

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: P920264

Luminaire Tested: DFN2DIP-SQ3F0-110D120US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920264
REPORT IS A COMBINATION OF REPORTS P900019 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-110D120US935-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

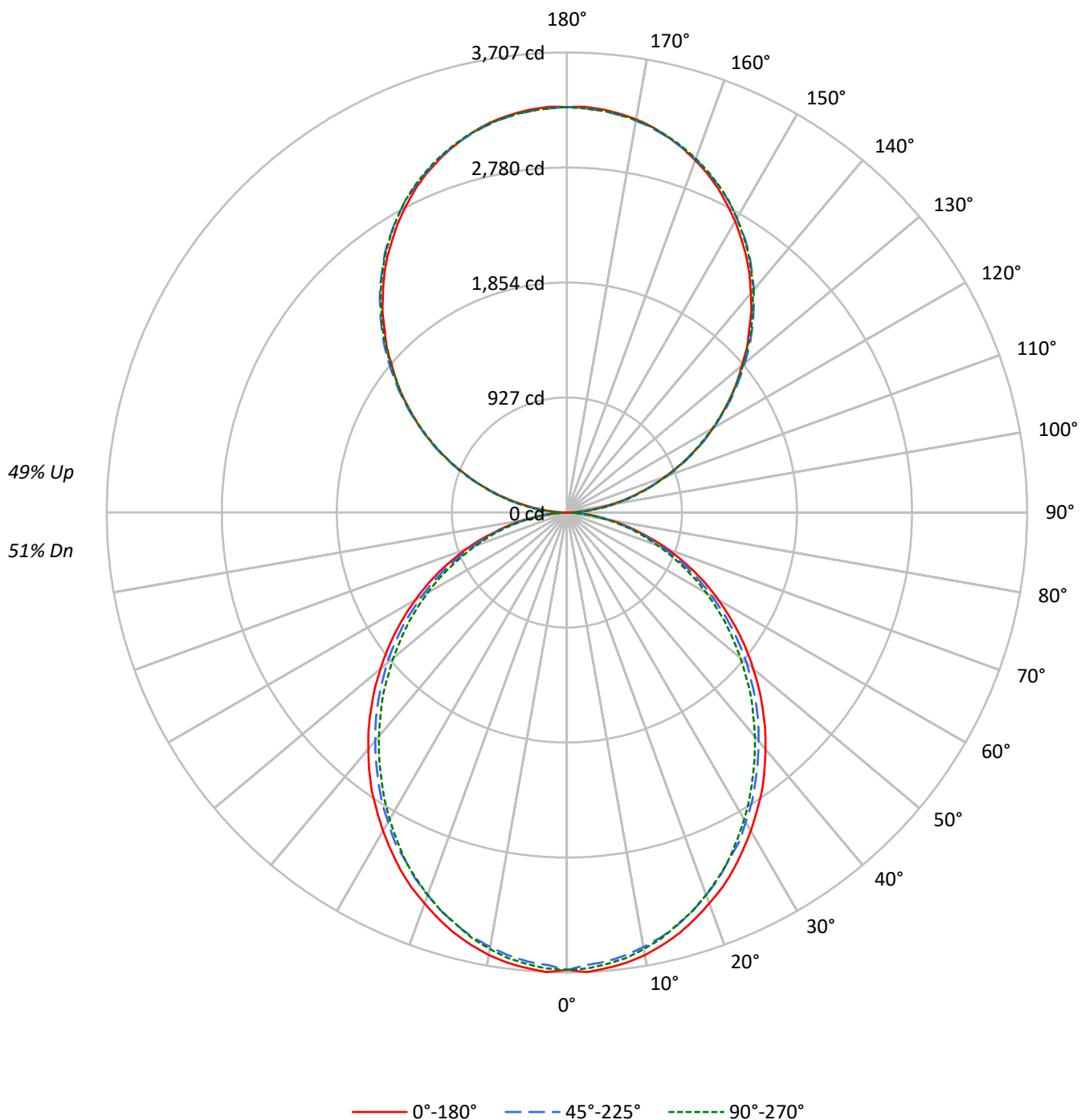
Lumens per Lamp: N/A
Luminaire Lumens: 18520.0 lumens
Efficiency: N/A
Efficacy: 89.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 206
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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	30	10
RCR																	
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57
1	98	94	90	86	90	87	83	80	73	71	69	61	60	58	50	49	48
2	89	82	76	70	82	76	70	66	64	60	57	54	51	48	44	42	40
3	81	72	65	59	75	67	60	55	57	52	48	48	44	41	39	37	34
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	30
5	68	57	49	43	63	53	45	40	45	40	35	38	34	30	32	28	26
6	63	51	43	37	58	47	40	35	41	35	31	34	30	27	29	25	23
7	58	46	38	32	54	43	36	31	37	31	27	31	27	24	26	23	20
8	54	42	34	29	50	39	32	27	34	28	24	29	24	21	24	21	18
9	50	38	31	25	46	36	29	24	31	25	22	26	22	19	22	19	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	21	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4223	4223	4223
5°	4227	4161	4190
10°	4190	4102	4132
15°	4125	4032	4042
20°	4039	3935	3950
25°	3954	3820	3844
30°	3847	3713	3709
35°	3746	3587	3567
40°	3622	3459	3431
45°	3498	3332	3292
50°	3362	3197	3131
55°	3220	3042	2983
60°	3059	2858	2813
65°	2883	2667	2613
70°	2659	2434	2397
75°	2349	2154	2196
80°	1974	1797	1815
85°	1390	1191	1188

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3498 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	346.9	1.9
10°-20°	975.9	5.3
20°-30°	1434.2	7.7
30°-40°	1665.7	9.0
40°-50°	1663.7	9.0
50°-60°	1450.7	7.8
60°-70°	1072.4	5.8
70°-80°	606.7	3.3
80°-90°	169.4	0.9
90°-100°	202.2	1.1
100°-110°	642.4	3.5
110°-120°	1099.4	5.9
120°-130°	1445.9	7.8
130°-140°	1623.0	8.8
140°-150°	1591.6	8.6
150°-160°	1335.1	7.2
160°-170°	885.4	4.8
170°-180°	309.5	1.7
0°-30°	2757.0	14.9
0°-40°	4422.7	23.9
0°-60°	7537.0	40.7
0°-90°	9385.5	50.7
90°-120°	1944.1	10.5
90°-150°	6604.6	35.7
90°-180°	9134.0	49.3
0°-180°	18520.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3685	3685	3685	3685	3685	
5°	3685	3671	3632	3660	3654	350
15°	3508	3487	3441	3455	3437	988
25°	3175	3147	3087	3094	3087	1461
35°	2739	2704	2647	2626	2608	1711
45°	2229	2204	2151	2112	2098	1720
55°	1687	1666	1623	1580	1563	1508
65°	1138	1116	1081	1049	1031	1125
75°	595	588	570	549	556	635
85°	145	142	138	127	124	162
90°	3	36	96	91	94	18
95°	144	171	176	176	171	160
105°	593	601	607	612	612	626
115°	1103	1119	1114	1111	1103	1091
125°	1605	1629	1622	1613	1610	1434
135°	2076	2106	2112	2109	2101	1604
145°	2520	2540	2555	2558	2548	1574
155°	2881	2889	2898	2912	2903	1326
165°	3135	3132	3132	3151	3138	884
175°	3262	3254	3248	3268	3251	310
180°	3268	3268	3268	3268	3268	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3685.2	3685.2	3685.2	3685.2	3685.2
2.5°	3706.6	3688.9	3649.9	3685.2	3678.4
5°	3685.2	3671.3	3632.2	3660.4	3653.6
7.5°	3660.4	3639.4	3600.3	3628.8	3621.7
10°	3621.7	3596.8	3554.4	3582.5	3572.0
12.5°	3568.3	3547.2	3504.8	3522.4	3515.3
15°	3508.1	3487.0	3440.8	3455.1	3437.4
17.5°	3433.7	3412.7	3366.4	3384.1	3366.4
20°	3352.1	3331.0	3281.4	3291.9	3278.1
22.5°	3270.9	3238.9	3192.7	3192.7	3185.5
25°	3175.0	3146.9	3086.7	3093.5	3086.7
27.5°	3068.6	3043.8	2997.9	2987.4	2969.8
30°	2962.6	2934.0	2881.0	2870.5	2856.2
32.5°	2849.0	2828.0	2771.2	2749.8	2735.5
35°	2739.3	2704.0	2647.1	2625.7	2608.0
37.5°	2615.2	2583.3	2526.5	2501.6	2484.0
40°	2487.8	2459.2	2402.4	2370.8	2356.6
42.5°	2363.7	2335.1	2278.7	2243.0	2222.0
45°	2229.1	2204.2	2150.9	2112.2	2097.9
47.5°	2097.9	2073.1	2016.3	1977.2	1956.1
50°	1959.5	1941.9	1892.2	1842.6	1825.0
52.5°	1825.0	1800.1	1754.3	1715.1	1690.3
55°	1687.0	1665.5	1623.1	1580.5	1562.9
57.5°	1548.6	1530.9	1484.7	1442.2	1427.9
60°	1410.2	1396.4	1346.7	1307.6	1297.1
62.5°	1275.7	1250.9	1215.5	1180.2	1165.9
65°	1137.6	1116.2	1080.9	1049.0	1031.3
67.5°	995.9	977.9	946.3	921.5	907.2
70°	864.7	850.4	818.5	793.7	779.7
72.5°	730.1	715.8	698.2	673.4	662.8
75°	595.1	588.4	570.3	549.3	556.5
77.5°	474.8	460.5	453.4	442.9	432.4
80°	354.6	350.8	343.6	333.1	326.0
82.5°	241.0	241.0	237.6	223.3	223.3
85°	145.2	141.7	138.4	127.4	124.1
87.5°	63.9	56.7	49.6	39.1	35.3
90°	2.9	35.5	96.5	90.7	93.6
92.5°	61.0	82.7	85.7	88.7	88.7
95°	143.8	171.4	176.3	176.3	171.4
97.5°	239.4	265.0	275.9	275.9	275.9
100°	349.7	372.4	380.2	380.2	377.3
102.5°	466.0	482.7	493.5	496.5	493.5
105°	593.1	600.9	606.8	611.7	611.7
107.5°	719.1	731.0	731.0	732.9	719.1
110°	841.3	857.0	857.0	857.0	849.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	973.3	990.1	987.0	979.2	973.3
115°	1103.3	1119.1	1114.1	1111.2	1103.3
117.5°	1232.3	1254.0	1240.3	1232.3	1224.5
120°	1362.4	1384.1	1362.4	1362.4	1353.6
122.5°	1480.7	1508.2	1494.4	1486.5	1480.7
125°	1604.7	1629.4	1621.5	1612.6	1609.6
127.5°	1726.0	1756.4	1745.6	1733.8	1726.0
130°	1839.2	1874.7	1869.7	1863.8	1853.0
132.5°	1966.3	1993.9	1995.8	1982.0	1974.2
135°	2075.6	2106.2	2112.1	2109.1	2101.3
137.5°	2197.8	2222.4	2227.3	2225.3	2213.5
140°	2305.1	2329.8	2343.6	2343.6	2332.7
142.5°	2415.5	2440.2	2448.0	2450.9	2440.2
145°	2519.9	2539.6	2555.4	2558.4	2547.5
147.5°	2613.5	2638.1	2650.0	2654.9	2644.0
150°	2710.1	2726.8	2737.6	2746.5	2737.6
152.5°	2795.7	2812.4	2826.3	2837.2	2826.3
155°	2881.4	2889.3	2898.2	2912.0	2903.1
157.5°	2955.4	2961.2	2966.1	2985.9	2972.1
160°	3021.3	3027.3	3030.2	3047.0	3035.1
162.5°	3082.4	3082.4	3085.4	3104.1	3090.3
165°	3134.6	3131.7	3131.7	3151.3	3137.6
167.5°	3181.9	3173.0	3173.0	3192.8	3179.0
170°	3217.4	3209.5	3206.5	3226.2	3209.5
172.5°	3242.0	3234.1	3231.2	3250.9	3234.1
175°	3261.7	3253.8	3247.9	3267.6	3250.9
177.5°	3272.6	3264.6	3258.7	3275.5	3258.7
180°	3267.6	3267.6	3267.6	3267.6	3267.6

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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	12.30	13.17	13.25	14.14	15.40	11.86	12.73	12.81	13.69	14.96
	3H	13.96	14.74	14.92	15.71	17.00	13.47	14.25	14.43	15.22	16.51
	4H	14.54	15.28	15.52	16.26	17.55	14.05	14.79	15.03	15.77	17.06
	6H	14.94	15.62	15.93	16.61	17.91	14.44	15.12	15.43	16.11	17.41
	8H	15.04	15.69	16.04	16.69	18.00	14.54	15.19	15.54	16.19	17.49
	12H	15.09	15.71	16.09	16.70	18.03	14.58	15.20	15.58	16.19	17.52
4H	2H	12.76	13.50	13.74	14.48	15.77	12.41	13.14	13.39	14.12	15.42
	3H	14.62	15.24	15.61	16.25	17.55	14.21	14.83	15.21	15.84	17.15
	4H	15.33	15.90	16.33	16.90	18.23	14.91	15.47	15.91	16.47	17.80
	6H	15.84	16.33	16.86	17.35	18.68	15.41	15.90	16.42	16.92	18.25
	8H	15.99	16.44	17.00	17.46	18.81	15.55	16.01	16.57	17.03	18.37
	12H	16.06	16.47	17.09	17.51	18.85	15.61	16.02	16.65	17.06	18.41
8H	4H	15.53	15.98	16.54	17.00	18.34	15.15	15.60	16.16	16.62	17.96
	6H	16.15	16.53	17.19	17.59	18.93	15.77	16.14	16.81	17.20	18.54
	8H	16.37	16.70	17.41	17.75	19.10	15.98	16.31	17.02	17.35	18.71
	12H	16.50	16.79	17.55	17.83	19.23	16.09	16.38	17.14	17.42	18.82
12H	4H	15.51	15.92	16.54	16.95	18.30	15.14	15.55	16.17	16.59	17.93
	6H	16.18	16.51	17.23	17.56	18.92	15.81	16.14	16.85	17.18	18.54
	8H	16.42	16.71	17.47	17.75	19.15	16.04	16.33	17.09	17.37	18.77