

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: P926356

Luminaire Tested: DFN2DIP-TR3F0-090D070US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926356
REPORT IS A COMBINATION OF REPORTS P900339 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-090D070US950-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

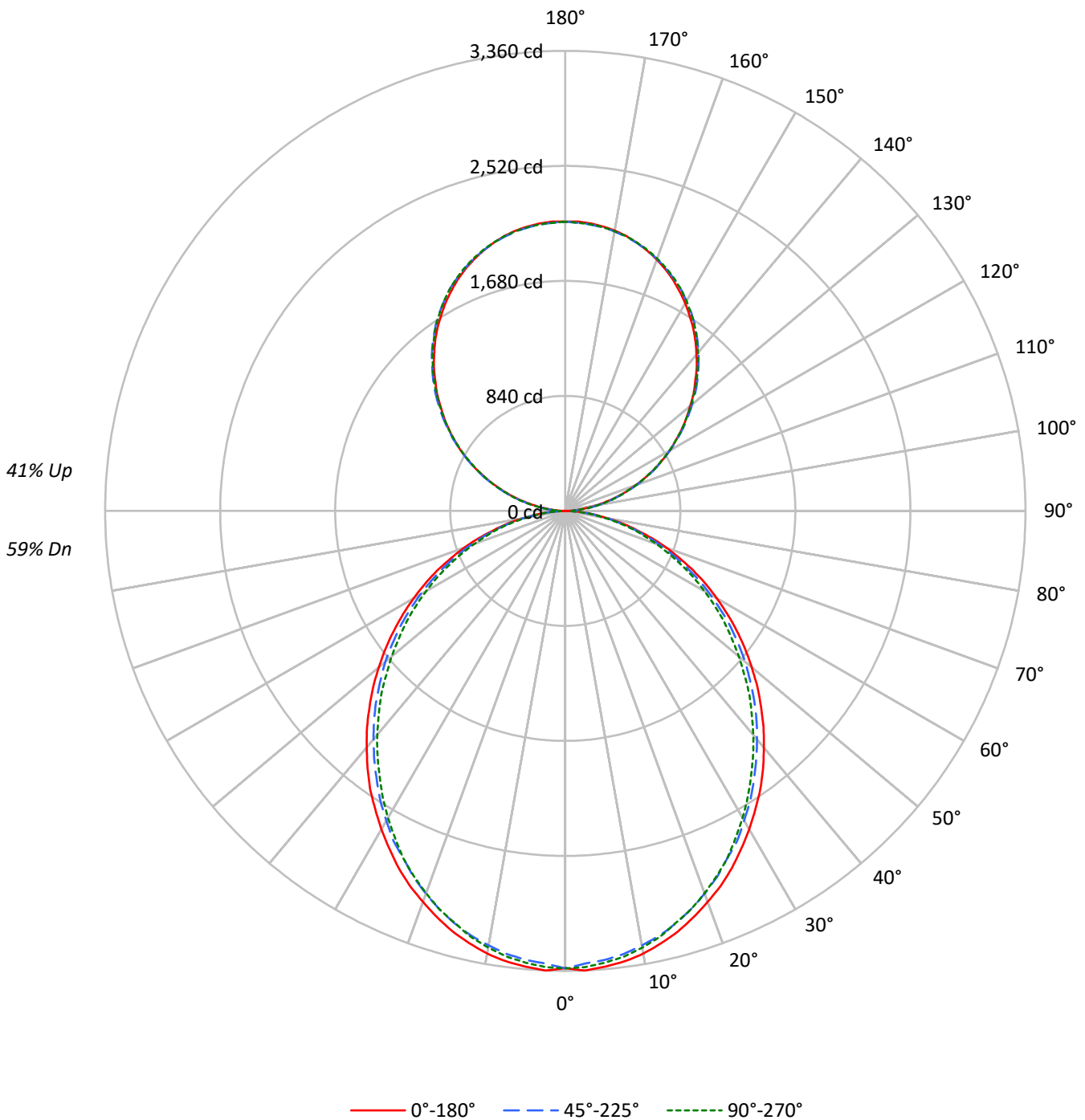
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14410.2 lumens
Efficiency: N/A
Efficacy: 97.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 148.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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			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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59			59
1	100	95	91	88	93	89	86	83	78	75	73	67	65	63	57	56	54	50			50
2	91	83	77	72	85	78	73	68	68	64	60	59	56	53	50	48	46	42			42
3	83	73	66	60	77	69	62	57	60	55	51	52	48	45	44	42	39	35			35
4	76	65	57	51	71	61	54	48	53	48	43	46	42	38	40	36	34	30			30
5	70	58	50	44	65	54	47	41	48	42	37	42	37	33	36	32	29	26			26
6	64	52	44	38	60	49	41	36	43	37	33	38	33	29	33	29	26	23			23
7	59	47	39	33	55	44	37	32	39	33	29	34	29	26	30	26	23	21			21
8	55	43	35	29	51	40	33	28	36	30	26	31	27	23	27	23	21	18			18
9	51	39	31	26	48	37	30	25	33	27	23	29	24	21	25	21	19	17			17
10	48	36	29	24	45	34	27	23	30	25	21	27	22	19	23	20	17	15			15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4163	4163	4163
5°	4167	4102	4130
10°	4131	4043	4071
15°	4068	3973	3981
20°	3984	3877	3889
25°	3900	3763	3783
30°	3795	3656	3649
35°	3696	3531	3507
40°	3574	3405	3372
45°	3452	3278	3233
50°	3319	3145	3073
55°	3179	2991	2925
60°	3021	2808	2756
65°	2848	2618	2556
70°	2627	2387	2340
75°	2323	2110	2137
80°	1955	1755	1756
85°	1382	1157	1134

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3452 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	314.4	2.2
10°-20°	884.7	6.1
20°-30°	1300.2	9.0
30°-40°	1510.1	10.5
40°-50°	1508.2	10.5
50°-60°	1315.1	9.1
60°-70°	972.2	6.7
70°-80°	550.0	3.8
80°-90°	151.2	1.0
90°-100°	130.7	0.9
100°-110°	415.3	2.9
110°-120°	710.6	4.9
120°-130°	934.6	6.5
130°-140°	1049.0	7.3
140°-150°	1028.7	7.1
150°-160°	862.9	6.0
160°-170°	572.3	4.0
170°-180°	200.0	1.4
0°-30°	2499.3	17.3
0°-40°	4009.4	27.8
0°-60°	6832.8	47.4
0°-90°	8506.2	59.0
90°-120°	1256.6	8.7
90°-150°	4268.9	29.6
90°-180°	5904.0	41.0
0°-180°	14410.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3341	3341	3341	3341	3341	
5°	3341	3328	3293	3318	3312	317
15°	3180	3161	3119	3132	3116	896
25°	2878	2853	2798	2804	2798	1324
35°	2483	2451	2400	2380	2364	1551
45°	2021	1998	1950	1915	1902	1560
55°	1529	1510	1471	1433	1417	1367
65°	1031	1012	980	951	935	1020
75°	540	533	517	498	504	576
85°	132	128	126	116	112	147
90°	2	23	62	59	60	14
95°	93	111	114	114	111	103
105°	383	388	392	395	395	405
115°	713	723	720	718	713	705
125°	1037	1053	1048	1042	1040	927
135°	1342	1361	1365	1363	1358	1037
145°	1629	1642	1652	1654	1647	1018
155°	1862	1868	1873	1882	1876	857
165°	2026	2024	2024	2037	2028	572
175°	2108	2103	2099	2112	2101	200
180°	2112	2112	2112	2112	2112	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3340.8	3340.8	3340.8	3340.8	3340.8
2.5°	3360.3	3344.2	3308.9	3340.8	3334.7
5°	3340.8	3328.2	3292.8	3318.4	3312.2
7.5°	3318.4	3299.3	3263.8	3289.8	3283.3
10°	3283.3	3260.8	3222.2	3247.8	3238.3
12.5°	3234.8	3215.7	3177.3	3193.2	3186.8
15°	3180.3	3161.3	3119.3	3132.3	3116.2
17.5°	3112.8	3093.7	3051.8	3067.9	3051.8
20°	3038.9	3019.8	2974.8	2984.3	2971.7
22.5°	2965.2	2936.3	2894.3	2894.3	2887.9
25°	2878.3	2852.7	2798.3	2804.4	2798.3
27.5°	2781.9	2759.3	2717.9	2708.3	2692.3
30°	2685.8	2659.8	2611.8	2602.2	2589.3
32.5°	2582.9	2563.8	2512.3	2492.9	2479.9
35°	2483.4	2451.3	2399.8	2380.4	2364.4
37.5°	2370.9	2341.9	2290.4	2267.9	2251.9
40°	2255.3	2229.4	2177.9	2149.3	2136.4
42.5°	2142.8	2116.9	2065.8	2033.5	2014.4
45°	2020.8	1998.3	1949.9	1914.8	1901.9
47.5°	1901.9	1879.4	1827.9	1792.5	1773.4
50°	1776.4	1760.4	1715.4	1670.5	1654.4
52.5°	1654.4	1631.9	1590.3	1554.9	1532.4
55°	1529.4	1509.9	1471.4	1432.9	1416.9
57.5°	1403.9	1387.9	1346.0	1307.5	1294.5
60°	1278.5	1265.9	1220.8	1185.4	1175.9
62.5°	1156.4	1133.9	1101.9	1069.9	1056.9
65°	1031.4	1011.9	979.9	950.9	934.9
67.5°	902.9	886.6	857.8	835.4	822.4
70°	783.9	770.9	742.0	719.5	706.9
72.5°	661.9	648.9	632.9	610.5	600.9
75°	539.6	533.4	517.1	498.0	504.5
77.5°	430.4	417.6	411.1	401.5	392.0
80°	321.4	318.0	311.5	301.9	295.5
82.5°	218.5	218.5	215.4	202.4	202.4
85°	131.6	128.5	125.5	115.5	112.5
87.5°	57.9	51.4	45.0	35.5	32.1
90°	1.9	22.9	62.4	58.6	60.5
92.5°	39.5	53.5	55.4	57.3	57.3
95°	92.9	110.8	114.0	114.0	110.8
97.5°	154.7	171.2	178.3	178.3	178.3
100°	226.0	240.7	245.8	245.8	243.8
102.5°	301.2	312.0	319.0	320.9	319.0
105°	383.3	388.4	392.2	395.4	395.4
107.5°	464.8	472.4	472.4	473.8	464.8
110°	543.8	554.0	554.0	554.0	548.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	629.1	639.9	638.0	632.9	629.1
115°	713.1	723.3	720.2	718.3	713.1
117.5°	796.5	810.5	801.6	796.5	791.4
120°	880.5	894.6	880.5	880.5	874.8
122.5°	957.0	974.8	965.9	960.8	957.0
125°	1037.2	1053.1	1048.1	1042.3	1040.4
127.5°	1115.5	1135.3	1128.3	1120.7	1115.5
130°	1188.8	1211.7	1208.5	1204.7	1197.7
132.5°	1270.9	1288.8	1290.0	1281.1	1276.0
135°	1341.6	1361.3	1365.2	1363.2	1358.1
137.5°	1420.5	1436.4	1439.6	1438.3	1430.7
140°	1490.0	1505.9	1514.8	1514.8	1507.8
142.5°	1561.2	1577.2	1582.2	1584.1	1577.2
145°	1628.8	1641.5	1651.7	1653.6	1646.6
147.5°	1689.2	1705.2	1712.8	1716.0	1709.0
150°	1751.6	1762.4	1769.5	1775.2	1769.5
152.5°	1807.0	1817.8	1826.7	1833.8	1826.7
155°	1862.4	1867.5	1873.3	1882.1	1876.4
157.5°	1910.2	1914.0	1917.2	1929.9	1921.0
160°	1952.8	1956.7	1958.6	1969.3	1961.7
162.5°	1992.3	1992.3	1994.2	2006.3	1997.4
165°	2026.0	2024.1	2024.1	2036.9	2027.9
167.5°	2056.6	2050.9	2050.9	2063.6	2054.7
170°	2079.5	2074.5	2072.6	2085.3	2074.5
172.5°	2095.5	2090.3	2088.4	2101.2	2090.3
175°	2108.1	2103.1	2099.3	2112.0	2101.2
177.5°	2115.2	2110.1	2106.2	2117.1	2106.2
180°	2112.0	2112.0	2112.0	2112.0	2112.0



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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	12.97	13.92	13.84	14.81	15.95	12.54	13.49	13.42	14.39	15.52
	3H	14.63	15.48	15.51	16.38	17.55	14.16	15.01	15.05	15.92	17.08
	4H	15.21	16.02	16.11	16.93	18.10	14.74	15.55	15.65	16.46	17.63
	6H	15.61	16.35	16.52	17.27	18.45	15.14	15.88	16.05	16.80	17.98
	8H	15.71	16.42	16.63	17.35	18.54	15.24	15.95	16.17	16.89	18.07
	12H	15.76	16.43	16.69	17.36	18.57	15.29	15.96	16.21	16.89	18.10
4H	2H	13.44	14.24	14.35	15.15	16.33	13.09	13.90	14.00	14.81	15.98
	3H	15.30	15.97	16.22	16.92	18.10	14.91	15.58	15.83	16.53	17.71
	4H	16.01	16.62	16.94	17.56	18.77	15.61	16.22	16.54	17.16	18.37
	6H	16.52	17.05	17.47	18.01	19.23	16.12	16.65	17.06	17.61	18.82
	8H	16.67	17.16	17.61	18.12	19.35	16.26	16.76	17.21	17.71	18.94
	12H	16.74	17.19	17.71	18.16	19.39	16.33	16.77	17.29	17.75	18.98
8H	4H	16.21	16.71	17.16	17.66	18.89	15.85	16.35	16.80	17.30	18.53
	6H	16.83	17.24	17.81	18.24	19.47	16.48	16.89	17.45	17.88	19.11
	8H	17.05	17.41	18.03	18.40	19.64	16.69	17.05	17.67	18.03	19.28
	12H	17.18	17.50	18.16	18.48	19.77	16.80	17.12	17.79	18.10	19.39
12H	4H	16.20	16.65	17.16	17.62	18.85	15.85	16.30	16.82	17.27	18.50
	6H	16.86	17.23	17.84	18.21	19.45	16.52	16.88	17.50	17.86	19.11
	8H	17.10	17.42	18.09	18.40	19.69	16.75	17.07	17.73	18.05	19.34