

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: P925246

Luminaire Tested: DFN2DIP-PN4F0-110D100US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925246
REPORT IS A COMBINATION OF REPORTS P899732 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-110D100US950-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

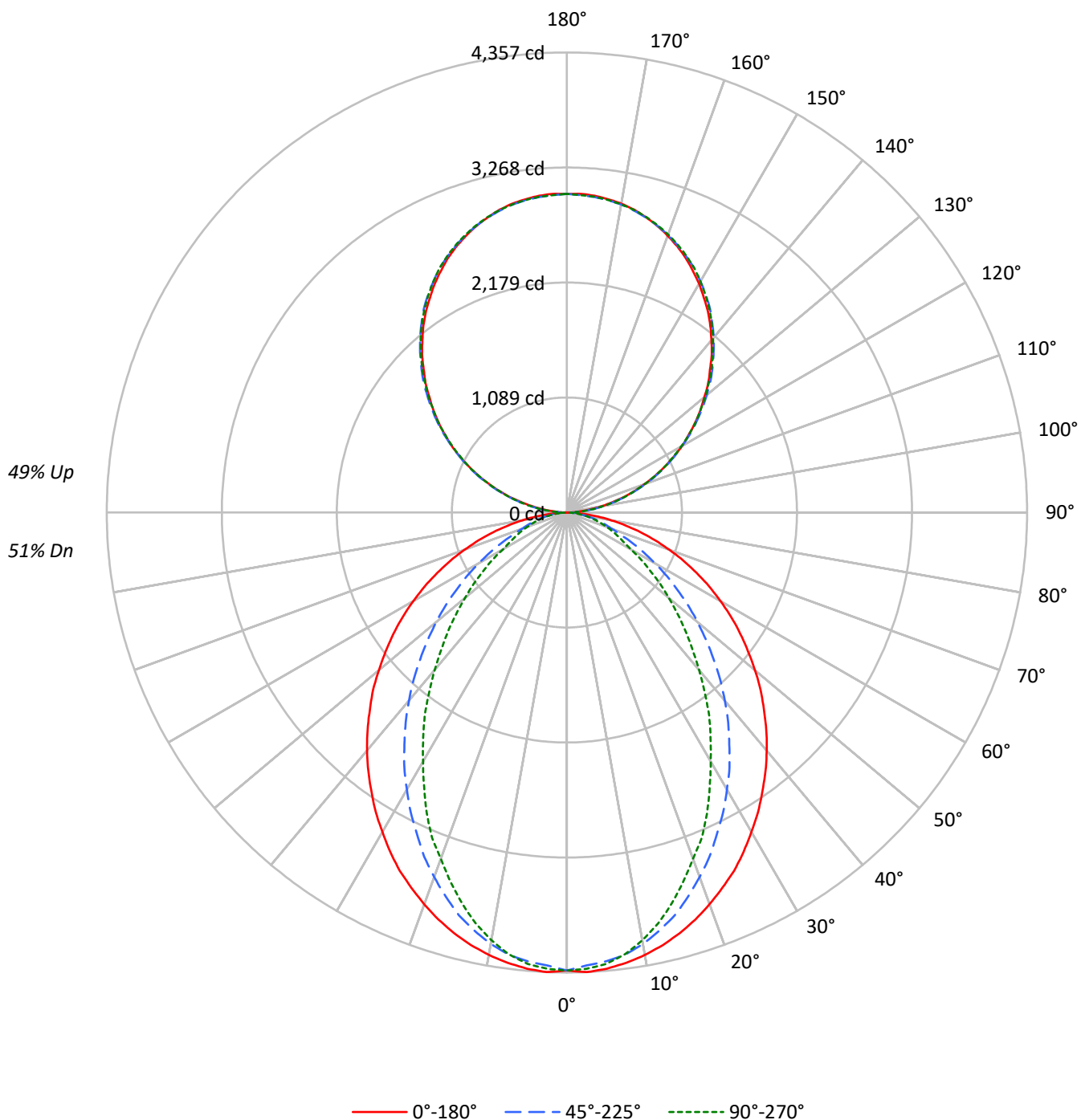
Lumens per Lamp: N/A
Luminaire Lumens: 17362.8 lumens
Efficiency: N/A
Efficacy: 91.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 189.2
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

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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	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57
1	99	94	91	87	91	87	84	81	74	72	70	63	61	59	52	50	49
2	90	83	77	72	83	77	72	68	66	62	59	56	53	50	46	44	42
3	83	73	66	61	76	68	62	57	59	54	50	50	46	43	41	39	37
4	76	65	58	52	70	61	54	49	52	47	43	44	41	37	37	34	32
5	70	58	51	45	64	55	48	42	47	42	38	40	36	33	34	31	28
6	64	53	45	39	59	49	42	37	43	37	33	36	32	29	31	28	25
7	60	48	40	34	55	45	38	33	39	33	29	33	29	26	28	25	23
8	55	43	36	31	51	41	34	29	36	30	26	31	26	23	26	23	20
9	52	40	32	27	48	37	31	26	33	27	24	28	24	21	24	21	18
10	48	37	29	25	45	34	28	24	30	25	21	26	22	19	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3166	3166	3166
5°	3171	3116	3136
10°	3140	3055	3035
15°	3096	2955	2877
20°	3039	2816	2684
25°	2981	2660	2498
30°	2902	2501	2261
35°	2825	2329	2053
40°	2747	2151	1814
45°	2655	1954	1598
50°	2561	1755	1387
55°	2463	1542	1184
60°	2349	1320	975
65°	2218	1093	878
70°	2059	882	796
75°	1860	779	725
80°	1572	654	631
85°	1095	439	478

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2655 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	406.5	2.3
10°-20°	1115.9	6.4
20°-30°	1566.7	9.0
30°-40°	1707.7	9.8
40°-50°	1569.6	9.0
50°-60°	1232.7	7.1
60°-70°	802.4	4.6
70°-80°	413.0	2.4
80°-90°	114.0	0.7
90°-100°	186.7	1.1
100°-110°	593.2	3.4
110°-120°	1015.2	5.8
120°-130°	1335.1	7.7
130°-140°	1498.6	8.6
140°-150°	1469.5	8.5
150°-160°	1232.7	7.1
160°-170°	817.5	4.7
170°-180°	285.7	1.6
0°-30°	3089.0	17.8
0°-40°	4796.8	27.6
0°-60°	7599.1	43.8
0°-90°	8928.5	51.4
90°-120°	1795.1	10.3
90°-150°	6098.3	35.1
90°-180°	8434.0	48.6
0°-180°	17362.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4337	4337	4337	4337	4337	
5°	4337	4318	4266	4302	4290	411
15°	4125	4082	3949	3874	3835	1162
25°	3744	3619	3360	3199	3140	1722
35°	3226	3026	2681	2434	2347	2019
45°	2638	2374	1963	1684	1590	2037
55°	2006	1700	1276	1040	966	1792
65°	1354	1036	683	550	538	1343
75°	722	447	314	286	283	764
85°	169	86	74	74	74	194
90°	3	33	89	84	86	17
95°	133	158	163	163	158	148
105°	548	555	560	565	565	578
115°	1019	1033	1029	1026	1019	1008
125°	1482	1504	1497	1489	1486	1324
135°	1916	1945	1950	1948	1940	1481
145°	2327	2345	2360	2362	2352	1454
155°	2661	2668	2676	2689	2680	1225
165°	2894	2892	2892	2910	2897	817
175°	3012	3004	2999	3017	3002	286
180°	3017	3017	3017	3017	3017	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4337.2	4337.2	4337.2	4337.2	4337.2
2.5°	4356.7	4337.2	4293.9	4333.4	4325.5
5°	4337.2	4317.6	4266.4	4301.8	4290.1
7.5°	4301.8	4278.4	4223.5	4238.9	4219.3
10°	4254.7	4227.2	4148.9	4136.8	4113.6
12.5°	4196.0	4160.6	4054.4	4031.0	3987.7
15°	4125.2	4081.9	3948.6	3874.1	3834.9
17.5°	4042.8	3979.9	3815.0	3728.7	3665.8
20°	3948.6	3869.9	3673.8	3575.9	3489.3
22.5°	3846.6	3756.2	3528.5	3395.2	3336.4
25°	3744.5	3618.8	3359.8	3199.0	3139.9
27.5°	3623.0	3489.3	3202.8	3018.3	2927.9
30°	3493.5	3344.0	3030.0	2830.0	2723.9
32.5°	3367.7	3186.9	2865.4	2629.8	2531.5
35°	3226.5	3026.2	2681.0	2433.7	2347.0
37.5°	3089.1	2873.0	2508.2	2237.0	2139.2
40°	2943.8	2708.5	2327.5	2048.8	1946.8
42.5°	2794.6	2543.6	2147.2	1856.5	1758.6
45°	2637.7	2374.5	1962.7	1683.6	1589.6
47.5°	2488.6	2210.0	1786.1	1507.0	1420.9
50°	2323.7	2045.1	1613.3	1342.2	1260.1
52.5°	2162.5	1868.1	1448.4	1189.4	1114.7
55°	2005.5	1699.5	1275.5	1040.2	965.7
57.5°	1844.8	1530.8	1122.7	902.9	839.9
60°	1679.9	1365.9	961.5	761.7	698.8
62.5°	1519.1	1205.2	824.2	635.9	604.6
65°	1354.2	1036.0	683.0	549.7	537.6
67.5°	1197.3	879.1	549.7	482.6	471.0
70°	1032.3	726.3	455.2	416.0	400.2
72.5°	875.3	584.7	380.6	349.4	341.4
75°	722.1	447.2	314.0	286.5	282.8
77.5°	569.3	317.8	247.4	231.5	223.6
80°	427.7	227.8	188.2	172.9	172.9
82.5°	298.1	153.2	129.6	121.6	121.6
85°	168.7	86.2	74.5	74.5	74.5
87.5°	62.9	31.2	31.2	27.5	27.5
90°	2.8	32.7	89.1	83.7	86.4
92.5°	56.4	76.4	79.2	81.9	81.9
95°	132.8	158.3	162.8	162.8	158.3
97.5°	221.0	244.7	254.7	254.7	254.7
100°	322.9	343.8	351.1	351.1	348.4
102.5°	430.3	445.7	455.7	458.4	455.7
105°	547.6	554.8	560.3	564.9	564.9
107.5°	664.0	675.0	675.0	676.8	664.0
110°	776.8	791.3	791.3	791.3	784.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	898.7	914.1	911.5	904.1	898.7
115°	1018.8	1033.3	1028.8	1026.0	1018.8
117.5°	1137.9	1158.0	1145.2	1137.9	1130.6
120°	1257.9	1278.0	1257.9	1257.9	1249.8
122.5°	1367.1	1392.6	1379.9	1372.6	1367.1
125°	1481.8	1504.5	1497.2	1489.0	1486.3
127.5°	1593.7	1621.8	1611.8	1600.9	1593.7
130°	1698.2	1730.9	1726.5	1720.9	1711.0
132.5°	1815.6	1841.0	1842.8	1830.2	1822.8
135°	1916.5	1944.7	1950.2	1947.5	1940.1
137.5°	2029.3	2052.1	2056.6	2054.8	2043.8
140°	2128.5	2151.2	2164.0	2164.0	2153.9
142.5°	2230.4	2253.1	2260.3	2263.1	2253.1
145°	2326.7	2344.9	2359.5	2362.2	2352.2
147.5°	2413.1	2435.9	2446.8	2451.4	2441.4
150°	2502.3	2517.8	2527.8	2535.9	2527.8
152.5°	2581.4	2596.9	2609.7	2619.7	2609.7
155°	2660.6	2667.9	2676.1	2688.8	2680.5
157.5°	2728.8	2734.3	2738.8	2757.0	2744.3
160°	2789.8	2795.2	2797.9	2813.3	2802.5
162.5°	2846.2	2846.2	2848.8	2866.1	2853.4
165°	2894.3	2891.6	2891.6	2909.8	2897.1
167.5°	2938.0	2929.8	2929.8	2948.1	2935.3
170°	2970.8	2963.5	2960.7	2979.0	2963.5
172.5°	2993.5	2986.2	2983.4	3001.7	2986.2
175°	3011.7	3004.4	2999.0	3017.1	3001.7
177.5°	3021.7	3014.4	3008.9	3024.4	3008.9
180°	3017.1	3017.1	3017.1	3017.1	3017.1

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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	11.29	12.13	12.24	13.09	14.35	7.25	8.10	8.21	9.06	10.31
	3H	12.97	13.72	13.93	14.70	15.97	8.44	9.20	9.41	10.17	11.45
	4H	13.58	14.29	14.56	15.27	16.55	8.90	9.61	9.87	10.58	11.87
	6H	14.01	14.66	14.99	15.64	16.94	9.22	9.87	10.21	10.85	12.15
	8H	14.13	14.76	15.13	15.75	17.05	9.31	9.93	10.30	10.93	12.22
	12H	14.20	14.79	15.20	15.78	17.10	9.35	9.95	10.35	10.94	12.26
4H	2H	11.31	12.02	12.29	13.00	14.28	7.85	8.56	8.84	9.54	10.83
	3H	13.14	13.73	14.13	14.74	16.04	9.20	9.80	10.20	10.80	12.10
	4H	13.84	14.38	14.84	15.38	16.70	9.75	10.29	10.75	11.29	12.62
	6H	14.36	14.82	15.37	15.84	17.16	10.17	10.64	11.19	11.66	12.98
	8H	14.53	14.97	15.55	15.98	17.32	10.30	10.74	11.32	11.75	13.09
	12H	14.63	15.02	15.66	16.05	17.39	10.37	10.76	11.40	11.79	13.13
8H	4H	13.81	14.24	14.82	15.25	16.59	10.04	10.47	11.05	11.49	12.82
	6H	14.38	14.73	15.41	15.79	17.12	10.56	10.91	11.59	11.97	13.30
	8H	14.59	14.91	15.64	15.95	17.30	10.75	11.06	11.79	12.11	13.46
	12H	14.74	15.01	15.78	16.05	17.44	10.87	11.15	11.92	12.18	13.58
12H	4H	13.76	14.15	14.79	15.18	16.52	10.04	10.43	11.07	11.46	12.80
	6H	14.35	14.67	15.40	15.71	17.06	10.61	10.92	11.65	11.97	13.32
	8H	14.57	14.85	15.62	15.89	17.28	10.82	11.10	11.87	12.13	13.53

END OF REPORT