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: P920362

Luminaire Tested: DFN2DIP-SQ4F0-070D110US935-RLLFLL

Issue Date: 11/21/2024

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

Test Information

Test Method:	LM-79-2019
Report Number:	P920362
	REPORT IS A COMBINATION OF REPORTS P900152 AND P896915
Test Lab:	INNOVATION CENTER
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	NEO-RAY
Catalog Number:	DFN2DIP-SQ4F0-070D110US935-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:	13504.7 lumens
Efficiency:	N/A
Efficacy:	93.7 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-Indirect

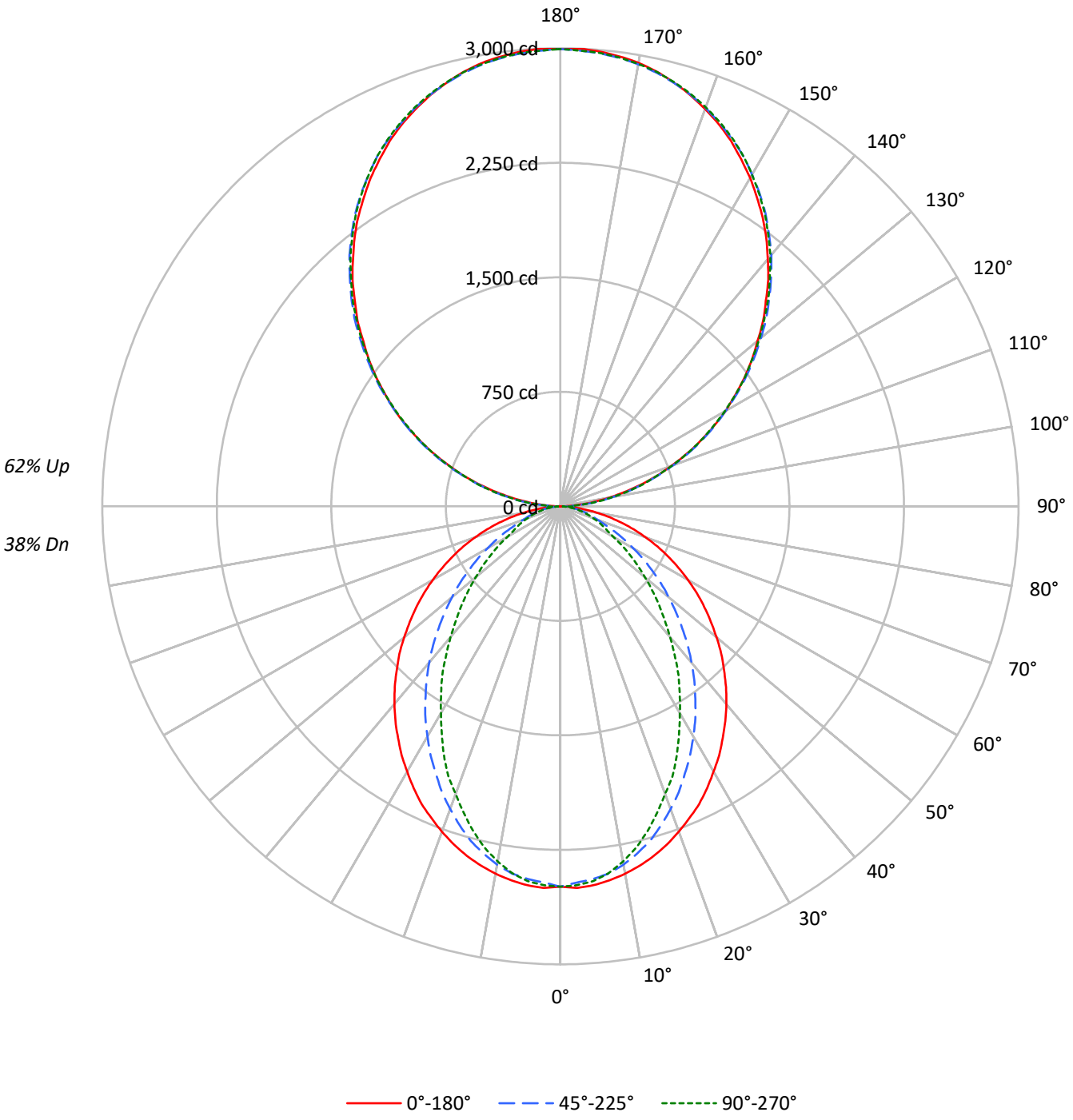
Input Watts (W):	144.1
Input Voltage (V):	
Input Current (Ain):	NR
Voltage Rise (V):	NR
Power Factor:	0.9967
Total Harmonic Distortion (THDi):	0.063
Frequency (hertz):	60
Stabilization Time:	NR
Operation Time:	NR
Ambient Temperature (°C):	NR
Test Distance:	24 FT

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P920362
CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US935-RLLFLL

Luminous Intensity Polar Plot



Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P920362
CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US935-RLLFLL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20			20			20			20
RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38
1	95	91	88	84	87	83	80	77	68	66	64	53	52	51	40	40	39	33
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	34	33	28
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	32	30	29	24
4	73	63	55	49	66	57	51	46	47	42	39	38	34	32	29	27	25	21
5	67	56	48	43	61	51	45	40	42	37	34	34	30	28	26	24	22	19
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	21	20	16
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	17	15
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16	13
9	49	38	30	26	45	35	28	24	29	24	21	24	20	17	19	16	14	12
10	46	35	28	23	42	32	26	22	27	22	19	22	18	16	17	15	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1748	1748	1748
5°	1751	1720	1732
10°	1733	1687	1676
15°	1709	1632	1589
20°	1678	1555	1483
25°	1645	1469	1380
30°	1602	1381	1249
35°	1559	1286	1134
40°	1516	1188	1003
45°	1466	1080	883
50°	1414	970	767
55°	1359	852	655
60°	1297	729	539
65°	1224	605	486
70°	1137	488	441
75°	1026	431	402
80°	867	363	350
85°	604	244	267

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
Vertical Angle: 90°
Luminance: 2358 cd/sqm

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P920362
CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US935-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	233.5	1.7
10°-20°	640.9	4.7
20°-30°	899.8	6.7
30°-40°	980.8	7.3
40°-50°	901.5	6.7
50°-60°	708.0	5.2
60°-70°	460.8	3.4
70°-80°	237.2	1.8
80°-90°	69.1	0.5
90°-100°	185.3	1.4
100°-110°	588.9	4.4
110°-120°	1007.8	7.5
120°-130°	1325.4	9.8
130°-140°	1487.7	11.0
140°-150°	1458.9	10.8
150°-160°	1223.8	9.1
160°-170°	811.6	6.0
170°-180°	283.7	2.1
0°-30°	1774.1	13.1
0°-40°	2754.9	20.4
0°-60°	4364.3	32.3
0°-90°	5131.4	38.0
90°-120°	1782.1	13.2
90°-150°	6054.2	44.8
90°-180°	8373.0	62.0
0°-180°	13504.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2491	2491	2491	2491	2491	
5°	2491	2480	2450	2471	2464	236
15°	2369	2344	2268	2225	2202	668
25°	2151	2078	1930	1837	1803	989
35°	1853	1738	1540	1398	1348	1160
45°	1515	1364	1127	967	913	1170
55°	1152	976	732	597	555	1029
65°	778	595	392	316	309	771
75°	415	257	180	164	162	439
85°	97	50	43	43	43	111
90°	3	32	88	83	86	13
95°	132	157	162	162	157	147
105°	544	551	556	561	561	574
115°	1011	1026	1021	1019	1011	1000
125°	1471	1494	1486	1478	1476	1315
135°	1903	1931	1936	1933	1926	1471
145°	2310	2328	2342	2345	2335	1443
155°	2641	2648	2657	2669	2661	1216
165°	2873	2871	2871	2889	2876	811
175°	2990	2983	2977	2995	2980	284
180°	2995	2995	2995	2995	2995	

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P920362
CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US935-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2491.0	2491.0	2491.0	*2491.0*	2491.0
2.5°	2502.1	2491.0	2466.1	*2488.8*	2484.2
5°	2491.0	2479.7	2450.3	*2470.6*	2463.9
7.5°	2470.6	2457.2	2425.7	*2434.5*	2423.3
10°	2443.6	2427.8	2382.8	*2375.9*	2362.5
12.5°	2409.8	2389.5	2328.6	*2315.1*	2290.3
15°	2369.2	2344.3	2267.8	*2225.0*	2202.5
17.5°	2321.9	2285.8	2191.1	*2141.5*	2105.4
20°	2267.8	2222.6	2110.0	*2053.7*	2004.0
22.5°	2209.2	2157.3	2026.4	*1949.9*	1916.2
25°	2150.6	2078.4	1929.6	*1837.3*	1803.4
27.5°	2080.8	2004.0	1839.4	*1733.5*	1681.6
30°	2006.4	1920.5	1740.2	*1625.4*	1564.4
32.5°	1934.1	1830.4	1645.7	*1510.4*	1453.9
35°	1853.0	1738.0	1539.8	*1397.7*	1348.0
37.5°	1774.2	1650.0	1440.5	*1284.8*	1228.6
40°	1690.7	1555.6	1336.7	*1176.7*	1118.1
42.5°	1605.1	1460.9	1233.1	*1066.2*	1010.0
45°	1514.9	1363.7	1127.2	*967.0*	912.9
47.5°	1429.3	1269.3	1025.8	*865.6*	816.1
50°	1334.5	1174.6	926.5	*770.9*	723.8
52.5°	1242.0	1072.9	831.8	*683.0*	640.2
55°	1151.8	976.0	732.5	*597.4*	554.7
57.5°	1059.5	879.2	644.8	*518.5*	482.4
60°	964.8	784.5	552.2	*437.5*	401.3
62.5°	872.4	692.2	473.3	*365.2*	347.2
65°	777.7	595.0	392.3	*315.7*	308.8
67.5°	687.6	504.9	315.7	*277.2*	270.5
70°	592.9	417.1	261.4	*238.9*	229.8
72.5°	502.7	335.8	218.6	*200.7*	196.1
75°	414.7	256.8	180.3	*164.5*	162.4
77.5°	326.9	182.4	142.1	*132.9*	128.5
80°	245.6	130.8	108.1	*99.3*	99.3
82.5°	171.3	88.0	74.4	*69.8*	69.8
85°	96.9	49.5	42.8	*42.8*	42.8
87.5°	36.1	17.9	17.9	*15.8*	15.8
90°	2.7	32.5	88.5	*83.1*	85.8
92.5°	56.0	75.9	78.5	*81.3*	81.3
95°	131.8	157.1	161.6	*161.6*	157.1
97.5°	219.5	242.9	252.9	*252.9*	252.9
100°	320.5	341.3	348.5	*348.5*	345.9
102.5°	427.1	442.5	452.5	*455.1*	452.5
105°	543.6	550.9	556.3	*560.8*	560.8
107.5°	659.2	670.0	670.0	*671.8*	659.2
110°	771.2	785.7	785.7	*785.7*	778.4

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P920362
CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US935-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	892.2	907.5	904.8	*897.6*	892.2
115°	1011.4	1025.8	1021.3	*1018.6*	1011.4
117.5°	1129.7	1149.5	1136.9	*1129.7*	1122.5
120°	1248.9	1268.8	1248.9	*1248.9*	1240.8
122.5°	1357.3	1382.5	1369.8	*1362.6*	1357.3
125°	1471.0	1493.6	1486.3	*1478.2*	1475.5
127.5°	1582.1	1610.1	1600.2	*1589.3*	1582.1
130°	1685.9	1718.5	1713.9	*1708.5*	1698.6
132.5°	1802.4	1827.7	1829.5	*1816.9*	1809.6
135°	1902.6	1930.6	1936.0	*1933.4*	1926.1
137.5°	2014.6	2037.2	2041.7	*2039.9*	2029.1
140°	2113.1	2135.6	2148.3	*2148.3*	2138.4
142.5°	2214.2	2236.8	2244.0	*2246.7*	2236.8
145°	2309.9	2328.0	2342.4	*2345.1*	2335.2
147.5°	2395.7	2418.3	2429.1	*2433.6*	2423.7
150°	2484.2	2499.6	2509.5	*2517.6*	2509.5
152.5°	2562.8	2578.1	2590.7	*2600.7*	2590.7
155°	2641.4	2648.5	2656.7	*2669.4*	2661.2
157.5°	2709.0	2714.5	2718.9	*2737.0*	2724.4
160°	2769.6	2775.0	2777.7	*2793.1*	2782.2
162.5°	2825.5	2825.5	2828.3	*2845.4*	2832.8
165°	2873.4	2870.7	2870.7	*2888.7*	2876.1
167.5°	2916.7	2908.6	2908.6	*2926.7*	2914.0
170°	2949.3	2942.0	2939.4	*2957.4*	2942.0
172.5°	2971.8	2964.6	2961.9	*2980.0*	2964.6
175°	2989.9	2982.7	2977.2	*2995.3*	2980.0
177.5°	*2999.8*	*2992.6*	*2987.1*	*3002.6*	*2987.1*
180°	2995.3	2995.3	2995.3	*2995.3*	2995.3

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

TEST NUMBER: P920362
CATALOG NUMBER: DFN2DIP-SQ4F0-070D110US935-RLLFLL

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	7.86	8.60	8.92	9.66	11.10	3.82	4.56	4.88	5.62	7.06
	3H	9.54	10.20	10.61	11.27	12.72	5.01	5.67	6.07	6.74	8.19
	4H	10.14	10.77	11.22	11.84	13.30	5.45	6.08	6.53	7.15	8.61
	6H	10.57	11.14	11.65	12.22	13.69	5.77	6.35	6.86	7.42	8.89
	8H	10.69	11.24	11.78	12.33	13.80	5.86	6.41	6.95	7.50	8.96
	12H	10.75	11.27	11.85	12.36	13.85	5.90	6.42	7.00	7.50	8.99
4H	2H	7.87	8.50	8.96	9.57	11.03	4.41	5.04	5.50	6.11	7.57
	3H	9.70	10.22	10.79	11.31	12.79	5.75	6.27	6.85	7.37	8.84
	4H	10.39	10.87	11.49	11.95	13.45	6.30	6.78	7.40	7.86	9.36
	6H	10.90	11.31	12.01	12.42	13.91	6.71	7.12	7.82	8.23	9.72
	8H	11.08	11.46	12.18	12.56	14.07	6.84	7.22	7.95	8.33	9.83
	12H	11.17	11.52	12.29	12.63	14.14	6.90	7.25	8.03	8.36	9.87
8H	4H	10.35	10.73	11.45	11.83	13.34	6.57	6.96	7.68	8.06	9.56
	6H	10.92	11.23	12.04	12.38	13.88	7.09	7.41	8.22	8.55	10.05
	8H	11.14	11.41	12.27	12.54	14.06	7.28	7.56	8.42	8.68	10.20
	12H	11.27	11.52	12.41	12.64	14.19	7.40	7.64	8.54	8.76	10.32
12H	4H	10.30	10.64	11.42	11.76	13.27	6.58	6.92	7.70	8.04	9.54
	6H	10.89	11.17	12.03	12.29	13.81	7.14	7.42	8.27	8.54	10.06
	8H	11.11	11.35	12.25	12.48	14.03	7.35	7.59	8.49	8.71	10.27

END OF REPORT