

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: P925677

Luminaire Tested: DFN2DIP-SQ3F0-100D100US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925677
REPORT IS A COMBINATION OF REPORTS P901501 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D100US950-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

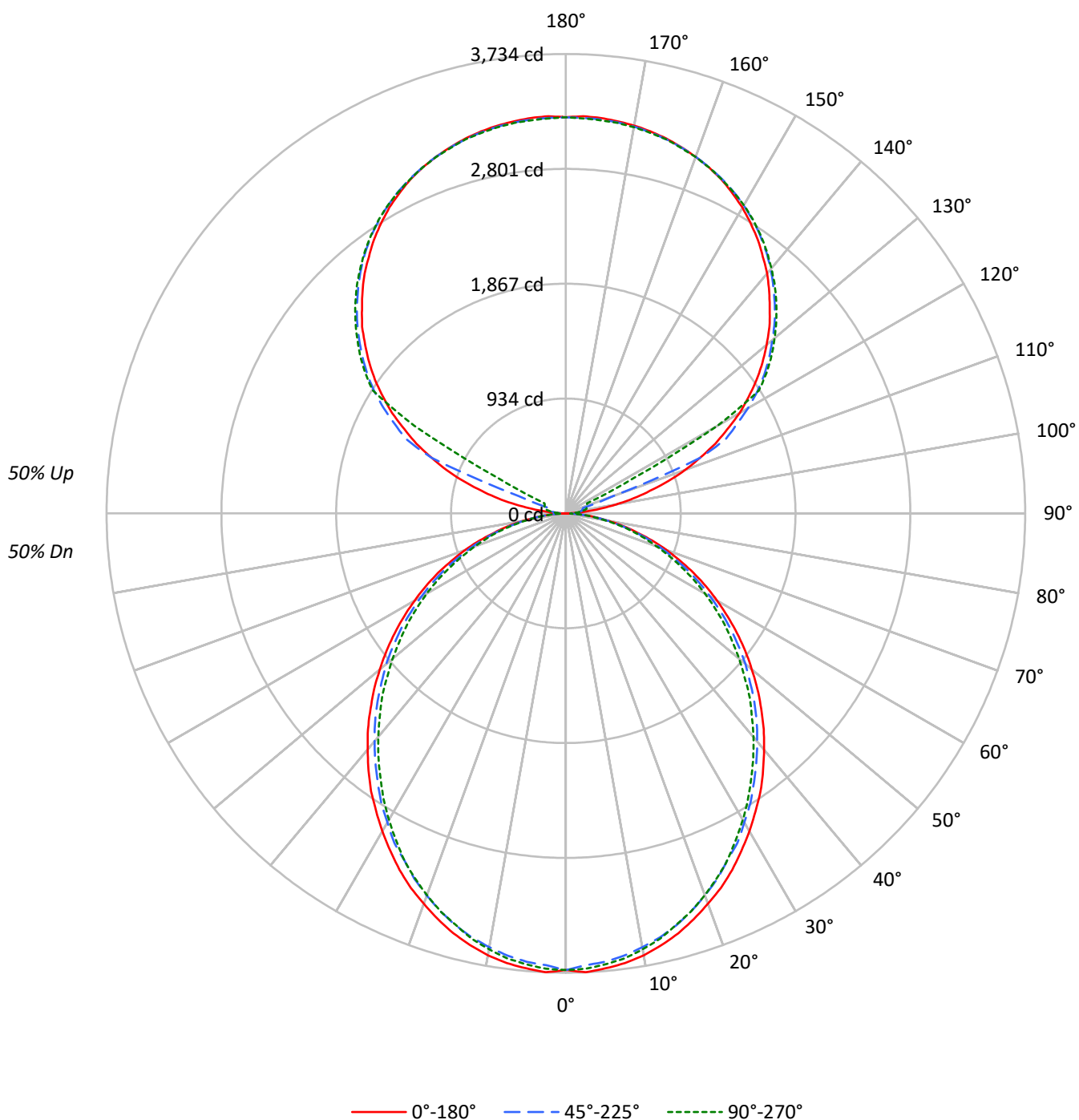
Lumens per Lamp: N/A
Luminaire Lumens: 18889.2 lumens
Efficiency: N/A
Efficacy: 107.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 176
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

TEST NUMBER: P925677

CATALOG NUMBER: DFN2DIP-SQ3F0-100D100US950-FLLONL

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	83	83	83	69	69	69	56	56	56
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47
2	89	82	75	70	82	76	70	66	64	60	57	53	51	48	44	42	40
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	29
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	23
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	23	20
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4253	4253	4253
5°	4257	4191	4221
10°	4220	4132	4162
15°	4155	4061	4072
20°	4069	3964	3979
25°	3983	3848	3872
30°	3875	3740	3736
35°	3773	3613	3592
40°	3648	3485	3456
45°	3523	3356	3316
50°	3387	3220	3154
55°	3243	3064	3005
60°	3081	2879	2834
65°	2904	2686	2632
70°	2678	2451	2415
75°	2366	2170	2212
80°	1988	1810	1829
85°	1400	1200	1197

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3523 cd/sqm

TEST NUMBER: P925677

CATALOG NUMBER: DFN2DIP-SQ3F0-100D100US950-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	349.4	1.8
10°-20°	983.0	5.2
20°-30°	1444.7	7.6
30°-40°	1677.9	8.9
40°-50°	1675.8	8.9
50°-60°	1461.2	7.7
60°-70°	1080.2	5.7
70°-80°	611.1	3.2
80°-90°	167.0	0.9
90°-100°	106.2	0.6
100°-110°	395.8	2.1
110°-120°	1049.6	5.6
120°-130°	1740.9	9.2
130°-140°	1849.2	9.8
140°-150°	1718.7	9.1
150°-160°	1381.8	7.3
160°-170°	890.4	4.7
170°-180°	306.5	1.6
0°-30°	2777.1	14.7
0°-40°	4454.9	23.6
0°-60°	7592.0	40.2
0°-90°	9450.3	50.0
90°-120°	1551.6	8.2
90°-150°	6860.4	36.3
90°-180°	9439.0	50.0
0°-180°	18889.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3712	3712	3712	3712	3712	
5°	3712	3698	3659	3687	3680	352
15°	3534	3512	3466	3480	3462	995
25°	3198	3170	3109	3116	3109	1472
35°	2759	2724	2666	2645	2627	1723
45°	2245	2220	2166	2128	2113	1733
55°	1699	1678	1635	1592	1574	1519
65°	1146	1124	1089	1057	1039	1133
75°	600	593	574	553	560	640
85°	146	143	139	128	125	163
90°	2	28	46	58	63	17
95°	151	74	91	103	100	179
105°	708	778	142	168	177	757
115°	1340	1379	1438	359	191	1319
125°	1894	1924	1969	1985	1992	1689
135°	2344	2381	2402	2425	2421	1810
145°	2719	2716	2756	2772	2761	1700
155°	2994	2973	3001	3015	2996	1380
165°	3154	3140	3147	3164	3147	891
175°	3226	3210	3215	3231	3208	307
180°	3220	3220	3220	3220	3220	

TEST NUMBER: P925677

CATALOG NUMBER: DFN2DIP-SQ3F0-100D100US950-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3712.1	3712.1	3712.1	3712.1	3712.1
2.5°	3733.7	3715.8	3676.4	3712.1	3705.2
5°	3712.1	3698.1	3658.7	3687.1	3680.2
7.5°	3687.1	3665.8	3626.4	3655.3	3648.1
10°	3648.1	3623.1	3580.3	3608.7	3598.1
12.5°	3594.3	3573.1	3530.3	3548.1	3540.9
15°	3533.7	3512.5	3465.9	3480.3	3462.5
17.5°	3458.7	3437.5	3390.9	3408.7	3390.9
20°	3376.5	3355.3	3305.3	3315.9	3301.9
22.5°	3294.7	3262.6	3215.9	3215.9	3208.8
25°	3198.2	3169.8	3109.2	3116.0	3109.2
27.5°	3091.0	3066.0	3019.8	3009.2	2991.4
30°	2984.2	2955.4	2902.0	2891.4	2877.0
32.5°	2869.8	2848.6	2791.4	2769.8	2755.4
35°	2759.3	2723.7	2666.4	2644.9	2627.0
37.5°	2634.3	2602.0	2544.9	2519.9	2502.1
40°	2505.9	2477.1	2419.9	2388.1	2373.7
42.5°	2380.9	2352.1	2295.3	2259.4	2238.2
45°	2245.3	2220.3	2166.5	2127.5	2113.2
47.5°	2113.2	2088.2	2031.0	1991.6	1970.4
50°	1973.8	1956.0	1906.0	1856.0	1838.3
52.5°	1838.3	1813.3	1767.0	1727.7	1702.7
55°	1699.3	1677.7	1634.9	1592.0	1574.3
57.5°	1559.9	1542.0	1495.5	1452.8	1438.3
60°	1420.5	1406.5	1356.5	1317.1	1306.5
62.5°	1284.9	1259.9	1224.4	1188.8	1174.4
65°	1145.9	1124.4	1088.8	1056.6	1038.8
67.5°	1003.2	985.0	953.2	928.2	913.8
70°	871.0	856.6	824.4	799.5	785.4
72.5°	735.4	721.0	703.3	678.3	667.6
75°	599.5	592.7	574.5	553.3	560.5
77.5°	478.3	463.9	456.7	446.1	435.5
80°	357.1	353.4	346.1	335.5	328.4
82.5°	242.8	242.8	239.4	225.0	225.0
85°	146.2	142.8	139.4	128.4	125.0
87.5°	64.4	57.1	50.0	39.4	35.6
90°	2.2	28.0	46.5	58.4	62.8
92.5°	58.4	48.9	55.9	60.6	62.8
95°	151.3	74.4	90.7	102.7	100.2
97.5°	272.5	81.6	118.7	125.8	128.1
100°	412.5	93.2	132.8	151.3	156.1
102.5°	566.0	561.6	137.5	162.9	170.1
105°	708.2	778.2	142.2	167.6	177.1
107.5°	873.7	931.8	146.9	172.4	181.7
110°	1032.1	1080.9	407.7	174.9	183.9

TEST NUMBER: P925677

CATALOG NUMBER: DFN2DIP-SQ3F0-100D100US950-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1181.2	1223.0	1183.5	179.3	186.5
115°	1339.5	1379.1	1437.5	358.8	191.2
117.5°	1477.0	1523.5	1563.3	1230.0	619.7
120°	1630.9	1665.7	1707.8	1735.7	1421.2
122.5°	1761.2	1798.5	1845.2	1859.1	1861.5
125°	1894.0	1924.4	1968.7	1985.0	1991.9
127.5°	2015.1	2047.8	2082.9	2106.1	2108.3
130°	2129.3	2166.7	2192.2	2217.9	2215.7
132.5°	2245.8	2276.2	2301.7	2322.7	2320.5
135°	2343.8	2381.1	2401.9	2425.4	2420.7
137.5°	2446.2	2474.1	2497.6	2520.8	2513.9
140°	2546.2	2565.1	2590.5	2611.6	2599.9
142.5°	2630.4	2646.7	2676.8	2695.3	2683.8
145°	2718.9	2716.4	2756.0	2772.3	2760.7
147.5°	2795.5	2788.6	2828.1	2839.8	2830.7
150°	2870.2	2853.9	2891.3	2905.1	2893.5
152.5°	2933.0	2914.5	2949.4	2963.4	2947.1
155°	2993.7	2972.9	3000.8	3014.6	2996.1
157.5°	3042.6	3024.1	3045.1	3061.4	3042.6
160°	3084.7	3070.5	3084.7	3098.5	3082.2
162.5°	3121.7	3107.8	3119.5	3135.8	3114.8
165°	3154.3	3140.5	3147.4	3163.8	3147.4
167.5°	3180.1	3165.9	3173.2	3189.5	3168.4
170°	3201.1	3187.0	3191.7	3208.0	3187.0
172.5°	3214.9	3201.1	3205.8	3222.1	3201.1
175°	3226.5	3210.2	3214.9	3231.3	3208.0
177.5°	3231.3	3214.9	3217.5	3233.8	3212.7
180°	3219.7	3219.7	3219.7	3219.7	3219.7

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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	12.27	13.13	13.23	14.10	15.37	11.83	12.69	12.78	13.66	14.93
	3H	13.93	14.70	14.89	15.68	16.97	13.44	14.21	14.40	15.19	16.48
	4H	14.51	15.24	15.49	16.23	17.53	14.02	14.75	15.00	15.73	17.04
	6H	14.91	15.58	15.90	16.57	17.89	14.41	15.08	15.40	16.07	17.39
	8H	15.01	15.65	16.01	16.66	17.97	14.51	15.15	15.51	16.16	17.47
	12H	15.06	15.67	16.06	16.67	18.00	14.55	15.16	15.55	16.16	17.50
4H	2H	12.73	13.46	13.72	14.44	15.75	12.37	13.10	13.36	14.09	15.39
	3H	14.59	15.20	15.59	16.21	17.53	14.18	14.79	15.18	15.81	17.12
	4H	15.30	15.86	16.30	16.86	18.20	14.88	15.43	15.88	16.44	17.78
	6H	15.81	16.29	16.83	17.32	18.66	15.38	15.86	16.39	16.89	18.23
	8H	15.96	16.41	16.98	17.43	18.78	15.52	15.97	16.54	16.99	18.34
	12H	16.03	16.43	17.06	17.47	18.83	15.58	15.98	16.62	17.02	18.38
8H	4H	15.49	15.94	16.51	16.96	18.32	15.11	15.56	16.13	16.59	17.94
	6H	16.12	16.49	17.16	17.55	18.90	15.73	16.10	16.77	17.17	18.52
	8H	16.33	16.66	17.38	17.71	19.08	15.94	16.27	16.99	17.32	18.69
	12H	16.46	16.75	17.52	17.80	19.21	16.05	16.34	17.11	17.39	18.80
12H	4H	15.48	15.88	16.51	16.92	18.28	15.11	15.51	16.14	16.55	17.91
	6H	16.14	16.47	17.19	17.52	18.89	15.77	16.10	16.82	17.15	18.52
	8H	16.38	16.67	17.44	17.72	19.13	16.00	16.29	17.06	17.34	18.75