

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: P922203

Luminaire Tested: DFN2DIP-PN3F0-080D070US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922203
REPORT IS A COMBINATION OF REPORTS P901098 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-080D070US940-RLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

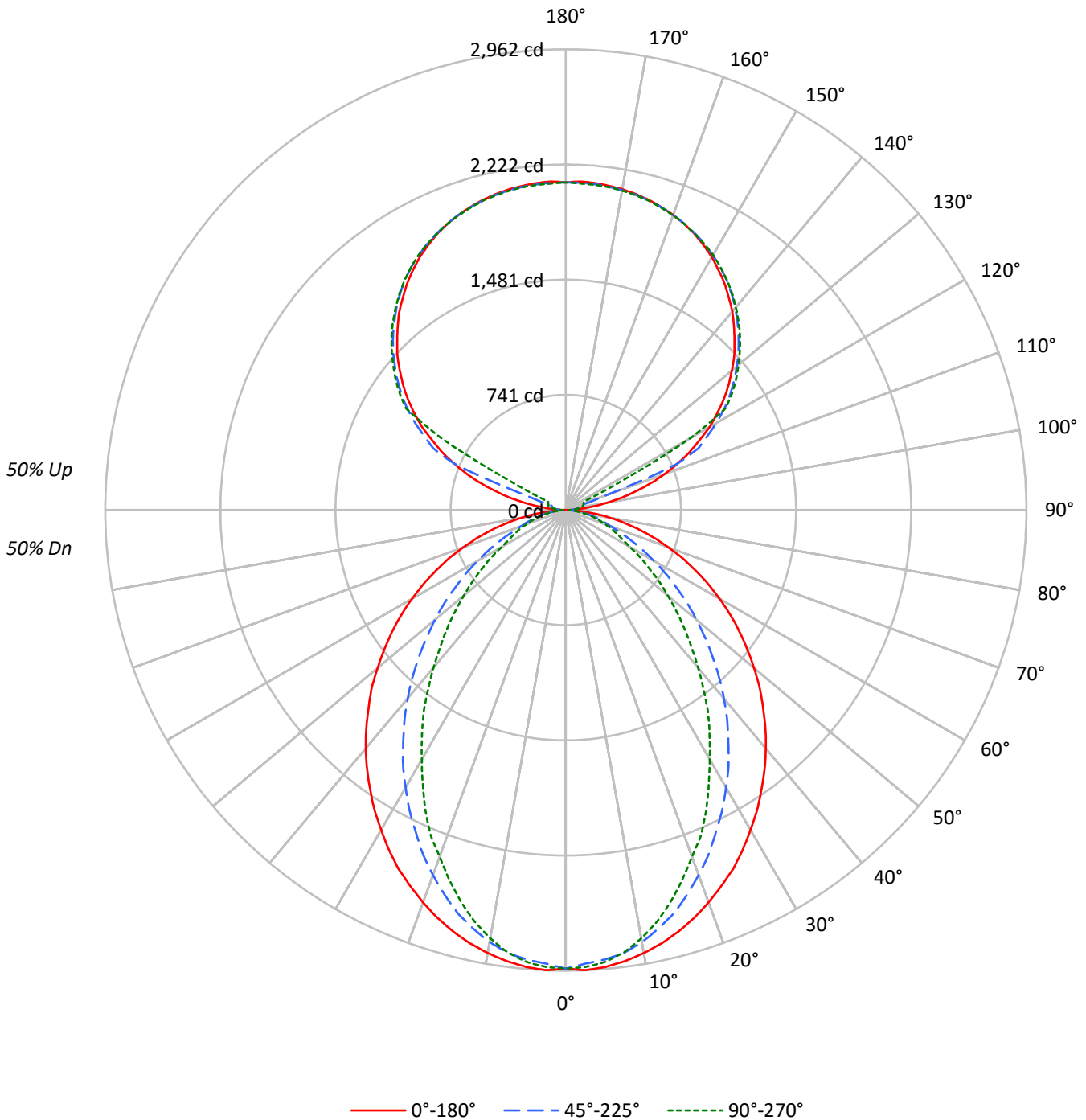
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12243.2 lumens
Efficiency: N/A
Efficacy: 91.2 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): 134.2
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				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	69	69	69	56	56	56	56	56	56	50
1	98	94	90	87	90	87	84	81	74	71	69	61	60	58	50	49	48	50	49	48	43
2	90	83	77	72	83	77	71	67	65	61	58	54	52	49	45	43	41	45	43	41	37
3	82	73	66	60	76	68	62	57	58	53	49	49	45	42	40	38	36	40	38	36	32
4	75	65	57	52	69	60	54	48	52	47	42	44	40	37	36	33	31	36	33	31	27
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	33	30	27	33	30	27	24
6	64	52	44	39	59	49	42	37	42	37	32	36	32	28	30	27	24	30	27	24	21
7	59	47	40	34	55	44	37	32	38	33	29	33	28	25	27	24	22	27	24	22	19
8	55	43	36	30	51	40	34	29	35	30	26	30	26	23	25	22	20	25	22	20	17
9	51	39	32	27	48	37	30	26	32	27	23	28	23	21	23	20	18	23	20	18	16
10	48	36	29	25	45	34	28	23	30	25	21	26	22	19	22	19	16	22	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3447	3447	3447
5°	3450	3389	3412
10°	3414	3321	3300
15°	3365	3208	3127
20°	3301	3055	2915
25°	3235	2883	2710
30°	3147	2707	2452
35°	3061	2519	2224
40°	2974	2324	1964
45°	2872	2107	1728
50°	2767	1889	1498
55°	2657	1657	1276
60°	2529	1414	1049
65°	2382	1167	942
70°	2204	937	851
75°	1980	821	771
80°	1655	681	663
85°	1125	443	490

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2872 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.3	2.3
10°-20°	758.6	6.2
20°-30°	1065.0	8.7
30°-40°	1160.9	9.5
40°-50°	1067.0	8.7
50°-60°	838.0	6.8
60°-70°	545.4	4.5
70°-80°	280.8	2.3
80°-90°	75.4	0.6
90°-100°	69.5	0.6
100°-110°	259.0	2.1
110°-120°	686.8	5.6
120°-130°	1139.1	9.3
130°-140°	1209.9	9.9
140°-150°	1124.5	9.2
150°-160°	904.1	7.4
160°-170°	582.6	4.8
170°-180°	200.5	1.6
0°-30°	2099.9	17.2
0°-40°	3260.8	26.6
0°-60°	5165.8	42.2
0°-90°	6067.4	49.6
90°-120°	1015.2	8.3
90°-150°	4488.7	36.7
90°-180°	6176.0	50.4
0°-180°	12243.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2948	2948	2948	2948	2948	
5°	2948	2935	2900	2924	2916	280
15°	2804	2775	2684	2634	2607	790
25°	2546	2460	2284	2175	2134	1171
35°	2193	2057	1822	1654	1595	1373
45°	1793	1614	1334	1144	1081	1385
55°	1363	1155	867	707	656	1218
65°	921	704	464	374	365	913
75°	491	304	214	195	192	519
85°	115	59	51	51	51	132
90°	1	18	30	38	41	11
95°	99	49	59	67	66	117
105°	463	509	93	110	116	495
115°	876	902	940	235	125	863
125°	1239	1259	1288	1299	1303	1105
135°	1534	1558	1572	1587	1584	1185
145°	1779	1777	1803	1814	1806	1113
155°	1959	1945	1963	1972	1960	903
165°	2064	2055	2059	2070	2059	583
175°	2111	2100	2104	2114	2099	201
180°	2107	2107	2107	2107	2107	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2948.4	2948.4	2948.4	2948.4	2948.4
2.5°	2961.6	2948.4	2918.9	2945.8	2940.4
5°	2948.4	2935.1	2900.2	2924.3	2916.3
7.5°	2924.3	2908.4	2871.0	2881.6	2868.2
10°	2892.3	2873.6	2820.4	2812.2	2796.3
12.5°	2852.4	2828.3	2756.1	2740.2	2710.8
15°	2804.3	2774.8	2684.2	2633.6	2606.9
17.5°	2748.2	2705.4	2593.4	2534.8	2492.0
20°	2684.2	2630.7	2497.4	2430.9	2371.9
22.5°	2614.9	2553.4	2398.6	2308.0	2268.1
25°	2545.5	2460.1	2283.9	2174.7	2134.5
27.5°	2462.8	2371.9	2177.2	2051.8	1990.4
30°	2374.8	2273.1	2059.8	1923.9	1851.6
32.5°	2289.3	2166.5	1947.9	1787.7	1720.9
35°	2193.3	2057.2	1822.5	1654.4	1595.4
37.5°	2099.9	1953.0	1705.0	1520.7	1454.2
40°	2001.2	1841.2	1582.2	1392.8	1323.4
42.5°	1899.8	1729.1	1459.6	1262.0	1195.4
45°	1793.1	1614.2	1334.2	1144.5	1080.6
47.5°	1691.8	1502.4	1214.2	1024.5	965.9
50°	1579.6	1390.3	1096.7	912.4	856.6
52.5°	1470.1	1269.9	984.5	808.5	757.9
55°	1363.3	1155.3	867.1	707.1	656.5
57.5°	1254.1	1040.6	763.2	613.8	571.0
60°	1141.9	928.5	653.6	517.7	475.0
62.5°	1032.7	819.2	560.3	432.3	411.1
65°	920.6	704.3	464.2	373.7	365.4
67.5°	813.9	597.6	373.7	328.1	320.2
70°	701.8	493.7	309.4	282.8	272.1
72.5°	595.0	397.4	258.8	237.6	232.1
75°	490.9	304.1	213.5	194.7	192.3
77.5°	387.0	216.0	168.2	157.4	152.0
80°	290.7	154.9	128.0	117.4	117.4
82.5°	202.7	104.2	88.0	82.7	82.7
85°	114.7	58.6	50.6	50.6	50.6
87.5°	42.7	21.2	21.2	18.7	18.7
90°	1.4	18.3	30.4	38.2	41.1
92.5°	38.2	32.0	36.6	39.7	41.1
95°	99.0	48.7	59.4	67.1	65.5
97.5°	178.3	53.4	77.7	82.4	83.8
100°	269.9	61.0	86.9	99.0	102.1
102.5°	370.3	367.5	90.0	106.6	111.3
105°	463.4	509.2	93.0	109.7	115.8
107.5°	571.6	609.7	96.1	112.8	119.0
110°	675.4	707.2	266.8	114.4	120.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	772.9	800.2	774.4	117.3	122.0
115°	876.5	902.3	940.5	234.8	125.1
117.5°	966.4	996.8	1022.9	804.8	405.5
120°	1067.0	1089.8	1117.4	1135.7	929.9
122.5°	1152.3	1176.7	1207.4	1216.4	1218.0
125°	1239.2	1259.1	1288.1	1298.8	1303.2
127.5°	1318.5	1339.8	1362.8	1378.0	1379.5
130°	1393.2	1417.6	1434.3	1451.2	1449.7
132.5°	1469.4	1489.3	1506.0	1519.7	1518.3
135°	1533.5	1557.9	1571.6	1586.9	1583.9
137.5°	1600.4	1618.8	1634.1	1649.4	1644.8
140°	1666.0	1678.3	1695.0	1708.7	1701.1
142.5°	1721.0	1731.7	1751.4	1763.5	1756.0
145°	1779.0	1777.4	1803.2	1813.9	1806.3
147.5°	1829.1	1824.6	1850.5	1858.1	1852.1
150°	1877.9	1867.3	1891.8	1900.8	1893.2
152.5°	1919.0	1906.9	1929.8	1938.9	1928.3
155°	1958.7	1945.1	1963.4	1972.5	1960.3
157.5°	1990.7	1978.6	1992.3	2003.0	1990.7
160°	2018.3	2009.0	2018.3	2027.3	2016.6
162.5°	2042.6	2033.5	2041.0	2051.7	2038.0
165°	2063.9	2054.9	2059.3	2070.0	2059.3
167.5°	2080.7	2071.4	2076.2	2086.9	2073.1
170°	2094.4	2085.3	2088.3	2099.0	2085.3
172.5°	2103.5	2094.4	2097.6	2108.2	2094.4
175°	2111.1	2100.4	2103.5	2114.2	2099.0
177.5°	2114.2	2103.5	2105.1	2115.9	2102.0
180°	2106.6	2106.6	2106.6	2106.6	2106.6



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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	11.37	12.19	12.33	13.17	14.45	7.33	8.16	8.30	9.14	10.42
	3H	13.04	13.78	14.02	14.76	16.07	8.51	9.25	9.49	10.24	11.54
	4H	13.64	14.34	14.63	15.33	16.64	8.96	9.66	9.95	10.65	11.96
	6H	14.06	14.70	15.06	15.70	17.02	9.28	9.92	10.28	10.91	12.24
	8H	14.18	14.79	15.19	15.80	17.12	9.36	9.98	10.37	10.99	12.31
	12H	14.24	14.82	15.25	15.83	17.17	9.40	9.99	10.42	10.99	12.33
4H	2H	11.38	12.08	12.38	13.07	14.38	7.92	8.62	8.92	9.61	10.92
	3H	13.20	13.78	14.21	14.80	16.13	9.27	9.85	10.27	10.87	12.19
	4H	13.89	14.42	14.91	15.43	16.78	9.81	10.34	10.82	11.35	12.70
	6H	14.40	14.86	15.43	15.89	17.24	10.22	10.68	11.25	11.71	13.06
	8H	14.57	15.00	15.60	16.03	17.38	10.35	10.77	11.37	11.80	13.16
	12H	14.66	15.05	15.71	16.09	17.46	10.41	10.79	11.45	11.84	13.20
8H	4H	13.86	14.28	14.88	15.31	16.67	10.09	10.51	11.11	11.54	12.90
	6H	14.42	14.77	15.47	15.84	17.19	10.60	10.95	11.65	12.02	13.37
	8H	14.63	14.94	15.69	15.99	17.37	10.78	11.09	11.84	12.15	13.52
	12H	14.76	15.03	15.82	16.08	17.50	10.90	11.17	11.96	12.22	13.64
12H	4H	13.81	14.19	14.85	15.24	16.60	10.09	10.47	11.13	11.52	12.88
	6H	14.39	14.70	15.45	15.76	17.13	10.64	10.95	11.70	12.01	13.38
	8H	14.61	14.88	15.67	15.93	17.35	10.85	11.12	11.91	12.17	13.59