

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: P903081

Luminaire Tested: DFN2DIP-PN3F0-070D080US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903081
REPORT IS A COMBINATION OF REPORTS P901109 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-070D080US830-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

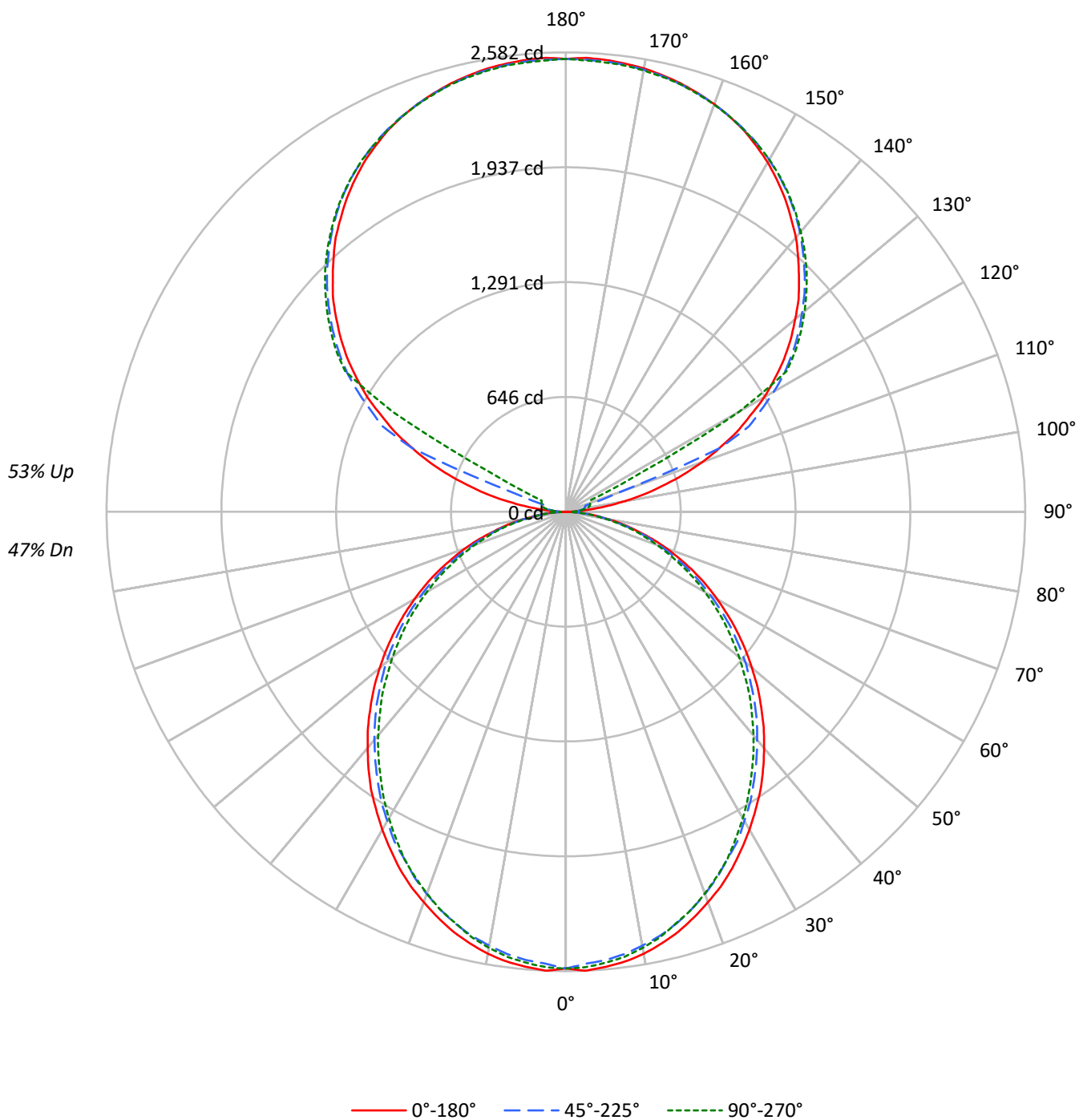
Lumens per Lamp: N/A
Luminaire Lumens: 13996.8 lumens
Efficiency: N/A
Efficacy: 106.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 130.9
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	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	81	81	81	67	67	67	53	53	53			47
1	97	93	89	85	89	85	82	79	71	69	67	59	57	56	47	46	45			39
2	88	81	75	70	81	75	69	65	63	59	55	52	49	46	41	39	38			33
3	81	71	64	58	74	66	59	54	55	50	47	46	42	39	37	34	32			28
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28			24
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	29	27	24			21
6	62	50	42	36	57	47	39	34	40	34	30	33	29	25	27	24	21			18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	24	21	19			16
8	53	41	33	28	49	38	31	27	33	27	23	27	23	20	22	19	17			15
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15			13
10	46	34	27	22	43	32	26	21	28	22	19	23	19	16	19	16	14			12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3001	3001	3001
5°	3004	2957	2978
10°	2978	2915	2936
15°	2932	2865	2872
20°	2871	2796	2806
25°	2811	2715	2730
30°	2735	2638	2634
35°	2663	2548	2533
40°	2575	2458	2436
45°	2487	2367	2337
50°	2391	2271	2222
55°	2290	2161	2117
60°	2176	2030	1996
65°	2051	1894	1853
70°	1892	1727	1699
75°	1672	1529	1555
80°	1406	1275	1283
85°	992	843	836

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2487 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.6	1.7
10°-20°	679.9	4.9
20°-30°	999.1	7.1
30°-40°	1160.4	8.3
40°-50°	1159.0	8.3
50°-60°	1010.6	7.2
60°-70°	747.1	5.3
70°-80°	422.7	3.0
80°-90°	116.0	0.8
90°-100°	83.9	0.6
100°-110°	312.8	2.2
110°-120°	829.6	5.9
120°-130°	1376.0	9.8
130°-140°	1461.6	10.4
140°-150°	1358.4	9.7
150°-160°	1092.1	7.8
160°-170°	703.7	5.0
170°-180°	242.2	1.7
0°-30°	1920.6	13.7
0°-40°	3081.0	22.0
0°-60°	5250.6	37.5
0°-90°	6536.3	46.7
90°-120°	1226.4	8.8
90°-150°	5422.4	38.7
90°-180°	7460.0	53.3
0°-180°	13996.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2567	2567	2567	2567	2567	
5°	2567	2558	2530	2550	2545	244
15°	2444	2429	2397	2407	2395	688
25°	2212	2192	2150	2155	2150	1018
35°	1908	1884	1844	1829	1817	1192
45°	1553	1536	1498	1471	1461	1198
55°	1175	1160	1131	1101	1089	1051
65°	793	778	753	731	718	784
75°	415	410	397	383	388	443
85°	101	99	96	89	86	113
90°	2	22	37	46	50	13
95°	120	59	72	81	79	142
105°	560	615	112	132	140	598
115°	1059	1090	1136	284	151	1042
125°	1497	1521	1556	1569	1574	1335
135°	1852	1882	1898	1917	1913	1431
145°	2149	2147	2178	2191	2182	1344
155°	2366	2350	2372	2383	2368	1090
165°	2493	2482	2488	2501	2488	704
175°	2550	2537	2541	2554	2536	243
180°	2545	2545	2545	2545	2545	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2567.2	2567.2	2567.2	2567.2	2567.2
2.5°	2582.2	2569.8	2542.6	2567.2	2562.5
5°	2567.2	2557.6	2530.3	2550.0	2545.2
7.5°	2550.0	2535.3	2508.0	2528.0	2523.0
10°	2523.0	2505.7	2476.1	2495.8	2488.4
12.5°	2485.8	2471.2	2441.6	2453.8	2448.8
15°	2443.9	2429.2	2397.0	2407.0	2394.6
17.5°	2392.0	2377.4	2345.1	2357.5	2345.1
20°	2335.1	2320.5	2285.9	2293.3	2283.6
22.5°	2278.6	2256.4	2224.1	2224.1	2219.1
25°	2211.9	2192.2	2150.3	2155.0	2150.3
27.5°	2137.7	2120.4	2088.5	2081.1	2068.8
30°	2063.9	2043.9	2007.0	1999.7	1989.7
32.5°	1984.7	1970.1	1930.5	1915.6	1905.6
35°	1908.3	1883.7	1844.1	1829.2	1816.8
37.5°	1821.8	1799.6	1760.0	1742.8	1730.4
40°	1733.1	1713.2	1673.6	1651.6	1641.6
42.5°	1646.6	1626.7	1587.4	1562.5	1547.8
45°	1552.8	1535.6	1498.4	1471.4	1461.4
47.5°	1461.4	1444.2	1404.6	1377.3	1362.7
50°	1365.1	1352.7	1318.1	1283.6	1271.3
52.5°	1271.3	1254.1	1222.1	1194.9	1177.5
55°	1175.2	1160.3	1130.7	1101.1	1088.7
57.5°	1078.8	1066.5	1034.3	1004.7	994.8
60°	982.4	972.7	938.2	911.0	903.6
62.5°	888.6	871.4	846.8	822.2	812.2
65°	792.6	777.6	753.0	730.8	718.4
67.5°	693.8	681.3	659.2	642.0	632.0
70°	602.4	592.5	570.1	552.9	543.2
72.5°	508.6	498.7	486.4	469.1	461.8
75°	414.6	409.9	397.3	382.7	387.7
77.5°	330.8	320.8	315.8	308.5	301.2
80°	246.9	244.4	239.4	232.1	227.1
82.5°	167.9	167.9	165.5	155.6	155.6
85°	101.1	98.8	96.4	88.8	86.4
87.5°	44.5	39.6	34.6	27.2	24.6
90°	1.8	22.1	36.8	46.1	49.7
92.5°	46.1	38.7	44.2	47.9	49.7
95°	119.6	58.8	71.7	81.2	79.2
97.5°	215.4	64.5	93.8	99.5	101.2
100°	326.0	73.7	105.0	119.6	123.3
102.5°	447.4	443.8	108.7	128.8	134.5
105°	559.8	615.1	112.4	132.5	140.0
107.5°	690.5	736.4	116.1	136.2	143.6
110°	815.9	854.3	322.3	138.2	145.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	933.7	966.7	935.5	141.7	147.4
115°	1058.8	1090.1	1136.1	283.6	151.1
117.5°	1167.4	1204.2	1235.7	972.1	489.8
120°	1289.0	1316.5	1349.8	1371.9	1123.2
122.5°	1391.9	1421.5	1458.5	1469.4	1471.4
125°	1496.9	1521.0	1555.9	1568.9	1574.3
127.5°	1592.7	1618.5	1646.3	1664.6	1666.4
130°	1683.0	1712.5	1732.7	1753.0	1751.2
132.5°	1775.1	1799.1	1819.3	1835.9	1834.1
135°	1852.5	1882.0	1898.4	1917.0	1913.3
137.5°	1933.4	1955.5	1974.1	1992.4	1987.0
140°	2012.5	2027.4	2047.6	2064.2	2054.9
142.5°	2079.1	2091.9	2115.7	2130.4	2121.2
145°	2149.0	2147.0	2178.3	2191.2	2182.0
147.5°	2209.6	2204.1	2235.3	2244.6	2237.3
150°	2268.6	2255.7	2285.2	2296.1	2287.0
152.5°	2318.3	2303.6	2331.1	2342.3	2329.4
155°	2366.2	2349.8	2371.8	2382.7	2368.1
157.5°	2404.8	2390.2	2406.8	2419.7	2404.8
160°	2438.1	2427.0	2438.1	2449.0	2436.1
162.5°	2467.4	2456.5	2465.6	2478.5	2461.9
165°	2493.2	2482.3	2487.7	2500.6	2487.7
167.5°	2513.5	2502.4	2508.0	2520.9	2504.3
170°	2530.2	2518.9	2522.7	2535.6	2518.9
172.5°	2541.1	2530.2	2533.8	2546.7	2530.2
175°	2550.2	2537.3	2541.1	2553.9	2535.6
177.5°	2553.9	2541.1	2543.0	2555.9	2539.3
180°	2544.8	2544.8	2544.8	2544.8	2544.8

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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	10.74	11.57	11.72	12.57	13.89	10.30	11.13	11.28	12.13	13.45
	3H	12.39	13.14	13.39	14.14	15.48	11.91	12.65	12.90	13.66	15.00
	4H	12.97	13.68	13.98	14.69	16.04	12.49	13.19	13.50	14.20	15.55
	6H	13.37	14.02	14.39	15.03	16.39	12.88	13.53	13.90	14.54	15.90
	8H	13.47	14.09	14.49	15.12	16.47	12.98	13.60	14.00	14.63	15.98
	12H	13.51	14.10	14.54	15.13	16.51	13.02	13.61	14.05	14.63	16.01
4H	2H	11.19	11.90	12.21	12.91	14.26	10.84	11.55	11.86	12.56	13.90
	3H	13.05	13.64	14.07	14.68	16.04	12.65	13.24	13.67	14.28	15.64
	4H	13.76	14.30	14.79	15.33	16.71	13.34	13.88	14.37	14.91	16.29
	6H	14.26	14.73	15.31	15.78	17.16	13.84	14.31	14.88	15.36	16.74
	8H	14.41	14.84	15.45	15.89	17.29	13.98	14.42	15.03	15.46	16.86
	12H	14.48	14.87	15.54	15.93	17.33	14.04	14.43	15.10	15.50	16.89
8H	4H	13.95	14.38	14.99	15.43	16.82	13.58	14.01	14.62	15.06	16.45
	6H	14.57	14.93	15.64	16.02	17.41	14.19	14.55	15.26	15.64	17.03
	8H	14.79	15.10	15.86	16.17	17.58	14.40	14.72	15.48	15.79	17.20
	12H	14.91	15.19	15.99	16.26	17.71	14.51	14.79	15.59	15.86	17.31
12H	4H	13.93	14.32	14.99	15.38	16.78	13.57	13.96	14.63	15.02	16.42
	6H	14.60	14.91	15.67	15.99	17.40	14.23	14.55	15.31	15.62	17.03
	8H	14.83	15.11	15.91	16.18	17.63	14.46	14.74	15.54	15.81	17.26

END OF REPORT