

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: P917281

Luminaire Tested: DFN2DIP-SQ3F0-040D110US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917281
REPORT IS A COMBINATION OF REPORTS P901507 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D110US930-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

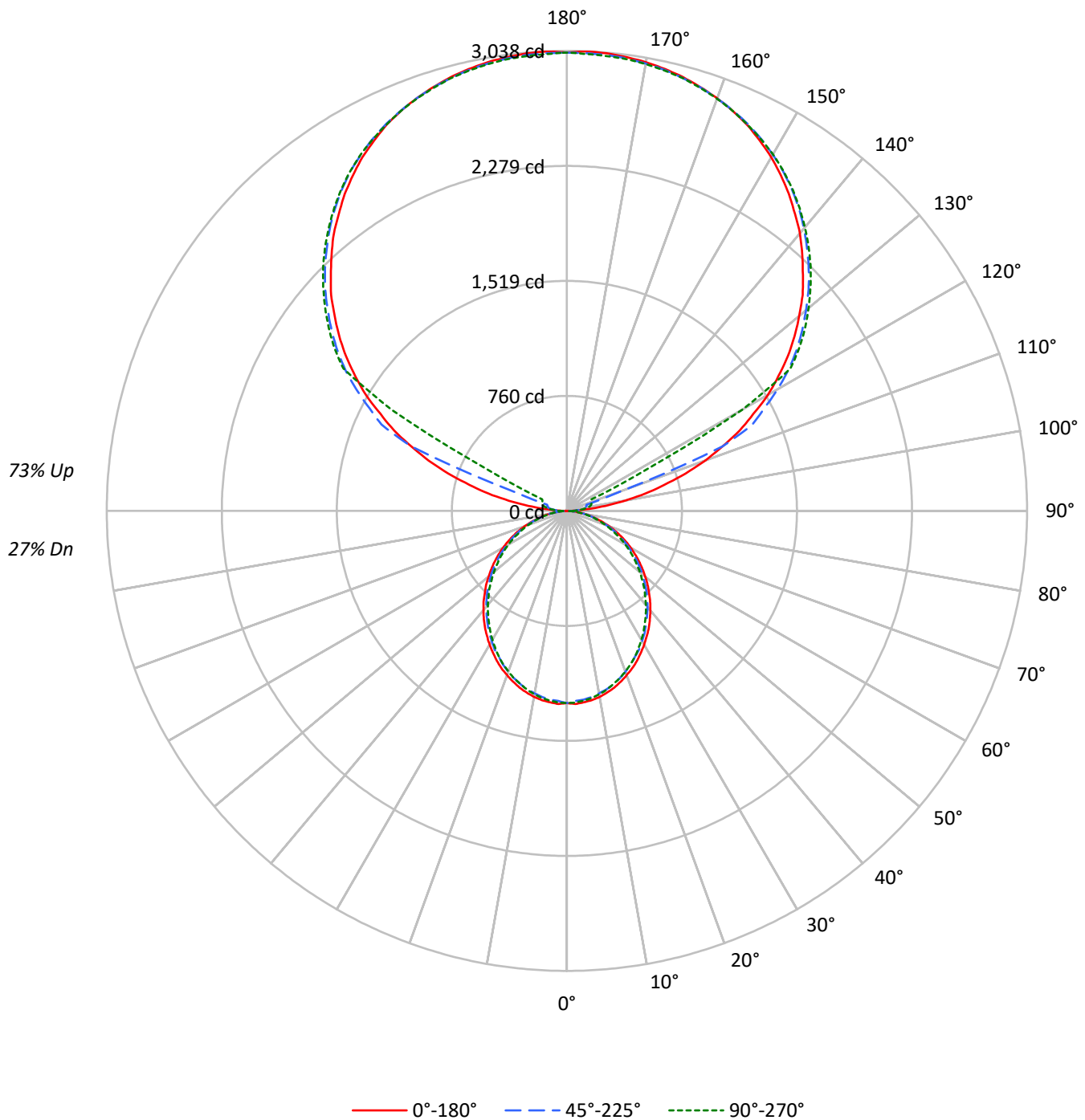
Lumens per Lamp: N/A
Luminaire Lumens: 12107.2 lumens
Efficiency: N/A
Efficacy: 102.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 118.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P917281

CATALOG NUMBER: DFN2DIP-SQ3F0-040D110US930-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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	35	35	35
1	93	88	85	81	82	79	76	73	62	59	58	45	44	43	31	30	29
2	84	77	71	66	75	69	64	60	54	51	48	40	38	36	27	26	25
3	77	68	61	55	68	61	55	50	47	43	40	35	33	30	24	22	21
4	70	60	52	46	62	54	47	42	42	38	34	31	28	26	21	20	18
5	64	53	45	40	57	48	41	36	38	33	29	28	25	22	19	17	16
6	59	48	40	34	53	43	36	31	34	29	25	25	22	19	17	15	14
7	55	43	35	30	49	39	32	27	30	26	22	23	20	17	16	14	12
8	50	39	31	26	45	35	28	24	28	23	19	21	18	15	15	12	11
9	47	35	28	23	42	32	25	21	25	21	17	19	16	14	13	11	10
10	44	32	25	21	39	29	23	19	23	19	15	18	14	12	12	10	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1454	1454	1454
5°	1455	1433	1443
10°	1443	1412	1423
15°	1420	1388	1392
20°	1391	1355	1360
25°	1361	1315	1324
30°	1325	1279	1277
35°	1290	1235	1228
40°	1247	1191	1181
45°	1204	1147	1134
50°	1158	1101	1078
55°	1109	1047	1027
60°	1053	984	969
65°	993	918	900
70°	915	838	826
75°	809	742	756
80°	680	619	625
85°	479	410	409

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2072 cd/sqm

TEST NUMBER: P917281

CATALOG NUMBER: DFN2DIP-SQ3F0-040D110US930-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.4	1.0
10°-20°	336.0	2.8
20°-30°	493.8	4.1
30°-40°	573.6	4.7
40°-50°	572.9	4.7
50°-60°	499.5	4.1
60°-70°	369.3	3.0
70°-80°	208.9	1.7
80°-90°	60.5	0.5
90°-100°	99.8	0.8
100°-110°	372.1	3.1
110°-120°	986.7	8.2
120°-130°	1636.6	13.5
130°-140°	1738.4	14.4
140°-150°	1615.7	13.3
150°-160°	1298.9	10.7
160°-170°	837.0	6.9
170°-180°	288.1	2.4
0°-30°	949.3	7.8
0°-40°	1522.9	12.6
0°-60°	2595.3	21.4
0°-90°	3233.9	26.7
90°-120°	1458.6	12.0
90°-150°	6449.2	53.3
90°-180°	8873.0	73.3
0°-180°	12107.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1269	1269	1269	1269	1269	
5°	1269	1264	1251	1260	1258	120
15°	1208	1201	1185	1190	1184	340
25°	1093	1084	1063	1065	1063	503
35°	943	931	912	904	898	589
45°	768	759	741	727	722	592
55°	581	574	559	544	538	519
65°	392	384	372	361	355	387
75°	205	203	196	189	192	219
85°	50	49	48	44	43	56
90°	2	26	44	55	59	11
95°	142	70	85	96	94	169
105°	666	732	134	158	166	711
115°	1259	1296	1351	337	180	1240
125°	1780	1809	1851	1866	1872	1588
135°	2203	2238	2258	2280	2276	1702
145°	2556	2554	2591	2606	2595	1599
155°	2814	2795	2821	2834	2816	1297
165°	2965	2952	2959	2974	2959	838
175°	3033	3018	3022	3038	3016	289
180°	3027	3027	3027	3027	3027	

TEST NUMBER: P917281

CATALOG NUMBER: DFN2DIP-SQ3F0-040D110US930-FLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1268.9	1268.9	1268.9	1268.9	1268.9
2.5°	1276.3	1270.2	1256.8	1268.9	1266.6
5°	1268.9	1264.1	1250.7	1260.4	1258.1
7.5°	1260.4	1253.1	1239.7	1249.5	1247.1
10°	1247.1	1238.5	1223.9	1233.6	1230.0
12.5°	1228.7	1221.4	1206.8	1212.9	1210.4
15°	1207.9	1200.7	1184.8	1189.7	1183.6
17.5°	1182.3	1175.1	1159.2	1165.2	1159.2
20°	1154.2	1147.0	1129.9	1133.5	1128.8
22.5°	1126.3	1115.2	1099.3	1099.3	1096.9
25°	1093.2	1083.5	1062.8	1065.2	1062.8
27.5°	1056.6	1048.1	1032.3	1028.7	1022.6
30°	1020.1	1010.3	992.1	988.4	983.5
32.5°	981.0	973.8	954.2	946.9	941.9
35°	943.2	931.1	911.5	904.2	898.1
37.5°	900.5	889.5	869.9	861.4	855.3
40°	856.6	846.8	827.2	816.4	811.5
42.5°	813.9	804.0	784.6	772.3	765.1
45°	767.5	759.0	740.6	727.3	722.4
47.5°	722.4	713.8	694.3	680.9	673.6
50°	674.7	668.6	651.6	634.5	628.4
52.5°	628.4	619.9	604.1	590.6	582.0
55°	580.9	573.5	558.9	544.2	538.2
57.5°	533.2	527.2	511.2	496.6	491.7
60°	485.6	480.8	463.7	450.3	446.6
62.5°	439.3	430.7	418.6	406.3	401.5
65°	391.8	384.3	372.2	361.2	355.1
67.5°	342.9	336.7	325.9	317.3	312.4
70°	297.7	292.9	281.8	273.3	268.5
72.5°	251.4	246.5	240.4	231.9	228.2
75°	205.0	202.6	196.4	189.1	191.6
77.5°	163.5	158.6	156.1	152.5	148.9
80°	122.1	120.7	118.3	114.7	112.3
82.5°	83.0	83.0	81.9	76.9	76.9
85°	50.0	48.8	47.6	43.9	42.7
87.5°	22.0	19.6	17.1	13.5	12.1
90°	2.1	26.3	43.7	54.9	59.0
92.5°	54.9	46.1	52.5	57.0	59.0
95°	142.3	70.0	85.3	96.4	94.2
97.5°	256.2	76.7	111.5	118.3	120.4
100°	387.8	87.6	124.8	142.3	146.7
102.5°	532.1	527.9	129.2	153.2	160.0
105°	665.8	731.6	133.7	157.6	166.5
107.5°	821.3	875.9	138.1	162.0	170.9
110°	970.3	1016.1	383.4	164.4	172.9

TEST NUMBER: P917281

CATALOG NUMBER: DFN2DIP-SQ3F0-040D110US930-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1110.5	1149.7	1112.6	168.5	175.3
115°	1259.2	1296.4	1351.4	337.3	179.7
117.5°	1388.5	1432.2	1469.7	1156.3	582.5
120°	1533.1	1565.9	1605.4	1631.7	1335.9
122.5°	1655.6	1690.7	1734.6	1747.7	1750.0
125°	1780.4	1809.1	1850.6	1866.0	1872.5
127.5°	1894.3	1925.0	1958.0	1979.9	1982.0
130°	2001.7	2036.9	2060.7	2085.0	2082.9
132.5°	2111.2	2139.8	2163.8	2183.5	2181.5
135°	2203.3	2238.4	2257.9	2280.1	2275.6
137.5°	2299.5	2325.8	2347.9	2369.7	2363.2
140°	2393.7	2411.3	2435.3	2455.0	2444.1
142.5°	2472.7	2488.0	2516.4	2533.9	2522.9
145°	2556.0	2553.6	2590.8	2606.2	2595.3
147.5°	2628.0	2621.5	2658.7	2669.6	2661.1
150°	2698.2	2682.9	2718.0	2731.0	2720.1
152.5°	2757.3	2739.8	2772.6	2785.9	2770.5
155°	2814.2	2794.7	2820.9	2834.0	2816.5
157.5°	2860.2	2842.8	2862.6	2877.9	2860.2
160°	2899.8	2886.5	2899.8	2912.7	2897.4
162.5°	2934.6	2921.6	2932.5	2947.9	2928.1
165°	2965.3	2952.3	2958.8	2974.1	2958.8
167.5°	2989.5	2976.2	2983.0	2998.3	2978.6
170°	3009.3	2996.0	3000.4	3015.8	2996.0
172.5°	3022.2	3009.3	3013.7	3029.0	3009.3
175°	3033.2	3017.8	3022.2	3037.6	3015.8
177.5°	3037.6	3022.2	3024.6	3039.9	3020.2
180°	3026.7	3026.7	3026.7	3026.7	3026.7

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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	5.85	6.54	6.99	7.66	9.23	5.41	6.09	6.54	7.22	8.79
	3H	7.50	8.11	8.64	9.24	10.83	7.01	7.62	8.15	8.75	10.34
	4H	8.07	8.66	9.22	9.79	11.38	7.58	8.16	8.73	9.29	10.88
	6H	8.46	9.00	9.62	10.13	11.73	7.96	8.50	9.12	9.63	11.23
	8H	8.56	9.07	9.72	10.22	11.81	8.06	8.57	9.22	9.72	11.31
	12H	8.60	9.08	9.76	10.23	11.84	8.09	8.57	9.25	9.72	11.33
4H	2H	6.29	6.87	7.45	8.01	9.60	5.93	6.52	7.09	7.65	9.24
	3H	8.13	8.62	9.30	9.78	11.38	7.73	8.21	8.89	9.37	10.97
	4H	8.84	9.28	10.00	10.43	12.05	8.41	8.86	9.58	10.01	11.63
	6H	9.34	9.72	10.51	10.89	12.50	8.90	9.29	10.08	10.46	12.07
	8H	9.48	9.84	10.65	11.00	12.63	9.04	9.40	10.21	10.56	12.19
	12H	9.54	9.87	10.73	11.04	12.67	9.09	9.42	10.28	10.59	12.22
8H	4H	9.01	9.37	10.19	10.53	12.16	8.64	8.99	9.81	10.16	11.78
	6H	9.63	9.93	10.82	11.13	12.76	9.25	9.54	10.44	10.75	12.37
	8H	9.85	10.10	11.04	11.29	12.93	9.45	9.71	10.65	10.89	12.54
	12H	9.97	10.19	11.17	11.37	13.05	9.56	9.78	10.76	10.96	12.64
12H	4H	8.99	9.32	10.18	10.49	12.12	8.62	8.95	9.81	10.12	11.75
	6H	9.66	9.92	10.85	11.10	12.74	9.29	9.54	10.48	10.73	12.37
	8H	9.89	10.11	11.09	11.29	12.97	9.51	9.73	10.71	10.91	12.59

END OF REPORT