

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: P914808

Luminaire Tested: DFN2DIP-SQ3F0-110D120US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914808
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-SQ3F0-110D120US927-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

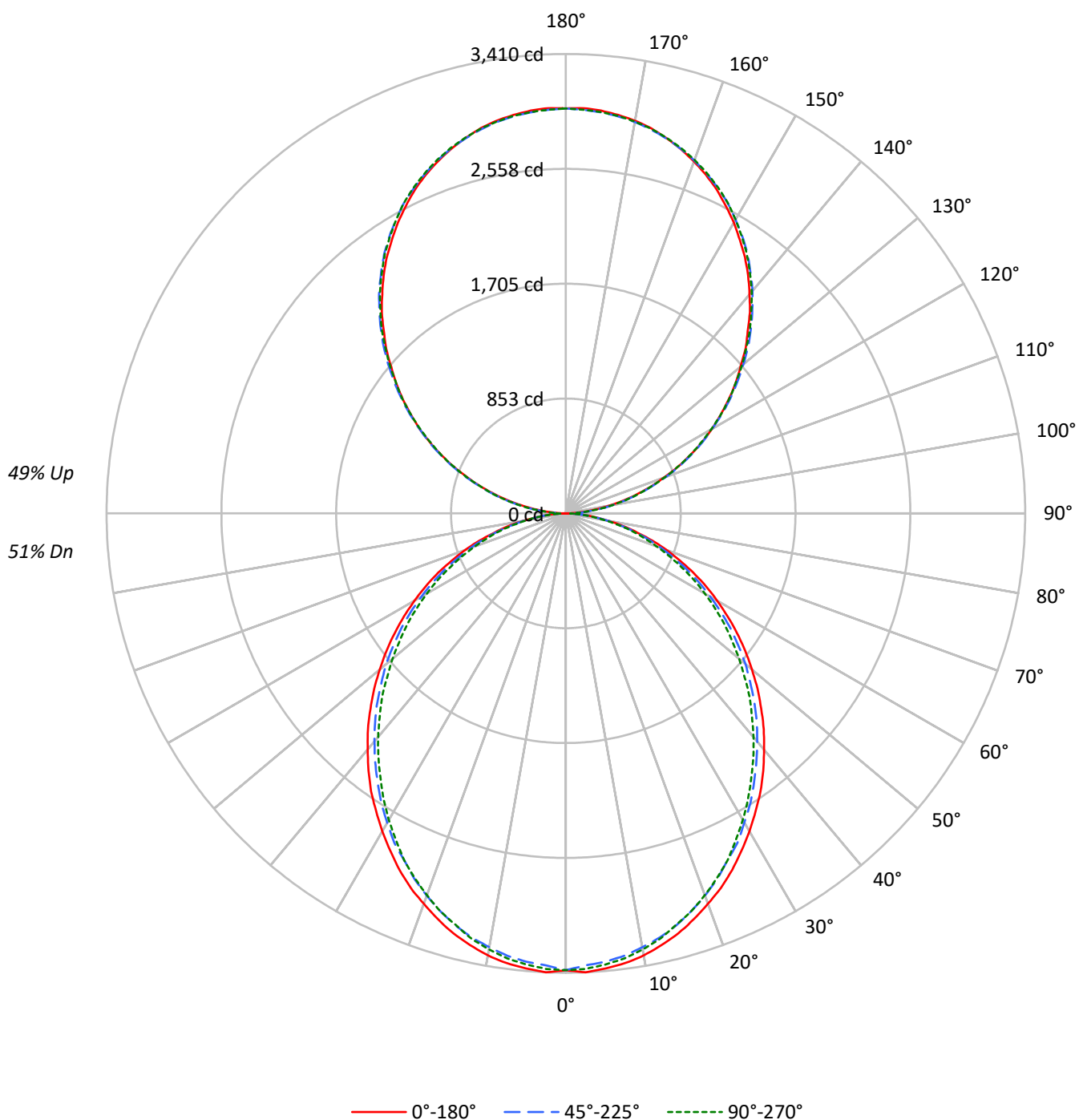
Lumens per Lamp: N/A
Luminaire Lumens: 17039.7 lumens
Efficiency: N/A
Efficacy: 82.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

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°	3885	3885	3885
5°	3889	3828	3855
10°	3855	3774	3802
15°	3796	3709	3719
20°	3717	3621	3634
25°	3638	3515	3537
30°	3540	3416	3413
35°	3447	3300	3282
40°	3332	3183	3157
45°	3218	3065	3029
50°	3093	2942	2881
55°	2963	2799	2745
60°	2814	2629	2589
65°	2652	2454	2404
70°	2446	2239	2206
75°	2161	1982	2021
80°	1816	1654	1670
85°	1279	1096	1094

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3218 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	319.1	1.9
10°-20°	897.9	5.3
20°-30°	1319.6	7.7
30°-40°	1532.6	9.0
40°-50°	1530.7	9.0
50°-60°	1334.7	7.8
60°-70°	986.7	5.8
70°-80°	558.2	3.3
80°-90°	155.9	0.9
90°-100°	186.0	1.1
100°-110°	591.1	3.5
110°-120°	1011.6	5.9
120°-130°	1330.4	7.8
130°-140°	1493.3	8.8
140°-150°	1464.3	8.6
150°-160°	1228.4	7.2
160°-170°	814.6	4.8
170°-180°	284.7	1.7
0°-30°	2536.6	14.9
0°-40°	4069.2	23.9
0°-60°	6934.6	40.7
0°-90°	8635.4	50.7
90°-120°	1788.7	10.5
90°-150°	6076.6	35.7
90°-180°	8404.0	49.3
0°-180°	17039.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3391	3391	3391	3391	3391	
5°	3391	3378	3342	3368	3362	322
15°	3228	3208	3166	3179	3163	909
25°	2921	2895	2840	2846	2840	1344
35°	2520	2488	2436	2416	2400	1574
45°	2051	2028	1979	1943	1930	1583
55°	1552	1532	1493	1454	1438	1388
65°	1047	1027	994	965	949	1035
75°	548	541	525	505	512	585
85°	134	130	127	117	114	149
90°	3	33	89	83	86	16
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°	3390.7	3390.7	3390.7	3390.7	3390.7
2.5°	3410.3	3394.1	3358.1	3390.7	3384.4
5°	3390.7	3377.9	3341.9	3367.8	3361.6
7.5°	3367.8	3348.5	3312.5	3338.8	3332.2
10°	3332.2	3309.3	3270.3	3296.2	3286.5
12.5°	3283.1	3263.7	3224.7	3240.9	3234.3
15°	3227.7	3208.3	3165.8	3178.9	3162.7
17.5°	3159.2	3139.9	3097.3	3113.6	3097.3
20°	3084.2	3064.8	3019.2	3028.8	3016.1
22.5°	3009.5	2980.0	2937.5	2937.5	2930.9
25°	2921.2	2895.3	2840.0	2846.2	2840.0
27.5°	2823.3	2800.5	2758.3	2748.6	2732.4
30°	2725.8	2699.5	2650.7	2641.1	2627.9
32.5°	2621.3	2602.0	2549.7	2530.0	2516.8
35°	2520.3	2487.8	2435.6	2415.8	2399.6
37.5°	2406.2	2376.8	2324.6	2301.7	2285.4
40°	2288.9	2262.6	2210.4	2181.4	2168.2
42.5°	2174.8	2148.5	2096.6	2063.7	2044.4
45°	2051.0	2028.1	1978.9	1943.4	1930.2
47.5°	1930.2	1907.4	1855.1	1819.2	1799.8
50°	1802.9	1786.7	1741.0	1695.3	1679.1
52.5°	1679.1	1656.2	1614.1	1578.0	1555.2
55°	1552.1	1532.4	1493.3	1454.2	1438.0
57.5°	1424.8	1408.6	1366.0	1326.9	1313.8
60°	1297.5	1284.8	1239.1	1203.1	1193.4
62.5°	1173.7	1150.9	1118.3	1085.8	1072.7
65°	1046.7	1027.0	994.5	965.1	948.9
67.5°	916.3	899.8	870.7	847.9	834.7
70°	795.6	782.4	753.0	730.2	717.4
72.5°	671.8	658.6	642.4	619.6	609.8
75°	547.6	541.4	524.7	505.4	512.0
77.5°	436.9	423.7	417.2	407.5	397.8
80°	326.2	322.7	316.2	306.5	299.9
82.5°	221.7	221.7	218.6	205.5	205.5
85°	133.6	130.4	127.3	117.2	114.2
87.5°	58.8	52.2	45.6	36.0	32.5
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	12.01	12.88	12.97	13.85	15.11	11.57	12.44	12.52	13.40	14.67
	3H	13.67	14.45	14.63	15.43	16.71	13.18	13.96	14.14	14.93	16.22
	4H	14.26	14.99	15.23	15.97	17.27	13.76	14.50	14.74	15.48	16.77
	6H	14.65	15.33	15.64	16.32	17.62	14.15	14.83	15.14	15.82	17.12
	8H	14.76	15.40	15.75	16.40	17.71	14.25	14.90	15.25	15.90	17.20
	12H	14.80	15.42	15.80	16.41	17.74	14.29	14.91	15.29	15.90	17.23
4H	2H	12.47	13.21	13.45	14.19	15.48	12.12	12.85	13.10	13.83	15.13
	3H	14.33	14.95	15.32	15.96	17.26	13.93	14.54	14.92	15.55	16.86
	4H	15.04	15.61	16.04	16.61	17.94	14.62	15.18	15.62	16.18	17.51
	6H	15.56	16.04	16.57	17.07	18.39	15.12	15.61	16.13	16.63	17.96
	8H	15.70	16.15	16.72	17.17	18.52	15.27	15.72	16.28	16.74	18.08
	12H	15.77	16.18	16.81	17.22	18.56	15.32	15.73	16.36	16.77	18.12
8H	4H	15.24	15.69	16.25	16.71	18.05	14.86	15.31	15.87	16.33	17.67
	6H	15.86	16.24	16.90	17.30	18.64	15.48	15.85	16.52	16.91	18.25
	8H	16.08	16.41	17.13	17.46	18.81	15.69	16.02	16.73	17.06	18.42
	12H	16.21	16.50	17.26	17.54	18.94	15.80	16.09	16.85	17.13	18.53
12H	4H	15.22	15.63	16.25	16.67	18.01	14.85	15.26	15.89	16.30	17.64
	6H	15.89	16.22	16.94	17.27	18.63	15.52	15.85	16.56	16.89	18.25
	8H	16.13	16.42	17.18	17.46	18.86	15.75	16.04	16.80	17.08	18.48