

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: P907405

Luminaire Tested: DFN2DIP-TR4F0-070D100US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907405
REPORT IS A COMBINATION OF REPORTS P902004 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D100US835-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

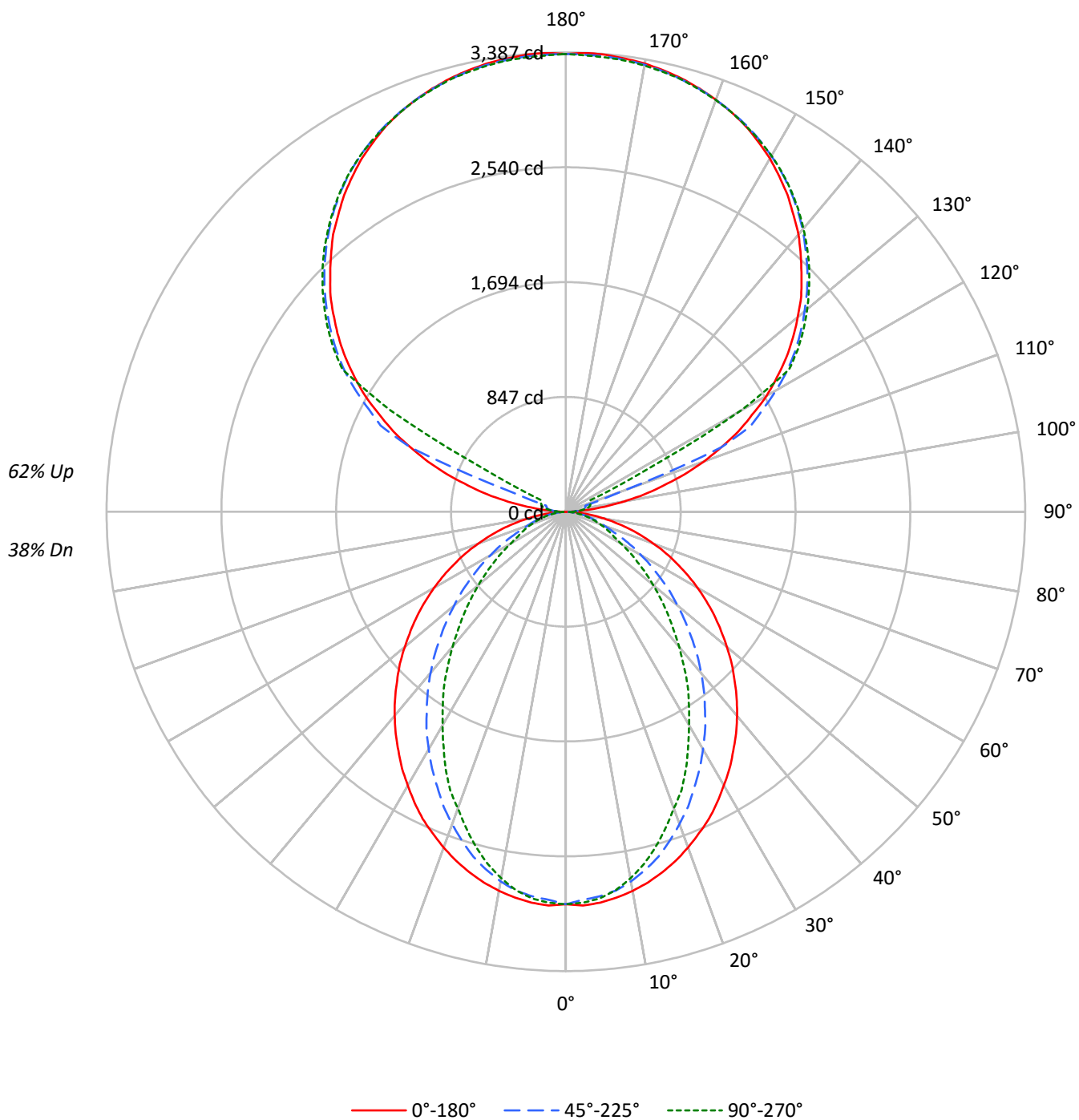
Lumens per Lamp: N/A
Luminaire Lumens: 15850.0 lumens
Efficiency: N/A
Efficacy: 111.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 141.9
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					0
RW	70	50	30	10	70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																				
0	104	104	104	104	95	95	95	95		76	76	76		60	60	60		45	45	45
1	95	91	88	84	86	83	80	77		67	65	63		53	52	51		40	39	38
2	87	80	74	69	79	73	68	64		60	56	53		47	45	43		36	34	33
3	80	71	64	58	72	64	58	54		53	48	45		42	39	37		32	30	28
4	73	63	55	49	66	57	51	46		47	42	39		38	34	32		29	27	25
5	67	56	48	42	61	51	44	39		42	37	33		34	30	28		26	24	22
6	62	50	43	37	56	46	39	34		38	33	29		31	27	24		24	21	19
7	57	45	38	32	52	42	35	30		35	30	26		28	24	22		22	19	17
8	53	41	34	29	48	38	31	27		32	27	23		26	22	19		20	18	16
9	49	38	30	26	45	35	28	24		29	24	21		24	20	17		19	16	14
10	46	35	28	23	42	32	26	21		27	22	19		22	18	16		17	15	13

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: 0°

Vertical Angle: 45°

Luminance: 1928 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	6.6
30°-40°	1139.2	7.2
40°-50°	1047.0	6.6
50°-60°	822.3	5.2
60°-70°	535.2	3.4
70°-80°	275.5	1.7
80°-90°	76.3	0.5
90°-100°	111.3	0.7
100°-110°	414.9	2.6
110°-120°	1100.3	6.9
120°-130°	1824.9	11.5
130°-140°	1938.4	12.2
140°-150°	1801.5	11.4
150°-160°	1448.4	9.1
160°-170°	933.3	5.9
170°-180°	321.2	2.0
0°-30°	2060.5	13.0
0°-40°	3199.7	20.2
0°-60°	5068.9	32.0
0°-90°	5955.9	37.6
90°-120°	1626.4	10.3
90°-150°	7191.2	45.4
90°-180°	9894.0	62.4
0°-180°	15850.0	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°	2	29	49	61	66	15
95°	159	78	95	108	105	188
105°	742	816	149	176	186	793
115°	1404	1446	1507	376	200	1382
125°	1985	2017	2064	2081	2088	1771
135°	2457	2496	2518	2542	2537	1898
145°	2850	2847	2889	2906	2894	1782
155°	3138	3116	3146	3160	3141	1446
165°	3306	3292	3299	3316	3299	934
175°	3382	3365	3370	3387	3363	322
180°	3375	3375	3375	3375	3375	

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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°	2.3	29.3	48.7	61.2	65.8
92.5°	61.2	51.3	58.6	63.5	65.8
95°	158.6	78.0	95.1	107.6	105.0
97.5°	285.6	85.5	124.4	131.9	134.3
100°	432.4	97.7	139.2	158.6	163.6
102.5°	593.3	588.7	144.1	170.8	178.3
105°	742.4	815.7	149.1	175.7	185.6
107.5°	915.8	976.7	154.0	180.7	190.5
110°	1081.9	1133.0	427.4	183.3	192.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1238.2	1282.0	1240.6	187.9	195.5
115°	1404.1	1445.6	1506.8	376.1	200.4
117.5°	1548.2	1597.0	1638.7	1289.3	649.6
120°	1709.5	1746.0	1790.1	1819.4	1489.7
122.5°	1846.1	1885.2	1934.2	1948.7	1951.3
125°	1985.3	2017.2	2063.6	2080.7	2087.9
127.5°	2112.3	2146.5	2183.3	2207.7	2210.0
130°	2232.0	2271.2	2297.9	2324.8	2322.5
132.5°	2354.1	2386.0	2412.7	2434.7	2432.4
135°	2456.8	2495.9	2517.7	2542.3	2537.4
137.5°	2564.1	2593.4	2618.0	2642.4	2635.1
140°	2669.0	2688.8	2715.4	2737.5	2725.3
142.5°	2757.2	2774.3	2805.9	2825.3	2813.2
145°	2850.0	2847.4	2888.9	2906.0	2893.8
147.5°	2930.3	2923.1	2964.5	2976.7	2967.2
150°	3008.6	2991.5	3030.7	3045.2	3033.0
152.5°	3074.4	3055.0	3091.6	3106.3	3089.2
155°	3138.0	3116.2	3145.5	3160.0	3140.6
157.5°	3189.3	3169.9	3191.9	3209.0	3189.3
160°	3233.4	3218.6	3233.4	3247.9	3230.8
162.5°	3272.2	3257.7	3269.9	3287.0	3265.0
165°	3306.4	3291.9	3299.2	3316.3	3299.2
167.5°	3333.4	3318.6	3326.2	3343.3	3321.2
170°	3355.4	3340.7	3345.6	3362.7	3340.7
172.5°	3369.9	3355.4	3360.4	3377.5	3355.4
175°	3382.1	3365.0	3369.9	3387.1	3362.7
177.5°	3387.1	3369.9	3372.6	3389.7	3367.6
180°	3374.9	3374.9	3374.9	3374.9	3374.9

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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	8.75	9.49	9.81	10.55	11.99	4.72	5.46	5.79	6.52	7.96
	3H	10.42	11.08	11.49	12.15	13.61	5.91	6.57	6.98	7.64	9.10
	4H	11.02	11.65	12.11	12.72	14.19	6.35	6.98	7.44	8.05	9.52
	6H	11.44	12.02	12.53	13.09	14.57	6.67	7.25	7.76	8.32	9.80
	8H	11.56	12.11	12.66	13.20	14.67	6.76	7.31	7.86	8.40	9.87
	12H	11.62	12.14	12.72	13.23	14.72	6.80	7.32	7.90	8.40	9.90
4H	2H	8.76	9.38	9.85	10.45	11.92	5.31	5.93	6.40	7.01	8.47
	3H	10.58	11.10	11.67	12.20	13.68	6.65	7.17	7.75	8.27	9.75
	4H	11.27	11.74	12.37	12.83	14.33	7.20	7.67	8.30	8.76	10.26
	6H	11.78	12.18	12.89	13.30	14.79	7.61	8.02	8.72	9.13	10.62
	8H	11.95	12.33	13.06	13.44	14.94	7.74	8.12	8.85	9.22	10.73
	12H	12.04	12.39	13.17	13.50	15.02	7.80	8.14	8.93	9.26	10.77
8H	4H	11.23	11.61	12.34	12.71	14.22	7.47	7.85	8.58	8.95	10.46
	6H	11.79	12.10	12.92	13.25	14.76	7.98	8.30	9.12	9.45	10.95
	8H	12.01	12.28	13.14	13.41	14.93	8.18	8.45	9.31	9.58	11.10
	12H	12.14	12.38	13.28	13.51	15.07	8.29	8.53	9.43	9.66	11.22
12H	4H	11.18	11.52	12.30	12.64	14.15	7.47	7.81	8.60	8.93	10.44
	6H	11.77	12.04	12.90	13.17	14.69	8.03	8.31	9.17	9.44	10.96
	8H	11.98	12.22	13.12	13.35	14.91	8.24	8.48	9.38	9.61	11.17