

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: P914055

Luminaire Tested: DFN2DIP-PN3F0-090D090US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914055
REPORT IS A COMBINATION OF REPORTS P901128 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D090US927-RLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

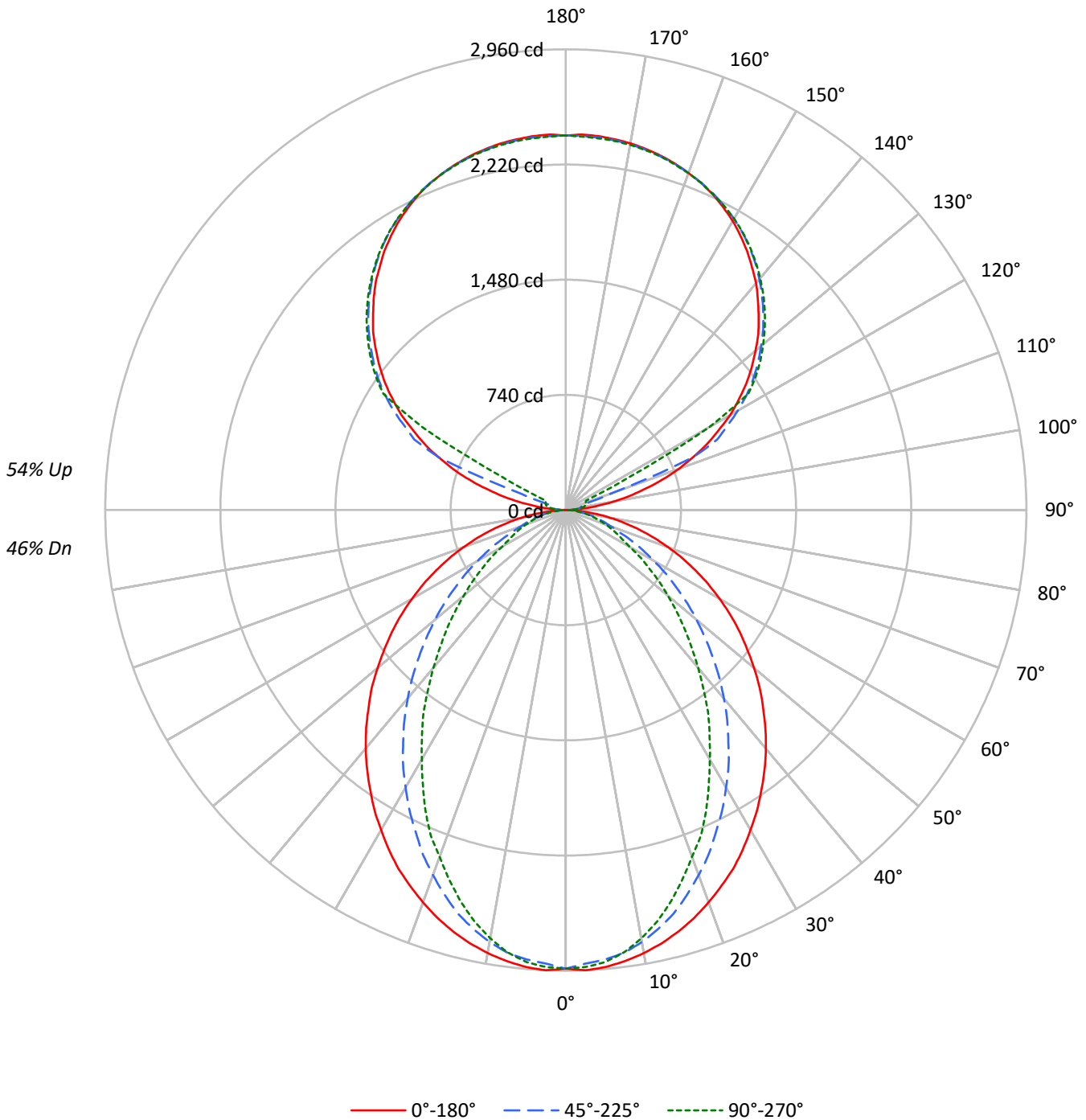
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13118.5 lumens
Efficiency: N/A
Efficacy: 79.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 164.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53	46			46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45	40			40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39	34			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34	29			29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29	26			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26	23			23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23	20			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21	18			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19	16			16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17	15			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15	13			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3445	3445	3445
5°	3448	3388	3410
10°	3412	3319	3298
15°	3363	3207	3125
20°	3299	3053	2913
25°	3233	2882	2709
30°	3145	2706	2450
35°	3059	2517	2223
40°	2972	2322	1963
45°	2870	2106	1727
50°	2765	1888	1497
55°	2655	1656	1276
60°	2528	1413	1049
65°	2381	1167	942
70°	2203	937	850
75°	1979	821	770
80°	1655	681	663
85°	1123	443	490

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2870 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.2	2.1
10°-20°	758.1	5.8
20°-30°	1064.4	8.1
30°-40°	1160.3	8.8
40°-50°	1066.4	8.1
50°-60°	837.5	6.4
60°-70°	545.1	4.2
70°-80°	280.6	2.1
80°-90°	75.9	0.6
90°-100°	79.3	0.6
100°-110°	295.8	2.3
110°-120°	784.4	6.0
120°-130°	1301.0	9.9
130°-140°	1382.0	10.5
140°-150°	1284.4	9.8
150°-160°	1032.6	7.9
160°-170°	665.4	5.1
170°-180°	229.0	1.7
0°-30°	2098.7	16.0
0°-40°	3258.9	24.8
0°-60°	5162.8	39.4
0°-90°	6064.4	46.2
90°-120°	1159.5	8.8
90°-150°	5127.0	39.1
90°-180°	7054.0	53.8
0°-180°	13118.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2947	2947	2947	2947	2947	
5°	2947	2933	2899	2923	2915	279
15°	2803	2773	2683	2632	2606	790
25°	2544	2459	2283	2173	2133	1170
35°	2192	2056	1822	1653	1595	1372
45°	1792	1613	1333	1144	1080	1384
55°	1363	1155	867	707	656	1218
65°	920	704	464	373	365	912
75°	491	304	213	195	192	519
85°	114	58	51	51	51	132
90°	2	21	35	44	47	12
95°	113	56	68	77	75	134
105°	529	582	106	125	132	566
115°	1001	1031	1074	268	143	986
125°	1415	1438	1471	1483	1489	1262
135°	1752	1780	1795	1813	1809	1353
145°	2032	2030	2060	2072	2063	1271
155°	2237	2222	2243	2253	2239	1031
165°	2357	2347	2352	2364	2352	666
175°	2411	2399	2403	2415	2398	229
180°	2406	2406	2406	2406	2406	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2946.7	2946.7	2946.7	2946.7	2946.7
2.5°	2960.0	2946.7	2917.2	2944.1	2938.8
5°	2946.7	2933.4	2898.6	2922.6	2914.7
7.5°	2922.6	2906.8	2869.4	2879.9	2866.6
10°	2890.7	2872.0	2818.8	2810.6	2794.7
12.5°	2850.7	2826.7	2754.6	2738.7	2709.3
15°	2802.7	2773.3	2682.7	2632.0	2605.5
17.5°	2746.7	2704.0	2591.9	2533.3	2490.6
20°	2682.7	2629.2	2495.9	2429.5	2370.6
22.5°	2613.4	2552.0	2397.2	2306.7	2266.8
25°	2544.1	2458.6	2282.7	2173.4	2133.3
27.5°	2461.5	2370.6	2176.0	2050.6	1989.2
30°	2373.5	2271.9	2058.6	1922.8	1850.6
32.5°	2288.0	2165.2	1946.8	1786.7	1719.9
35°	2192.1	2056.0	1821.5	1653.4	1594.6
37.5°	2098.7	1951.9	1704.1	1519.9	1453.4
40°	2000.0	1840.2	1581.3	1392.0	1322.7
42.5°	1898.7	1728.1	1458.7	1261.3	1194.8
45°	1792.1	1613.3	1333.4	1143.8	1079.9
47.5°	1690.8	1501.5	1213.5	1023.9	965.4
50°	1578.7	1389.4	1096.1	911.9	856.1
52.5°	1469.3	1269.2	984.0	808.0	757.4
55°	1362.6	1154.6	866.6	706.8	656.1
57.5°	1253.4	1040.1	762.8	613.4	570.7
60°	1141.3	928.0	653.3	517.5	474.8
62.5°	1032.1	818.8	559.9	432.1	410.8
65°	920.0	703.9	464.0	373.4	365.3
67.5°	813.4	597.2	373.4	327.9	320.0
70°	701.4	493.4	309.3	282.7	271.9
72.5°	594.7	397.2	258.6	237.3	232.0
75°	490.6	303.9	213.3	194.6	192.1
77.5°	386.7	215.9	168.0	157.3	151.9
80°	290.6	154.8	127.9	117.4	117.4
82.5°	202.6	104.1	88.0	82.6	82.6
85°	114.5	58.5	50.6	50.6	50.6
87.5°	42.7	21.2	21.2	18.7	18.7
90°	1.7	20.9	34.7	43.6	46.9
92.5°	43.6	36.6	41.7	45.3	46.9
95°	113.1	55.6	67.8	76.7	74.9
97.5°	203.7	61.0	88.7	94.0	95.7
100°	308.2	69.7	99.3	113.1	116.6
102.5°	423.0	419.7	102.7	121.8	127.1
105°	529.3	581.6	106.2	125.3	132.3
107.5°	652.9	696.3	109.8	128.8	135.9
110°	771.3	807.8	304.8	130.6	137.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	882.8	914.0	884.5	134.0	139.3
115°	1001.1	1030.6	1074.3	268.2	142.8
117.5°	1103.8	1138.6	1168.3	919.2	463.1
120°	1218.8	1244.8	1276.3	1297.1	1062.1
122.5°	1316.2	1344.1	1379.0	1389.3	1391.2
125°	1415.4	1438.1	1471.2	1483.4	1488.6
127.5°	1505.9	1530.3	1556.6	1574.0	1575.6
130°	1591.3	1619.3	1638.3	1657.5	1655.9
132.5°	1678.4	1701.1	1720.1	1735.9	1734.2
135°	1751.6	1779.5	1795.0	1812.6	1809.1
137.5°	1828.1	1849.0	1866.5	1883.9	1878.7
140°	1902.9	1917.0	1936.0	1951.7	1943.1
142.5°	1965.8	1978.0	2000.5	2014.4	2005.7
145°	2031.9	2030.0	2059.7	2071.9	2063.2
147.5°	2089.2	2084.1	2113.6	2122.3	2115.4
150°	2145.1	2132.9	2160.8	2171.1	2162.4
152.5°	2192.0	2178.1	2204.2	2214.7	2202.5
155°	2237.3	2221.8	2242.6	2253.0	2239.1
157.5°	2273.9	2260.0	2275.7	2287.9	2273.9
160°	2305.2	2294.7	2305.2	2315.6	2303.4
162.5°	2333.0	2322.6	2331.3	2343.5	2327.8
165°	2357.4	2347.0	2352.2	2364.4	2352.2
167.5°	2376.6	2366.1	2371.4	2383.6	2367.9
170°	2392.3	2381.8	2385.3	2397.5	2381.8
172.5°	2402.7	2392.3	2395.8	2408.0	2392.3
175°	2411.3	2399.1	2402.7	2414.8	2397.5
177.5°	2414.8	2402.7	2404.5	2416.7	2401.0
180°	2406.2	2406.2	2406.2	2406.2	2406.2



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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	11.04	11.84	12.04	12.85	14.17	7.01	7.81	8.00	8.81	10.14
	3H	12.71	13.43	13.72	14.44	15.79	8.19	8.90	9.19	9.92	11.26
	4H	13.31	13.99	14.33	15.01	16.36	8.63	9.31	9.65	10.32	11.68
	6H	13.73	14.35	14.76	15.37	16.74	8.95	9.57	9.98	10.59	11.96
	8H	13.85	14.45	14.89	15.48	16.84	9.03	9.63	10.07	10.66	12.03
	12H	13.91	14.47	14.95	15.50	16.89	9.07	9.64	10.11	10.67	12.05
4H	2H	11.06	11.73	12.08	12.75	14.10	7.60	8.27	8.62	9.29	10.64
	3H	12.87	13.44	13.91	14.48	15.85	8.94	9.50	9.97	10.54	11.91
	4H	13.56	14.08	14.60	15.11	16.50	9.48	9.99	10.52	11.03	12.42
	6H	14.07	14.51	15.12	15.57	16.96	9.89	10.33	10.94	11.39	12.78
	8H	14.24	14.65	15.29	15.70	17.11	10.01	10.43	11.07	11.48	12.88
	12H	14.33	14.70	15.40	15.77	17.17	10.07	10.45	11.14	11.51	12.92
8H	4H	13.53	13.94	14.58	14.99	16.39	9.75	10.17	10.80	11.22	12.62
	6H	14.08	14.42	15.16	15.52	16.92	10.26	10.60	11.34	11.70	13.10
	8H	14.30	14.59	15.38	15.67	17.09	10.45	10.75	11.53	11.82	13.24
	12H	14.43	14.69	15.51	15.76	17.22	10.56	10.82	11.65	11.90	13.36
12H	4H	13.48	13.85	14.54	14.91	16.32	9.76	10.13	10.82	11.19	12.60
	6H	14.06	14.36	15.14	15.43	16.85	10.31	10.61	11.39	11.69	13.10
	8H	14.27	14.54	15.36	15.61	17.07	10.51	10.78	11.60	11.85	13.31