

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: P926504

Luminaire Tested: DFN2DIP-TR4F0-070D110US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926504
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-TR4F0-070D110US950-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

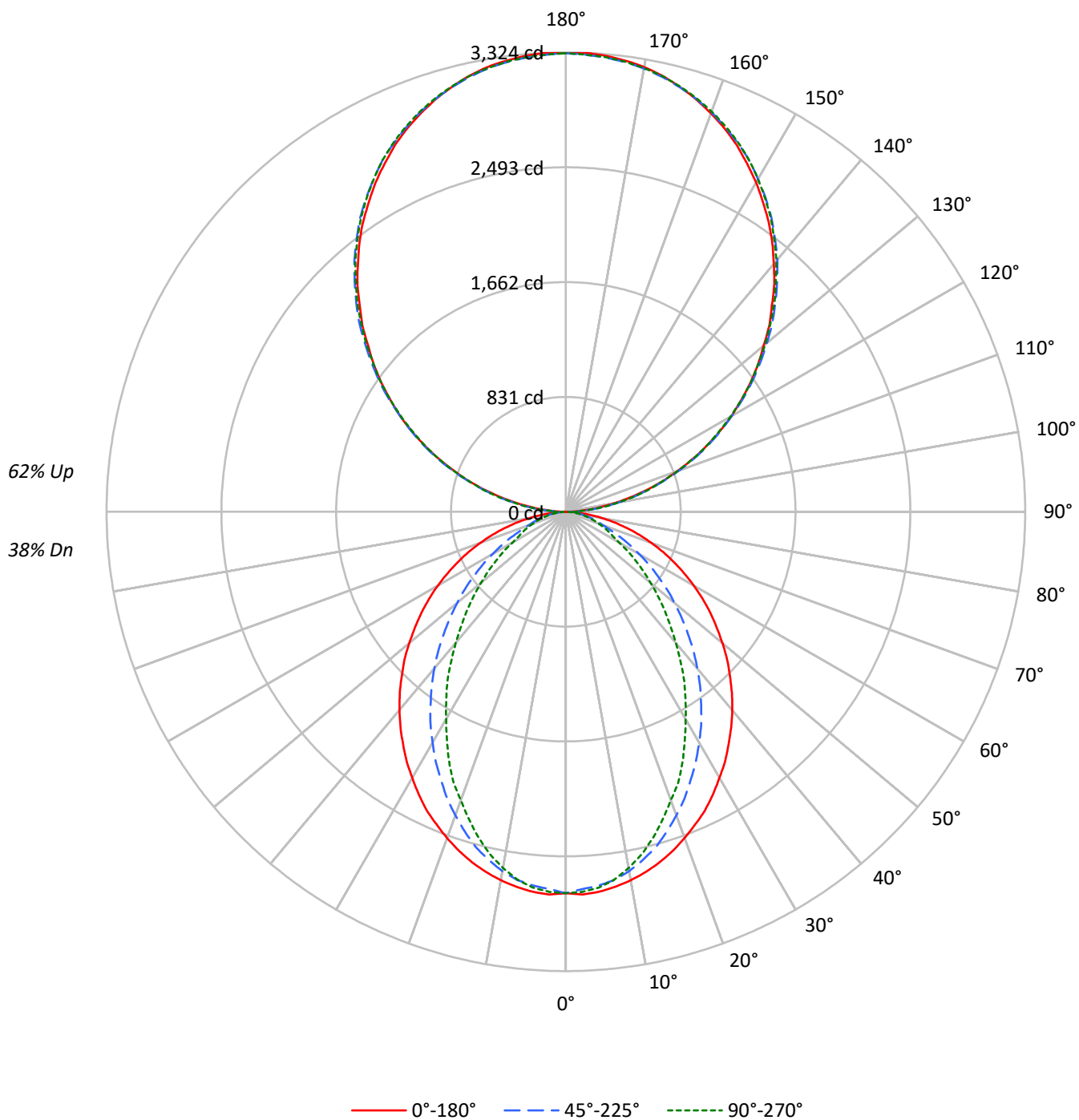
Lumens per Lamp: N/A
Luminaire Lumens: 14963.5 lumens
Efficiency: N/A
Efficacy: 99.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

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
RCR																	
0	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45
1	95	91	88	84	87	83	80	77	68	66	64	53	52	51	40	40	39
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	34	33
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	32	30	29
4	73	63	55	49	66	57	51	46	47	42	39	38	34	32	29	27	25
5	67	56	48	43	61	51	45	40	42	37	34	34	30	28	26	24	22
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	21	20
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	22	27	22	19	22	18	16	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2193	2193	2193
5°	2196	2158	2172
10°	2174	2115	2101
15°	2145	2045	1992
20°	2105	1949	1857
25°	2064	1841	1728
30°	2010	1730	1564
35°	1957	1611	1420
40°	1902	1488	1254
45°	1839	1351	1104
50°	1774	1213	958
55°	1706	1066	817
60°	1627	911	673
65°	1537	755	605
70°	1427	608	547
75°	1289	536	498
80°	1089	450	432
85°	759	300	324

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2586 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.7	1.7
10°-20°	710.1	4.7
20°-30°	997.0	6.7
30°-40°	1086.8	7.3
40°-50°	998.8	6.7
50°-60°	784.4	5.2
60°-70°	510.6	3.4
70°-80°	262.8	1.8
80°-90°	76.5	0.5
90°-100°	205.4	1.4
100°-110°	652.5	4.4
110°-120°	1116.7	7.5
120°-130°	1468.6	9.8
130°-140°	1648.4	11.0
140°-150°	1616.5	10.8
150°-160°	1356.0	9.1
160°-170°	899.3	6.0
170°-180°	314.3	2.1
0°-30°	1965.7	13.1
0°-40°	3052.5	20.4
0°-60°	4835.8	32.3
0°-90°	5685.7	38.0
90°-120°	1974.6	13.2
90°-150°	6708.2	44.8
90°-180°	9278.0	62.0
0°-180°	14963.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2760	2760	2760	2760	2760	
5°	2760	2748	2715	2738	2730	262
15°	2625	2598	2513	2465	2440	740
25°	2383	2303	2138	2036	1998	1096
35°	2053	1926	1706	1549	1494	1285
45°	1679	1511	1249	1071	1012	1296
55°	1276	1082	812	662	615	1140
65°	862	659	435	350	342	854
75°	460	285	200	182	180	486
85°	107	55	47	47	47	123
90°	3	36	98	92	95	15
95°	146	174	179	179	174	163
105°	602	610	616	621	621	636
115°	1121	1137	1132	1129	1121	1108
125°	1630	1655	1647	1638	1635	1457
135°	2108	2139	2145	2142	2134	1630
145°	2559	2579	2596	2598	2587	1599
155°	2927	2935	2944	2958	2949	1347
165°	3184	3181	3181	3201	3187	898
175°	3313	3305	3299	3319	3302	315
180°	3319	3319	3319	3319	3319	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2760.0	2760.0	2760.0	2760.0	2760.0
2.5°	2772.4	2760.0	2732.4	2757.6	2752.6
5°	2760.0	2747.5	2715.0	2737.5	2730.1
7.5°	2737.5	2722.6	2687.7	2697.4	2685.0
10°	2707.5	2690.1	2640.2	2632.6	2617.7
12.5°	2670.2	2647.6	2580.1	2565.2	2537.6
15°	2625.1	2597.6	2512.7	2465.3	2440.4
17.5°	2572.7	2532.7	2427.7	2372.8	2332.8
20°	2512.7	2462.7	2337.9	2275.6	2220.4
22.5°	2447.9	2390.3	2245.3	2160.5	2123.2
25°	2382.9	2302.9	2138.0	2035.7	1998.2
27.5°	2305.5	2220.4	2038.1	1920.8	1863.3
30°	2223.1	2128.0	1928.1	1801.0	1733.4
32.5°	2143.1	2028.1	1823.5	1673.5	1610.9
35°	2053.2	1925.7	1706.1	1548.7	1493.6
37.5°	1965.8	1828.2	1596.1	1423.6	1361.4
40°	1873.3	1723.6	1481.1	1303.8	1238.9
42.5°	1778.4	1618.7	1366.3	1181.3	1119.1
45°	1678.6	1511.0	1249.0	1071.4	1011.5
47.5°	1583.6	1406.4	1136.6	959.1	904.2
50°	1478.7	1301.4	1026.6	854.1	801.9
52.5°	1376.1	1188.8	921.7	756.8	709.4
55°	1276.3	1081.5	811.7	662.0	614.6
57.5°	1174.0	974.1	714.5	574.5	534.5
60°	1069.1	869.2	611.9	484.7	444.7
62.5°	966.7	766.9	524.4	404.7	384.7
65°	861.7	659.3	434.6	349.8	342.1
67.5°	761.9	559.4	349.8	307.1	299.7
70°	656.9	462.1	289.6	264.7	254.6
72.5°	557.0	372.1	242.2	222.4	217.3
75°	459.5	284.6	199.8	182.3	179.9
77.5°	362.2	202.2	157.4	147.3	142.3
80°	272.2	144.9	119.8	110.0	110.0
82.5°	189.8	97.5	82.4	77.4	77.4
85°	107.3	54.9	47.4	47.4	47.4
87.5°	40.0	19.8	19.8	17.5	17.5
90°	3.0	36.1	98.1	92.1	95.0
92.5°	62.0	84.0	87.0	90.1	90.1
95°	146.1	174.1	179.1	179.1	174.1
97.5°	243.2	269.1	280.2	280.2	280.2
100°	355.2	378.2	386.2	386.2	383.2
102.5°	473.3	490.3	501.3	504.3	501.3
105°	602.4	610.4	616.4	621.3	621.3
107.5°	730.4	742.4	742.4	744.4	730.4
110°	854.5	870.5	870.5	870.5	862.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	988.5	1005.5	1002.6	994.5	988.5
115°	1120.7	1136.6	1131.6	1128.7	1120.7
117.5°	1251.7	1273.7	1259.7	1251.7	1243.7
120°	1383.8	1405.8	1383.8	1383.8	1374.8
122.5°	1503.9	1531.8	1517.8	1509.8	1503.9
125°	1629.9	1654.9	1646.9	1637.9	1634.9
127.5°	1753.0	1784.0	1773.0	1761.0	1753.0
130°	1868.0	1904.1	1899.0	1893.0	1882.1
132.5°	1997.1	2025.2	2027.2	2013.1	2005.1
135°	2108.1	2139.2	2145.2	2142.2	2134.2
137.5°	2232.3	2257.3	2262.2	2260.2	2248.3
140°	2341.3	2366.3	2380.3	2380.3	2369.4
142.5°	2453.4	2478.4	2486.4	2489.4	2478.4
145°	2559.4	2579.4	2595.5	2598.4	2587.4
147.5°	2654.5	2679.5	2691.5	2696.5	2685.5
150°	2752.6	2769.6	2780.5	2789.6	2780.5
152.5°	2839.6	2856.6	2870.6	2881.7	2870.6
155°	2926.7	2934.6	2943.7	2957.7	2948.6
157.5°	3001.7	3007.7	3012.6	3032.7	3018.6
160°	3068.7	3074.7	3077.7	3094.8	3082.8
162.5°	3130.7	3130.7	3133.8	3152.8	3138.8
165°	3183.8	3180.7	3180.7	3200.8	3186.7
167.5°	3231.8	3222.8	3222.8	3242.8	3228.8
170°	3267.8	3259.8	3256.9	3276.8	3259.8
172.5°	3292.8	3284.8	3281.9	3301.9	3284.8
175°	3312.9	3304.8	3298.8	3318.9	3301.9
177.5°	3323.8	3315.8	3309.8	3326.9	3309.8
180°	3318.9	3318.9	3318.9	3318.9	3318.9

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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	8.63	9.37	9.69	10.43	11.87	4.61	5.35	5.67	6.41	7.84
	3H	10.30	10.97	11.37	12.03	13.49	5.79	6.45	6.86	7.52	8.97
	4H	10.91	11.53	11.99	12.60	14.06	6.23	6.86	7.32	7.93	9.39
	6H	11.32	11.90	12.41	12.97	14.45	6.55	7.13	7.64	8.20	9.67
	8H	11.45	12.00	12.54	13.09	14.55	6.64	7.19	7.73	8.28	9.75
	12H	11.51	12.03	12.60	13.11	14.60	6.68	7.20	7.78	8.29	9.78
4H	2H	8.64	9.27	9.73	10.34	11.80	5.19	5.82	6.28	6.89	8.35
	3H	10.46	10.98	11.55	12.08	13.55	6.53	7.05	7.63	8.15	9.62
	4H	11.15	11.63	12.25	12.71	14.21	7.08	7.56	8.18	8.64	10.14
	6H	11.66	12.07	12.77	13.18	14.67	7.49	7.90	8.60	9.01	10.50
	8H	11.83	12.22	12.94	13.32	14.82	7.62	8.00	8.73	9.11	10.61
	12H	11.92	12.27	13.05	13.38	14.89	7.68	8.03	8.81	9.14	10.65
8H	4H	11.11	11.49	12.22	12.60	14.10	7.35	7.73	8.46	8.84	10.34
	6H	11.67	11.99	12.80	13.13	14.63	7.87	8.18	9.00	9.33	10.83
	8H	11.89	12.17	13.02	13.29	14.81	8.06	8.34	9.19	9.46	10.98
	12H	12.02	12.27	13.16	13.39	14.95	8.17	8.42	9.31	9.54	11.10
12H	4H	11.06	11.40	12.18	12.52	14.03	7.35	7.70	8.48	8.81	10.32
	6H	11.65	11.92	12.78	13.05	14.57	7.92	8.19	9.05	9.32	10.84
	8H	11.86	12.11	13.00	13.23	14.79	8.12	8.37	9.26	9.49	11.05