

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: P917758

Luminaire Tested: DFN2DIP-SQ4F0-110D060US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917758
REPORT IS A COMBINATION OF REPORTS P900070 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-110D060US930-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

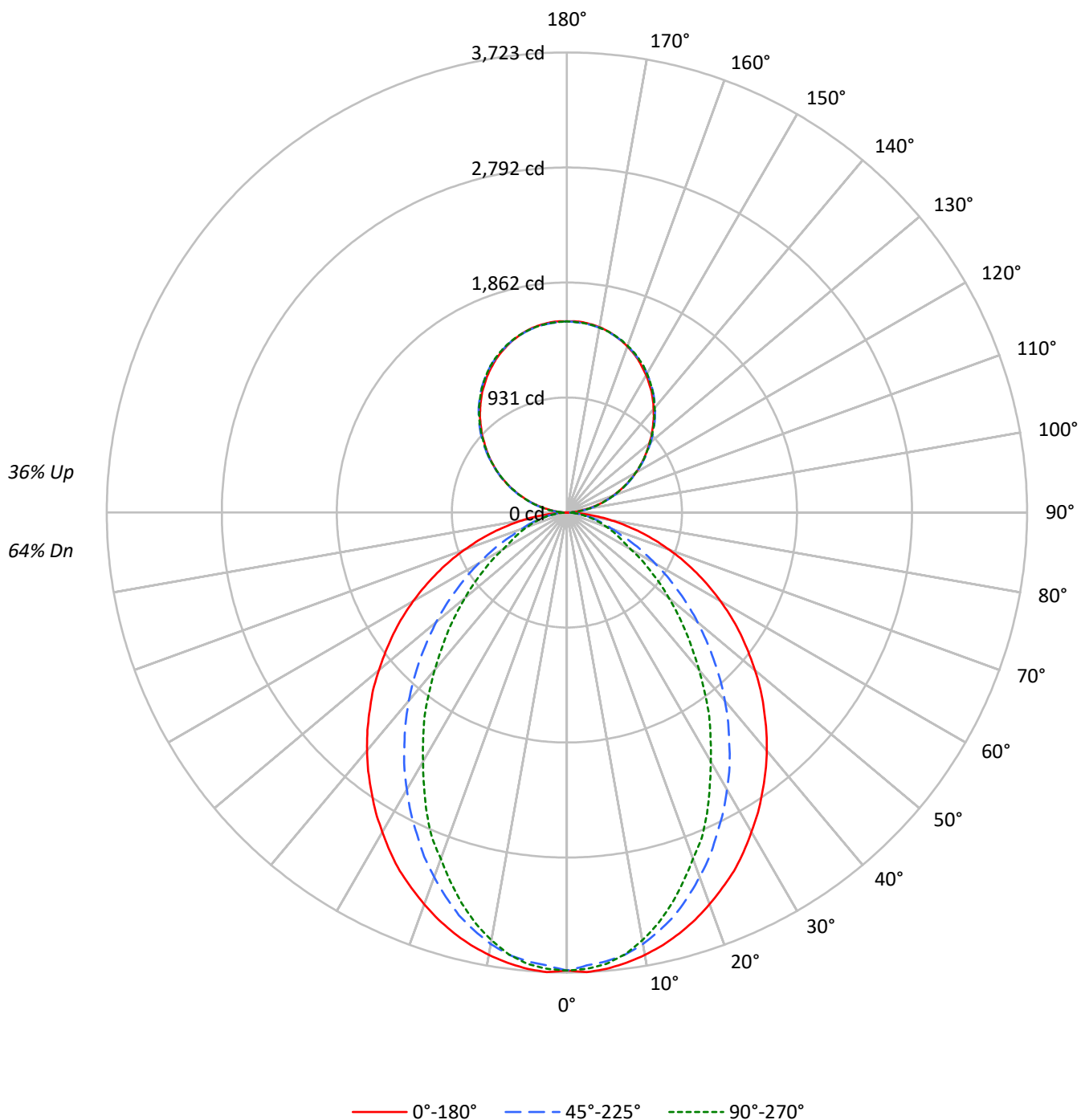
Lumens per Lamp: N/A
Luminaire Lumens: 11952.3 lumens
Efficiency: N/A
Efficacy: 79.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 150.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P917758

CATALOG NUMBER: DFN2DIP-SQ4F0-110D060US930-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P917758

CATALOG NUMBER: DFN2DIP-SQ4F0-110D060US930-RLLFLL

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	110	110	110	110	104	104	104	104	91	91	91	79	79	79	69	69	69
1	101	97	94	90	95	92	88	85	81	78	76	71	69	67	62	61	59
2	93	86	80	75	87	81	76	71	72	68	64	63	60	57	55	53	51
3	85	76	69	63	80	72	65	60	64	59	55	56	52	49	49	47	44
4	78	68	60	54	73	64	57	52	57	52	47	51	46	43	45	41	39
5	72	61	53	47	68	58	50	45	51	46	41	46	41	38	40	37	34
6	67	55	47	41	63	52	45	39	47	41	36	42	37	33	37	33	30
7	62	50	42	36	58	47	40	35	43	37	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	25
9	54	42	34	29	51	40	33	28	36	30	26	32	28	24	29	25	22
10	50	38	31	26	48	37	30	26	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2601	2601	2601
5°	2605	2560	2577
10°	2579	2510	2494
15°	2544	2428	2365
20°	2497	2314	2206
25°	2448	2186	2053
30°	2384	2055	1859
35°	2320	1914	1688
40°	2256	1768	1492
45°	2181	1606	1314
50°	2104	1443	1141
55°	2023	1268	974
60°	1929	1085	803
65°	1822	899	723
70°	1691	726	656
75°	1527	641	598
80°	1290	540	521
85°	898	363	397

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2181 cd/sqm

TEST NUMBER: P917758

CATALOG NUMBER: DFN2DIP-SQ4F0-110D060US930-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	347.4	2.9
10°-20°	953.6	8.0
20°-30°	1338.9	11.2
30°-40°	1459.5	12.2
40°-50°	1341.4	11.2
50°-60°	1053.5	8.8
60°-70°	685.7	5.7
70°-80°	353.0	3.0
80°-90°	94.5	0.8
90°-100°	95.7	0.8
100°-110°	304.2	2.5
110°-120°	520.6	4.4
120°-130°	684.6	5.7
130°-140°	768.4	6.4
140°-150°	753.5	6.3
150°-160°	632.1	5.3
160°-170°	419.2	3.5
170°-180°	146.5	1.2
0°-30°	2639.9	22.1
0°-40°	4099.4	34.3
0°-60°	6494.2	54.3
0°-90°	7627.4	63.8
90°-120°	920.5	7.7
90°-150°	3127.0	26.2
90°-180°	4325.0	36.2
0°-180°	11952.3	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°	1	17	46	43	44	12
95°	68	81	84	84	81	76
105°	281	284	287	290	290	296
115°	522	530	528	526	522	517
125°	760	771	768	764	762	679
135°	983	997	1000	999	995	760
145°	1193	1202	1210	1211	1206	745
155°	1364	1368	1372	1379	1374	628
165°	1484	1483	1483	1492	1486	419
175°	1544	1541	1538	1547	1539	147
180°	1547	1547	1547	1547	1547	

TEST NUMBER: P917758

CATALOG NUMBER: DFN2DIP-SQ4F0-110D060US930-RLFL

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°	1.4	16.8	45.7	42.9	44.3
92.5°	28.9	39.2	40.6	42.0	42.0
95°	68.1	81.1	83.5	83.5	81.1
97.5°	113.3	125.5	130.6	130.6	130.6
100°	165.6	176.3	180.0	180.0	178.6
102.5°	220.6	228.5	233.7	235.1	233.7
105°	280.8	284.5	287.3	289.7	289.7
107.5°	340.5	346.1	346.1	347.0	340.5
110°	398.4	405.8	405.8	405.8	402.0

TEST NUMBER: P917758

CATALOG NUMBER: DFN2DIP-SQ4F0-110D060US930-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	460.8	468.7	467.3	463.6	460.8
115°	522.4	529.9	527.5	526.1	522.4
117.5°	583.5	593.8	587.2	583.5	579.8
120°	645.1	655.3	645.1	645.1	640.8
122.5°	701.0	714.0	707.5	703.8	701.0
125°	759.8	771.4	767.7	763.5	762.1
127.5°	817.2	831.6	826.5	820.9	817.2
130°	870.8	887.6	885.3	882.5	877.3
132.5°	931.0	944.0	944.9	938.4	934.7
135°	982.8	997.2	1000.0	998.6	994.8
137.5°	1040.6	1052.2	1054.6	1053.6	1048.1
140°	1091.4	1103.1	1109.6	1109.6	1104.5
142.5°	1143.6	1155.3	1159.0	1160.4	1155.3
145°	1193.1	1202.4	1209.9	1211.3	1206.2
147.5°	1237.4	1249.0	1254.7	1256.9	1251.8
150°	1283.1	1291.0	1296.2	1300.3	1296.2
152.5°	1323.6	1331.6	1338.1	1343.3	1338.1
155°	1364.2	1368.0	1372.1	1378.8	1374.5
157.5°	1399.2	1402.1	1404.4	1413.7	1407.2
160°	1430.5	1433.3	1434.7	1442.6	1437.0
162.5°	1459.4	1459.4	1460.8	1469.7	1463.1
165°	1484.1	1482.7	1482.7	1492.1	1485.6
167.5°	1506.5	1502.4	1502.4	1511.6	1505.1
170°	1523.3	1519.6	1518.2	1527.5	1519.6
172.5°	1535.0	1531.2	1529.8	1539.1	1531.2
175°	1544.3	1540.6	1537.7	1547.1	1539.1
177.5°	1549.4	1545.7	1542.9	1550.8	1542.9
180°	1547.1	1547.1	1547.1	1547.1	1547.1

TEST NUMBER: P917758

CATALOG NUMBER: DFN2DIP-SQ4F0-110D060US930-RLFL

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	11.68	12.64	12.52	13.49	14.55	7.64	8.60	8.48	9.45	10.51
	3H	13.37	14.23	14.22	15.09	16.18	8.84	9.70	9.69	10.56	11.65
	4H	13.99	14.80	14.86	15.67	16.77	9.30	10.10	10.16	10.97	12.07
	6H	14.42	15.17	15.30	16.04	17.16	9.63	10.37	10.50	11.25	12.36
	8H	14.55	15.26	15.44	16.16	17.27	9.72	10.43	10.61	11.32	12.43
	12H	14.62	15.29	15.51	16.18	17.32	9.77	10.44	10.66	11.33	12.47
4H	2H	11.71	12.52	12.58	13.39	14.49	8.25	9.06	9.13	9.93	11.03
	3H	13.56	14.23	14.44	15.13	16.25	9.62	10.29	10.50	11.19	12.31
	4H	14.26	14.87	15.15	15.77	16.91	10.17	10.78	11.06	11.68	12.82
	6H	14.79	15.31	15.69	16.23	17.38	10.60	11.12	11.51	12.05	13.19
	8H	14.97	15.46	15.88	16.37	17.53	10.73	11.22	11.64	12.14	13.29
	12H	15.07	15.51	16.00	16.45	17.61	10.80	11.24	11.73	12.18	13.34
8H	4H	14.24	14.73	15.15	15.65	16.80	10.46	10.95	11.37	11.87	13.03
	6H	14.81	15.22	15.75	16.18	17.33	10.99	11.39	11.92	12.35	13.51
	8H	15.03	15.39	15.98	16.34	17.52	11.18	11.54	12.13	12.49	13.66
	12H	15.18	15.50	16.13	16.44	17.66	11.31	11.62	12.25	12.56	13.79
12H	4H	14.20	14.64	15.12	15.57	16.73	10.47	10.92	11.40	11.85	13.01
	6H	14.79	15.15	15.74	16.10	17.27	11.04	11.40	11.98	12.35	13.52
	8H	15.02	15.33	15.97	16.28	17.50	11.26	11.57	12.20	12.51	13.74

END OF REPORT