

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: P916725

Luminaire Tested: DFN2DIP-PN3F0-070D090US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916725
REPORT IS A COMBINATION OF REPORTS P901123 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-070D090US930-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

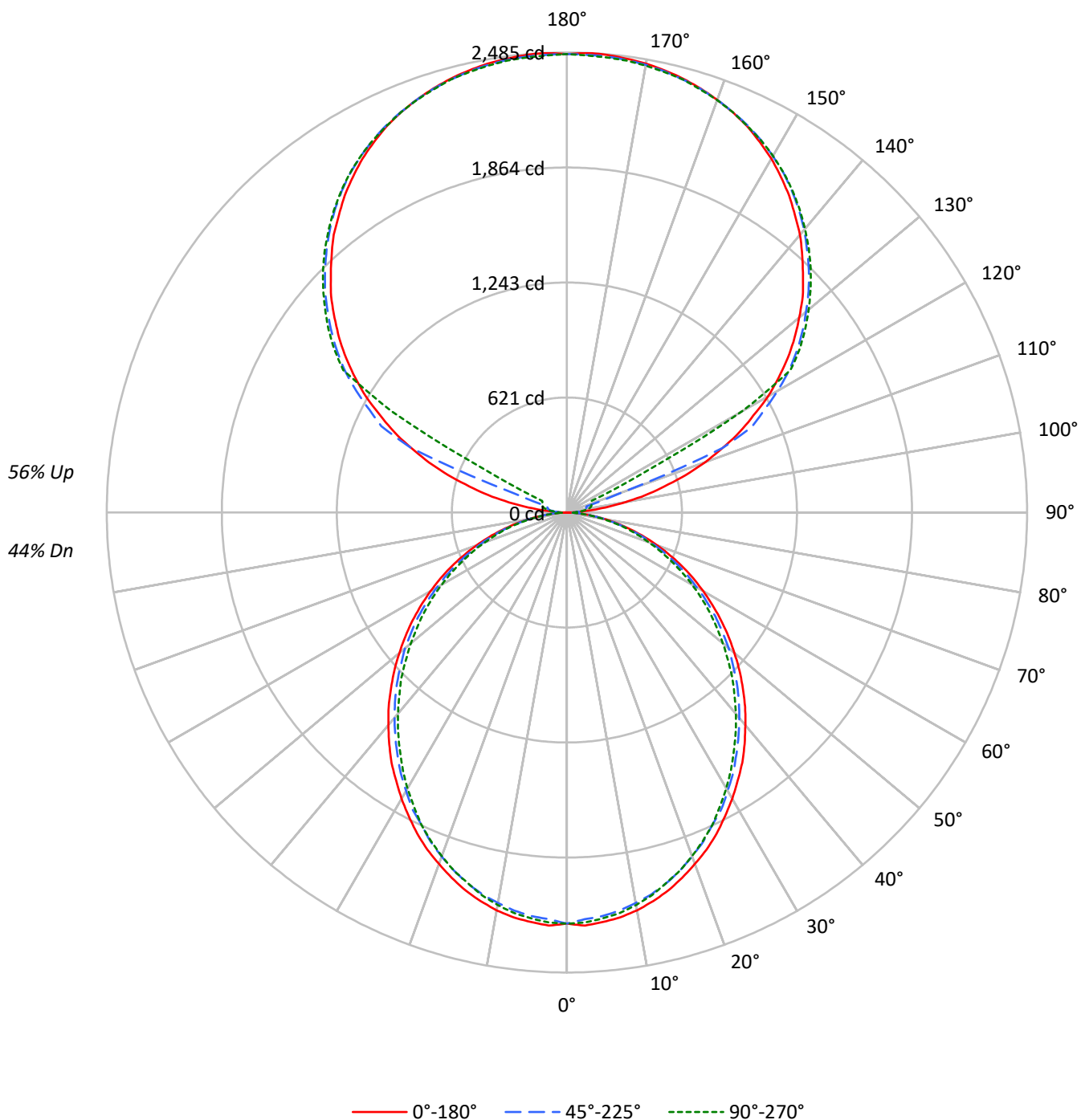
Lumens per Lamp: N/A
Luminaire Lumens: 12914.3 lumens
Efficiency: N/A
Efficacy: 91.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 140.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	50	50	50
1	96	92	88	85	88	84	81	78	70	68	66	57	55	54	45	44	43
2	88	80	74	69	80	74	69	64	61	58	54	50	47	45	39	37	36
3	80	71	63	58	73	65	59	54	54	49	46	44	41	38	35	32	31
4	73	63	55	49	67	58	51	45	48	43	39	39	35	32	31	28	26
5	67	56	48	42	61	51	44	39	43	38	33	35	31	28	28	25	23
6	62	50	42	36	56	46	39	34	39	33	29	32	28	25	25	22	20
7	57	45	37	32	52	42	35	30	35	30	26	29	25	22	23	20	18
8	53	41	33	28	48	38	31	26	32	27	23	26	22	19	21	18	16
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	20	17	14
10	46	34	27	22	42	32	25	21	27	22	18	22	18	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2596	2596	2596
5°	2598	2558	2576
10°	2576	2522	2540
15°	2537	2478	2484
20°	2484	2419	2427
25°	2431	2348	2362
30°	2366	2282	2279
35°	2304	2204	2191
40°	2228	2126	2107
45°	2151	2047	2021
50°	2068	1964	1923
55°	1981	1869	1831
60°	1882	1756	1726
65°	1774	1638	1603
70°	1637	1494	1470
75°	1446	1322	1345
80°	1216	1103	1110
85°	858	730	724

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2151 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.0	1.6
10°-20°	588.1	4.6
20°-30°	864.2	6.7
30°-40°	1003.7	7.8
40°-50°	1002.5	7.8
50°-60°	874.2	6.8
60°-70°	646.2	5.0
70°-80°	365.6	2.8
80°-90°	100.9	0.8
90°-100°	81.7	0.6
100°-110°	304.4	2.4
110°-120°	807.3	6.3
120°-130°	1339.0	10.4
130°-140°	1422.3	11.0
140°-150°	1321.9	10.2
150°-160°	1062.8	8.2
160°-170°	684.8	5.3
170°-180°	235.7	1.8
0°-30°	1661.3	12.9
0°-40°	2665.1	20.6
0°-60°	4541.7	35.2
0°-90°	5654.4	43.8
90°-120°	1193.4	9.2
90°-150°	5276.6	40.9
90°-180°	7260.0	56.2
0°-180°	12914.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2221	2212	2189	2206	2202	211
15°	2114	2101	2073	2082	2071	595
25°	1913	1896	1860	1864	1860	880
35°	1651	1629	1595	1582	1572	1031
45°	1343	1328	1296	1273	1264	1037
55°	1016	1004	978	952	942	909
65°	686	673	651	632	621	678
75°	359	355	344	331	335	383
85°	88	85	83	77	75	98
90°	2	22	36	45	48	12
95°	116	57	70	79	77	138
105°	545	599	109	129	136	582
115°	1030	1061	1106	276	147	1014
125°	1457	1480	1514	1527	1532	1299
135°	1803	1831	1847	1866	1862	1393
145°	2091	2089	2120	2132	2123	1308
155°	2303	2287	2308	2319	2304	1061
165°	2426	2416	2421	2433	2421	685
175°	2482	2469	2473	2485	2467	236
180°	2476	2476	2476	2476	2476	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2220.6	2220.6	2220.6	2220.6	2220.6
2.5°	2233.6	2222.9	2199.3	2220.6	2216.6
5°	2220.6	2212.3	2188.7	2205.7	2201.6
7.5°	2205.7	2193.0	2169.4	2186.7	2182.4
10°	2182.4	2167.4	2141.8	2158.8	2152.5
12.5°	2150.2	2137.5	2111.9	2122.5	2118.2
15°	2114.0	2101.3	2073.4	2082.0	2071.3
17.5°	2069.1	2056.4	2028.5	2039.2	2028.5
20°	2019.9	2007.3	1977.3	1983.7	1975.3
22.5°	1971.0	1951.7	1923.9	1923.9	1919.5
25°	1913.3	1896.2	1860.0	1864.1	1860.0
27.5°	1849.1	1834.2	1806.5	1800.2	1789.5
30°	1785.3	1768.0	1736.1	1729.7	1721.1
32.5°	1716.8	1704.1	1669.9	1657.0	1648.4
35°	1650.7	1629.4	1595.1	1582.2	1571.6
37.5°	1575.9	1556.6	1522.4	1507.5	1496.8
40°	1499.1	1481.9	1447.6	1428.6	1420.0
42.5°	1424.3	1407.1	1373.1	1351.6	1338.9
45°	1343.2	1328.3	1296.1	1272.8	1264.1
47.5°	1264.1	1249.2	1215.0	1191.4	1178.8
50°	1180.8	1170.1	1140.2	1110.4	1099.7
52.5°	1099.7	1084.8	1057.1	1033.6	1018.6
55°	1016.5	1003.6	978.0	952.4	941.8
57.5°	933.2	922.5	894.6	869.0	860.5
60°	849.8	841.4	811.5	788.0	781.6
62.5°	768.7	753.7	732.5	711.2	702.5
65°	685.6	672.6	651.3	632.1	621.4
67.5°	600.1	589.3	570.2	555.3	546.7
70°	521.1	512.5	493.2	478.3	469.9
72.5°	439.9	431.4	420.7	405.8	399.4
75°	358.6	354.6	343.6	331.0	335.3
77.5°	286.2	277.5	273.2	266.8	260.6
80°	213.6	211.4	207.1	200.7	196.4
82.5°	145.2	145.2	143.2	134.6	134.6
85°	87.5	85.4	83.4	76.8	74.8
87.5°	38.5	34.2	29.9	23.6	21.3
90°	1.7	21.5	35.7	44.9	48.3
92.5°	44.9	37.7	43.0	46.6	48.3
95°	116.4	57.2	69.8	78.9	77.0
97.5°	209.6	62.8	91.3	96.8	98.5
100°	317.2	71.7	102.2	116.4	120.0
102.5°	435.4	431.9	105.7	125.3	130.9
105°	544.7	598.6	109.3	129.0	136.2
107.5°	672.0	716.6	113.0	132.6	139.8
110°	793.9	831.4	313.6	134.4	141.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	908.6	940.7	910.3	137.9	143.4
115°	1030.3	1060.7	1105.6	276.0	147.0
117.5°	1136.0	1171.8	1202.4	946.1	476.6
120°	1254.3	1281.2	1313.5	1335.0	1093.1
122.5°	1354.6	1383.3	1419.3	1429.9	1431.8
125°	1456.7	1480.1	1514.2	1526.7	1532.0
127.5°	1549.9	1575.0	1602.1	1619.9	1621.6
130°	1637.8	1666.6	1686.1	1705.8	1704.2
132.5°	1727.4	1750.8	1770.3	1786.6	1784.9
135°	1802.7	1831.4	1847.4	1865.5	1861.9
137.5°	1881.5	1902.9	1921.0	1938.9	1933.6
140°	1958.4	1972.9	1992.5	2008.7	1999.8
142.5°	2023.2	2035.7	2058.9	2073.1	2064.3
145°	2091.2	2089.3	2119.8	2132.3	2123.4
147.5°	2150.2	2144.9	2175.3	2184.3	2177.2
150°	2207.7	2195.1	2223.8	2234.4	2225.5
152.5°	2255.9	2241.7	2268.5	2279.3	2266.8
155°	2302.6	2286.6	2308.0	2318.7	2304.4
157.5°	2340.2	2326.0	2342.1	2354.7	2340.2
160°	2372.5	2361.7	2372.5	2383.2	2370.6
162.5°	2401.1	2390.4	2399.3	2411.9	2395.8
165°	2426.2	2415.5	2420.9	2433.4	2420.9
167.5°	2446.0	2435.1	2440.6	2453.2	2437.0
170°	2462.1	2451.3	2454.9	2467.4	2451.3
172.5°	2472.8	2462.1	2465.7	2478.3	2462.1
175°	2481.7	2469.1	2472.8	2485.3	2467.4
177.5°	2485.3	2472.8	2474.7	2487.2	2471.1
180°	2476.4	2476.4	2476.4	2476.4	2476.4

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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	9.94	10.75	10.95	11.77	13.13	9.50	10.31	10.51	11.33	12.69
	3H	11.59	12.32	12.61	13.35	14.72	11.11	11.84	12.13	12.86	14.24
	4H	12.18	12.86	13.21	13.89	15.28	11.69	12.38	12.72	13.41	14.79
	6H	12.57	13.20	13.61	14.23	15.63	12.08	12.71	13.12	13.75	15.14
	8H	12.67	13.27	13.72	14.32	15.71	12.18	12.78	13.23	13.83	15.22
	12H	12.71	13.29	13.77	14.33	15.75	12.22	12.79	13.27	13.83	15.25
4H	2H	10.40	11.08	11.43	12.11	13.50	10.04	10.73	11.08	11.76	13.15
	3H	12.25	12.82	13.30	13.88	15.28	11.85	12.42	12.89	13.48	14.88
	4H	12.96	13.48	14.01	14.53	15.95	12.54	13.07	13.59	14.11	15.54
	6H	13.46	13.91	14.53	14.99	16.40	13.04	13.49	14.10	14.56	15.98
	8H	13.61	14.03	14.67	15.10	16.53	13.18	13.60	14.24	14.67	16.10
	12H	13.68	14.06	14.76	15.14	16.57	13.24	13.62	14.32	14.70	16.14
8H	4H	13.14	13.57	14.21	14.63	16.06	12.77	13.20	13.84	14.26	15.69
	6H	13.77	14.11	14.85	15.22	16.65	13.39	13.74	14.48	14.85	16.28
	8H	13.98	14.29	15.08	15.38	16.83	13.60	13.91	14.69	15.00	16.44
	12H	14.11	14.38	15.20	15.46	16.95	13.71	13.98	14.80	15.06	16.55
12H	4H	13.13	13.51	14.21	14.59	16.02	12.77	13.15	13.85	14.23	15.66
	6H	13.79	14.10	14.89	15.19	16.64	13.43	13.74	14.52	14.83	16.27
	8H	14.03	14.30	15.13	15.38	16.87	13.66	13.93	14.75	15.01	16.50