

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: P917522

Luminaire Tested: DFN2DIP-SQ3F0-110D080US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917522
REPORT IS A COMBINATION OF REPORTS P899948 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-110D080US930-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

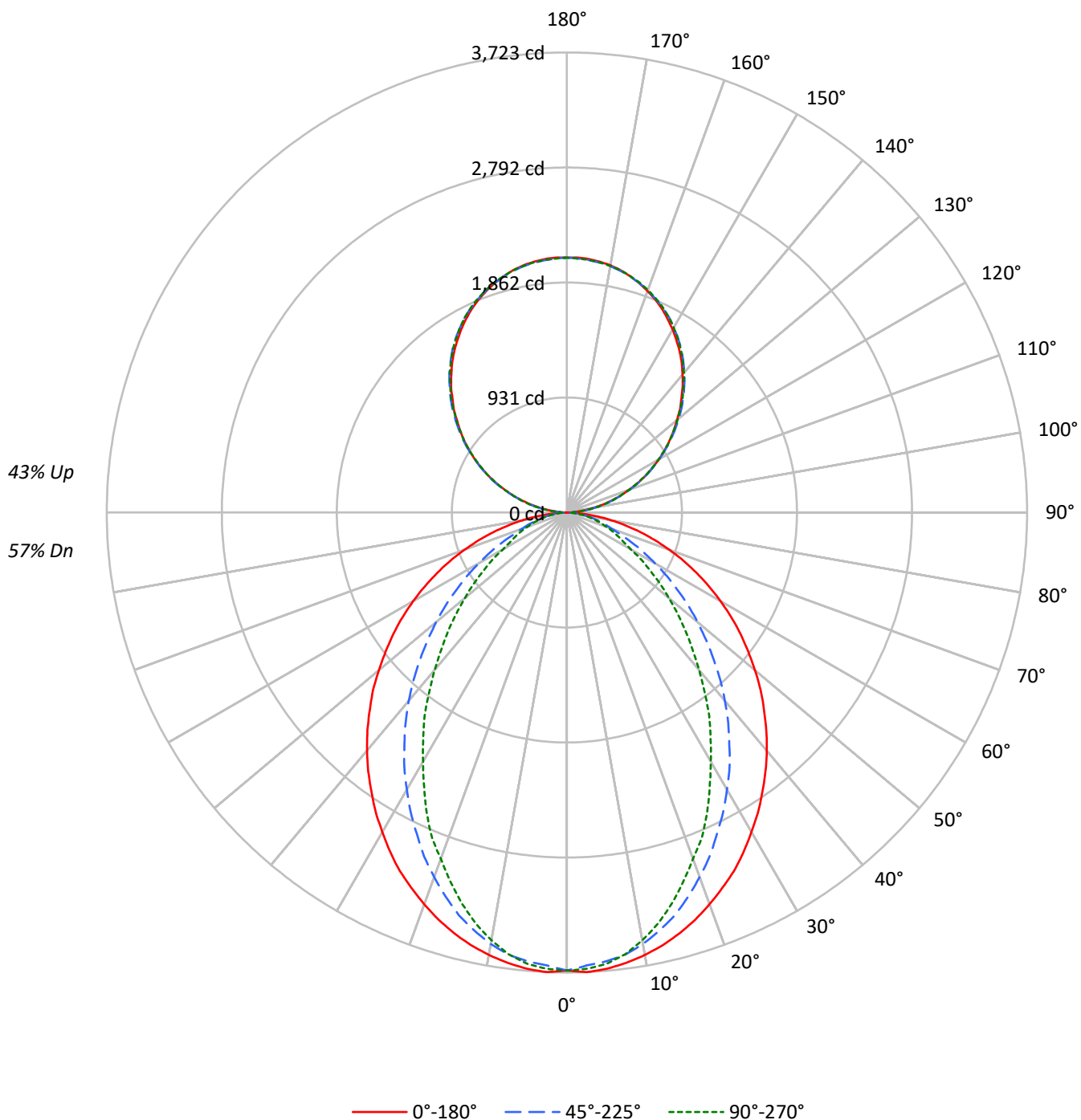
Lumens per Lamp: N/A
Luminaire Lumens: 13395.4 lumens
Efficiency: N/A
Efficacy: 77.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 172.3
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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63
1	100	96	92	89	93	89	86	83	77	75	73	66	65	63	56	55	54
2	91	84	78	73	85	79	74	69	68	65	61	59	56	54	50	48	46
3	84	75	67	62	78	70	64	58	61	56	52	53	49	46	45	42	40
4	77	66	59	53	71	62	55	50	54	49	45	47	43	40	40	37	35
5	71	59	52	46	66	56	49	43	49	43	39	43	38	35	37	33	31
6	65	54	46	40	61	50	43	38	44	39	34	39	34	31	34	30	27
7	61	49	41	35	57	46	39	34	40	35	31	35	31	28	31	27	25
8	56	44	37	31	53	42	35	30	37	31	27	33	28	25	28	25	22
9	53	41	33	28	49	38	32	27	34	29	25	30	26	22	26	23	20
10	49	37	30	26	46	35	29	24	32	26	22	28	24	20	24	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4247	4247	4247
5°	4251	4177	4205
10°	4206	4092	4067
15°	4146	3954	3854
20°	4066	3765	3593
25°	3985	3554	3342
30°	3877	3337	3023
35°	3771	3105	2743
40°	3663	2864	2422
45°	3537	2598	2132
50°	3407	2330	1848
55°	3271	2043	1575
60°	3114	1744	1295
65°	2932	1440	1164
70°	2712	1157	1051
75°	2435	1013	954
80°	2035	841	822
85°	1380	548	610

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3537 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	347.4	2.6
10°-20°	953.6	7.1
20°-30°	1338.9	10.0
30°-40°	1459.5	10.9
40°-50°	1341.4	10.0
50°-60°	1053.5	7.9
60°-70°	685.7	5.1
70°-80°	353.0	2.6
80°-90°	96.0	0.7
90°-100°	127.6	1.0
100°-110°	405.6	3.0
110°-120°	694.1	5.2
120°-130°	912.8	6.8
130°-140°	1024.6	7.6
140°-150°	1004.7	7.5
150°-160°	842.8	6.3
160°-170°	558.9	4.2
170°-180°	195.4	1.5
0°-30°	2639.9	19.7
0°-40°	4099.4	30.6
0°-60°	6494.2	48.5
0°-90°	7628.9	57.0
90°-120°	1227.3	9.2
90°-150°	4169.4	31.1
90°-180°	5766.0	43.0
0°-180°	13395.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3707	3707	3707	3707	3707	
5°	3707	3690	3646	3676	3666	351
15°	3525	3488	3374	3311	3277	993
25°	3200	3093	2871	2734	2683	1472
35°	2757	2586	2291	2080	2006	1726
45°	2254	2029	1677	1439	1358	1741
55°	1714	1452	1090	889	825	1532
65°	1157	885	584	470	459	1147
75°	617	382	268	245	242	653
85°	144	74	64	64	64	165
90°	2	22	61	57	59	13
95°	91	108	111	111	108	101
105°	374	379	383	386	386	395
115°	696	706	703	702	696	689
125°	1013	1029	1024	1018	1016	905
135°	1310	1330	1333	1332	1326	1013
145°	1591	1603	1613	1615	1608	994
155°	1819	1824	1830	1838	1833	837
165°	1979	1977	1977	1989	1981	558
175°	2059	2054	2050	2063	2052	196
180°	2063	2063	2063	2063	2063	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3706.6	3706.6	3706.6	3706.6	3706.6
2.5°	3723.3	3706.6	3669.6	3703.4	3696.6
5°	3706.6	3689.9	3646.1	3676.3	3666.4
7.5°	3676.3	3656.4	3609.4	3622.6	3605.8
10°	3636.1	3612.6	3545.7	3535.4	3515.5
12.5°	3585.9	3555.7	3464.9	3445.0	3407.9
15°	3525.4	3488.4	3374.5	3310.8	3277.3
17.5°	3455.0	3401.3	3260.3	3186.6	3132.9
20°	3374.5	3307.3	3139.6	3056.0	2982.0
22.5°	3287.4	3210.1	3015.5	2901.6	2851.3
25°	3200.1	3092.7	2871.3	2733.9	2683.4
27.5°	3096.3	2982.0	2737.1	2579.4	2502.2
30°	2985.5	2857.8	2589.5	2418.6	2327.8
32.5°	2878.1	2723.6	2448.8	2247.5	2163.5
35°	2757.4	2586.2	2291.2	2079.8	2005.8
37.5°	2640.0	2455.3	2143.5	1911.8	1828.2
40°	2515.8	2314.7	1989.1	1750.9	1663.8
42.5°	2388.3	2173.7	1835.0	1586.6	1502.9
45°	2254.2	2029.3	1677.3	1438.8	1358.4
47.5°	2126.8	1888.7	1526.4	1287.9	1214.3
50°	1985.8	1747.8	1378.8	1147.0	1076.9
52.5°	1848.1	1596.5	1237.8	1016.4	952.7
55°	1713.9	1452.4	1090.1	889.0	825.3
57.5°	1576.6	1308.2	959.4	771.6	717.8
60°	1435.7	1167.3	821.7	650.9	597.2
62.5°	1298.3	1030.0	704.3	543.5	516.7
65°	1157.3	885.4	583.7	469.8	459.4
67.5°	1023.2	751.3	469.8	412.5	402.5
70°	882.2	620.7	389.0	355.6	342.0
72.5°	748.0	499.7	325.3	298.6	291.8
75°	617.1	382.2	268.3	244.8	241.7
77.5°	486.5	271.6	211.4	197.9	191.1
80°	365.5	194.7	160.9	147.7	147.7
82.5°	254.8	130.9	110.7	104.0	104.0
85°	144.1	73.7	63.7	63.7	63.7
87.5°	53.7	26.7	26.7	23.5	23.5
90°	1.9	22.4	61.0	57.2	59.1
92.5°	38.6	52.3	54.1	55.9	55.9
95°	90.8	108.2	111.3	111.3	108.2
97.5°	151.2	167.3	174.1	174.1	174.1
100°	220.8	235.1	240.0	240.0	238.1
102.5°	294.2	304.8	311.5	313.4	311.5
105°	374.4	379.4	383.1	386.2	386.2
107.5°	454.0	461.5	461.5	462.7	454.0
110°	531.1	541.0	541.0	541.0	536.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	614.4	625.0	623.1	618.2	614.4
115°	696.5	706.5	703.4	701.5	696.5
117.5°	778.0	791.7	782.9	778.0	773.0
120°	860.1	873.8	860.1	860.1	854.4
122.5°	934.7	952.1	943.4	938.4	934.7
125°	1013.0	1028.6	1023.6	1018.0	1016.2
127.5°	1089.6	1108.8	1102.0	1094.5	1089.6
130°	1161.1	1183.4	1180.3	1176.6	1169.8
132.5°	1241.3	1258.7	1260.0	1251.2	1246.3
135°	1310.3	1329.6	1333.3	1331.5	1326.5
137.5°	1387.4	1403.0	1406.1	1404.8	1397.3
140°	1455.2	1470.7	1479.4	1479.4	1472.6
142.5°	1524.9	1540.4	1545.4	1547.3	1540.4
145°	1590.8	1603.2	1613.1	1615.0	1608.2
147.5°	1649.8	1665.4	1672.8	1676.0	1669.2
150°	1710.8	1721.3	1728.2	1733.8	1728.2
152.5°	1764.9	1775.5	1784.2	1791.0	1784.2
155°	1819.0	1824.0	1829.6	1838.3	1832.7
157.5°	1865.6	1869.4	1872.5	1884.9	1876.2
160°	1907.3	1911.1	1912.9	1923.5	1916.0
162.5°	1945.9	1945.9	1947.7	1959.6	1950.8
165°	1978.8	1976.9	1976.9	1989.4	1980.7
167.5°	2008.7	2003.1	2003.1	2015.5	2006.8
170°	2031.1	2026.1	2024.2	2036.7	2026.1
172.5°	2046.6	2041.7	2039.8	2052.2	2041.7
175°	2059.0	2054.1	2050.3	2062.8	2052.2
177.5°	2065.9	2060.9	2057.2	2067.8	2057.2
180°	2062.8	2062.8	2062.8	2062.8	2062.8

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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	12.76	13.65	13.66	14.57	15.74	8.72	9.61	9.63	10.53	11.70
	3H	14.44	15.24	15.35	16.16	17.36	9.91	10.71	10.82	11.63	12.83
	4H	15.05	15.80	15.98	16.73	17.94	10.36	11.11	11.29	12.04	13.25
	6H	15.47	16.16	16.41	17.10	18.32	10.68	11.37	11.62	12.31	13.52
	8H	15.60	16.25	16.54	17.21	18.42	10.77	11.42	11.71	12.38	13.60
	12H	15.66	16.28	16.61	17.23	18.47	10.81	11.43	11.76	12.38	13.62
4H	2H	12.79	13.54	13.72	14.47	15.67	9.32	10.08	10.26	11.01	12.21
	3H	14.62	15.24	15.56	16.20	17.42	10.67	11.30	11.62	12.26	13.48
	4H	15.31	15.88	16.26	16.83	18.08	11.22	11.79	12.17	12.74	13.99
	6H	15.82	16.31	16.79	17.29	18.53	11.63	12.12	12.60	13.10	14.35
	8H	15.99	16.45	16.96	17.42	18.68	11.76	12.22	12.73	13.19	14.45
	12H	16.09	16.50	17.08	17.49	18.75	11.82	12.23	12.81	13.23	14.49
8H	4H	15.28	15.73	16.25	16.71	17.97	11.50	11.96	12.47	12.93	14.19
	6H	15.84	16.22	16.83	17.23	18.49	12.01	12.39	13.00	13.40	14.66
	8H	16.05	16.39	17.06	17.39	18.67	12.20	12.53	13.20	13.53	14.81
	12H	16.19	16.48	17.20	17.48	18.80	12.31	12.61	13.32	13.60	14.93
12H	4H	15.23	15.64	16.22	16.63	17.90	11.51	11.92	12.49	12.91	14.17
	6H	15.81	16.15	16.82	17.15	18.43	12.06	12.39	13.06	13.40	14.67
	8H	16.03	16.33	17.04	17.32	18.65	12.27	12.56	13.27	13.56	14.88