	1409.3	1218.6	1154.3
45°	1731.3	1558.6	1288.2	1105.1	1043.4
47.5°	1633.5	1450.6	1172.3	989.2	932.6
50°	1525.2	1342.4	1058.9	881.0	827.1
52.5°	1419.4	1226.1	950.6	780.7	731.8
55°	1316.4	1115.5	837.2	682.8	633.9
57.5°	1210.9	1004.8	736.9	592.6	551.3
60°	1102.6	896.6	631.1	499.9	458.7
62.5°	997.1	791.0	541.0	417.4	396.9
65°	888.9	680.0	448.2	360.8	352.8
67.5°	785.8	577.0	360.8	316.8	309.2
70°	677.6	476.7	298.8	273.0	262.7
72.5°	574.5	383.7	249.9	229.4	224.1
75°	474.0	293.6	206.1	188.0	185.6
77.5°	373.7	208.5	162.4	152.0	146.8
80°	280.7	149.6	123.6	113.4	113.4
82.5°	195.7	100.6	85.0	79.8	79.8
85°	110.7	56.6	48.9	48.9	48.9
87.5°	41.2	20.5	20.5	18.1	18.1
90°	2.0	23.7	64.4	60.4	62.4
92.5°	40.7	55.2	57.2	59.1	59.1
95°	95.9	114.3	117.5	117.5	114.3
97.5°	159.6	176.7	183.9	183.9	183.9
100°	233.2	248.2	253.5	253.5	251.5
102.5°	310.6	321.8	329.0	331.0	329.0
105°	395.4	400.6	404.6	407.9	407.9
107.5°	479.4	487.3	487.3	488.6	479.4
110°	560.9	571.4	571.4	571.4	566.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	648.8	660.0	658.1	652.8	648.8
115°	735.6	746.1	742.8	740.8	735.6
117.5°	821.6	836.0	826.8	821.6	816.3
120°	908.3	922.7	908.3	908.3	902.3
122.5°	987.0	1005.5	996.3	991.0	987.0
125°	1069.8	1086.2	1081.0	1075.0	1073.1
127.5°	1150.6	1171.0	1163.7	1155.9	1150.6
130°	1226.1	1249.7	1246.5	1242.6	1235.4
132.5°	1310.9	1329.2	1330.6	1321.4	1316.1
135°	1383.7	1404.1	1408.1	1406.1	1400.8
137.5°	1465.2	1481.6	1484.9	1483.6	1475.7
140°	1536.8	1553.2	1562.4	1562.4	1555.1
142.5°	1610.3	1626.8	1632.0	1634.0	1626.8
145°	1680.0	1693.1	1703.6	1705.6	1698.3
147.5°	1742.3	1758.8	1766.6	1770.0	1762.7
150°	1806.7	1817.8	1825.1	1831.0	1825.1
152.5°	1863.8	1875.0	1884.2	1891.4	1884.2
155°	1921.0	1926.2	1932.2	1941.3	1935.4
157.5°	1970.2	1974.2	1977.5	1990.5	1981.4
160°	2014.2	2018.2	2020.2	2031.3	2023.4
162.5°	2054.9	2054.9	2056.9	2069.4	2060.2
165°	2089.7	2087.7	2087.7	2100.9	2091.7
167.5°	2121.2	2115.4	2115.4	2128.5	2119.3
170°	2144.9	2139.7	2137.7	2150.9	2139.7
172.5°	2161.4	2156.1	2154.1	2167.2	2156.1
175°	2174.5	2169.2	2165.2	2178.4	2167.2
177.5°	2181.7	2176.4	2172.5	2183.7	2172.5
180°	2178.4	2178.4	2178.4	2178.4	2178.4



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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	11.19	12.02	12.17	13.00	14.28	7.16	7.98	8.13	8.96	10.25
	3H	12.86	13.60	13.85	14.59	15.90	8.34	9.08	9.32	10.07	11.38
	4H	13.47	14.16	14.47	15.16	16.48	8.79	9.48	9.78	10.48	11.80
	6H	13.89	14.53	14.89	15.52	16.85	9.10	9.74	10.11	10.74	12.07
	8H	14.01	14.62	15.02	15.63	16.96	9.19	9.80	10.20	10.81	12.14
	12H	14.07	14.65	15.09	15.66	17.01	9.23	9.81	10.25	10.82	12.17
4H	2H	11.21	11.90	12.21	12.90	14.22	7.75	8.45	8.75	9.44	10.76
	3H	13.03	13.61	14.04	14.63	15.96	9.09	9.67	10.10	10.69	12.03
	4H	13.72	14.25	14.74	15.26	16.62	9.64	10.16	10.65	11.18	12.53
	6H	14.23	14.68	15.26	15.72	17.07	10.05	10.50	11.08	11.54	12.89
	8H	14.40	14.82	15.43	15.85	17.22	10.17	10.60	11.20	11.63	12.99
	12H	14.49	14.87	15.54	15.92	17.29	10.23	10.62	11.28	11.66	13.03
8H	4H	13.68	14.11	14.71	15.14	16.51	9.91	10.34	10.94	11.37	12.73
	6H	14.24	14.59	15.30	15.67	17.03	10.42	10.77	11.48	11.85	13.21
	8H	14.46	14.76	15.52	15.82	17.20	10.61	10.92	11.67	11.97	13.36
	12H	14.59	14.86	15.65	15.91	17.34	10.72	10.99	11.79	12.05	13.47
12H	4H	13.63	14.02	14.68	15.06	16.44	9.92	10.30	10.96	11.34	12.72
	6H	14.22	14.53	15.28	15.58	16.97	10.47	10.78	11.53	11.84	13.22
	8H	14.43	14.70	15.50	15.76	17.18	10.67	10.94	11.74	12.00	13.42