

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: P907408

Luminaire Tested: DFN2DIP-TR4F0-070D110US835-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907408
REPORT IS A COMBINATION OF REPORTS P900502 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D110US835-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

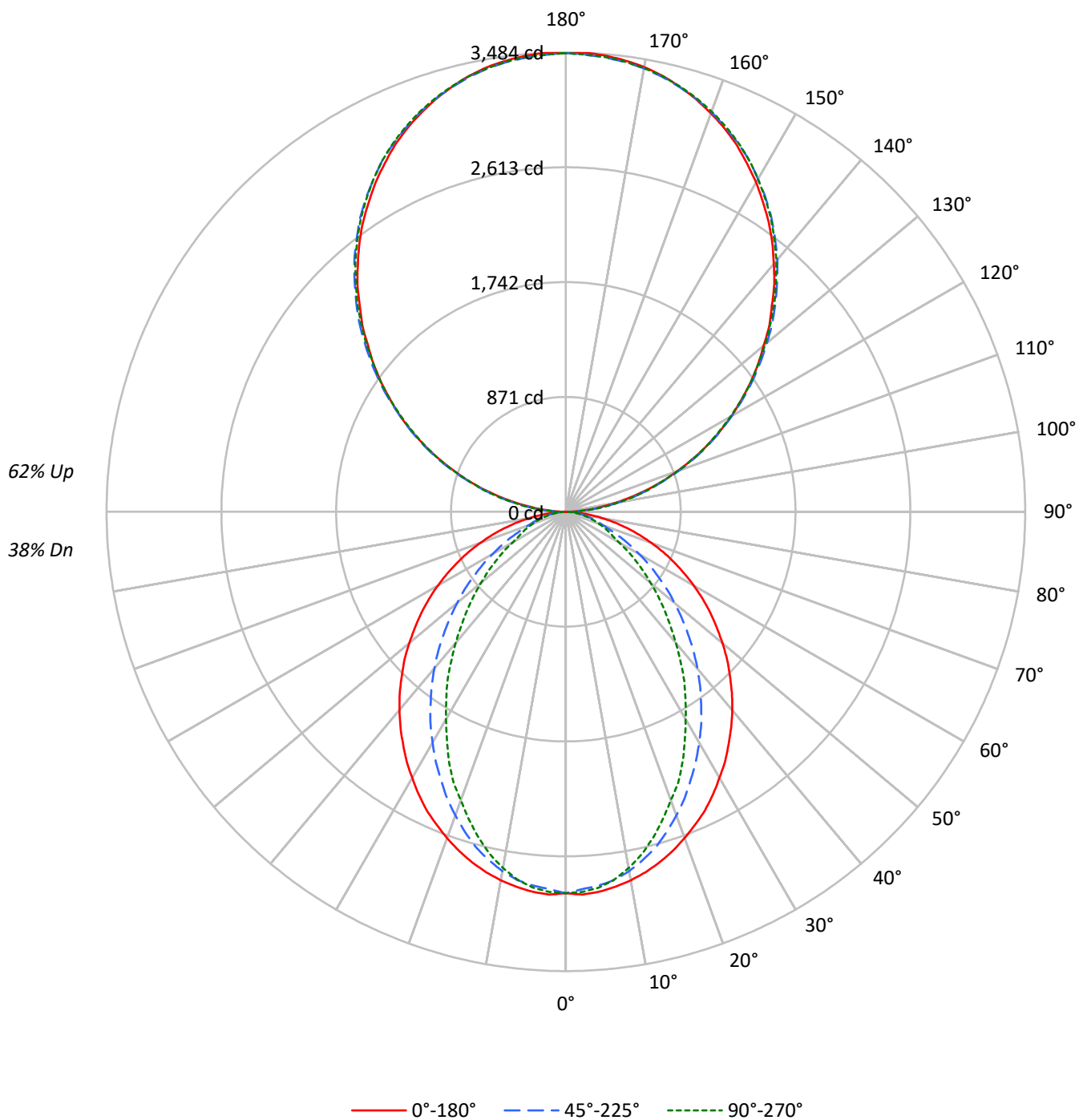
Lumens per Lamp: N/A
Luminaire Lumens: 15685.0 lumens
Efficiency: N/A
Efficacy: 104.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

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	50	30	10
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°	2298	2298	2298
5°	2302	2262	2276
10°	2279	2217	2202
15°	2248	2144	2088
20°	2206	2043	1947
25°	2164	1930	1811
30°	2107	1814	1639
35°	2051	1689	1488
40°	1994	1560	1315
45°	1928	1416	1157
50°	1860	1272	1004
55°	1788	1117	857
60°	1706	955	705
65°	1611	791	634
70°	1496	638	574
75°	1351	562	522
80°	1142	472	453
85°	796	315	340

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°	271.1	1.7
10°-20°	744.3	4.7
20°-30°	1045.0	6.7
30°-40°	1139.2	7.3
40°-50°	1047.0	6.7
50°-60°	822.3	5.2
60°-70°	535.2	3.4
70°-80°	275.5	1.8
80°-90°	80.2	0.5
90°-100°	215.3	1.4
100°-110°	684.0	4.4
110°-120°	1170.5	7.5
120°-130°	1539.4	9.8
130°-140°	1727.9	11.0
140°-150°	1694.4	10.8
150°-160°	1421.4	9.1
160°-170°	942.6	6.0
170°-180°	329.5	2.1
0°-30°	2060.5	13.1
0°-40°	3199.7	20.4
0°-60°	5068.9	32.3
0°-90°	5959.8	38.0
90°-120°	2069.8	13.2
90°-150°	7031.6	44.8
90°-180°	9725.0	62.0
0°-180°	15685.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2893	2893	2893	2893	2893	
5°	2893	2880	2846	2870	2862	274
15°	2752	2723	2634	2584	2558	775
25°	2498	2414	2241	2134	2094	1149
35°	2152	2019	1788	1623	1566	1347
45°	1760	1584	1309	1123	1060	1359
55°	1338	1134	851	694	644	1195
65°	903	691	456	367	359	896
75°	482	298	209	191	189	509
85°	112	58	50	50	50	129
90°	3	38	103	96	100	15
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°	2893.1	2893.1	2893.1	2893.1	2893.1
2.5°	2906.1	2893.1	2864.2	2890.6	2885.3
5°	2893.1	2880.0	2845.9	2869.5	2861.7
7.5°	2869.5	2853.9	2817.3	2827.5	2814.5
10°	2838.1	2819.8	2767.5	2759.5	2743.9
12.5°	2798.9	2775.3	2704.5	2688.9	2660.0
15°	2751.7	2722.8	2633.9	2584.2	2558.1
17.5°	2696.7	2654.8	2544.8	2487.2	2445.3
20°	2633.9	2581.4	2450.6	2385.3	2327.5
22.5°	2565.9	2505.6	2353.6	2264.7	2225.6
25°	2497.8	2413.9	2241.1	2133.9	2094.5
27.5°	2416.7	2327.5	2136.4	2013.4	1953.1
30°	2330.3	2230.6	2021.1	1887.8	1817.0
32.5°	2246.4	2125.9	1911.4	1754.2	1688.6
35°	2152.2	2018.6	1788.4	1623.4	1565.6
37.5°	2060.6	1916.4	1673.1	1492.2	1427.0
40°	1963.6	1806.7	1552.5	1366.7	1298.6
42.5°	1864.2	1696.7	1432.2	1238.3	1173.1
45°	1759.5	1583.9	1309.2	1123.1	1060.3
47.5°	1660.0	1474.2	1191.4	1005.3	947.8
50°	1550.0	1364.2	1076.1	895.3	840.6
52.5°	1442.5	1246.1	966.1	793.3	743.6
55°	1337.8	1133.6	850.8	693.9	644.2
57.5°	1230.6	1021.1	748.9	602.2	560.3
60°	1120.6	911.1	641.4	508.1	466.1
62.5°	1013.3	803.9	549.7	424.2	403.3
65°	903.3	691.1	455.6	366.7	358.6
67.5°	798.6	586.4	366.7	321.9	314.2
70°	688.6	484.4	303.6	277.5	266.9
72.5°	583.9	390.0	253.9	233.1	227.8
75°	481.7	298.3	209.4	191.1	188.6
77.5°	379.7	211.9	165.0	154.4	149.2
80°	285.3	151.9	125.6	115.3	115.3
82.5°	198.9	102.2	86.4	81.1	81.1
85°	112.5	57.5	49.7	49.7	49.7
87.5°	41.9	20.8	20.8	18.3	18.3
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	8.80	9.54	9.86	10.60	12.03	4.77	5.51	5.83	6.57	8.00
	3H	10.47	11.13	11.54	12.20	13.65	5.95	6.61	7.02	7.68	9.14
	4H	11.07	11.70	12.15	12.77	14.23	6.40	7.03	7.48	8.10	9.56
	6H	11.49	12.06	12.58	13.14	14.61	6.72	7.29	7.81	8.37	9.84
	8H	11.61	12.16	12.70	13.25	14.72	6.80	7.35	7.90	8.44	9.91
	12H	11.67	12.19	12.77	13.27	14.76	6.85	7.37	7.94	8.45	9.94
4H	2H	8.80	9.43	9.89	10.50	11.96	5.35	5.98	6.44	7.05	8.51
	3H	10.62	11.15	11.72	12.24	13.72	6.70	7.22	7.79	8.32	9.79
	4H	11.31	11.79	12.41	12.88	14.37	7.24	7.72	8.34	8.81	10.30
	6H	11.82	12.23	12.93	13.34	14.83	7.66	8.07	8.76	9.18	10.66
	8H	12.00	12.38	13.10	13.48	14.98	7.78	8.17	8.89	9.27	10.77
	12H	12.09	12.43	13.21	13.55	15.06	7.85	8.19	8.97	9.31	10.82
8H	4H	11.27	11.66	12.38	12.76	14.26	7.52	7.90	8.62	9.00	10.50
	6H	11.84	12.15	12.96	13.30	14.80	8.03	8.35	9.16	9.49	10.99
	8H	12.05	12.33	13.19	13.45	14.97	8.22	8.50	9.36	9.62	11.14
	12H	12.19	12.43	13.32	13.55	15.11	8.34	8.58	9.48	9.70	11.26
12H	4H	11.22	11.57	12.34	12.68	14.19	7.52	7.86	8.64	8.98	10.49
	6H	11.81	12.09	12.95	13.21	14.73	8.08	8.36	9.21	9.48	11.00
	8H	12.03	12.27	13.17	13.39	14.95	8.29	8.53	9.43	9.65	11.21