

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: P914844

Luminaire Tested: DFN2DIP-SQ3F0-120D120US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914844
REPORT IS A COMBINATION OF REPORTS P900021 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D120US927-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

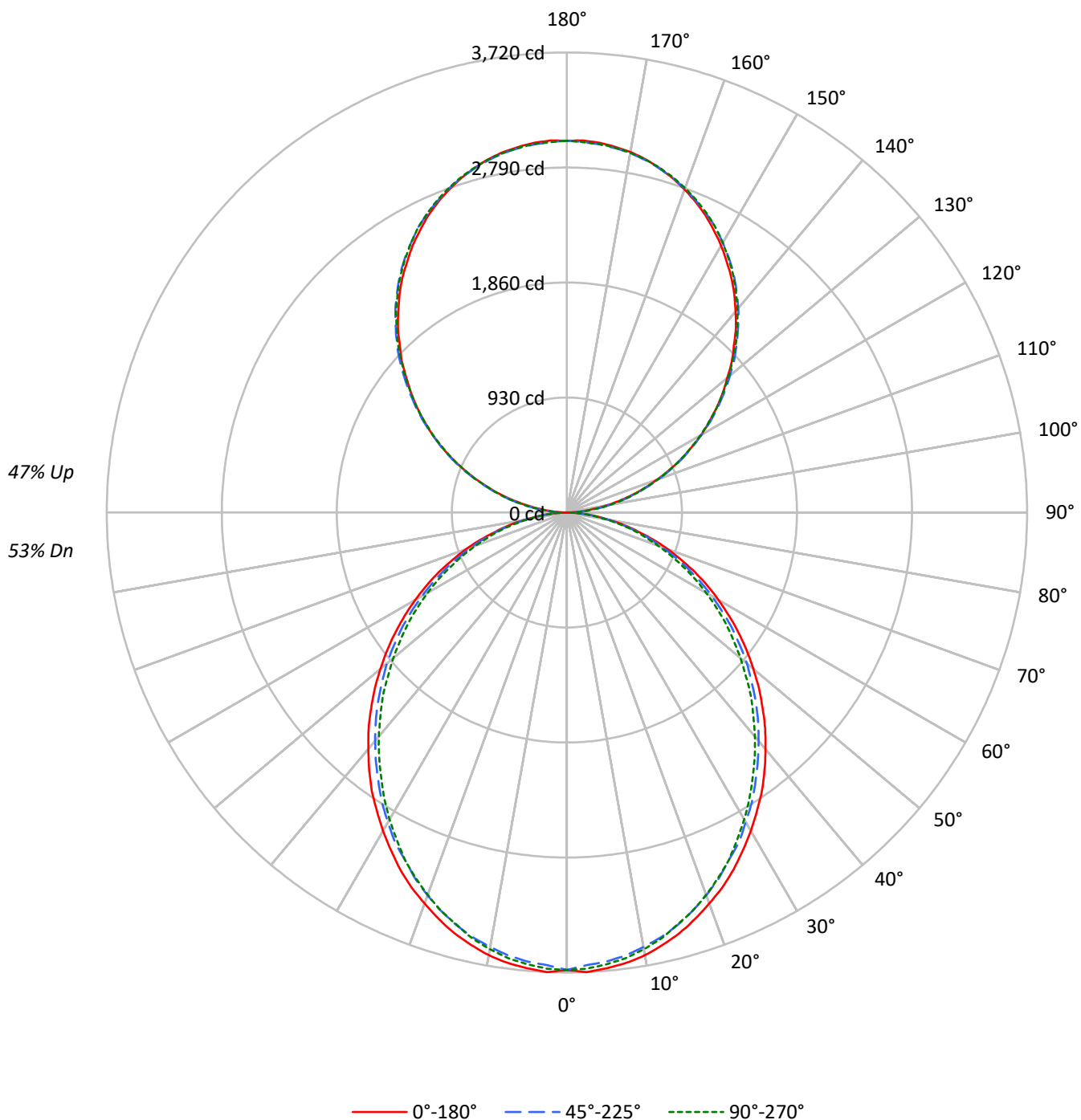
Lumens per Lamp: N/A
Luminaire Lumens: 17824.0 lumens
Efficiency: N/A
Efficacy: 81.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 219.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
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
RCR																	
0	108	108	108	108	100	100	100	100	85	85	85		71	71	71		59
1	98	94	90	87	91	87	84	81	74	72	70		63	61	59		52
2	90	82	76	71	83	76	71	66	65	61	58		55	52	50		46
3	82	72	65	59	75	67	61	55	58	53	49		49	45	42		41
4	75	64	56	50	69	60	52	47	51	46	41		43	39	36		36
5	69	57	49	43	63	53	46	40	46	40	36		39	35	31		33
6	63	51	43	37	58	48	40	35	41	36	31		35	31	27		30
7	59	46	38	33	54	43	36	31	37	32	28		32	28	24		27
8	54	42	34	29	50	39	32	27	34	29	24		29	25	22		25
9	51	38	31	26	47	36	29	24	31	26	22		27	23	19		23
10	47	35	28	23	44	33	26	22	29	23	20		25	21	18		21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4238	4238	4238
5°	4242	4176	4206
10°	4205	4117	4148
15°	4141	4047	4057
20°	4054	3950	3965
25°	3969	3834	3858
30°	3862	3727	3723
35°	3760	3600	3580
40°	3635	3472	3444
45°	3511	3344	3304
50°	3375	3209	3143
55°	3232	3053	2994
60°	3070	2868	2824
65°	2893	2677	2623
70°	2668	2442	2406
75°	2358	2162	2204
80°	1981	1804	1822
85°	1395	1196	1192

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3511 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	348.1	2.0
10°-20°	979.5	5.5
20°-30°	1439.5	8.1
30°-40°	1671.9	9.4
40°-50°	1669.9	9.4
50°-60°	1456.0	8.2
60°-70°	1076.3	6.0
70°-80°	609.0	3.4
80°-90°	169.3	0.9
90°-100°	186.0	1.0
100°-110°	591.1	3.3
110°-120°	1011.6	5.7
120°-130°	1330.4	7.5
130°-140°	1493.3	8.4
140°-150°	1464.3	8.2
150°-160°	1228.4	6.9
160°-170°	814.6	4.6
170°-180°	284.7	1.6
0°-30°	2767.2	15.5
0°-40°	4439.1	24.9
0°-60°	7565.0	42.4
0°-90°	9419.6	52.8
90°-120°	1788.7	10.0
90°-150°	6076.6	34.1
90°-180°	8404.0	47.1
0°-180°	17824.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3699	3699	3699	3699	3699	
5°	3699	3685	3646	3674	3667	351
15°	3521	3500	3454	3468	3450	992
25°	3187	3158	3098	3105	3098	1466
35°	2749	2714	2657	2636	2618	1717
45°	2237	2212	2159	2120	2106	1727
55°	1693	1672	1629	1586	1569	1514
65°	1142	1120	1085	1053	1035	1129
75°	597	591	572	551	558	638
85°	146	142	139	128	124	162
90°	3	33	89	83	86	17
95°	132	158	162	162	158	147
105°	546	553	558	563	563	576
115°	1015	1030	1025	1022	1015	1004
125°	1476	1499	1492	1484	1481	1319
135°	1910	1938	1943	1940	1933	1476
145°	2318	2337	2351	2354	2344	1449
155°	2651	2658	2667	2679	2671	1220
165°	2884	2881	2881	2900	2887	814
175°	3001	2994	2988	3006	2991	285
180°	3006	3006	3006	3006	3006	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3698.9	3698.9	3698.9	3698.9	3698.9
2.5°	3720.4	3702.7	3663.4	3698.9	3692.1
5°	3698.9	3684.9	3645.7	3674.0	3667.2
7.5°	3674.0	3652.8	3613.6	3642.3	3635.2
10°	3635.2	3610.2	3567.6	3595.9	3585.3
12.5°	3581.5	3560.4	3517.8	3535.5	3528.3
15°	3521.2	3500.0	3453.6	3467.9	3450.2
17.5°	3446.5	3425.3	3378.9	3396.6	3378.9
20°	3364.6	3343.4	3293.7	3304.2	3290.2
22.5°	3283.0	3251.0	3204.5	3204.5	3197.4
25°	3186.8	3158.5	3098.1	3105.0	3098.1
27.5°	3080.0	3055.1	3009.1	2998.5	2980.8
30°	2973.6	2944.9	2891.7	2881.2	2866.8
32.5°	2859.6	2838.5	2781.5	2760.0	2745.7
35°	2749.4	2714.0	2657.0	2635.5	2617.8
37.5°	2624.9	2592.9	2535.9	2511.0	2493.2
40°	2497.0	2468.4	2411.3	2379.6	2365.3
42.5°	2372.5	2343.8	2287.2	2251.4	2230.2
45°	2237.4	2212.5	2158.9	2120.0	2105.7
47.5°	2105.7	2080.7	2023.8	1984.6	1963.4
50°	1966.8	1949.1	1899.3	1849.4	1831.7
52.5°	1831.7	1806.8	1760.8	1721.5	1696.6
55°	1693.2	1671.7	1629.0	1586.4	1568.7
57.5°	1554.3	1536.6	1490.2	1447.6	1433.2
60°	1415.5	1401.5	1351.7	1312.5	1301.9
62.5°	1280.4	1255.4	1220.0	1184.5	1170.2
65°	1141.9	1120.4	1084.9	1052.8	1035.1
67.5°	999.7	981.5	949.8	925.0	910.6
70°	867.9	853.6	821.5	796.6	782.7
72.5°	732.8	718.5	700.8	675.9	665.3
75°	597.4	590.6	572.4	551.4	558.5
77.5°	476.6	462.2	455.1	444.5	434.0
80°	355.8	352.0	344.9	334.4	327.2
82.5°	241.9	241.9	238.5	224.2	224.2
85°	145.7	142.3	138.9	127.9	124.5
87.5°	64.2	57.0	49.8	39.2	35.5
90°	2.7	32.6	88.8	83.4	86.1
92.5°	56.2	76.1	78.8	81.6	81.6
95°	132.3	157.7	162.2	162.2	157.7
97.5°	220.2	243.8	253.8	253.8	253.8
100°	321.8	342.6	349.8	349.8	347.1
102.5°	428.7	444.1	454.1	456.9	454.1
105°	545.7	552.9	558.3	562.8	562.8
107.5°	661.6	672.6	672.6	674.3	661.6
110°	774.0	788.5	788.5	788.5	781.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	895.5	910.9	908.2	900.9	895.5
115°	1015.1	1029.7	1025.1	1022.4	1015.1
117.5°	1133.8	1153.8	1141.1	1133.8	1126.6
120°	1253.5	1273.4	1253.5	1253.5	1245.4
122.5°	1362.3	1387.7	1375.0	1367.7	1362.3
125°	1476.5	1499.1	1491.9	1483.8	1481.0
127.5°	1588.0	1616.0	1606.1	1595.2	1588.0
130°	1692.2	1724.8	1720.3	1714.8	1704.9
132.5°	1809.1	1834.5	1836.3	1823.6	1816.4
135°	1909.7	1937.8	1943.3	1940.5	1933.3
137.5°	2022.1	2044.8	2049.3	2047.5	2036.6
140°	2120.9	2143.6	2156.2	2156.2	2146.3
142.5°	2222.5	2245.1	2252.3	2255.0	2245.1
145°	2318.5	2336.6	2351.1	2353.9	2343.9
147.5°	2404.6	2427.2	2438.2	2442.7	2432.7
150°	2493.5	2508.8	2518.8	2527.0	2518.8
152.5°	2572.3	2587.7	2600.4	2610.4	2600.4
155°	2651.1	2658.4	2666.6	2679.2	2671.1
157.5°	2719.2	2724.5	2729.1	2747.2	2734.5
160°	2779.8	2785.3	2788.0	2803.4	2792.5
162.5°	2836.0	2836.0	2838.8	2856.0	2843.3
165°	2884.1	2881.4	2881.4	2899.5	2886.8
167.5°	2927.6	2919.4	2919.4	2937.6	2924.9
170°	2960.2	2952.9	2950.2	2968.4	2952.9
172.5°	2982.9	2975.6	2972.9	2991.0	2975.6
175°	3001.0	2993.7	2988.3	3006.4	2991.0
177.5°	3011.0	3003.7	2998.2	3013.7	2998.2
180°	3006.4	3006.4	3006.4	3006.4	3006.4

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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	12.51	13.40	13.45	14.35	15.58	12.07	12.96	13.00	13.91	15.14
	3H	14.17	14.97	15.12	15.93	17.18	13.68	14.48	14.63	15.44	16.69
	4H	14.76	15.51	15.72	16.47	17.74	14.26	15.02	15.22	15.98	17.24
	6H	15.15	15.85	16.12	16.82	18.09	14.65	15.35	15.62	16.32	17.59
	8H	15.26	15.92	16.23	16.91	18.18	14.76	15.42	15.73	16.40	17.68
	12H	15.31	15.94	16.29	16.92	18.21	14.80	15.43	15.78	16.41	17.70
4H	2H	12.97	13.73	13.94	14.69	15.95	12.62	13.37	13.58	14.34	15.60
	3H	14.84	15.47	15.81	16.46	17.74	14.43	15.06	15.40	16.05	17.33
	4H	15.55	16.12	16.53	17.11	18.41	15.12	15.70	16.11	16.69	17.99
	6H	16.06	16.56	17.06	17.57	18.86	15.63	16.12	16.62	17.13	18.43
	8H	16.21	16.67	17.20	17.67	18.99	15.77	16.23	16.77	17.24	18.55
	12H	16.28	16.70	17.30	17.72	19.04	15.83	16.25	16.85	17.27	18.59
8H	4H	15.74	16.21	16.74	17.21	18.52	15.37	15.83	16.36	16.83	18.15
	6H	16.37	16.75	17.39	17.80	19.11	15.99	16.37	17.01	17.41	18.72
	8H	16.59	16.92	17.62	17.96	19.29	16.19	16.53	17.22	17.56	18.89
	12H	16.72	17.01	17.75	18.04	19.41	16.31	16.60	17.34	17.63	19.00
12H	4H	15.73	16.15	16.74	17.17	18.48	15.36	15.78	16.38	16.80	18.12
	6H	16.40	16.74	17.43	17.77	19.10	16.03	16.36	17.05	17.40	18.72
	8H	16.64	16.93	17.67	17.96	19.33	16.26	16.55	17.29	17.58	18.95