

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: P919794

Luminaire Tested: DFN2DIP-PN4F0-110D110US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919794
REPORT IS A COMBINATION OF REPORTS P899750 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-110D110US935-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

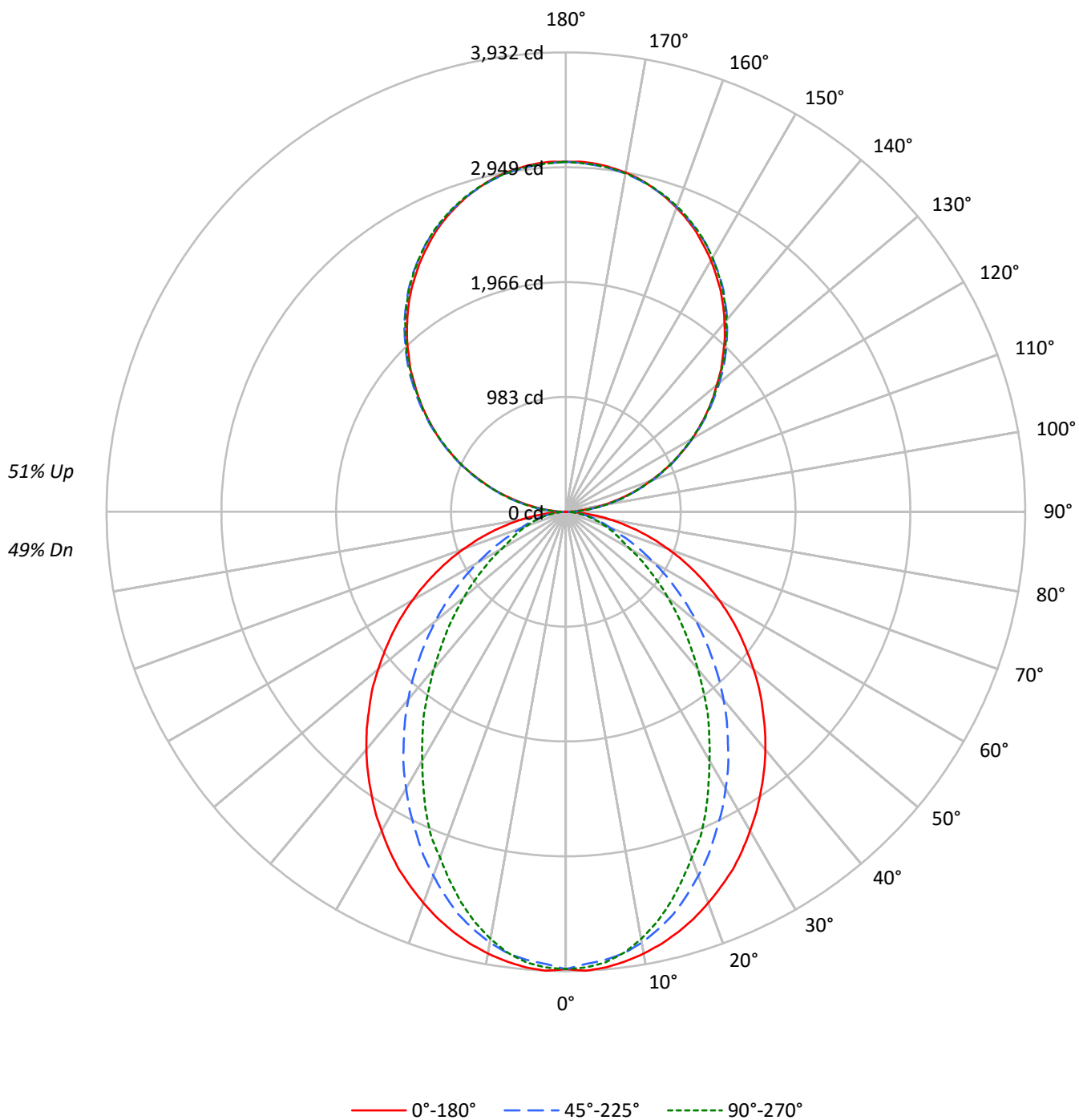
Lumens per Lamp: N/A
Luminaire Lumens: 16432.2 lumens
Efficiency: N/A
Efficacy: 79.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 205.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P919794

CATALOG NUMBER: DFN2DIP-PN4F0-110D110US935-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P919794

CATALOG NUMBER: DFN2DIP-PN4F0-110D110US935-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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2857	2857	2857
5°	2862	2812	2831
10°	2834	2758	2739
15°	2794	2667	2597
20°	2743	2541	2423
25°	2690	2401	2254
30°	2619	2257	2041
35°	2550	2102	1853
40°	2479	1942	1638
45°	2397	1764	1442
50°	2312	1584	1252
55°	2223	1392	1068
60°	2120	1191	880
65°	2002	987	793
70°	1859	796	718
75°	1679	703	655
80°	1418	591	570
85°	988	396	431

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2397 cd/sqm

TEST NUMBER: P919794

CATALOG NUMBER: DFN2DIP-PN4F0-110D110US935-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	366.9	2.2
10°-20°	1007.1	6.1
20°-30°	1413.9	8.6
30°-40°	1541.3	9.4
40°-50°	1416.6	8.6
50°-60°	1112.5	6.8
60°-70°	724.2	4.4
70°-80°	372.8	2.3
80°-90°	103.7	0.6
90°-100°	185.3	1.1
100°-110°	588.9	3.6
110°-120°	1007.8	6.1
120°-130°	1325.4	8.1
130°-140°	1487.7	9.1
140°-150°	1458.9	8.9
150°-160°	1223.8	7.4
160°-170°	811.6	4.9
170°-180°	283.7	1.7
0°-30°	2787.9	17.0
0°-40°	4329.1	26.3
0°-60°	6858.3	41.7
0°-90°	8058.9	49.0
90°-120°	1782.1	10.8
90°-150°	6054.2	36.8
90°-180°	8373.0	51.0
0°-180°	16432.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3914	3914	3914	3914	3914	
5°	3914	3897	3850	3882	3872	371
15°	3723	3684	3564	3496	3461	1049
25°	3380	3266	3032	2887	2834	1554
35°	2912	2731	2420	2196	2118	1823
45°	2381	2143	1771	1520	1435	1838
55°	1810	1534	1151	939	872	1617
65°	1222	935	616	496	485	1212
75°	652	404	283	259	255	689
85°	152	78	67	67	67	175
90°	3	32	88	83	86	16
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	

TEST NUMBER: P919794

CATALOG NUMBER: DFN2DIP-PN4F0-110D110US935-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3914.4	3914.4	3914.4	3914.4	3914.4
2.5°	3932.0	3914.4	3875.3	3911.0	3903.9
5°	3914.4	3896.7	3850.5	3882.4	3871.9
7.5°	3882.4	3861.3	3811.7	3825.7	3807.9
10°	3840.0	3815.1	3744.5	3733.5	3712.5
12.5°	3786.9	3755.0	3659.2	3638.1	3599.0
15°	3723.0	3684.0	3563.7	3496.4	3461.0
17.5°	3648.7	3591.9	3443.0	3365.2	3308.5
20°	3563.7	3492.6	3315.6	3227.3	3149.1
22.5°	3471.6	3390.0	3184.5	3064.2	3011.2
25°	3379.5	3266.0	3032.3	2887.2	2833.8
27.5°	3269.8	3149.1	2890.5	2724.0	2642.5
30°	3152.9	3018.0	2734.6	2554.2	2458.3
32.5°	3039.4	2876.2	2586.1	2373.4	2284.7
35°	2912.0	2731.2	2419.7	2196.4	2118.2
37.5°	2788.0	2592.9	2263.6	2019.0	1930.7
40°	2656.8	2444.5	2100.6	1849.1	1757.0
42.5°	2522.2	2295.6	1937.8	1675.5	1587.2
45°	2380.6	2143.0	1771.3	1519.5	1434.6
47.5°	2246.0	1994.6	1612.0	1360.1	1282.4
50°	2097.1	1845.7	1456.0	1211.3	1137.3
52.5°	1951.7	1686.0	1307.2	1073.4	1006.1
55°	1810.0	1533.8	1151.2	938.8	871.6
57.5°	1665.0	1381.6	1013.2	814.8	758.0
60°	1516.1	1232.8	867.8	687.4	630.7
62.5°	1371.1	1087.7	743.8	573.9	545.7
65°	1222.2	935.0	616.4	496.1	485.2
67.5°	1080.6	793.4	496.1	435.6	425.1
70°	931.7	655.5	410.8	375.5	361.2
72.5°	790.0	527.7	343.5	315.3	308.2
75°	651.7	403.6	283.4	258.6	255.2
77.5°	513.8	286.8	223.3	209.0	201.8
80°	386.0	205.6	169.9	156.0	156.0
82.5°	269.1	138.3	116.9	109.8	109.8
85°	152.2	77.8	67.2	67.2	67.2
87.5°	56.7	28.2	28.2	24.8	24.8
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

TEST NUMBER: P919794

CATALOG NUMBER: DFN2DIP-PN4F0-110D110US935-RLFL

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

TEST NUMBER: P919794

CATALOG NUMBER: DFN2DIP-PN4F0-110D110US935-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	10.71	11.53	11.68	12.51	13.80	6.67	7.50	7.65	8.48	9.77
	3H	12.39	13.13	13.37	14.12	15.43	7.86	8.60	8.85	9.59	10.90
	4H	13.00	13.70	14.00	14.69	16.01	8.31	9.01	9.31	10.00	11.32
	6H	13.42	14.06	14.43	15.06	16.39	8.64	9.28	9.64	10.27	11.60
	8H	13.55	14.16	14.56	15.18	16.50	8.73	9.34	9.74	10.35	11.68
	12H	13.61	14.19	14.63	15.20	16.55	8.77	9.35	9.79	10.36	11.71
4H	2H	10.73	11.42	11.73	12.42	13.73	7.27	7.97	8.27	8.96	10.28
	3H	12.56	13.14	13.57	14.16	15.49	8.62	9.20	9.63	10.22	11.55
	4H	13.25	13.78	14.27	14.80	16.15	9.17	9.70	10.19	10.71	12.07
	6H	13.77	14.22	14.80	15.26	16.61	9.59	10.04	10.62	11.08	12.43
	8H	13.95	14.37	14.98	15.40	16.77	9.72	10.14	10.75	11.17	12.54
	12H	14.04	14.43	15.09	15.47	16.84	9.78	10.17	10.83	11.21	12.58
8H	4H	13.22	13.64	14.25	14.68	16.04	9.45	9.87	10.48	10.91	12.27
	6H	13.79	14.14	14.84	15.21	16.58	9.97	10.32	11.02	11.39	12.76
	8H	14.01	14.32	15.07	15.37	16.76	10.16	10.47	11.22	11.53	12.91
	12H	14.15	14.42	15.21	15.47	16.90	10.28	10.55	11.35	11.61	13.03
12H	4H	13.17	13.55	14.22	14.60	15.97	9.46	9.84	10.50	10.89	12.26
	6H	13.76	14.07	14.83	15.13	16.51	10.02	10.33	11.08	11.39	12.77
	8H	13.99	14.26	15.05	15.31	16.74	10.23	10.50	11.30	11.56	12.98

END OF REPORT