

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: P924905

Luminaire Tested: DFN2DIP-PN3F0-070D080US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924905
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-PN3F0-070D080US950-FLLONL
Description: 3 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

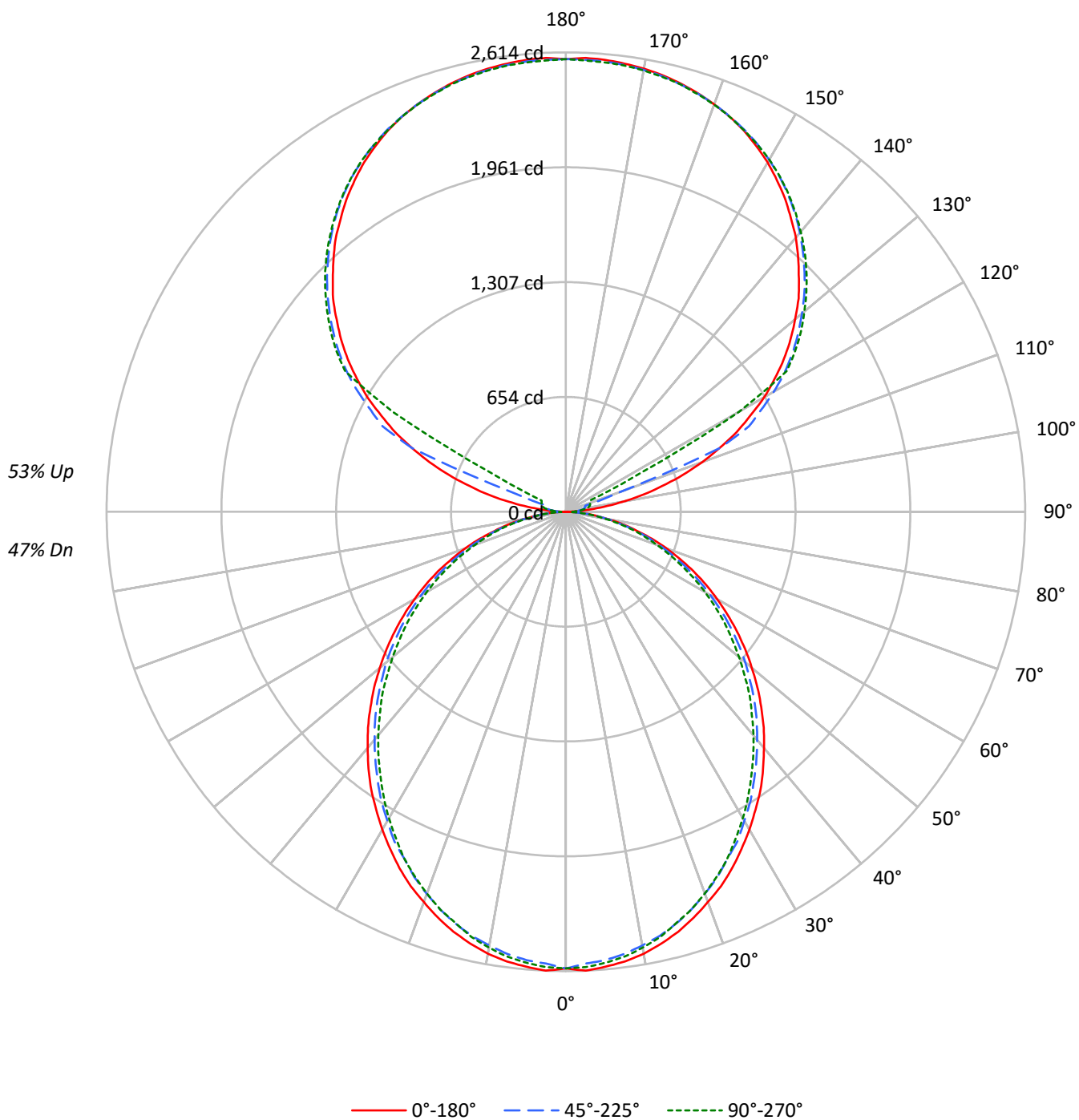
Lumens per Lamp: N/A
Luminaire Lumens: 14167.0 lumens
Efficiency: N/A
Efficacy: 108.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

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°	3037	3037	3037
5°	3041	2993	3014
10°	3014	2951	2972
15°	2968	2900	2907
20°	2906	2830	2840
25°	2845	2748	2764
30°	2768	2670	2666
35°	2696	2579	2564
40°	2606	2488	2466
45°	2517	2396	2365
50°	2420	2299	2250
55°	2318	2187	2143
60°	2202	2054	2020
65°	2076	1917	1875
70°	1915	1748	1719
75°	1693	1547	1574
80°	1423	1290	1298
85°	1004	854	847

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2517 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	244.6	1.7
10°-20°	688.1	4.9
20°-30°	1011.3	7.1
30°-40°	1174.5	8.3
40°-50°	1173.1	8.3
50°-60°	1022.9	7.2
60°-70°	756.1	5.3
70°-80°	427.8	3.0
80°-90°	117.5	0.8
90°-100°	84.9	0.6
100°-110°	316.6	2.2
110°-120°	839.7	5.9
120°-130°	1392.7	9.8
130°-140°	1479.4	10.4
140°-150°	1374.9	9.7
150°-160°	1105.4	7.8
160°-170°	712.3	5.0
170°-180°	245.2	1.7
0°-30°	1943.9	13.7
0°-40°	3118.5	22.0
0°-60°	5314.4	37.5
0°-90°	6615.8	46.7
90°-120°	1241.3	8.8
90°-150°	5488.3	38.7
90°-180°	7551.0	53.3
0°-180°	14167.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2598	2598	2598	2598	2598	
5°	2598	2589	2561	2581	2576	247
15°	2474	2459	2426	2436	2424	697
25°	2239	2219	2176	2181	2176	1030
35°	1932	1907	1866	1851	1839	1206
45°	1572	1554	1517	1489	1479	1213
55°	1189	1174	1144	1114	1102	1063
65°	802	787	762	740	727	793
75°	420	415	402	387	392	448
85°	102	100	98	90	88	114
90°	2	22	37	47	50	13
95°	121	60	73	82	80	143
105°	567	623	114	134	142	605
115°	1072	1103	1150	287	153	1055
125°	1515	1540	1575	1588	1594	1351
135°	1875	1905	1922	1940	1936	1448
145°	2175	2173	2205	2218	2208	1360
155°	2395	2378	2401	2412	2397	1104
165°	2524	2512	2518	2531	2518	713
175°	2581	2568	2572	2585	2566	246
180°	2576	2576	2576	2576	2576	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2598.4	2598.4	2598.4	2598.4	2598.4
2.5°	2613.6	2601.1	2573.5	2598.4	2593.6
5°	2598.4	2588.7	2561.1	2581.0	2576.2
7.5°	2581.0	2566.1	2538.5	2558.7	2553.7
10°	2553.7	2536.1	2506.2	2526.1	2518.7
12.5°	2516.0	2501.2	2471.2	2483.6	2478.6
15°	2473.6	2458.7	2426.1	2436.2	2423.7
17.5°	2421.1	2406.3	2373.6	2386.1	2373.6
20°	2363.5	2348.7	2313.7	2321.2	2311.4
22.5°	2306.3	2283.8	2251.2	2251.2	2246.1
25°	2238.8	2218.8	2176.5	2181.2	2176.5
27.5°	2163.7	2146.2	2113.9	2106.4	2093.9
30°	2089.0	2068.7	2031.4	2024.0	2013.9
32.5°	2008.8	1994.1	1954.0	1938.9	1928.8
35°	1931.5	1906.6	1866.5	1851.4	1838.9
37.5°	1844.0	1821.5	1781.4	1763.9	1751.4
40°	1754.1	1734.0	1693.9	1671.7	1661.6
42.5°	1666.6	1646.5	1606.7	1581.5	1566.7
45°	1571.7	1554.3	1516.6	1489.3	1479.2
47.5°	1479.2	1461.7	1421.7	1394.1	1379.3
50°	1381.7	1369.2	1334.2	1299.3	1286.8
52.5°	1286.8	1269.3	1237.0	1209.4	1191.8
55°	1189.4	1174.4	1144.4	1114.5	1102.0
57.5°	1091.9	1079.5	1046.8	1016.9	1006.9
60°	994.4	984.5	949.6	922.0	914.6
62.5°	899.4	882.0	857.1	832.2	822.1
65°	802.2	787.0	762.2	739.6	727.1
67.5°	702.2	689.6	667.2	649.8	639.7
70°	609.7	599.7	577.1	559.6	549.8
72.5°	514.8	504.8	492.3	474.8	467.4
75°	419.7	414.9	402.1	387.3	392.4
77.5°	334.9	324.7	319.7	312.2	304.9
80°	249.9	247.4	242.3	234.9	229.8
82.5°	169.9	169.9	167.5	157.5	157.5
85°	102.4	100.0	97.6	89.9	87.5
87.5°	45.0	40.1	35.0	27.6	24.9
90°	1.8	22.3	37.2	46.7	50.3
92.5°	46.7	39.2	44.7	48.5	50.3
95°	121.1	59.5	72.6	82.1	80.1
97.5°	218.0	65.3	94.9	100.7	102.5
100°	330.0	74.6	106.3	121.1	124.8
102.5°	452.9	449.2	110.0	130.3	136.1
105°	566.6	622.6	113.7	134.1	141.7
107.5°	698.9	745.4	117.5	137.9	145.4
110°	825.8	864.7	326.3	139.9	147.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	945.0	978.4	946.8	143.4	149.2
115°	1071.6	1103.3	1150.0	287.1	152.9
117.5°	1181.6	1218.8	1250.7	984.0	495.8
120°	1304.7	1332.5	1366.2	1388.5	1136.9
122.5°	1408.9	1438.8	1476.2	1487.3	1489.3
125°	1515.1	1539.5	1574.9	1587.9	1593.5
127.5°	1612.1	1638.2	1666.4	1684.9	1686.7
130°	1703.5	1733.3	1753.7	1774.3	1772.5
132.5°	1796.7	1821.0	1841.4	1858.2	1856.4
135°	1875.0	1904.9	1921.5	1940.3	1936.5
137.5°	1956.9	1979.3	1998.1	2016.7	2011.1
140°	2037.0	2052.1	2072.5	2089.3	2079.9
142.5°	2104.3	2117.3	2141.4	2156.3	2147.0
145°	2175.1	2173.1	2204.8	2217.9	2208.5
147.5°	2236.5	2230.9	2262.5	2271.9	2264.5
150°	2296.2	2283.1	2313.0	2324.0	2314.8
152.5°	2346.5	2331.6	2359.4	2370.8	2357.7
155°	2394.9	2378.3	2400.6	2411.7	2396.9
157.5°	2434.0	2419.2	2436.0	2449.1	2434.0
160°	2467.7	2456.5	2467.7	2478.8	2465.7
162.5°	2497.4	2486.3	2495.6	2508.6	2491.8
165°	2523.5	2512.5	2518.0	2531.0	2518.0
167.5°	2544.0	2532.8	2538.5	2551.6	2534.8
170°	2560.9	2549.6	2553.4	2566.5	2549.6
172.5°	2572.0	2560.9	2564.6	2577.7	2560.9
175°	2581.2	2568.2	2572.0	2585.0	2566.5
177.5°	2585.0	2572.0	2573.9	2587.0	2570.2
180°	2575.7	2575.7	2575.7	2575.7	2575.7

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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	10.78	11.61	11.76	12.61	13.93	10.34	11.17	11.33	12.17	13.49
	3H	12.43	13.18	13.43	14.19	15.52	11.95	12.70	12.95	13.70	15.04
	4H	13.01	13.72	14.02	14.73	16.08	12.53	13.24	13.54	14.25	15.59
	6H	13.41	14.06	14.43	15.07	16.43	12.92	13.57	13.94	14.58	15.94
	8H	13.51	14.13	14.53	15.16	16.52	13.02	13.64	14.04	14.67	16.03
	12H	13.56	14.14	14.59	15.17	16.55	13.06	13.65	14.09	14.67	16.05
4H	2H	11.23	11.94	12.25	12.95	14.30	10.88	11.59	11.90	12.60	13.95
	3H	13.09	13.68	14.11	14.72	16.08	12.69	13.28	13.71	14.32	15.68
	4H	13.80	14.34	14.83	15.37	16.75	13.38	13.92	14.41	14.95	16.34
	6H	14.31	14.77	15.35	15.83	17.20	13.88	14.35	14.93	15.40	16.78
	8H	14.45	14.89	15.49	15.93	17.33	14.03	14.46	15.07	15.51	16.90
	12H	14.52	14.91	15.58	15.97	17.37	14.08	14.48	15.14	15.54	16.94
8H	4H	13.99	14.42	15.03	15.47	16.86	13.62	14.05	14.66	15.10	16.49
	6H	14.61	14.97	15.68	16.06	17.45	14.24	14.59	15.30	15.68	17.08
	8H	14.83	15.14	15.90	16.22	17.63	14.44	14.76	15.52	15.83	17.24
	12H	14.95	15.23	16.03	16.30	17.75	14.55	14.83	15.63	15.90	17.35
12H	4H	13.97	14.36	15.03	15.43	16.83	13.61	14.00	14.67	15.06	16.46
	6H	14.64	14.96	15.71	16.03	17.44	14.28	14.59	15.35	15.66	17.07
	8H	14.88	15.15	15.95	16.22	17.67	14.50	14.78	15.58	15.85	17.30