

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: P919467

Luminaire Tested: DFN2DIP-PN3F0-080D050US935-RLLONL

Issue Date: 11/21/2024

**Test Information**

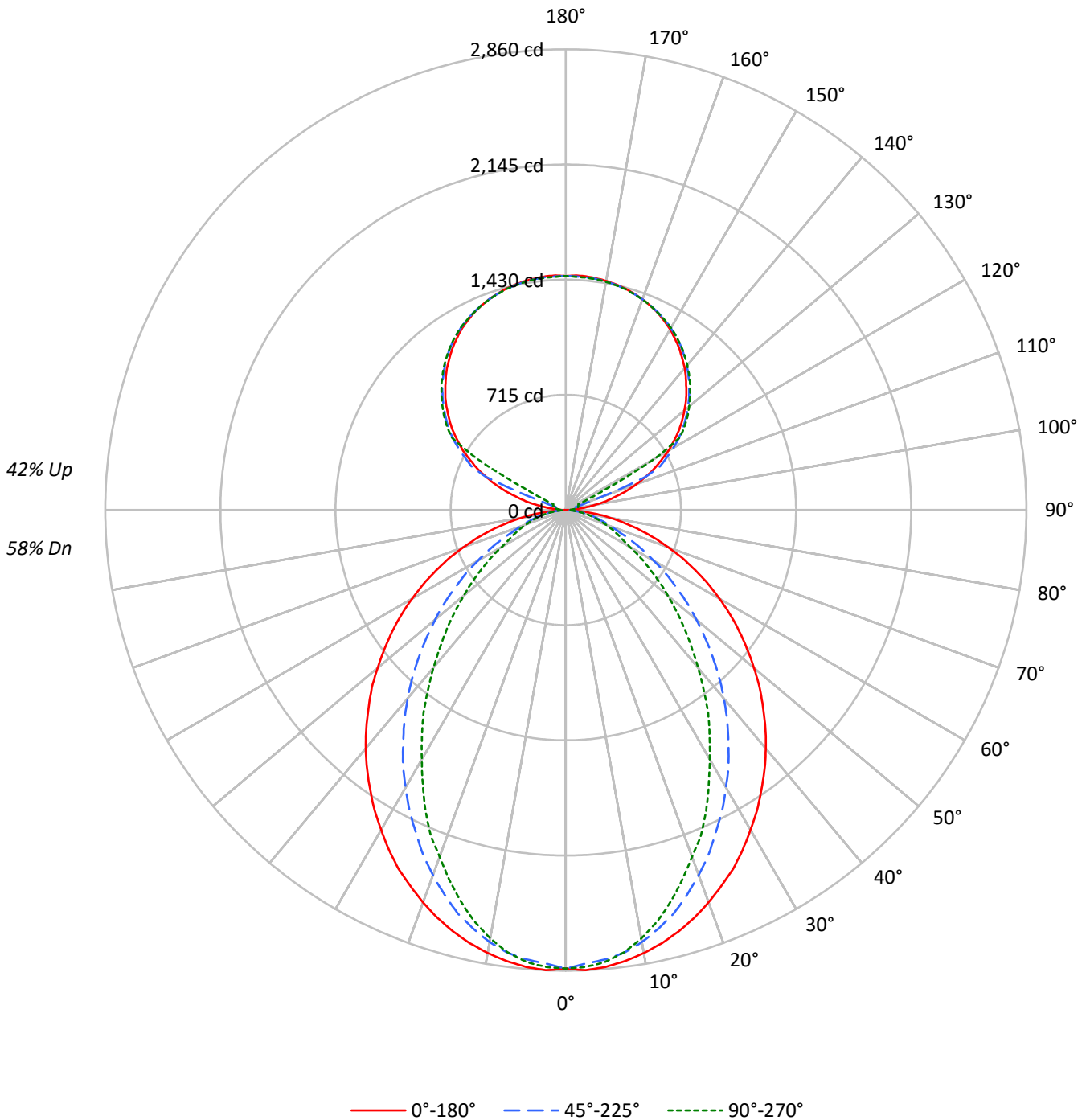
Test Method: LM-79-2019  
Report Number: P919467  
REPORT IS A COMBINATION OF REPORTS P901070 AND P897955  
Test Lab: INNOVATION CENTER  
Issue Date: 11/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DIP-PN3F0-080D050US935-RLONL  
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10116.8 lumens  
Efficiency: N/A  
Efficacy: 86.0 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): 117.6  
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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	63	63	63	58			58
1	100	96	92	89	93	90	86	83	78	75	73	67	65	64	57	56	55	50			50
2	92	84	79	74	85	79	74	69	69	65	62	59	57	54	51	49	47	43			43
3	84	75	68	62	78	70	64	59	61	56	52	53	49	46	45	43	41	37			37
4	77	67	59	53	72	62	56	50	55	49	45	48	44	40	41	38	35	32			32
5	71	60	52	46	66	56	49	44	49	44	39	43	39	35	37	34	31	28			28
6	66	54	46	40	61	51	43	38	45	39	35	39	35	31	34	31	28	25			25
7	61	49	41	35	57	46	39	34	41	35	31	36	31	28	31	28	25	22			22
8	57	44	37	32	53	42	35	30	37	32	28	33	28	25	29	25	23	20			20
9	53	41	33	28	49	39	32	27	34	29	25	30	26	23	27	23	20	18			18
10	49	38	30	26	46	36	29	25	32	26	23	28	24	21	25	21	19	17			17

**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	2.6
10°-20°	732.4	7.2
20°-30°	1028.3	10.2
30°-40°	1120.9	11.1
40°-50°	1030.3	10.2
50°-60°	809.1	8.0
60°-70°	526.6	5.2
70°-80°	271.1	2.7
80°-90°	71.8	0.7
90°-100°	47.9	0.5
100°-110°	178.6	1.8
110°-120°	473.7	4.7
120°-130°	785.6	7.8
130°-140°	834.5	8.2
140°-150°	775.6	7.7
150°-160°	623.5	6.2
160°-170°	401.8	4.0
170°-180°	138.3	1.4
0°-30°	2027.6	20.0
0°-40°	3148.5	31.1
0°-60°	4987.8	49.3
0°-90°	5857.4	57.9
90°-120°	700.2	6.9
90°-150°	3095.8	30.6
90°-180°	4259.0	42.1
0°-180°	10116.8	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°	1	13	21	26	28	10
95°	68	34	41	46	45	81
105°	320	351	64	76	80	342
115°	604	622	649	162	86	595
125°	855	868	888	896	899	762
135°	1058	1074	1084	1094	1092	817
145°	1227	1226	1244	1251	1246	767
155°	1351	1342	1354	1360	1352	622
165°	1423	1417	1420	1428	1420	402
175°	1456	1449	1451	1458	1448	139
180°	1453	1453	1453	1453	1453	



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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°	1.0	12.6	21.0	26.3	28.3
92.5°	26.3	22.1	25.2	27.4	28.3
95°	68.3	33.6	41.0	46.3	45.2
97.5°	123.0	36.9	53.6	56.8	57.8
100°	186.1	42.1	59.9	68.3	70.4
102.5°	255.5	253.4	62.1	73.5	76.8
105°	319.6	351.2	64.1	75.7	79.9
107.5°	394.3	420.4	66.3	77.7	82.1
110°	465.8	487.8	184.0	78.9	83.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	533.0	551.9	534.1	80.9	84.1
115°	604.5	622.3	648.7	162.0	86.3
117.5°	666.5	687.5	705.5	555.0	279.7
120°	735.9	751.7	770.6	783.2	641.3
122.5°	794.7	811.6	832.7	839.0	840.1
125°	854.6	868.4	888.4	895.7	898.9
127.5°	909.3	924.0	940.0	950.4	951.4
130°	960.9	977.7	989.2	1000.8	999.9
132.5°	1013.5	1027.2	1038.6	1048.2	1047.1
135°	1057.6	1074.5	1083.8	1094.5	1092.3
137.5°	1103.8	1116.5	1127.0	1137.6	1134.5
140°	1149.0	1157.5	1169.0	1178.4	1173.3
142.5°	1187.0	1194.4	1208.0	1216.3	1211.1
145°	1226.9	1225.8	1243.6	1251.0	1245.8
147.5°	1261.5	1258.3	1276.3	1281.5	1277.4
150°	1295.2	1287.9	1304.7	1311.0	1305.7
152.5°	1323.5	1315.2	1330.9	1337.3	1329.9
155°	1350.9	1341.5	1354.1	1360.4	1352.0
157.5°	1372.9	1364.6	1374.1	1381.5	1372.9
160°	1392.0	1385.6	1392.0	1398.2	1390.9
162.5°	1408.7	1402.5	1407.6	1415.0	1405.6
165°	1423.4	1417.2	1420.3	1427.6	1420.3
167.5°	1435.0	1428.7	1431.9	1439.2	1429.8
170°	1444.5	1438.1	1440.3	1447.6	1438.1
172.5°	1450.8	1444.5	1446.6	1454.0	1444.5
175°	1456.0	1448.6	1450.8	1458.1	1447.6
177.5°	1458.1	1450.8	1451.9	1459.2	1449.7
180°	1452.8	1452.8	1452.8	1452.8	1452.8



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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	11.99	12.89	12.89	13.80	14.96	7.96	8.86	8.85	9.77	10.92
	3H	13.67	14.47	14.58	15.39	16.57	9.15	9.95	10.05	10.87	12.05
	4H	14.28	15.04	15.20	15.96	17.15	9.60	10.36	10.52	11.28	12.47
	6H	14.70	15.40	15.63	16.33	17.53	9.92	10.61	10.85	11.54	12.75
	8H	14.82	15.49	15.76	16.43	17.64	10.00	10.67	10.94	11.62	12.82
	12H	14.88	15.52	15.83	16.46	17.68	10.05	10.68	10.99	11.62	12.85
4H	2H	12.02	12.78	12.94	13.70	14.89	8.56	9.32	9.49	10.24	11.43
	3H	13.85	14.48	14.78	15.43	16.64	9.91	10.54	10.85	11.49	12.70
	4H	14.54	15.11	15.48	16.06	17.29	10.45	11.03	11.40	11.98	13.21
	6H	15.05	15.54	16.01	16.52	17.75	10.87	11.37	11.83	12.34	13.57
	8H	15.22	15.68	16.18	16.65	17.90	11.00	11.46	11.96	12.43	13.67
	12H	15.32	15.73	16.30	16.72	17.97	11.06	11.48	12.04	12.46	13.71
8H	4H	14.51	14.97	15.47	15.94	17.18	10.74	11.20	11.70	12.16	13.41
	6H	15.07	15.45	16.06	16.46	17.70	11.25	11.63	12.24	12.64	13.88
	8H	15.28	15.62	16.28	16.62	17.88	11.44	11.77	12.43	12.77	14.03
	12H	15.42	15.72	16.42	16.71	18.01	11.55	11.85	12.55	12.84	14.15
12H	4H	14.46	14.88	15.44	15.86	17.11	10.74	11.16	11.72	12.14	13.39
	6H	15.04	15.38	16.04	16.38	17.64	11.30	11.63	12.29	12.63	13.89
	8H	15.26	15.56	16.26	16.55	17.86	11.50	11.80	12.50	12.79	14.10