

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: P907406

Luminaire Tested: DFN2DIP-TR4F0-070D110US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907406
REPORT IS A COMBINATION OF REPORTS P900501 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D110US835-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

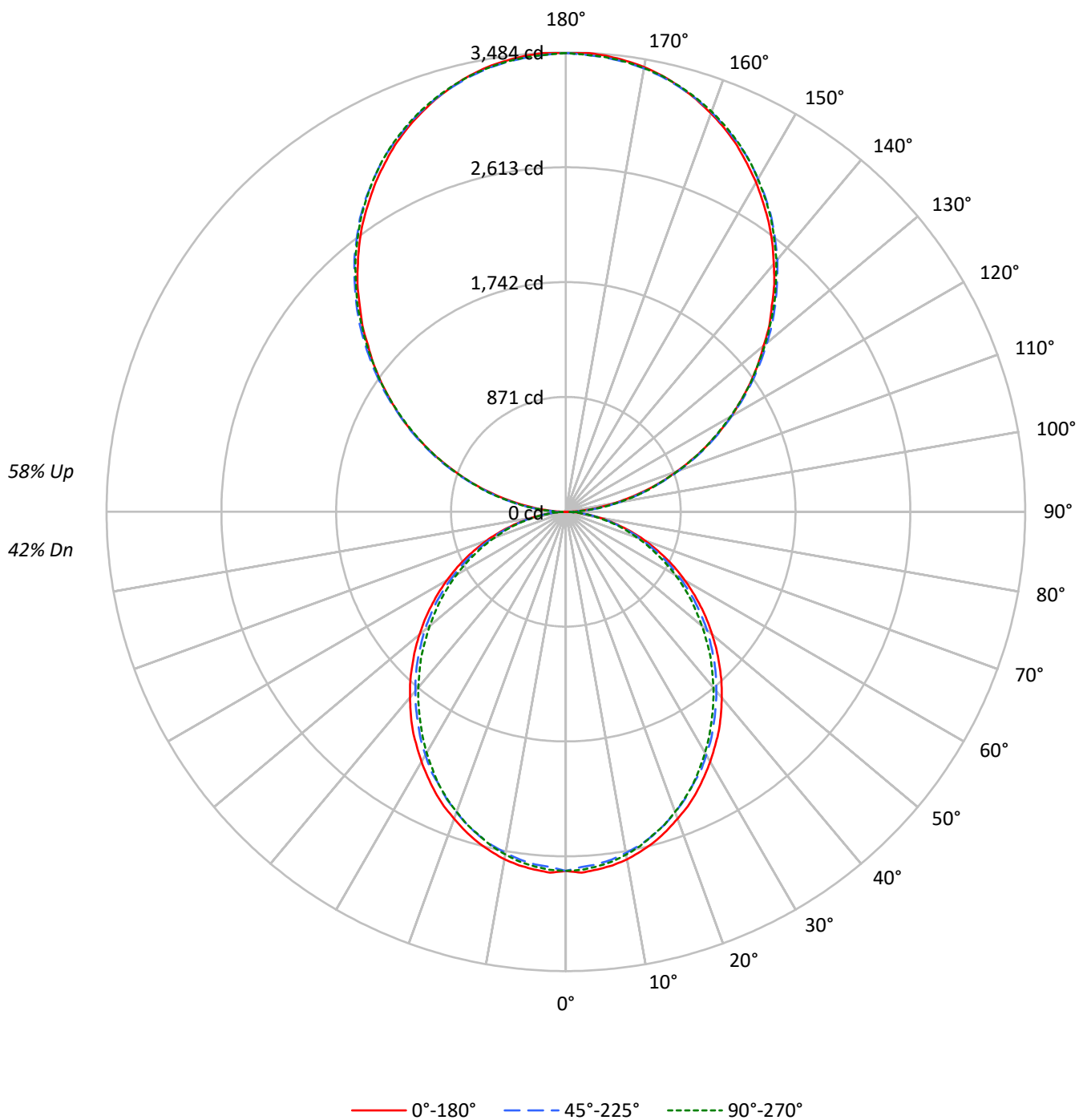
Lumens per Lamp: N/A
Luminaire Lumens: 16665.0 lumens
Efficiency: N/A
Efficacy: 110.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 150.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
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	105	105	105	105	96	96	96	96	79	79	79	63	63	63	48	48	48
1	96	92	88	84	87	84	80	78	69	67	65	55	54	52	43	42	41
2	87	80	74	69	79	73	68	64	60	57	53	49	46	44	38	36	34
3	80	70	63	57	72	64	58	53	53	49	45	43	40	37	33	31	29
4	73	62	54	48	66	57	50	45	47	42	38	38	35	32	30	27	25
5	67	55	47	41	61	51	44	39	42	37	33	34	30	27	27	24	22
6	61	50	42	36	56	46	39	33	38	33	29	31	27	24	24	22	19
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17
8	53	41	33	28	48	37	31	26	31	26	22	26	22	19	20	18	15
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2164	2164	2164
5°	2167	2134	2148
10°	2150	2105	2119
15°	2118	2070	2073
20°	2075	2022	2027
25°	2033	1964	1973
30°	1980	1911	1904
35°	1929	1848	1832
40°	1867	1784	1763
45°	1805	1720	1693
50°	1738	1653	1611
55°	1667	1575	1536
60°	1587	1483	1450
65°	1499	1387	1348
70°	1388	1271	1239
75°	1234	1131	1138
80°	1048	954	946
85°	759	647	627

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2711 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	256.4	1.5
10°-20°	721.3	4.3
20°-30°	1060.0	6.4
30°-40°	1231.1	7.4
40°-50°	1229.6	7.4
50°-60°	1072.2	6.4
60°-70°	792.6	4.8
70°-80°	448.4	2.7
80°-90°	128.3	0.8
90°-100°	215.3	1.3
100°-110°	684.0	4.1
110°-120°	1170.5	7.0
120°-130°	1539.4	9.2
130°-140°	1727.9	10.4
140°-150°	1694.4	10.2
150°-160°	1421.4	8.5
160°-170°	942.6	5.7
170°-180°	329.5	2.0
0°-30°	2037.7	12.2
0°-40°	3268.8	19.6
0°-60°	5570.6	33.4
0°-90°	6939.9	41.6
90°-120°	2069.8	12.4
90°-150°	7031.6	42.2
90°-180°	9725.0	58.4
0°-180°	16665.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2724	2724	2724	2724	2724	
5°	2724	2714	2685	2705	2700	259
15°	2593	2577	2543	2554	2541	730
25°	2347	2326	2281	2286	2281	1080
35°	2025	1998	1956	1941	1928	1264
45°	1648	1629	1590	1561	1550	1271
55°	1247	1231	1200	1168	1155	1115
65°	841	825	799	775	762	831
75°	440	435	422	406	411	470
85°	107	105	102	94	92	120
90°	3	38	103	96	100	16
95°	153	182	188	188	182	170
105°	631	640	646	651	651	666
115°	1175	1191	1186	1183	1175	1162
125°	1708	1735	1726	1717	1714	1527
135°	2210	2242	2249	2246	2237	1708
145°	2683	2704	2721	2724	2712	1676
155°	3068	3076	3086	3100	3091	1412
165°	3337	3334	3334	3355	3340	941
175°	3473	3464	3458	3479	3461	330
180°	3479	3479	3479	3479	3479	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2723.7	2723.7	2723.7	2723.7	2723.7
2.5°	2739.6	2726.5	2697.6	2723.7	2718.7
5°	2723.7	2713.5	2684.6	2705.4	2700.4
7.5°	2705.4	2689.8	2660.9	2682.1	2676.8
10°	2676.8	2658.4	2627.0	2647.9	2640.1
12.5°	2637.3	2621.8	2590.4	2603.4	2598.1
15°	2592.9	2577.3	2543.1	2553.7	2540.6
17.5°	2537.8	2522.3	2488.1	2501.2	2488.1
20°	2477.5	2462.0	2425.3	2433.1	2422.8
22.5°	2417.5	2393.9	2359.7	2359.7	2354.4
25°	2346.7	2325.8	2281.4	2286.4	2281.4
27.5°	2268.0	2249.7	2215.8	2208.0	2194.9
30°	2189.7	2168.5	2129.4	2121.6	2111.0
32.5°	2105.7	2090.2	2048.2	2032.4	2021.8
35°	2024.6	1998.5	1956.5	1940.7	1927.6
37.5°	1932.9	1909.3	1867.3	1849.0	1835.9
40°	1838.7	1817.6	1775.6	1752.3	1741.7
42.5°	1747.0	1725.9	1684.2	1657.8	1642.2
45°	1647.5	1629.2	1589.7	1561.1	1550.5
47.5°	1550.5	1532.2	1490.2	1461.3	1445.8
50°	1448.3	1435.2	1398.5	1361.9	1348.8
52.5°	1348.8	1330.5	1296.6	1267.7	1249.3
55°	1246.8	1231.0	1199.6	1168.2	1155.1
57.5°	1144.6	1131.5	1097.3	1065.9	1055.4
60°	1042.3	1032.0	995.4	966.5	958.7
62.5°	942.8	924.5	898.4	872.3	861.7
65°	840.9	825.0	798.9	775.3	762.2
67.5°	736.1	722.8	699.4	681.1	670.5
70°	639.1	628.6	604.9	586.6	576.3
72.5°	539.6	529.1	516.0	497.7	489.9
75°	439.9	434.9	421.5	406.0	411.3
77.5°	351.0	340.4	335.1	327.3	319.6
80°	262.0	259.3	254.0	246.2	240.9
82.5°	178.1	178.1	175.6	165.1	165.1
85°	107.3	104.8	102.3	94.2	91.7
87.5°	47.2	42.0	36.7	28.9	26.1
90°	3.1	37.8	102.8	96.5	99.6
92.5°	65.0	88.1	91.2	94.4	94.4
95°	153.1	182.5	187.7	187.7	182.5
97.5°	254.9	282.1	293.7	293.7	293.7
100°	372.3	396.4	404.8	404.8	401.7
102.5°	496.1	513.9	525.5	528.6	525.5
105°	631.4	639.8	646.1	651.3	651.3
107.5°	765.6	778.2	778.2	780.3	765.6
110°	895.7	912.5	912.5	912.5	904.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1036.2	1054.0	1050.9	1042.5	1036.2
115°	1174.7	1191.4	1186.2	1183.1	1174.7
117.5°	1312.1	1335.1	1320.4	1312.1	1303.7
120°	1450.5	1473.6	1450.5	1450.5	1441.1
122.5°	1576.4	1605.7	1591.0	1582.6	1576.4
125°	1708.5	1734.7	1726.3	1716.9	1713.7
127.5°	1837.5	1870.0	1858.5	1845.9	1837.5
130°	1958.1	1995.9	1990.6	1984.3	1972.8
132.5°	2093.4	2122.8	2124.9	2110.2	2101.8
135°	2209.8	2242.3	2248.6	2245.5	2237.1
137.5°	2339.9	2366.1	2371.3	2369.2	2356.7
140°	2454.2	2480.4	2495.1	2495.1	2483.6
142.5°	2571.7	2597.9	2606.3	2609.4	2597.9
145°	2682.8	2703.8	2720.6	2723.7	2712.2
147.5°	2782.5	2808.7	2821.3	2826.5	2815.0
150°	2885.3	2903.1	2914.6	2924.1	2914.6
152.5°	2976.5	2994.3	3009.0	3020.6	3009.0
155°	3067.8	3076.1	3085.6	3100.3	3090.8
157.5°	3146.4	3152.7	3157.9	3178.9	3164.2
160°	3216.7	3223.0	3226.1	3244.0	3231.4
162.5°	3281.7	3281.7	3284.9	3304.8	3290.1
165°	3337.3	3334.1	3334.1	3355.1	3340.4
167.5°	3387.6	3378.2	3378.2	3399.2	3384.5
170°	3425.4	3417.0	3413.9	3434.8	3417.0
172.5°	3451.6	3443.2	3440.1	3461.1	3443.2
175°	3472.6	3464.2	3457.9	3478.9	3461.1
177.5°	3484.1	3475.7	3469.4	3487.3	3469.4
180°	3478.9	3478.9	3478.9	3478.9	3478.9

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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	9.12	9.91	10.15	10.95	12.33	8.69	9.48	9.72	10.51	11.90
	3H	10.78	11.49	11.81	12.53	13.93	10.30	11.01	11.34	12.05	13.46
	4H	11.36	12.03	12.41	13.08	14.49	10.89	11.56	11.94	12.60	14.02
	6H	11.76	12.38	12.81	13.42	14.85	11.28	11.90	12.34	12.95	14.37
	8H	11.86	12.45	12.92	13.51	14.93	11.38	11.97	12.45	13.04	14.46
	12H	11.90	12.46	12.97	13.52	14.97	11.42	11.98	12.49	13.04	14.49
4H	2H	9.57	10.25	10.63	11.29	12.70	9.23	9.90	10.28	10.95	12.36
	3H	11.43	11.99	12.50	13.07	14.49	11.04	11.60	12.10	12.67	14.10
	4H	12.15	12.66	13.21	13.72	15.17	11.74	12.25	12.81	13.32	14.76
	6H	12.66	13.10	13.73	14.18	15.63	12.25	12.69	13.32	13.78	15.22
	8H	12.80	13.22	13.88	14.30	15.75	12.39	12.80	13.47	13.88	15.34
	12H	12.87	13.25	13.97	14.34	15.80	12.45	12.83	13.55	13.92	15.38
8H	4H	12.34	12.75	13.41	13.83	15.29	11.98	12.39	13.05	13.47	14.93
	6H	12.96	13.31	14.06	14.43	15.88	12.60	12.94	13.70	14.06	15.52
	8H	13.18	13.48	14.29	14.59	16.06	12.82	13.11	13.92	14.22	15.69
	12H	13.31	13.58	14.42	14.68	16.19	12.93	13.19	14.04	14.29	15.80
12H	4H	12.32	12.69	13.41	13.78	15.25	11.97	12.34	13.06	13.43	14.90
	6H	12.99	13.29	14.10	14.40	15.87	12.64	12.94	13.75	14.05	15.52
	8H	13.23	13.50	14.34	14.59	16.11	12.88	13.14	13.99	14.24	15.75