

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: P926466

Luminaire Tested: DFN2DIP-TR4F0-060D110US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926466
REPORT IS A COMBINATION OF REPORTS P900499 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-060D110US950-FLLFLL
Description: 4 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

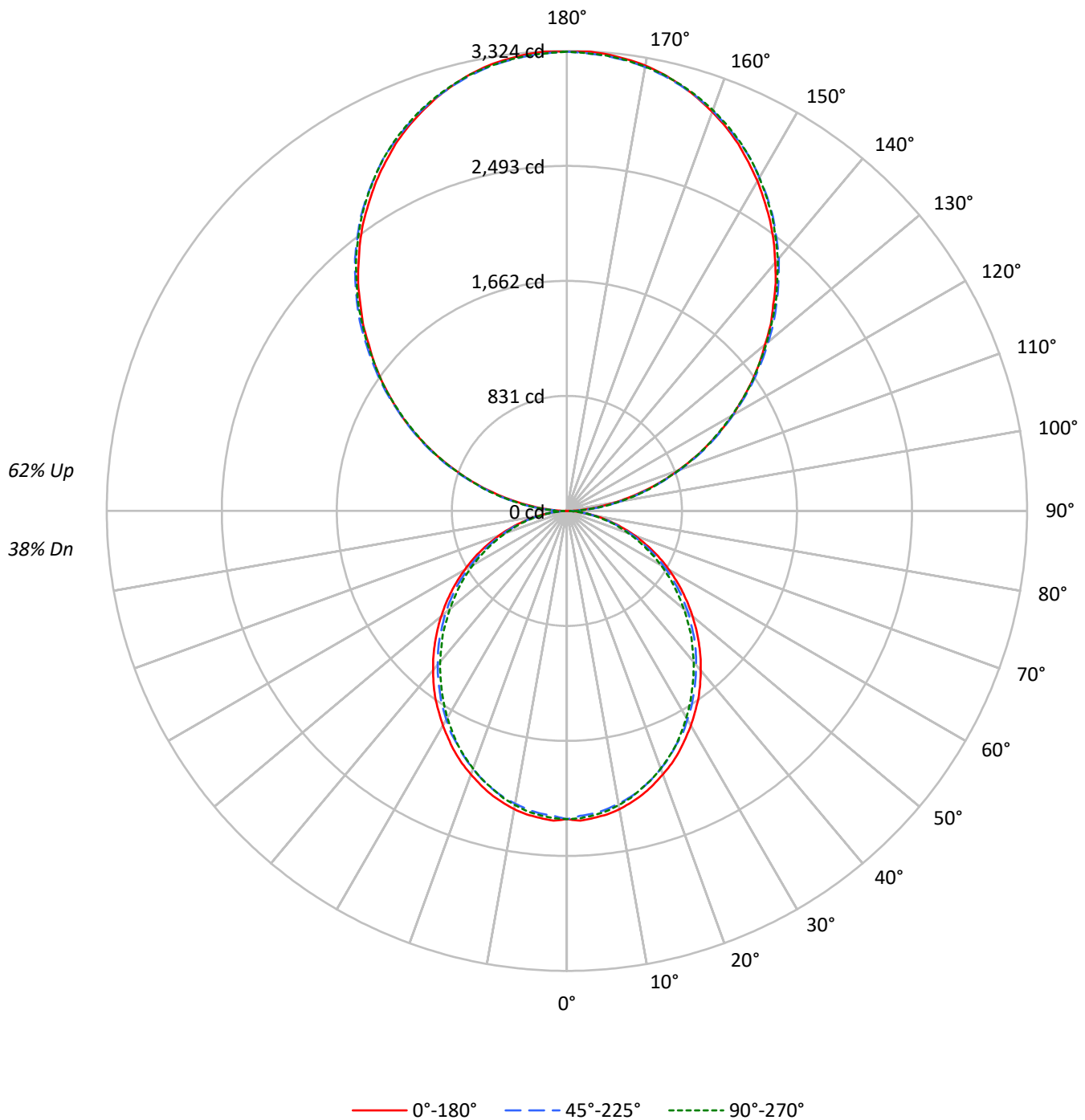
Lumens per Lamp: N/A
Luminaire Lumens: 14954.0 lumens
Efficiency: N/A
Efficacy: 108.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 138.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	87	84	86	83	79	76	67	65	63	53	51	50	40	39	38
2	87	79	73	68	78	72	67	63	59	55	52	46	44	42	35	33	32
3	79	70	62	57	71	63	57	52	52	47	44	41	38	35	31	29	27
4	72	62	54	48	65	56	49	44	46	41	37	37	33	30	28	25	23
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	25	22	20
6	61	49	41	35	55	45	38	33	37	32	28	30	26	23	23	20	18
7	56	44	36	31	51	41	34	29	33	28	24	27	23	20	21	18	16
8	52	40	32	27	47	37	30	25	30	25	22	25	21	18	19	16	14
9	48	37	29	24	44	34	27	23	28	23	19	23	19	16	17	15	13
10	45	33	26	22	41	31	24	20	26	21	17	21	17	14	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1769	1769	1769
5°	1772	1745	1756
10°	1758	1721	1733
15°	1732	1693	1695
20°	1697	1653	1657
25°	1662	1606	1613
30°	1619	1563	1557
35°	1578	1511	1498
40°	1527	1459	1442
45°	1476	1406	1384
50°	1421	1351	1317
55°	1363	1288	1256
60°	1297	1212	1186
65°	1226	1134	1102
70°	1135	1039	1013
75°	1009	925	931
80°	857	780	773
85°	620	529	513

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°	209.6	1.4
10°-20°	589.8	3.9
20°-30°	866.8	5.8
30°-40°	1006.7	6.7
40°-50°	1005.5	6.7
50°-60°	876.7	5.9
60°-70°	648.1	4.3
70°-80°	366.7	2.5
80°-90°	106.2	0.7
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°	1666.2	11.1
0°-40°	2673.0	17.9
0°-60°	4555.2	30.5
0°-90°	5676.2	38.0
90°-120°	1974.6	13.2
90°-150°	6708.2	44.9
90°-180°	9278.0	62.0
0°-180°	14954.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2227	2227	2227	2227	2227	
5°	2227	2219	2195	2212	2208	211
15°	2120	2108	2080	2088	2078	597
25°	1919	1902	1866	1870	1866	883
35°	1656	1634	1600	1587	1576	1034
45°	1347	1332	1300	1276	1268	1040
55°	1020	1007	981	955	945	912
65°	688	675	653	634	623	680
75°	360	356	345	332	336	384
85°	88	86	84	77	75	98
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°	2227.2	2227.2	2227.2	2227.2	2227.2
2.5°	2240.2	2229.5	2205.8	2227.2	2223.1
5°	2227.2	2218.8	2195.2	2212.2	2208.1
7.5°	2212.2	2199.5	2175.9	2193.2	2188.9
10°	2188.9	2173.9	2148.1	2165.2	2158.8
12.5°	2156.6	2143.8	2118.2	2128.9	2124.6
15°	2120.2	2107.5	2079.5	2088.2	2077.5
17.5°	2075.2	2062.5	2034.6	2045.2	2034.6
20°	2025.9	2013.2	1983.2	1989.6	1981.2
22.5°	1976.9	1957.5	1929.6	1929.6	1925.3
25°	1918.9	1901.9	1865.5	1869.6	1865.5
27.5°	1854.6	1839.6	1811.8	1805.5	1794.9
30°	1790.6	1773.2	1741.2	1734.8	1726.2
32.5°	1721.9	1709.2	1674.8	1661.9	1653.3
35°	1655.6	1634.2	1599.9	1586.9	1576.2
37.5°	1580.6	1561.2	1527.0	1511.9	1501.2
40°	1503.5	1486.2	1452.0	1432.9	1424.2
42.5°	1428.5	1411.3	1377.2	1355.6	1342.9
45°	1347.2	1332.2	1299.9	1276.5	1267.9
47.5°	1267.9	1252.9	1218.6	1195.0	1182.2
50°	1184.3	1173.6	1143.7	1113.6	1102.9
52.5°	1102.9	1087.9	1060.2	1036.6	1021.6
55°	1019.5	1006.6	980.9	955.2	944.6
57.5°	936.0	925.3	897.3	871.7	863.0
60°	852.3	843.9	814.0	790.3	783.9
62.5°	770.9	755.9	734.6	713.2	704.6
65°	687.5	674.7	653.3	633.9	623.2
67.5°	601.9	591.0	571.9	556.9	548.3
70°	522.6	514.0	494.6	479.7	471.3
72.5°	441.2	432.6	422.0	407.0	400.6
75°	359.7	355.7	344.7	332.0	336.3
77.5°	287.0	278.4	274.0	267.7	261.3
80°	214.3	212.0	207.7	201.3	197.0
82.5°	145.7	145.7	143.6	135.0	135.0
85°	87.7	85.7	83.6	77.0	75.0
87.5°	38.6	34.3	30.0	23.7	21.4
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	8.02	8.78	9.07	9.84	11.27	7.59	8.35	8.64	9.41	10.84
	3H	9.67	10.36	10.74	11.42	12.87	9.20	9.88	10.26	10.95	12.40
	4H	10.25	10.90	11.33	11.97	13.43	9.78	10.43	10.86	11.50	12.96
	6H	10.65	11.25	11.73	12.32	13.79	10.17	10.77	11.26	11.84	13.31
	8H	10.75	11.32	11.84	12.41	13.87	10.28	10.84	11.37	11.93	13.40
	12H	10.80	11.34	11.89	12.42	13.91	10.32	10.86	11.41	11.94	13.43
4H	2H	8.47	9.12	9.55	10.19	11.64	8.12	8.77	9.21	9.84	11.30
	3H	10.33	10.87	11.41	11.96	13.43	9.93	10.47	11.02	11.57	13.04
	4H	11.04	11.53	12.13	12.62	14.11	10.63	11.13	11.72	12.21	13.71
	6H	11.55	11.97	12.65	13.08	14.57	11.14	11.56	12.24	12.67	14.16
	8H	11.69	12.09	12.79	13.19	14.69	11.28	11.68	12.38	12.78	14.28
	12H	11.76	12.12	12.88	13.24	14.74	11.34	11.70	12.46	12.81	14.32
8H	4H	11.22	11.62	12.33	12.72	14.23	10.86	11.26	11.97	12.36	13.87
	6H	11.85	12.18	12.98	13.32	14.82	11.49	11.82	12.61	12.96	14.46
	8H	12.07	12.36	13.20	13.48	15.00	11.70	11.99	12.83	13.11	14.63
	12H	12.20	12.45	13.33	13.57	15.13	11.81	12.07	12.95	13.19	14.74
12H	4H	11.21	11.57	12.33	12.68	14.19	10.85	11.21	11.97	12.33	13.84
	6H	11.88	12.17	13.01	13.29	14.81	11.53	11.82	12.66	12.94	14.46
	8H	12.12	12.37	13.25	13.49	15.05	11.76	12.01	12.90	13.13	14.69