

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: P919657

Luminaire Tested: DFN2DIP-PN4F0-080D040US935-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919657
REPORT IS A COMBINATION OF REPORTS P901137 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-080D040US935-FLLONL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

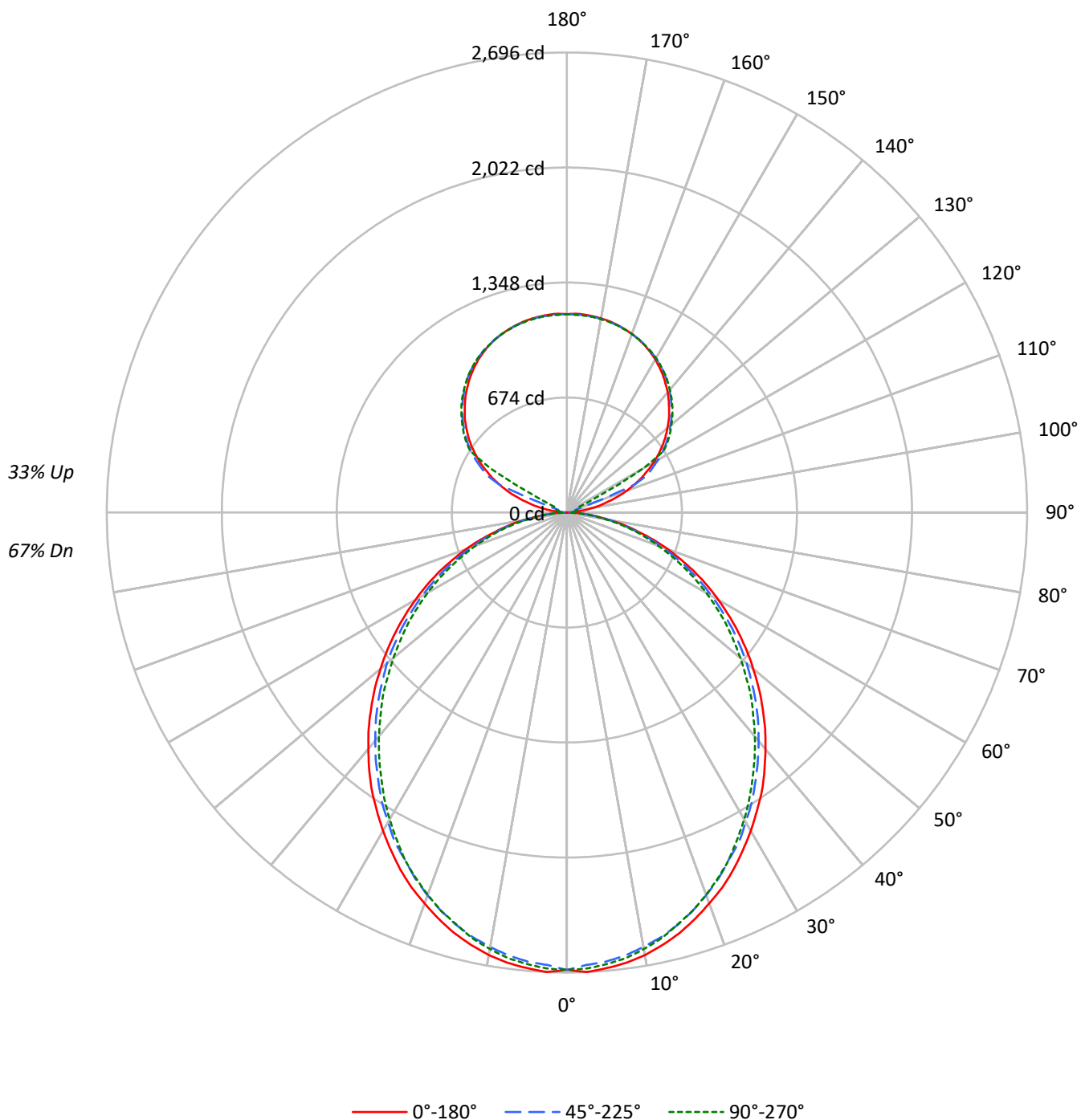
Lumens per Lamp: N/A
Luminaire Lumens: 10228.6 lumens
Efficiency: N/A
Efficacy: 95.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 107.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1956	1956	1956
5°	1959	1929	1943
10°	1944	1904	1917
15°	1915	1873	1876
20°	1876	1829	1834
25°	1838	1778	1786
30°	1790	1729	1724
35°	1744	1672	1659
40°	1688	1615	1597
45°	1632	1557	1534
50°	1571	1497	1461
55°	1507	1427	1393
60°	1434	1344	1316
65°	1355	1258	1225
70°	1255	1154	1128
75°	1115	1028	1038
80°	948	869	865
85°	685	593	579

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1632 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	252.3	2.5
10°-20°	709.8	6.9
20°-30°	1043.1	10.2
30°-40°	1211.4	11.8
40°-50°	1209.9	11.8
50°-60°	1055.0	10.3
60°-70°	779.9	7.6
70°-80°	441.2	4.3
80°-90°	118.5	1.2
90°-100°	38.3	0.4
100°-110°	142.9	1.4
110°-120°	378.9	3.7
120°-130°	628.5	6.1
130°-140°	667.6	6.5
140°-150°	620.4	6.1
150°-160°	498.8	4.9
160°-170°	321.4	3.1
170°-180°	110.6	1.1
0°-30°	2005.1	19.6
0°-40°	3216.5	31.4
0°-60°	5481.5	53.6
0°-90°	6821.1	66.7
90°-120°	560.1	5.5
90°-150°	2476.6	24.2
90°-180°	3407.0	33.3
0°-180°	10228.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2680	2680	2680	2680	2680	
5°	2680	2670	2642	2662	2657	254
15°	2551	2536	2502	2513	2500	719
25°	2309	2289	2245	2250	2245	1063
35°	1992	1966	1925	1910	1897	1244
45°	1621	1603	1564	1536	1526	1251
55°	1227	1211	1180	1150	1137	1097
65°	827	812	786	763	750	818
75°	433	428	415	400	405	462
85°	106	103	101	93	90	118
90°	1	10	17	21	23	9
95°	55	27	33	37	36	65
105°	256	281	51	60	64	273
115°	484	498	519	130	69	476
125°	684	695	711	717	719	610
135°	846	860	867	876	874	654
145°	982	981	995	1001	997	614
155°	1081	1073	1083	1088	1082	498
165°	1139	1134	1136	1142	1136	322
175°	1165	1159	1161	1166	1158	111
180°	1162	1162	1162	1162	1162	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2680.1	2680.1	2680.1	2680.1	2680.1
2.5°	2695.7	2682.9	2654.5	2680.1	2675.2
5°	2680.1	2670.0	2641.6	2662.1	2657.2
7.5°	2662.1	2646.8	2618.4	2639.1	2634.0
10°	2634.0	2615.9	2585.0	2605.5	2597.9
12.5°	2595.1	2579.8	2548.9	2561.7	2556.6
15°	2551.4	2536.1	2502.4	2512.8	2500.0
17.5°	2497.2	2481.9	2448.2	2461.2	2448.2
20°	2437.9	2422.6	2386.5	2394.2	2384.0
22.5°	2378.9	2355.6	2321.9	2321.9	2316.8
25°	2309.1	2288.6	2244.9	2249.8	2244.9
27.5°	2231.7	2213.7	2180.3	2172.6	2159.8
30°	2154.6	2133.8	2095.3	2087.7	2077.2
32.5°	2072.1	2056.8	2015.4	1999.8	1989.5
35°	1992.2	1966.5	1925.2	1909.6	1896.8
37.5°	1901.9	1878.7	1837.5	1819.4	1806.5
40°	1809.3	1788.5	1747.2	1724.2	1713.8
42.5°	1719.1	1698.2	1657.2	1631.2	1616.0
45°	1621.2	1603.1	1564.3	1536.1	1525.8
47.5°	1525.8	1507.7	1466.4	1438.0	1422.6
50°	1425.1	1412.3	1376.1	1340.1	1327.2
52.5°	1327.2	1309.1	1275.8	1247.4	1229.3
55°	1226.8	1211.3	1180.4	1149.5	1136.6
57.5°	1126.3	1113.4	1079.8	1048.9	1038.4
60°	1025.6	1015.5	979.4	951.0	943.3
62.5°	927.7	909.7	884.0	858.3	847.9
65°	827.4	811.8	786.1	762.8	750.0
67.5°	724.3	711.2	688.2	670.2	659.8
70°	628.9	618.5	595.3	577.2	567.1
72.5°	531.0	520.6	507.7	489.7	482.1
75°	432.8	427.9	414.8	399.5	404.7
77.5°	345.3	334.9	329.8	322.1	314.4
80°	257.9	255.1	249.9	242.3	237.0
82.5°	175.3	175.3	172.8	162.4	162.4
85°	105.6	103.1	100.7	92.7	90.2
87.5°	46.5	41.3	36.1	28.4	25.7
90°	0.8	10.1	16.8	21.1	22.6
92.5°	21.1	17.7	20.1	21.9	22.6
95°	54.6	26.9	32.7	37.0	36.2
97.5°	98.4	29.4	42.9	45.5	46.2
100°	148.9	33.7	48.0	54.6	56.3
102.5°	204.3	202.8	49.6	58.8	61.4
105°	255.6	280.9	51.3	60.5	63.9
107.5°	315.4	336.4	53.0	62.3	65.6
110°	372.6	390.2	147.2	63.1	66.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	426.5	441.5	427.2	64.7	67.3
115°	483.5	497.8	518.9	129.5	69.1
117.5°	533.2	550.0	564.4	444.0	223.7
120°	588.8	601.3	616.5	626.6	513.1
122.5°	635.8	649.3	666.2	671.1	672.0
125°	683.7	694.7	710.7	716.6	719.1
127.5°	727.5	739.3	751.9	760.3	761.1
130°	768.7	782.2	791.3	800.6	799.9
132.5°	810.7	821.7	830.9	838.5	837.8
135°	846.1	859.6	867.1	875.5	873.9
137.5°	883.0	893.1	901.6	910.0	907.5
140°	919.2	926.0	935.2	942.8	938.6
142.5°	949.6	955.4	966.4	973.0	968.9
145°	981.5	980.7	994.9	1000.8	996.6
147.5°	1009.2	1006.7	1021.0	1025.2	1021.9
150°	1036.1	1030.3	1043.8	1048.8	1044.6
152.5°	1058.9	1052.1	1064.7	1069.8	1063.9
155°	1080.7	1073.2	1083.3	1088.3	1081.6
157.5°	1098.4	1091.7	1099.3	1105.2	1098.4
160°	1113.5	1108.4	1113.5	1118.5	1112.7
162.5°	1127.0	1122.0	1126.2	1132.0	1124.5
165°	1138.8	1133.8	1136.3	1142.1	1136.3
167.5°	1148.1	1142.9	1145.6	1151.4	1143.8
170°	1155.6	1150.6	1152.2	1158.1	1150.6
172.5°	1160.6	1155.6	1157.4	1163.2	1155.6
175°	1164.8	1158.9	1160.6	1166.5	1158.1
177.5°	1166.5	1160.6	1161.5	1167.4	1159.9
180°	1162.3	1162.3	1162.3	1162.3	1162.3

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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	11.02	12.06	11.82	12.88	13.89	10.58	11.62	11.38	12.44	13.45
	3H	12.70	13.63	13.51	14.46	15.50	12.22	13.14	13.03	13.98	15.02
	4H	13.30	14.17	14.13	15.01	16.06	12.81	13.69	13.64	14.53	15.58
	6H	13.71	14.52	14.55	15.36	16.43	13.22	14.03	14.06	14.87	15.94
	8H	13.82	14.59	14.67	15.46	16.52	13.33	14.10	14.18	14.96	16.03
	12H	13.87	14.61	14.73	15.47	16.56	13.37	14.11	14.23	14.97	16.06
4H	2H	11.51	12.38	12.34	13.22	14.27	11.15	12.03	11.99	12.87	13.92
	3H	13.39	14.12	14.24	15.00	16.06	12.99	13.72	13.83	14.59	15.66
	4H	14.11	14.78	14.97	15.65	16.74	13.70	14.36	14.55	15.23	16.33
	6H	14.64	15.22	15.52	16.11	17.21	14.22	14.79	15.09	15.69	16.79
	8H	14.80	15.34	15.67	16.23	17.34	14.37	14.91	15.25	15.80	16.91
	12H	14.88	15.37	15.78	16.27	17.39	14.44	14.93	15.34	15.83	16.95
8H	4H	14.32	14.86	15.20	15.75	16.86	13.95	14.49	14.83	15.38	16.49
	6H	14.97	15.41	15.87	16.34	17.45	14.59	15.04	15.49	15.97	17.08
	8H	15.19	15.59	16.11	16.51	17.64	14.81	15.20	15.72	16.13	17.25
	12H	15.33	15.68	16.25	16.60	17.78	14.93	15.28	15.85	16.20	17.37
12H	4H	14.32	14.80	15.22	15.71	16.83	13.96	14.44	14.85	15.35	16.47
	6H	15.00	15.39	15.91	16.32	17.45	14.63	15.03	15.55	15.95	17.08
	8H	15.25	15.60	16.17	16.52	17.69	14.88	15.23	15.80	16.14	17.32