

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: P921044

Luminaire Tested: DFN2DIP-TR4F0-070D100US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921044
REPORT IS A COMBINATION OF REPORTS P900484 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-070D100US935-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

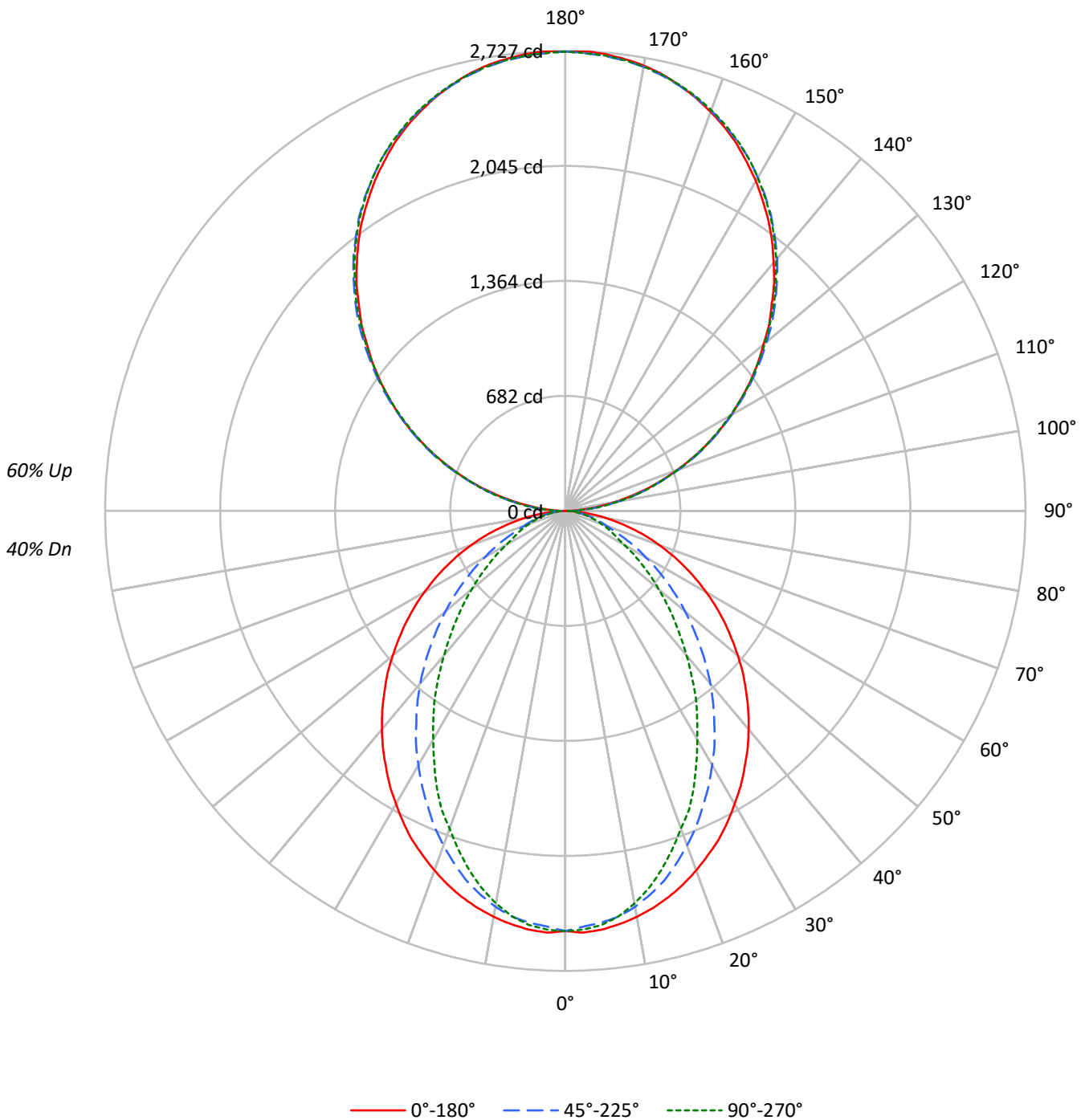
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12742.8 lumens
Efficiency: N/A
Efficacy: 89.8 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: General Diffuse

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				20
RC	80				70				50				30				10				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47	47	47	47	40
1	96	92	88	85	87	84	81	78	69	67	65	55	54	52	42	41	41	41	41	41	35
2	88	81	75	70	80	74	69	65	61	57	54	49	46	44	38	36	35	35	35	35	30
3	80	71	64	59	73	65	59	54	54	50	46	43	40	38	34	32	30	30	30	30	26
4	74	63	56	50	67	58	51	46	48	43	39	39	35	33	30	28	26	26	26	26	22
5	68	56	49	43	61	52	45	40	43	38	34	35	31	29	28	25	23	23	23	23	20
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	20	20	20	20	17
7	58	46	38	33	53	42	35	31	35	30	27	29	25	22	23	20	18	18	18	18	16
8	54	42	34	29	49	38	32	27	32	27	24	27	23	20	21	19	17	17	17	17	14
9	50	38	31	26	45	35	29	24	30	25	21	25	21	18	20	17	15	15	15	15	13
10	47	35	28	23	43	32	26	22	27	22	19	23	19	16	18	16	14	14	14	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1979	1979	1979
5°	1982	1947	1960
10°	1962	1909	1896
15°	1935	1846	1797
20°	1900	1759	1676
25°	1863	1662	1560
30°	1814	1562	1411
35°	1766	1454	1281
40°	1717	1343	1132
45°	1660	1219	997
50°	1601	1095	864
55°	1540	962	738
60°	1469	822	607
65°	1387	681	546
70°	1288	549	494
75°	1163	484	450
80°	983	406	390
85°	685	271	293

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2123 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	233.5	1.8
10°-20°	640.9	5.0
20°-30°	899.8	7.1
30°-40°	980.8	7.7
40°-50°	901.5	7.1
50°-60°	708.0	5.6
60°-70°	460.8	3.6
70°-80°	237.2	1.9
80°-90°	68.3	0.5
90°-100°	168.5	1.3
100°-110°	535.4	4.2
110°-120°	916.2	7.2
120°-130°	1204.9	9.5
130°-140°	1352.5	10.6
140°-150°	1326.3	10.4
150°-160°	1112.6	8.7
160°-170°	737.8	5.8
170°-180°	257.9	2.0
0°-30°	1774.1	13.9
0°-40°	2754.9	21.6
0°-60°	4364.3	34.2
0°-90°	5130.6	40.3
90°-120°	1620.1	12.7
90°-150°	5503.8	43.2
90°-180°	7612.0	59.7
0°-180°	12742.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2491	2491	2491	2491	2491	
5°	2491	2480	2450	2471	2464	236
15°	2369	2344	2268	2225	2202	668
25°	2151	2078	1930	1837	1803	989
35°	1853	1738	1540	1398	1348	1160
45°	1515	1364	1127	967	913	1170
55°	1152	976	732	597	555	1029
65°	778	595	392	316	309	771
75°	415	257	180	164	162	439
85°	97	50	43	43	43	111
90°	2	30	80	76	78	13
95°	120	143	147	147	143	133
105°	494	501	506	510	510	522
115°	920	932	928	926	920	909
125°	1337	1358	1351	1344	1341	1195
135°	1730	1755	1760	1758	1751	1337
145°	2100	2116	2130	2132	2123	1312
155°	2401	2408	2415	2427	2419	1105
165°	2612	2610	2610	2626	2615	737
175°	2718	2712	2707	2723	2709	258
180°	2723	2723	2723	2723	2723	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2491.0	2491.0	2491.0	2491.0	2491.0
2.5°	2502.1	2491.0	2466.1	2488.8	2484.2
5°	2491.0	2479.7	2450.3	2470.6	2463.9
7.5°	2470.6	2457.2	2425.7	2434.5	2423.3
10°	2443.6	2427.8	2382.8	2375.9	2362.5
12.5°	2409.8	2389.5	2328.6	2315.1	2290.3
15°	2369.2	2344.3	2267.8	2225.0	2202.5
17.5°	2321.9	2285.8	2191.1	2141.5	2105.4
20°	2267.8	2222.6	2110.0	2053.7	2004.0
22.5°	2209.2	2157.3	2026.4	1949.9	1916.2
25°	2150.6	2078.4	1929.6	1837.3	1803.4
27.5°	2080.8	2004.0	1839.4	1733.5	1681.6
30°	2006.4	1920.5	1740.2	1625.4	1564.4
32.5°	1934.1	1830.4	1645.7	1510.4	1453.9
35°	1853.0	1738.0	1539.8	1397.7	1348.0
37.5°	1774.2	1650.0	1440.5	1284.8	1228.6
40°	1690.7	1555.6	1336.7	1176.7	1118.1
42.5°	1605.1	1460.9	1233.1	1066.2	1010.0
45°	1514.9	1363.7	1127.2	967.0	912.9
47.5°	1429.3	1269.3	1025.8	865.6	816.1
50°	1334.5	1174.6	926.5	770.9	723.8
52.5°	1242.0	1072.9	831.8	683.0	640.2
55°	1151.8	976.0	732.5	597.4	554.7
57.5°	1059.5	879.2	644.8	518.5	482.4
60°	964.8	784.5	552.2	437.5	401.3
62.5°	872.4	692.2	473.3	365.2	347.2
65°	777.7	595.0	392.3	315.7	308.8
67.5°	687.6	504.9	315.7	277.2	270.5
70°	592.9	417.1	261.4	238.9	229.8
72.5°	502.7	335.8	218.6	200.7	196.1
75°	414.7	256.8	180.3	164.5	162.4
77.5°	326.9	182.4	142.1	132.9	128.5
80°	245.6	130.8	108.1	99.3	99.3
82.5°	171.3	88.0	74.4	69.8	69.8
85°	96.9	49.5	42.8	42.8	42.8
87.5°	36.1	17.9	17.9	15.8	15.8
90°	2.5	29.5	80.4	75.5	78.0
92.5°	50.9	69.0	71.5	73.9	73.9
95°	119.9	142.8	147.0	147.0	142.8
97.5°	199.5	220.8	229.9	229.9	229.9
100°	291.4	310.3	316.8	316.8	314.4
102.5°	388.3	402.3	411.3	413.7	411.3
105°	494.2	500.8	505.7	509.8	509.8
107.5°	599.3	609.2	609.2	610.8	599.3
110°	701.1	714.2	714.2	714.2	707.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	811.1	825.0	822.6	816.0	811.1
115°	919.5	932.5	928.5	926.0	919.5
117.5°	1027.0	1045.1	1033.5	1027.0	1020.4
120°	1135.3	1153.4	1135.3	1135.3	1128.0
122.5°	1233.8	1256.8	1245.3	1238.8	1233.8
125°	1337.3	1357.8	1351.3	1343.8	1341.4
127.5°	1438.3	1463.7	1454.7	1444.8	1438.3
130°	1532.7	1562.2	1558.1	1553.2	1544.2
132.5°	1638.6	1661.6	1663.2	1651.7	1645.1
135°	1729.7	1755.1	1760.1	1757.6	1751.0
137.5°	1831.5	1852.0	1856.1	1854.5	1844.6
140°	1921.0	1941.5	1953.0	1953.0	1944.0
142.5°	2012.9	2033.4	2040.0	2042.5	2033.4
145°	2099.9	2116.3	2129.5	2131.9	2122.9
147.5°	2177.9	2198.5	2208.3	2212.4	2203.4
150°	2258.4	2272.3	2281.4	2288.7	2281.4
152.5°	2329.8	2343.7	2355.3	2364.3	2355.3
155°	2401.2	2407.8	2415.2	2426.6	2419.2
157.5°	2462.8	2467.7	2471.8	2488.2	2476.7
160°	2517.8	2522.7	2525.1	2539.1	2529.3
162.5°	2568.7	2568.7	2571.1	2586.7	2575.2
165°	2612.2	2609.7	2609.7	2626.1	2614.7
167.5°	2651.6	2644.2	2644.2	2660.7	2649.1
170°	2681.1	2674.6	2672.1	2688.6	2674.6
172.5°	2701.6	2695.1	2692.6	2709.0	2695.1
175°	2718.1	2711.5	2706.6	2723.0	2709.0
177.5°	2727.1	2720.6	2715.6	2729.5	2715.6
180°	2723.0	2723.0	2723.0	2723.0	2723.0



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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	8.53	9.29	9.57	10.33	11.74	4.50	5.26	5.54	6.30	7.71
	3H	10.20	10.88	11.25	11.93	13.36	5.69	6.36	6.74	7.42	8.84
	4H	10.81	11.45	11.87	12.50	13.93	6.13	6.77	7.20	7.83	9.26
	6H	11.22	11.81	12.30	12.87	14.32	6.45	7.04	7.53	8.10	9.54
	8H	11.35	11.91	12.43	12.98	14.42	6.54	7.10	7.62	8.18	9.62
	12H	11.41	11.94	12.49	13.01	14.47	6.58	7.11	7.66	8.18	9.65
4H	2H	8.54	9.18	9.61	10.23	11.67	5.09	5.73	6.16	6.78	8.22
	3H	10.36	10.89	11.44	11.98	13.42	6.43	6.97	7.51	8.05	9.49
	4H	11.05	11.54	12.13	12.61	14.08	6.98	7.47	8.06	8.54	10.01
	6H	11.56	11.98	12.65	13.08	14.54	7.40	7.81	8.49	8.91	10.37
	8H	11.73	12.12	12.83	13.21	14.69	7.52	7.91	8.61	9.00	10.48
	12H	11.83	12.18	12.93	13.28	14.76	7.59	7.94	8.69	9.04	10.52
8H	4H	11.01	11.40	12.10	12.49	13.97	7.25	7.64	8.34	8.73	10.21
	6H	11.58	11.90	12.69	13.03	14.50	7.77	8.09	8.88	9.22	10.70
	8H	11.79	12.07	12.91	13.19	14.68	7.96	8.24	9.08	9.36	10.85
	12H	11.93	12.18	13.05	13.28	14.81	8.08	8.33	9.20	9.43	10.97
12H	4H	10.96	11.31	12.07	12.42	13.90	7.25	7.61	8.36	8.71	10.19
	6H	11.55	11.83	12.67	12.95	14.44	7.82	8.10	8.94	9.21	10.71
	8H	11.77	12.02	12.89	13.12	14.66	8.03	8.28	9.15	9.38	10.91