

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: P924959

Luminaire Tested: DFN2DIP-PN3F0-090D070US950-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924959
REPORT IS A COMBINATION OF REPORTS P901100 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D070US950-RLLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

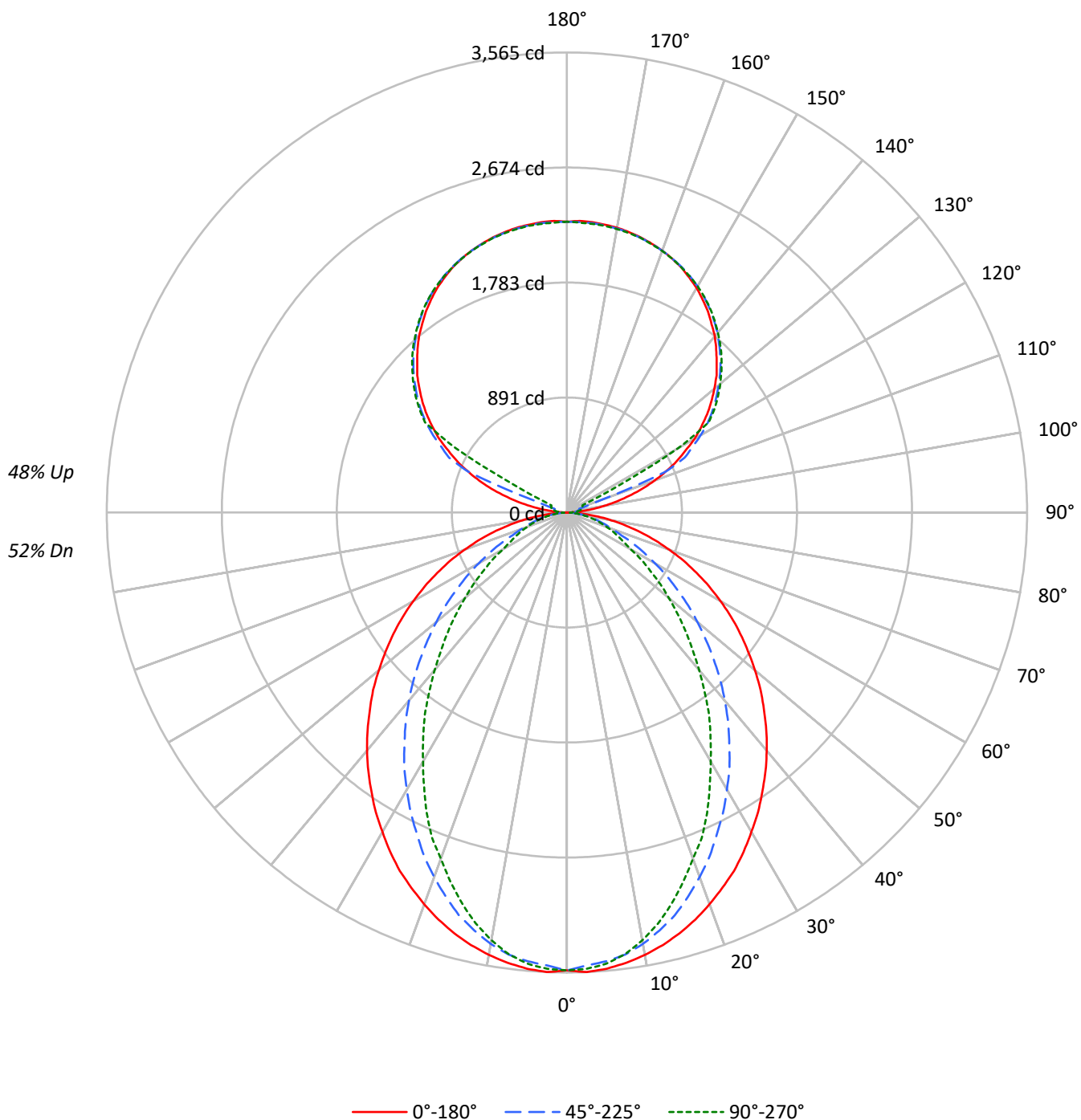
Lumens per Lamp: N/A
Luminaire Lumens: 13909.3 lumens
Efficiency: N/A
Efficacy: 94.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 147.3
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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	108	108	108	108	100	100	100	100	85	85	85		71	71	71		58
1	99	95	91	88	91	88	85	82	75	73	71		63	62	60		52
2	90	83	77	72	84	77	72	68	66	63	59		56	53	51		47
3	83	74	67	61	76	69	62	57	59	54	50		50	47	44		42
4	76	66	58	52	70	61	54	49	53	48	43		45	41	38		38
5	70	59	51	45	65	55	48	43	47	42	38		41	36	33		34
6	65	53	45	39	60	49	42	37	43	37	33		37	33	29		31
7	60	48	40	35	55	45	38	33	39	34	30		34	29	26		29
8	56	44	36	31	52	41	34	29	36	30	26		31	27	24		26
9	52	40	33	28	48	38	31	26	33	28	24		29	24	21		25
10	49	37	30	25	45	35	28	24	30	25	22		27	22	19		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4148	4148	4148
5°	4152	4080	4107
10°	4109	3997	3971
15°	4050	3862	3763
20°	3973	3677	3508
25°	3893	3470	3262
30°	3788	3259	2951
35°	3684	3031	2677
40°	3579	2797	2364
45°	3457	2536	2080
50°	3330	2274	1802
55°	3197	1994	1536
60°	3044	1702	1263
65°	2867	1405	1135
70°	2653	1128	1024
75°	2383	988	928
80°	1992	820	799
85°	1353	534	590

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3457 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	332.6	2.4
10°-20°	913.0	6.6
20°-30°	1281.8	9.2
30°-40°	1397.3	10.0
40°-50°	1284.2	9.2
50°-60°	1008.6	7.3
60°-70°	656.5	4.7
70°-80°	337.9	2.4
80°-90°	90.2	0.6
90°-100°	74.3	0.5
100°-110°	277.0	2.0
110°-120°	734.8	5.3
120°-130°	1218.6	8.8
130°-140°	1294.5	9.3
140°-150°	1203.1	8.6
150°-160°	967.2	7.0
160°-170°	623.3	4.5
170°-180°	214.5	1.5
0°-30°	2527.4	18.2
0°-40°	3924.6	28.2
0°-60°	6217.4	44.7
0°-90°	7302.1	52.5
90°-120°	1086.1	7.8
90°-150°	4802.2	34.5
90°-180°	6607.0	47.5
0°-180°	13909.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3549	3549	3549	3549	3549	
5°	3549	3533	3491	3520	3510	336
15°	3375	3340	3231	3170	3138	951
25°	3064	2961	2749	2617	2569	1409
35°	2640	2476	2194	1991	1920	1652
45°	2158	1943	1606	1378	1300	1667
55°	1641	1390	1044	851	790	1466
65°	1108	848	559	450	440	1099
75°	591	366	257	234	231	625
85°	138	70	61	61	61	158
90°	2	20	32	41	44	13
95°	106	52	64	72	70	125
105°	496	545	100	117	124	530
115°	938	965	1006	251	134	923
125°	1326	1347	1378	1390	1394	1182
135°	1641	1667	1681	1698	1694	1267
145°	1903	1902	1929	1941	1932	1190
155°	2096	2081	2100	2110	2097	966
165°	2208	2198	2203	2215	2203	624
175°	2259	2247	2250	2262	2246	215
180°	2254	2254	2254	2254	2254	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3548.6	3548.6	3548.6	3548.6	3548.6
2.5°	3564.6	3548.6	3513.1	3545.5	3539.1
5°	3548.6	3532.6	3490.7	3519.6	3510.1
7.5°	3519.6	3500.5	3455.6	3468.2	3452.1
10°	3481.1	3458.6	3394.6	3384.7	3365.6
12.5°	3433.1	3404.2	3317.2	3298.2	3262.7
15°	3375.2	3339.8	3230.7	3169.7	3137.7
17.5°	3307.7	3256.3	3121.3	3050.8	2999.4
20°	3230.7	3166.3	3005.8	2925.7	2854.8
22.5°	3147.2	3073.3	2886.9	2777.9	2729.9
25°	3063.8	2960.8	2749.0	2617.4	2569.0
27.5°	2964.3	2854.8	2620.4	2469.5	2395.6
30°	2858.3	2736.0	2479.1	2315.5	2228.6
32.5°	2755.3	2607.5	2344.5	2151.7	2071.2
35°	2639.9	2476.0	2193.5	1991.2	1920.3
37.5°	2527.4	2350.7	2052.1	1830.3	1750.3
40°	2408.6	2216.0	1904.3	1676.4	1592.9
42.5°	2286.5	2081.2	1756.7	1519.0	1438.8
45°	2158.1	1942.8	1605.8	1377.5	1300.5
47.5°	2036.1	1808.2	1461.3	1233.0	1162.5
50°	1901.2	1673.2	1320.0	1098.1	1031.0
52.5°	1769.4	1528.5	1185.1	973.1	912.1
55°	1640.9	1390.5	1043.6	851.2	790.1
57.5°	1509.4	1252.5	918.6	738.7	687.3
60°	1374.4	1117.5	786.8	623.2	571.7
62.5°	1243.0	986.1	674.3	520.3	494.7
65°	1108.0	847.7	558.8	449.7	439.9
67.5°	979.6	719.2	449.7	394.9	385.3
70°	844.7	594.2	372.4	340.4	327.4
72.5°	716.2	478.3	311.4	285.8	279.4
75°	590.8	366.0	256.9	234.4	231.3
77.5°	465.7	260.0	202.3	189.5	183.0
80°	349.9	186.4	154.0	141.4	141.4
82.5°	243.9	125.4	106.0	99.5	99.5
85°	137.9	70.5	61.0	61.0	61.0
87.5°	51.4	25.6	25.6	22.5	22.5
90°	1.5	19.6	32.5	40.8	44.0
92.5°	40.8	34.2	39.1	42.5	44.0
95°	105.9	52.1	63.5	71.8	70.1
97.5°	190.7	57.1	83.1	88.1	89.7
100°	288.8	65.3	92.9	105.9	109.2
102.5°	396.2	393.1	96.3	114.1	119.1
105°	495.8	544.7	99.5	117.3	123.9
107.5°	611.5	652.2	102.8	120.7	127.3
110°	722.6	756.6	285.4	122.4	128.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	826.9	856.1	828.5	125.5	130.5
115°	937.7	965.4	1006.2	251.2	133.8
117.5°	1033.9	1066.5	1094.3	861.0	433.8
120°	1141.6	1166.0	1195.5	1215.0	994.8
122.5°	1232.8	1258.9	1291.7	1301.4	1303.1
125°	1325.8	1347.0	1378.1	1389.5	1394.3
127.5°	1410.6	1433.4	1458.0	1474.3	1475.8
130°	1490.5	1516.7	1534.5	1552.5	1551.0
132.5°	1572.1	1593.4	1611.2	1625.9	1624.4
135°	1640.6	1666.7	1681.3	1697.7	1694.5
137.5°	1712.2	1731.9	1748.3	1764.6	1759.7
140°	1782.4	1795.5	1813.4	1828.1	1819.9
142.5°	1841.2	1852.7	1873.8	1886.7	1878.6
145°	1903.2	1901.5	1929.2	1940.6	1932.5
147.5°	1956.8	1952.1	1979.7	1987.8	1981.5
150°	2009.1	1997.8	2023.9	2033.5	2025.4
152.5°	2053.1	2040.1	2064.6	2074.4	2063.0
155°	2095.6	2081.0	2100.5	2110.2	2097.3
157.5°	2129.8	2116.8	2131.5	2143.0	2129.8
160°	2159.3	2149.4	2159.3	2168.9	2157.5
162.5°	2185.2	2175.5	2183.6	2195.1	2180.4
165°	2208.0	2198.4	2203.2	2214.6	2203.2
167.5°	2226.1	2216.1	2221.2	2232.6	2218.0
170°	2240.8	2230.9	2234.2	2245.6	2230.9
172.5°	2250.5	2240.8	2244.1	2255.4	2240.8
175°	2258.6	2247.1	2250.5	2261.8	2245.6
177.5°	2261.8	2250.5	2252.2	2263.7	2248.9
180°	2253.7	2253.7	2253.7	2253.7	2253.7

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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	12.28	13.13	13.22	14.09	15.32	8.25	9.10	9.19	10.05	11.29
	3H	13.96	14.72	14.91	15.68	16.94	9.43	10.19	10.39	11.16	12.42
	4H	14.56	15.28	15.53	16.25	17.52	9.88	10.60	10.85	11.57	12.84
	6H	14.98	15.64	15.96	16.61	17.90	10.20	10.86	11.18	11.83	13.11
	8H	15.10	15.73	16.09	16.72	18.00	10.28	10.91	11.27	11.90	13.18
	12H	15.16	15.76	16.15	16.74	18.05	10.33	10.92	11.32	11.91	13.21
4H	2H	12.30	13.02	13.27	13.99	15.26	8.84	9.56	9.82	10.53	11.80
	3H	14.13	14.72	15.11	15.72	17.00	10.19	10.79	11.17	11.78	13.07
	4H	14.81	15.36	15.81	16.35	17.66	10.73	11.28	11.72	12.27	13.58
	6H	15.32	15.79	16.33	16.81	18.11	11.15	11.61	12.15	12.63	13.93
	8H	15.50	15.93	16.50	16.94	18.26	11.27	11.71	12.28	12.72	14.04
	12H	15.59	15.98	16.61	17.01	18.33	11.33	11.73	12.36	12.75	14.08
8H	4H	14.78	15.22	15.79	16.23	17.55	11.01	11.45	12.01	12.45	13.77
	6H	15.34	15.70	16.37	16.75	18.07	11.52	11.88	12.55	12.93	14.25
	8H	15.55	15.87	16.59	16.91	18.24	11.71	12.03	12.74	13.06	14.40
	12H	15.69	15.97	16.73	17.00	18.38	11.82	12.10	12.86	13.13	14.51
12H	4H	14.73	15.13	15.76	16.15	17.48	11.01	11.41	12.04	12.43	13.76
	6H	15.32	15.63	16.35	16.67	18.01	11.57	11.89	12.61	12.92	14.26
	8H	15.53	15.81	16.57	16.84	18.22	11.77	12.05	12.81	13.08	14.47