

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: P914375

Luminaire Tested: DFN2DIP-PN4F0-120D110US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914375
REPORT IS A COMBINATION OF REPORTS P901272 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-120D110US927-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

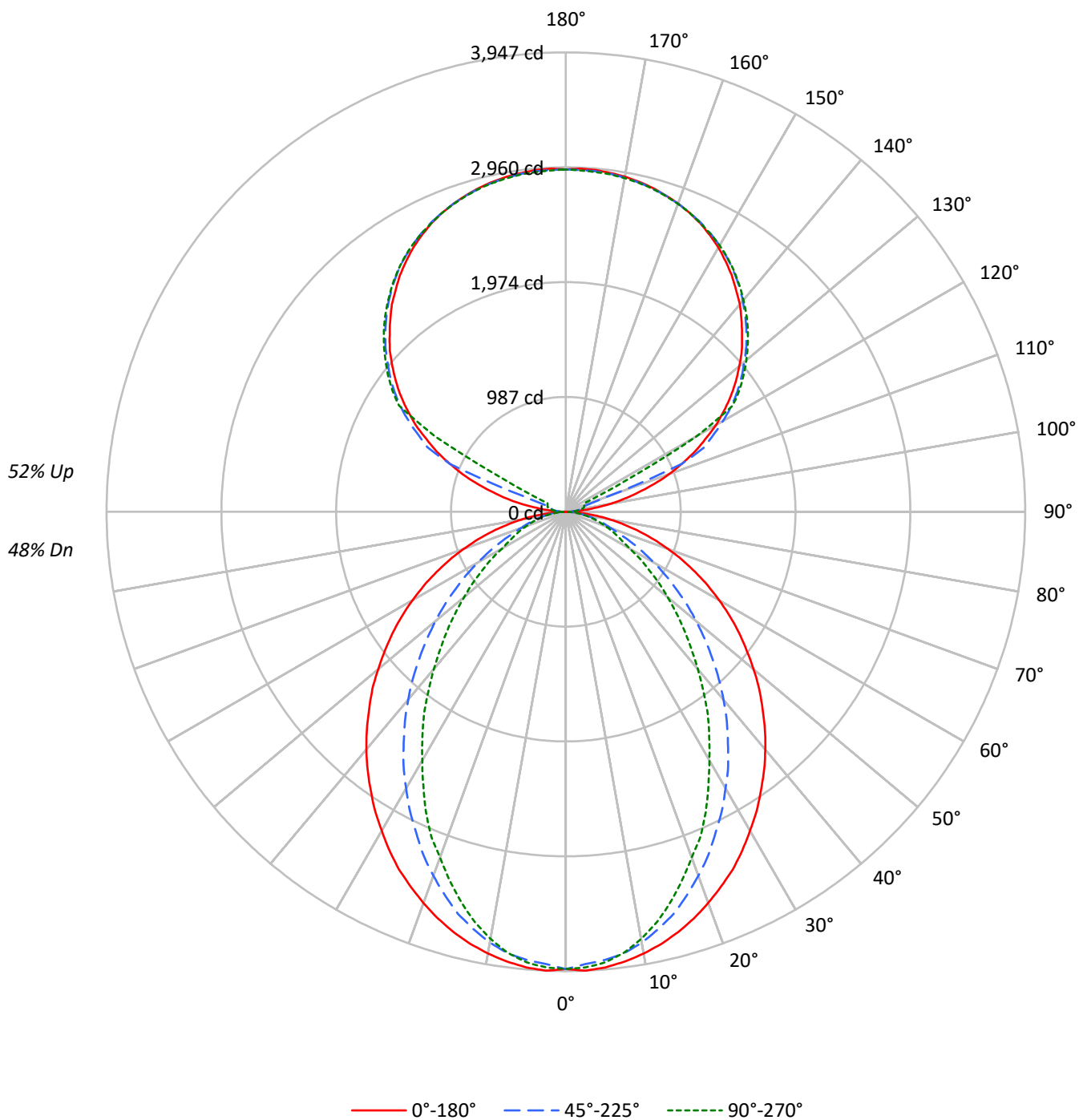
Lumens per Lamp: N/A
Luminaire Lumens: 16707.1 lumens
Efficiency: N/A
Efficacy: 76.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 217.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55
1	98	94	90	87	90	87	83	80	73	71	69	60	59	58	49	48	47
2	90	82	77	72	82	76	71	67	64	61	58	54	51	49	44	42	40
3	82	73	66	60	75	67	61	56	57	53	49	48	45	42	39	37	35
4	75	65	57	51	69	60	53	48	51	46	42	43	39	36	35	33	30
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	36	42	36	32	35	31	28	29	26	24
7	59	47	39	34	54	44	37	32	38	32	29	32	28	25	27	24	21
8	55	43	35	30	51	40	33	29	35	29	25	30	25	22	25	22	19
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	27	23	29	24	21	25	21	18	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2868	2868	2868
5°	2873	2823	2841
10°	2844	2768	2749
15°	2805	2677	2607
20°	2753	2551	2432
25°	2700	2410	2263
30°	2629	2265	2048
35°	2559	2110	1860
40°	2488	1949	1644
45°	2406	1770	1448
50°	2320	1590	1256
55°	2231	1397	1072
60°	2128	1195	883
65°	2010	990	796
70°	1866	799	721
75°	1685	705	657
80°	1424	593	571
85°	992	398	433

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2406 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	368.2	2.2
10°-20°	1010.8	6.1
20°-30°	1419.2	8.5
30°-40°	1547.0	9.3
40°-50°	1421.9	8.5
50°-60°	1116.7	6.7
60°-70°	726.9	4.4
70°-80°	374.2	2.2
80°-90°	100.7	0.6
90°-100°	97.0	0.6
100°-110°	361.5	2.2
110°-120°	958.7	5.7
120°-130°	1590.2	9.5
130°-140°	1689.1	10.1
140°-150°	1569.9	9.4
150°-160°	1262.1	7.6
160°-170°	813.3	4.9
170°-180°	279.9	1.7
0°-30°	2798.2	16.7
0°-40°	4345.2	26.0
0°-60°	6883.7	41.2
0°-90°	8085.4	48.4
90°-120°	1417.2	8.5
90°-150°	6266.3	37.5
90°-180°	8622.0	51.6
0°-180°	16707.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3929	3929	3929	3929	3929	
5°	3929	3911	3865	3897	3886	373
15°	3737	3698	3577	3509	3474	1053
25°	3392	3278	3044	2898	2844	1560
35°	2923	2741	2429	2205	2126	1829
45°	2389	2151	1778	1525	1440	1845
55°	1817	1540	1156	942	875	1623
65°	1227	939	619	498	487	1216
75°	654	405	284	260	256	692
85°	153	78	68	68	68	175
90°	2	26	42	53	57	16
95°	138	68	83	94	92	164
105°	647	711	130	153	162	691
115°	1224	1260	1313	328	175	1205
125°	1730	1758	1798	1813	1819	1543
135°	2141	2175	2194	2215	2211	1654
145°	2484	2481	2517	2532	2522	1553
155°	2734	2715	2741	2754	2737	1260
165°	2881	2869	2875	2890	2875	814
175°	2947	2932	2936	2952	2930	280
180°	2941	2941	2941	2941	2941	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3928.9	3928.9	3928.9	3928.9	3928.9
2.5°	3946.6	3928.9	3889.7	3925.5	3918.3
5°	3928.9	3911.2	3864.7	3896.8	3886.3
7.5°	3896.8	3875.7	3825.9	3839.9	3822.1
10°	3854.2	3829.3	3758.3	3747.4	3726.3
12.5°	3801.0	3769.0	3672.7	3651.6	3612.4
15°	3736.9	3697.7	3576.9	3509.4	3474.0
17.5°	3662.2	3605.2	3455.8	3377.8	3320.8
20°	3576.9	3505.6	3328.0	3239.3	3160.8
22.5°	3484.5	3402.7	3196.3	3075.6	3022.4
25°	3392.1	3278.1	3043.5	2897.9	2844.3
27.5°	3281.9	3160.8	2901.3	2734.2	2652.3
30°	3164.6	3029.2	2744.7	2563.7	2467.5
32.5°	3050.7	2886.9	2595.7	2382.2	2293.2
35°	2922.8	2741.3	2428.6	2204.6	2126.1
37.5°	2798.3	2602.6	2272.1	2026.5	1937.8
40°	2666.6	2453.5	2108.4	1856.0	1763.6
42.5°	2531.6	2304.1	1945.0	1681.7	1593.1
45°	2389.4	2151.0	1777.9	1525.2	1439.9
47.5°	2254.3	2002.0	1618.0	1365.2	1287.1
50°	2105.0	1852.6	1461.4	1215.8	1141.5
52.5°	1959.0	1692.3	1312.0	1077.4	1009.9
55°	1816.8	1539.5	1155.5	942.3	874.8
57.5°	1671.1	1386.7	1017.0	817.8	760.9
60°	1521.8	1237.3	871.0	690.0	633.0
62.5°	1376.2	1091.7	746.6	576.1	547.7
65°	1226.8	938.6	618.7	498.0	487.0
67.5°	1084.6	796.3	498.0	437.2	426.7
70°	935.2	657.9	412.3	376.8	362.5
72.5°	793.0	529.7	344.8	316.5	309.3
75°	654.1	405.1	284.5	259.5	256.1
77.5°	515.7	287.8	224.1	209.8	202.6
80°	387.5	206.4	170.5	156.5	156.5
82.5°	270.1	138.8	117.3	110.1	110.1
85°	152.8	78.1	67.5	67.5	67.5
87.5°	57.0	28.3	28.3	24.9	24.9
90°	2.1	25.5	42.5	53.3	57.4
92.5°	53.3	44.8	51.0	55.4	57.4
95°	138.2	68.0	82.9	93.7	91.5
97.5°	248.9	74.5	108.4	114.9	117.0
100°	376.8	85.2	121.3	138.2	142.5
102.5°	517.0	512.9	125.6	148.9	155.4
105°	646.9	710.8	129.9	153.1	161.8
107.5°	798.0	851.0	134.2	157.4	166.0
110°	942.8	987.3	372.5	159.7	168.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1079.0	1117.1	1081.0	163.7	170.3
115°	1223.5	1259.6	1313.0	327.7	174.6
117.5°	1349.2	1391.6	1428.0	1123.5	566.0
120°	1489.6	1521.5	1559.9	1585.4	1298.1
122.5°	1608.7	1642.7	1685.4	1698.1	1700.4
125°	1730.0	1757.8	1798.2	1813.1	1819.4
127.5°	1840.6	1870.4	1902.5	1923.7	1925.8
130°	1945.0	1979.1	2002.3	2025.8	2023.9
132.5°	2051.4	2079.2	2102.4	2121.6	2119.6
135°	2140.9	2174.9	2193.9	2215.4	2211.1
137.5°	2234.3	2259.9	2281.3	2302.6	2296.2
140°	2325.8	2343.0	2366.2	2385.4	2374.8
142.5°	2402.6	2417.5	2445.1	2462.0	2451.4
145°	2483.5	2481.2	2517.3	2532.3	2521.7
147.5°	2553.5	2547.2	2583.3	2593.9	2585.6
150°	2621.7	2606.8	2640.9	2653.6	2643.0
152.5°	2679.1	2662.1	2694.0	2706.9	2692.0
155°	2734.5	2715.4	2740.9	2753.6	2736.7
157.5°	2779.1	2762.2	2781.4	2796.3	2779.1
160°	2817.6	2804.6	2817.6	2830.1	2815.3
162.5°	2851.4	2838.8	2849.4	2864.3	2845.1
165°	2881.2	2868.6	2874.9	2889.8	2874.9
167.5°	2904.7	2891.9	2898.4	2913.3	2894.2
170°	2923.9	2911.0	2915.3	2930.3	2911.0
172.5°	2936.5	2923.9	2928.2	2943.1	2923.9
175°	2947.2	2932.3	2936.5	2951.5	2930.3
177.5°	2951.5	2936.5	2938.8	2953.7	2934.6
180°	2940.9	2940.9	2940.9	2940.9	2940.9

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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	10.66	11.48	11.64	12.47	13.76	6.63	7.44	7.60	8.43	9.73
	3H	12.34	13.07	13.33	14.07	15.39	7.82	8.55	8.80	9.54	10.86
	4H	12.95	13.64	13.95	14.64	15.97	8.27	8.96	9.27	9.96	11.28
	6H	13.38	14.01	14.39	15.01	16.35	8.59	9.22	9.60	10.23	11.57
	8H	13.50	14.11	14.52	15.13	16.46	8.68	9.28	9.70	10.30	11.64
	12H	13.57	14.14	14.59	15.15	16.51	8.72	9.30	9.74	10.31	11.67
4H	2H	10.68	11.37	11.69	12.37	13.70	7.22	7.91	8.23	8.91	10.24
	3H	12.51	13.08	13.53	14.11	15.45	8.57	9.15	9.59	10.17	11.51
	4H	13.20	13.73	14.23	14.75	16.11	9.12	9.65	10.14	10.67	12.03
	6H	13.72	14.17	14.76	15.22	16.58	9.54	9.99	10.58	11.03	12.39
	8H	13.90	14.32	14.93	15.36	16.73	9.67	10.09	10.70	11.13	12.50
	12H	13.99	14.37	15.05	15.43	16.80	9.73	10.11	10.79	11.17	12.54
8H	4H	13.17	13.59	14.21	14.63	16.00	9.40	9.82	10.44	10.86	12.23
	6H	13.74	14.09	14.80	15.17	16.54	9.92	10.27	10.98	11.35	12.72
	8H	13.96	14.26	15.03	15.33	16.72	10.11	10.42	11.18	11.48	12.87
	12H	14.10	14.37	15.17	15.43	16.86	10.23	10.50	11.30	11.56	12.99
12H	4H	13.12	13.50	14.18	14.55	15.93	9.41	9.79	10.46	10.84	12.22
	6H	13.72	14.02	14.78	15.08	16.48	9.97	10.28	11.04	11.34	12.73
	8H	13.94	14.21	15.01	15.26	16.70	10.18	10.45	11.25	11.51	12.94

END OF REPORT