

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: P903858

Luminaire Tested: DFN2DIP-SQ3F0-100D110US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903858
REPORT IS A COMBINATION OF REPORTS P900000 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D110US830-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

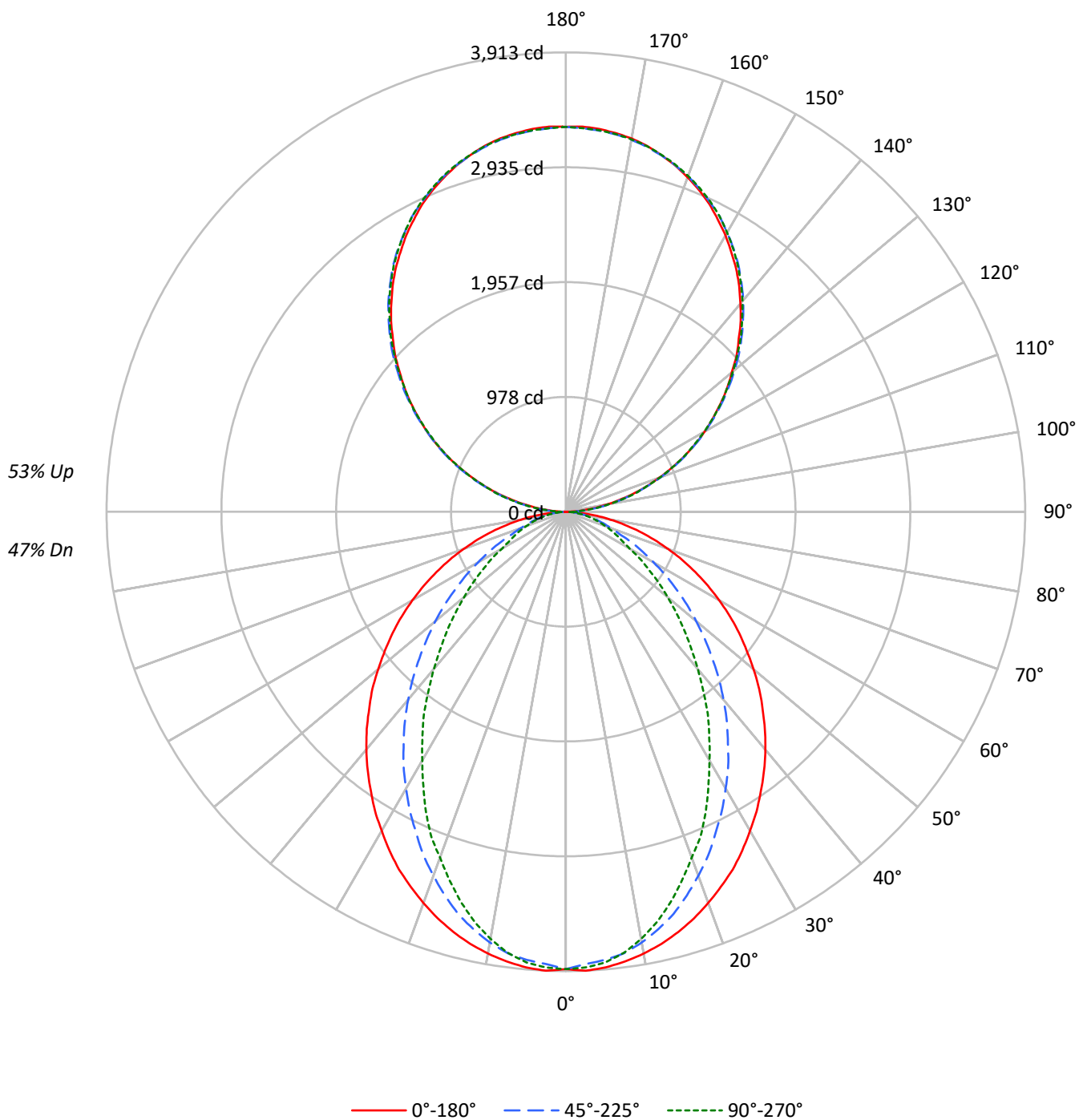
Lumens per Lamp: N/A
Luminaire Lumens: 17187.2 lumens
Efficiency: N/A
Efficacy: 93.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 184.4
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: P903858

CATALOG NUMBER: DFN2DIP-SQ3F0-100D110US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P903858

CATALOG NUMBER: DFN2DIP-SQ3F0-100D110US830-RLFL

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	106	106	106	106	98	98	98	98	81	81	81	67	67	67	53	53	53
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	48	47	46
2	89	82	76	71	82	76	71	66	64	60	57	53	50	48	42	41	39
3	82	72	65	60	75	67	61	56	57	52	48	47	44	41	38	36	34
4	75	64	57	51	69	60	53	48	51	46	42	42	38	35	34	32	30
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	64	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23
7	59	47	39	34	54	44	37	32	37	32	28	32	27	24	26	23	21
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19
9	51	39	32	27	47	36	30	25	31	26	23	27	23	20	22	19	17
10	48	36	29	24	44	34	27	23	29	24	20	25	21	18	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4463	4463	4463
5°	4468	4390	4419
10°	4421	4301	4274
15°	4357	4156	4050
20°	4274	3957	3777
25°	4188	3735	3512
30°	4075	3507	3177
35°	3963	3263	2883
40°	3849	3010	2546
45°	3718	2730	2240
50°	3581	2448	1942
55°	3438	2147	1655
60°	3273	1833	1361
65°	3082	1513	1224
70°	2851	1215	1105
75°	2560	1065	1002
80°	2139	884	864
85°	1451	576	641

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3718 cd/sqm

TEST NUMBER: P903858

CATALOG NUMBER: DFN2DIP-SQ3F0-100D110US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	365.1	2.1
10°-20°	1002.2	5.8
20°-30°	1407.1	8.2
30°-40°	1533.9	8.9
40°-50°	1409.8	8.2
50°-60°	1107.2	6.4
60°-70°	720.7	4.2
70°-80°	371.0	2.2
80°-90°	104.0	0.6
90°-100°	202.9	1.2
100°-110°	644.7	3.8
110°-120°	1103.3	6.4
120°-130°	1451.0	8.4
130°-140°	1628.6	9.5
140°-150°	1597.1	9.3
150°-160°	1339.7	7.8
160°-170°	888.5	5.2
170°-180°	310.5	1.8
0°-30°	2774.5	16.1
0°-40°	4308.3	25.1
0°-60°	6825.3	39.7
0°-90°	8020.9	46.7
90°-120°	1950.9	11.4
90°-150°	6627.6	38.6
90°-180°	9166.0	53.3
0°-180°	17187.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3896	3896	3896	3896	3896	
5°	3896	3878	3832	3864	3853	369
15°	3705	3666	3546	3480	3444	1044
25°	3363	3250	3018	2873	2820	1547
35°	2898	2718	2408	2186	2108	1814
45°	2369	2133	1763	1512	1428	1830
55°	1801	1526	1146	934	867	1610
65°	1216	931	613	494	483	1206
75°	649	402	282	257	254	686
85°	152	77	67	67	67	174
90°	3	36	97	91	94	17
95°	144	172	177	177	172	161
105°	595	603	609	614	614	628
115°	1107	1123	1118	1115	1107	1095
125°	1610	1635	1627	1618	1615	1439
135°	2083	2114	2119	2116	2109	1610
145°	2529	2548	2564	2567	2556	1580
155°	2892	2899	2908	2922	2913	1331
165°	3146	3142	3142	3162	3148	887
175°	3273	3265	3259	3279	3262	311
180°	3279	3279	3279	3279	3279	

TEST NUMBER: P903858

CATALOG NUMBER: DFN2DIP-SQ3F0-100D110US830-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3895.5	3895.5	3895.5	3895.5	3895.5
2.5°	3913.1	3895.5	3856.6	3892.1	3885.1
5°	3895.5	3877.9	3831.9	3863.8	3853.2
7.5°	3863.8	3842.7	3793.4	3807.2	3789.7
10°	3821.4	3796.7	3726.4	3715.6	3694.7
12.5°	3768.8	3736.9	3641.5	3620.6	3581.7
15°	3705.1	3666.2	3546.5	3479.6	3444.4
17.5°	3631.0	3574.6	3426.5	3349.0	3292.6
20°	3546.5	3475.8	3299.7	3211.8	3134.0
22.5°	3454.9	3373.7	3169.1	3049.5	2996.7
25°	3363.3	3250.4	3017.6	2873.2	2820.2
27.5°	3254.0	3134.0	2876.6	2710.9	2629.8
30°	3137.7	3003.4	2721.4	2541.9	2446.6
32.5°	3024.8	2862.4	2573.7	2362.0	2273.7
35°	2897.9	2718.1	2408.0	2185.8	2108.0
37.5°	2774.6	2580.4	2252.8	2009.3	1921.4
40°	2644.0	2432.7	2090.5	1840.2	1748.6
42.5°	2510.1	2284.5	1928.5	1667.5	1579.5
45°	2369.1	2132.7	1762.8	1512.2	1427.7
47.5°	2235.2	1985.0	1604.2	1353.6	1276.2
50°	2087.1	1836.8	1449.0	1205.5	1131.8
52.5°	1942.3	1677.9	1300.9	1068.2	1001.3
55°	1801.3	1526.4	1145.7	934.3	867.3
57.5°	1657.0	1374.9	1008.4	810.9	754.4
60°	1508.8	1226.8	863.7	684.1	627.6
62.5°	1364.4	1082.4	740.2	571.2	543.1
65°	1216.4	930.6	613.4	493.7	482.9
67.5°	1075.3	789.6	493.7	433.5	423.0
70°	927.2	652.3	408.8	373.6	359.5
72.5°	786.2	525.1	341.9	313.8	306.7
75°	648.6	401.7	282.0	257.3	253.9
77.5°	511.3	285.4	222.2	207.9	200.9
80°	384.1	204.6	169.1	155.2	155.2
82.5°	267.8	137.6	116.3	109.2	109.2
85°	151.5	77.4	66.9	66.9	66.9
87.5°	56.5	28.1	28.1	24.7	24.7
90°	2.9	35.6	96.9	91.0	93.9
92.5°	61.3	83.0	86.0	89.0	89.0
95°	144.3	172.0	176.9	176.9	172.0
97.5°	240.3	265.9	276.8	276.8	276.8
100°	350.9	373.6	381.5	381.5	378.6
102.5°	467.6	484.4	495.3	498.2	495.3
105°	595.1	603.0	609.0	613.9	613.9
107.5°	721.6	733.5	733.5	735.5	721.6
110°	844.2	860.1	860.1	860.1	852.2

TEST NUMBER: P903858

CATALOG NUMBER: DFN2DIP-SQ3F0-100D110US830-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	976.7	993.4	990.5	982.6	976.7
115°	1107.2	1122.9	1118.0	1115.1	1107.2
117.5°	1236.7	1258.4	1244.5	1236.7	1228.8
120°	1367.2	1388.9	1367.2	1367.2	1358.3
122.5°	1485.8	1513.4	1499.6	1491.7	1485.8
125°	1610.3	1635.0	1627.1	1618.3	1615.2
127.5°	1731.9	1762.6	1751.7	1739.8	1731.9
130°	1845.6	1881.2	1876.2	1870.3	1859.4
132.5°	1973.1	2000.8	2002.8	1989.0	1981.0
135°	2082.8	2113.5	2119.4	2116.5	2108.6
137.5°	2205.5	2230.1	2235.1	2233.1	2221.3
140°	2313.2	2337.9	2351.7	2351.7	2340.9
142.5°	2423.9	2448.6	2456.5	2459.5	2448.6
145°	2528.7	2548.4	2564.3	2567.2	2556.4
147.5°	2622.6	2647.3	2659.2	2664.1	2653.3
150°	2719.5	2736.3	2747.1	2756.1	2747.1
152.5°	2805.5	2822.3	2836.1	2847.0	2836.1
155°	2891.5	2899.4	2908.3	2922.2	2913.2
157.5°	2965.6	2971.6	2976.5	2996.2	2982.4
160°	3031.9	3037.8	3040.7	3057.6	3045.7
162.5°	3093.1	3093.1	3096.2	3114.9	3101.1
165°	3145.5	3142.5	3142.5	3162.3	3148.5
167.5°	3193.0	3184.1	3184.1	3203.9	3190.0
170°	3228.6	3220.7	3217.7	3237.4	3220.7
172.5°	3253.3	3245.4	3242.4	3262.2	3245.4
175°	3273.1	3265.2	3259.2	3279.0	3262.2
177.5°	3283.9	3276.0	3270.1	3286.9	3270.1
180°	3279.0	3279.0	3279.0	3279.0	3279.0

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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	11.99	12.79	12.98	13.79	15.11	7.95	8.75	8.94	9.75	11.07
	3H	13.66	14.38	14.66	15.39	16.73	9.13	9.85	10.13	10.86	12.20
	4H	14.26	14.94	15.28	15.96	17.31	9.57	10.25	10.59	11.27	12.62
	6H	14.68	15.31	15.71	16.32	17.68	9.89	10.51	10.91	11.53	12.89
	8H	14.80	15.40	15.84	16.43	17.79	9.97	10.57	11.01	11.60	12.96
	12H	14.86	15.43	15.90	16.45	17.84	10.01	10.58	11.05	11.61	12.99
4H	2H	12.00	12.68	13.02	13.69	15.04	8.54	9.22	9.56	10.23	11.58
	3H	13.82	14.39	14.85	15.43	16.79	9.88	10.44	10.91	11.48	12.85
	4H	14.51	15.03	15.55	16.06	17.45	10.42	10.94	11.46	11.97	13.36
	6H	15.02	15.46	16.07	16.52	17.90	10.83	11.28	11.88	12.33	13.71
	8H	15.19	15.61	16.24	16.65	18.05	10.96	11.37	12.00	12.42	13.82
	12H	15.28	15.66	16.35	16.72	18.12	11.02	11.39	12.08	12.45	13.85
8H	4H	14.48	14.89	15.52	15.94	17.33	10.70	11.11	11.74	12.16	13.56
	6H	15.03	15.38	16.11	16.47	17.86	11.21	11.55	12.28	12.64	14.03
	8H	15.25	15.55	16.33	16.62	18.04	11.39	11.69	12.47	12.77	14.18
	12H	15.38	15.65	16.46	16.72	18.17	11.50	11.77	12.58	12.84	14.29
12H	4H	14.43	14.80	15.49	15.86	17.26	10.70	11.07	11.76	12.14	13.54
	6H	15.01	15.31	16.09	16.38	17.80	11.25	11.55	12.33	12.63	14.04
	8H	15.23	15.49	16.31	16.56	18.01	11.46	11.72	12.54	12.79	14.24