

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: P915095

Luminaire Tested: DFN2DIP-SQ4F0-120D140US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915095
REPORT IS A COMBINATION OF REPORTS P901718 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-120D140US927-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

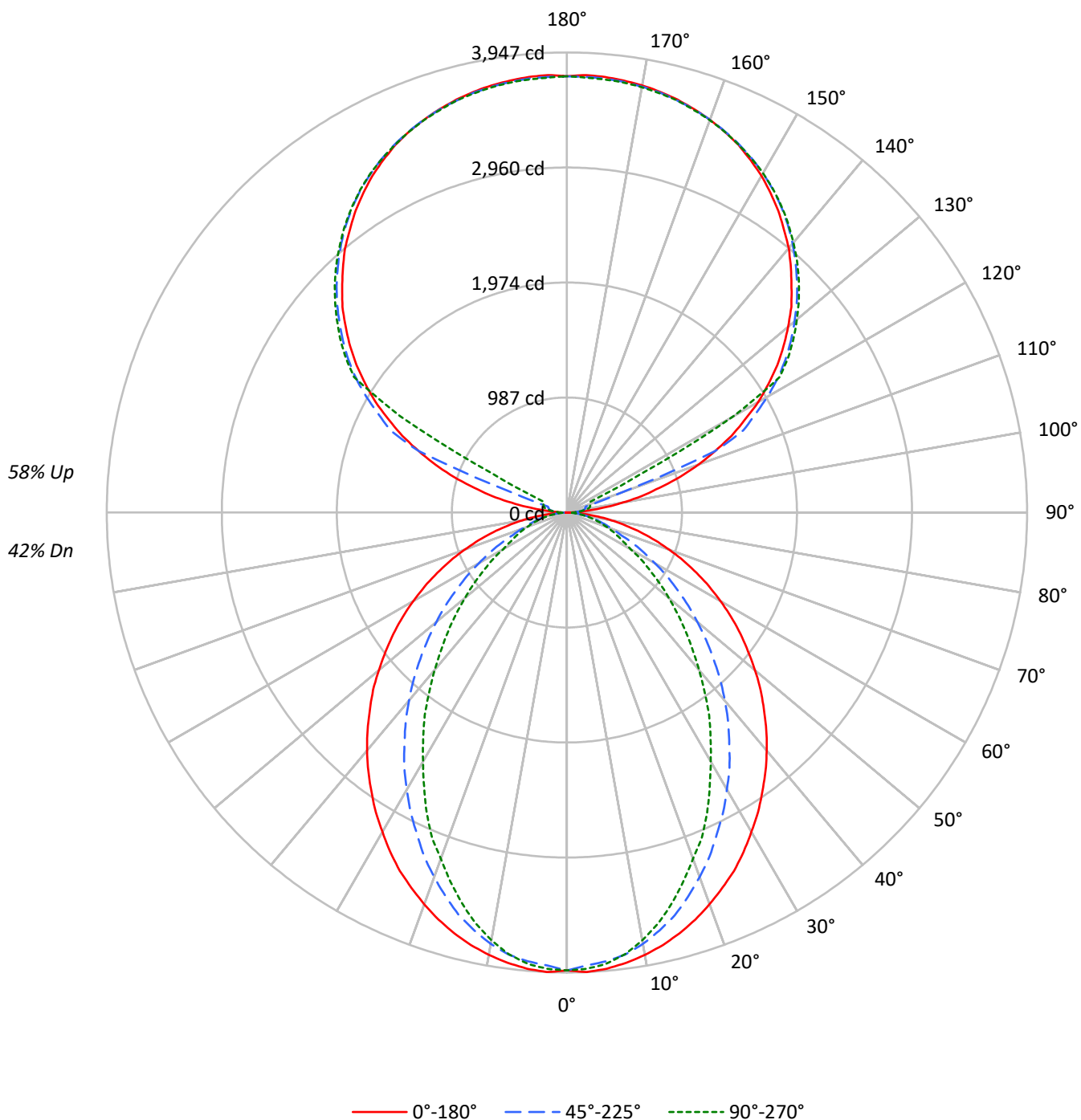
Lumens per Lamp: N/A
Luminaire Lumens: 19059.9 lumens
Efficiency: N/A
Efficacy: 85.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 223.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49
1	96	92	89	85	88	85	81	79	70	68	66	56	55	54	44	43	42
2	88	81	75	70	80	74	69	65	62	58	55	50	48	45	39	38	36
3	81	72	65	59	74	66	60	55	55	50	47	45	42	39	35	33	31
4	74	64	56	50	67	59	52	47	49	44	40	40	36	34	32	29	27
5	68	57	49	43	62	52	46	40	44	39	35	36	32	29	29	26	24
6	63	51	43	38	57	47	40	35	40	34	31	33	29	26	26	23	21
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	35	29	49	39	32	28	33	28	24	27	24	21	22	19	17
9	50	38	31	26	46	36	29	25	30	25	22	25	21	19	21	18	16
10	47	35	28	24	43	33	26	22	28	23	20	23	20	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2757	2757	2757
5°	2761	2714	2731
10°	2734	2661	2643
15°	2696	2573	2506
20°	2646	2453	2338
25°	2595	2317	2176
30°	2527	2178	1970
35°	2460	2029	1789
40°	2391	1874	1582
45°	2312	1703	1393
50°	2230	1529	1209
55°	2144	1344	1033
60°	2045	1150	851
65°	1931	953	767
70°	1793	770	695
75°	1619	680	634
80°	1368	572	552
85°	952	385	421

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2312 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	368.2	1.9
10°-20°	1010.8	5.3
20°-30°	1419.2	7.4
30°-40°	1547.0	8.1
40°-50°	1421.9	7.5
50°-60°	1116.7	5.9
60°-70°	726.9	3.8
70°-80°	374.2	2.0
80°-90°	102.1	0.5
90°-100°	123.4	0.6
100°-110°	460.1	2.4
110°-120°	1220.2	6.4
120°-130°	2023.8	10.6
130°-140°	2149.8	11.3
140°-150°	1998.0	10.5
150°-160°	1606.3	8.4
160°-170°	1035.1	5.4
170°-180°	356.3	1.9
0°-30°	2798.2	14.7
0°-40°	4345.2	22.8
0°-60°	6883.7	36.1
0°-90°	8086.8	42.4
90°-120°	1803.7	9.5
90°-150°	7975.4	41.8
90°-180°	10973.0	57.6
0°-180°	19059.9	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	32	54	68	73	18
95°	176	86	106	119	116	208
105°	823	905	165	195	206	880
115°	1557	1603	1671	417	222	1533
125°	2202	2237	2289	2308	2316	1964
135°	2725	2768	2792	2820	2814	2105
145°	3161	3158	3204	3223	3209	1977
155°	3480	3456	3488	3505	3483	1604
165°	3667	3651	3659	3678	3659	1036
175°	3751	3732	3737	3756	3729	357
180°	3743	3743	3743	3743	3743	

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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°	2.5	32.5	54.0	67.9	73.0
92.5°	67.9	57.0	65.0	70.4	73.0
95°	175.9	86.5	105.5	119.3	116.5
97.5°	316.8	94.9	138.0	146.3	148.9
100°	479.5	108.4	154.4	175.9	181.4
102.5°	658.0	652.8	159.9	189.4	197.8
105°	823.3	904.7	165.3	194.9	205.8
107.5°	1015.7	1083.1	170.8	200.3	211.3
110°	1199.9	1256.6	474.0	203.3	213.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1373.2	1421.8	1375.9	208.4	216.7
115°	1557.3	1603.2	1671.1	417.2	222.2
117.5°	1717.1	1771.1	1817.4	1429.9	720.4
120°	1895.9	1936.4	1985.3	2017.8	1652.1
122.5°	2047.4	2090.8	2145.1	2161.2	2164.2
125°	2201.8	2237.1	2288.6	2307.5	2315.6
127.5°	2342.6	2380.6	2421.4	2448.4	2451.0
130°	2475.4	2518.9	2548.4	2578.4	2575.8
132.5°	2610.9	2646.2	2675.8	2700.2	2697.7
135°	2724.7	2768.1	2792.2	2819.5	2814.1
137.5°	2843.7	2876.2	2903.5	2930.5	2922.5
140°	2960.1	2982.0	3011.6	3036.0	3022.5
142.5°	3057.9	3076.8	3111.9	3133.5	3119.9
145°	3160.8	3157.9	3203.9	3222.9	3209.4
147.5°	3249.9	3241.8	3287.9	3301.3	3290.7
150°	3336.7	3317.7	3361.1	3377.2	3363.8
152.5°	3409.7	3388.2	3428.7	3445.1	3426.1
155°	3480.1	3456.0	3488.5	3504.6	3483.1
157.5°	3537.1	3515.5	3540.0	3559.0	3537.1
160°	3586.0	3569.6	3586.0	3602.0	3583.1
162.5°	3629.1	3613.0	3626.5	3645.5	3621.1
165°	3667.0	3650.9	3659.0	3677.9	3659.0
167.5°	3697.0	3680.6	3688.9	3707.9	3683.4
170°	3721.4	3705.0	3710.4	3729.4	3705.0
172.5°	3737.4	3721.4	3726.8	3745.8	3721.4
175°	3751.0	3732.0	3737.4	3756.4	3729.4
177.5°	3756.4	3737.4	3740.4	3759.3	3734.9
180°	3742.9	3742.9	3742.9	3742.9	3742.9

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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	9.93	10.70	10.96	11.73	13.11	5.89	6.67	6.92	7.69	9.07
	3H	11.61	12.30	12.65	13.34	14.74	7.08	7.77	8.11	8.81	10.20
	4H	12.22	12.87	13.27	13.91	15.32	7.53	8.18	8.57	9.22	10.63
	6H	12.64	13.24	13.70	14.29	15.70	7.84	8.45	8.90	9.49	10.91
	8H	12.77	13.34	13.83	14.40	15.81	7.93	8.51	9.00	9.57	10.98
	12H	12.83	13.37	13.90	14.43	15.86	7.98	8.52	9.04	9.57	11.01
4H	2H	9.94	10.60	11.00	11.64	13.04	6.48	7.14	7.54	8.18	9.58
	3H	11.77	12.32	12.83	13.38	14.80	7.83	8.37	8.89	9.44	10.86
	4H	12.47	12.96	13.53	14.02	15.46	8.38	8.87	9.44	9.93	11.37
	6H	12.98	13.41	14.06	14.49	15.93	8.79	9.22	9.87	10.30	11.74
	8H	13.16	13.56	14.24	14.63	16.08	8.92	9.32	10.00	10.39	11.84
	12H	13.25	13.61	14.35	14.70	16.16	8.98	9.34	10.08	10.43	11.89
8H	4H	12.43	12.83	13.51	13.90	15.35	8.65	9.05	9.73	10.13	11.58
	6H	13.00	13.33	14.10	14.44	15.89	9.17	9.50	10.27	10.62	12.06
	8H	13.22	13.51	14.32	14.61	16.07	9.36	9.65	10.47	10.75	12.22
	12H	13.36	13.61	14.47	14.71	16.21	9.48	9.73	10.59	10.83	12.34
12H	4H	12.38	12.74	13.47	13.83	15.28	8.66	9.02	9.75	10.11	11.56
	6H	12.97	13.26	14.08	14.36	15.83	9.22	9.51	10.33	10.61	12.08
	8H	13.19	13.45	14.30	14.54	16.05	9.43	9.68	10.54	10.78	12.29

END OF REPORT