

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: P924938

Luminaire Tested: DFN2DIP-PN3F0-080D090US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924938
REPORT IS A COMBINATION OF REPORTS P899606 AND P896399
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-080D090US950-RLLFLL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

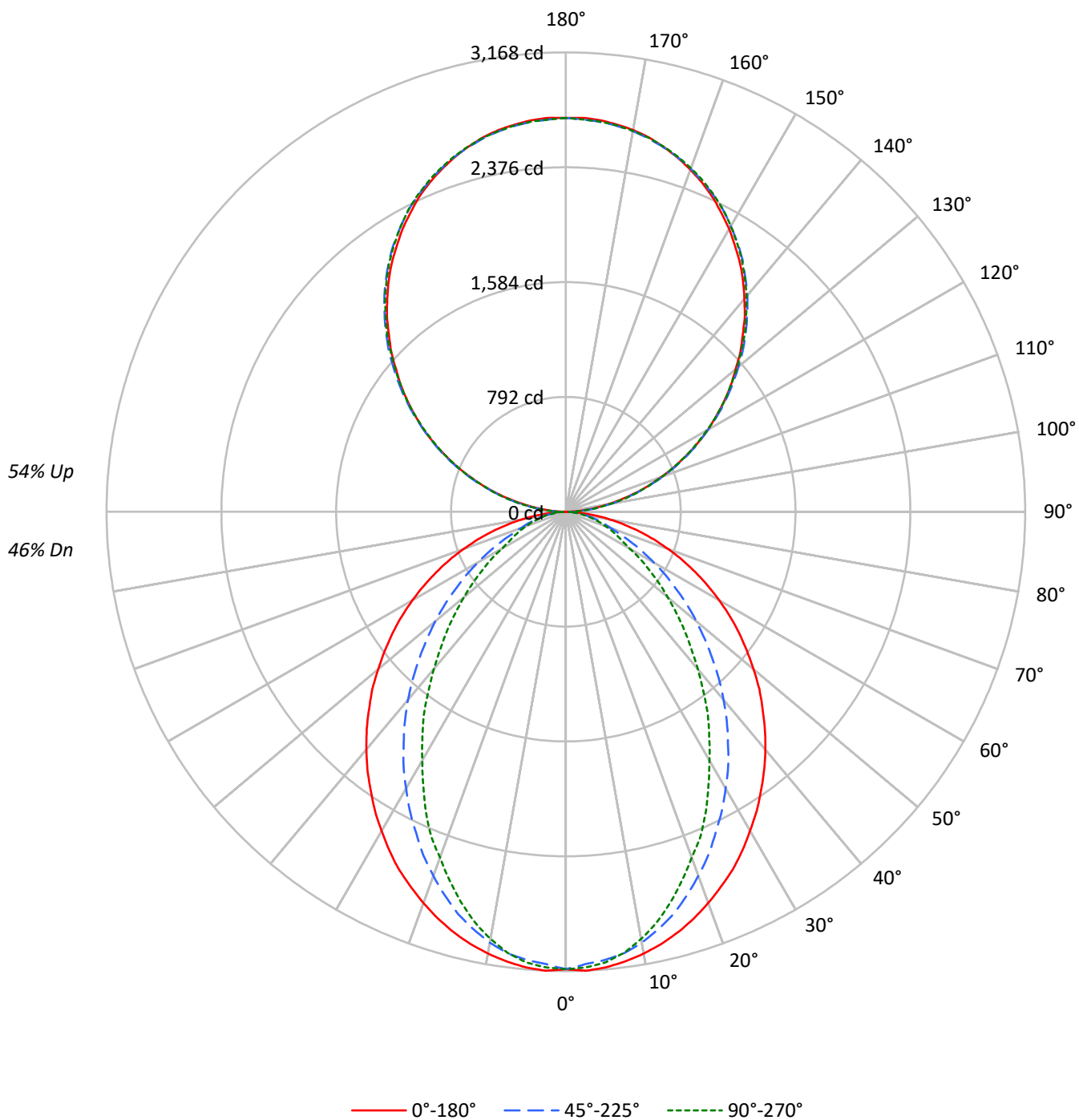
Lumens per Lamp: N/A
Luminaire Lumens: 14085.8 lumens
Efficiency: N/A
Efficacy: 93.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 151.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	53	53	53
1	97	93	90	86	89	86	83	80	72	70	68	59	57	56	47	46	45
2	89	82	76	71	82	75	70	66	63	60	57	52	50	47	42	40	39
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	33
4	75	64	57	51	68	59	53	48	50	45	41	42	38	35	34	31	29
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19
9	51	39	32	27	47	36	30	25	31	26	22	26	22	20	22	19	17
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3687	3687	3687
5°	3691	3626	3650
10°	3652	3552	3530
15°	3600	3433	3345
20°	3531	3268	3118
25°	3461	3085	2900
30°	3367	2897	2623
35°	3275	2695	2380
40°	3181	2486	2101
45°	3073	2255	1849
50°	2960	2021	1602
55°	2842	1773	1365
60°	2706	1513	1122
65°	2549	1249	1008
70°	2358	1003	910
75°	2118	879	825
80°	1771	729	710
85°	1204	474	524

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3073 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	295.6	2.1
10°-20°	811.5	5.8
20°-30°	1139.4	8.1
30°-40°	1242.0	8.8
40°-50°	1141.5	8.1
50°-60°	896.5	6.4
60°-70°	583.5	4.1
70°-80°	300.4	2.1
80°-90°	84.4	0.6
90°-100°	168.0	1.2
100°-110°	533.9	3.8
110°-120°	913.7	6.5
120°-130°	1201.6	8.5
130°-140°	1348.7	9.6
140°-150°	1322.6	9.4
150°-160°	1109.5	7.9
160°-170°	735.8	5.2
170°-180°	257.2	1.8
0°-30°	2246.6	15.9
0°-40°	3488.6	24.8
0°-60°	5526.6	39.2
0°-90°	6494.9	46.1
90°-120°	1615.6	11.5
90°-150°	5488.5	39.0
90°-180°	7591.0	53.9
0°-180°	14085.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3154	3154	3154	3154	3154	
5°	3154	3140	3103	3128	3120	299
15°	3000	2969	2872	2818	2789	845
25°	2723	2632	2444	2327	2284	1252
35°	2347	2201	1950	1770	1707	1469
45°	1918	1727	1427	1224	1156	1481
55°	1459	1236	928	756	702	1303
65°	985	754	497	400	391	976
75°	525	325	228	208	206	555
85°	123	63	54	54	54	141
90°	2	30	80	75	78	14
95°	120	142	146	146	142	133
105°	493	499	504	508	508	520
115°	917	930	926	924	917	907
125°	1334	1354	1348	1340	1338	1192
135°	1725	1750	1755	1753	1746	1333
145°	2094	2110	2124	2126	2117	1308
155°	2394	2401	2408	2420	2413	1102
165°	2605	2602	2602	2619	2607	735
175°	2710	2704	2699	2716	2702	258
180°	2716	2716	2716	2716	2716	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3154.3	3154.3	3154.3	3154.3	3154.3
2.5°	3168.5	3154.3	3122.8	3151.5	3145.8
5°	3154.3	3140.1	3102.8	3128.5	3120.1
7.5°	3128.5	3111.6	3071.6	3082.9	3068.5
10°	3094.3	3074.4	3017.4	3008.6	2991.6
12.5°	3051.7	3025.9	2948.6	2931.6	2900.2
15°	3000.1	2968.7	2871.7	2817.5	2789.0
17.5°	2940.1	2894.4	2774.5	2711.8	2666.0
20°	2871.7	2814.5	2671.9	2600.7	2537.6
22.5°	2797.5	2731.8	2566.2	2469.2	2426.5
25°	2723.3	2631.9	2443.5	2326.6	2283.6
27.5°	2634.9	2537.6	2329.3	2195.2	2129.4
30°	2540.7	2431.9	2203.6	2058.3	1981.0
32.5°	2449.2	2317.8	2084.0	1912.6	1841.1
35°	2346.6	2200.9	1949.8	1770.0	1706.9
37.5°	2246.6	2089.5	1824.1	1627.0	1555.8
40°	2141.0	1969.8	1692.7	1490.1	1415.8
42.5°	2032.5	1849.9	1561.5	1350.2	1278.9
45°	1918.3	1726.9	1427.4	1224.5	1156.1
47.5°	1809.9	1607.3	1299.0	1096.1	1033.4
50°	1689.9	1487.4	1173.3	976.1	916.4
52.5°	1572.8	1358.6	1053.3	865.0	810.8
55°	1458.6	1236.0	927.7	756.5	702.3
57.5°	1341.7	1113.3	816.5	656.6	610.8
60°	1221.7	993.4	699.3	553.9	508.2
62.5°	1104.8	876.4	599.4	462.5	439.8
65°	984.9	753.5	496.7	399.8	390.9
67.5°	870.7	639.4	399.8	351.0	342.6
70°	750.8	528.2	331.0	302.5	291.1
72.5°	636.6	425.2	276.9	254.1	248.3
75°	525.2	325.3	228.4	208.4	205.7
77.5°	414.0	231.1	179.9	168.4	162.7
80°	311.0	165.7	136.9	125.6	125.6
82.5°	216.8	111.4	94.2	88.4	88.4
85°	122.7	62.7	54.2	54.2	54.2
87.5°	45.7	22.7	22.7	20.0	20.0
90°	2.5	29.5	80.2	75.3	77.8
92.5°	50.8	68.8	71.3	73.6	73.6
95°	119.5	142.4	146.5	146.5	142.4
97.5°	198.9	220.2	229.2	229.2	229.2
100°	290.6	309.5	316.0	316.0	313.6
102.5°	387.2	401.2	410.1	412.6	410.1
105°	492.8	499.3	504.3	508.4	508.4
107.5°	597.6	607.4	607.4	609.0	597.6
110°	699.1	712.3	712.3	712.3	705.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	808.8	822.7	820.2	813.8	808.8
115°	916.9	930.0	925.9	923.5	916.9
117.5°	1024.1	1042.1	1030.7	1024.1	1017.5
120°	1132.2	1150.1	1132.2	1132.2	1124.8
122.5°	1230.4	1253.4	1241.9	1235.3	1230.4
125°	1333.6	1354.0	1347.5	1340.1	1337.7
127.5°	1434.2	1459.6	1450.7	1440.8	1434.2
130°	1528.4	1557.9	1553.8	1548.8	1539.9
132.5°	1634.0	1656.9	1658.5	1647.1	1640.6
135°	1724.8	1750.2	1755.2	1752.7	1746.2
137.5°	1826.3	1846.8	1851.0	1849.3	1839.5
140°	1915.6	1936.0	1947.5	1947.5	1938.5
142.5°	2007.3	2027.7	2034.3	2036.8	2027.7
145°	2094.1	2110.4	2123.5	2126.0	2117.0
147.5°	2171.9	2192.3	2202.1	2206.2	2197.3
150°	2252.1	2266.0	2275.0	2282.3	2275.0
152.5°	2323.3	2337.2	2348.7	2357.7	2348.7
155°	2394.5	2401.0	2408.5	2419.9	2412.6
157.5°	2455.9	2460.8	2464.9	2481.3	2469.8
160°	2510.7	2515.7	2518.2	2532.0	2522.2
162.5°	2561.5	2561.5	2564.0	2579.5	2568.1
165°	2604.9	2602.4	2602.4	2618.8	2607.4
167.5°	2644.2	2636.9	2636.9	2653.2	2641.7
170°	2673.7	2667.1	2664.7	2681.0	2667.1
172.5°	2694.1	2687.6	2685.1	2701.5	2687.6
175°	2710.5	2703.9	2699.1	2715.5	2701.5
177.5°	2719.5	2713.0	2708.0	2722.0	2708.0
180°	2715.5	2715.5	2715.5	2715.5	2715.5

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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	11.26	12.06	12.26	13.07	14.40	7.23	8.03	8.23	9.03	10.36
	3H	12.93	13.65	13.94	14.66	16.01	8.41	9.13	9.42	10.14	11.49
	4H	13.54	14.21	14.56	15.23	16.59	8.86	9.53	9.88	10.55	11.91
	6H	13.95	14.57	14.98	15.59	16.96	9.17	9.79	10.20	10.81	12.18
	8H	14.08	14.67	15.11	15.70	17.07	9.26	9.85	10.29	10.89	12.25
	12H	14.13	14.70	15.17	15.73	17.11	9.30	9.86	10.34	10.89	12.28
4H	2H	11.28	11.95	12.30	12.97	14.33	7.82	8.50	8.85	9.51	10.87
	3H	13.10	13.66	14.13	14.70	16.07	9.16	9.72	10.19	10.77	12.14
	4H	13.78	14.30	14.82	15.33	16.73	9.70	10.22	10.74	11.25	12.65
	6H	14.29	14.73	15.34	15.79	17.18	10.11	10.55	11.16	11.61	13.00
	8H	14.46	14.87	15.51	15.93	17.33	10.24	10.65	11.29	11.70	13.10
	12H	14.55	14.92	15.62	15.99	17.40	10.30	10.67	11.37	11.74	13.14
8H	4H	13.75	14.16	14.80	15.21	16.62	9.98	10.39	11.03	11.44	12.84
	6H	14.31	14.65	15.38	15.74	17.14	10.49	10.83	11.56	11.92	13.32
	8H	14.52	14.82	15.60	15.89	17.32	10.67	10.97	11.75	12.05	13.47
	12H	14.65	14.91	15.74	15.99	17.45	10.78	11.05	11.87	12.12	13.58
12H	4H	13.70	14.07	14.77	15.14	16.55	9.98	10.35	11.05	11.42	12.83
	6H	14.28	14.58	15.36	15.66	17.08	10.53	10.83	11.61	11.91	13.33
	8H	14.50	14.76	15.58	15.83	17.29	10.74	11.00	11.82	12.07	13.53