

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: P914198

Luminaire Tested: DFN2DIP-PN4F0-070D120US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914198
REPORT IS A COMBINATION OF REPORTS P899760 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-070D120US927-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

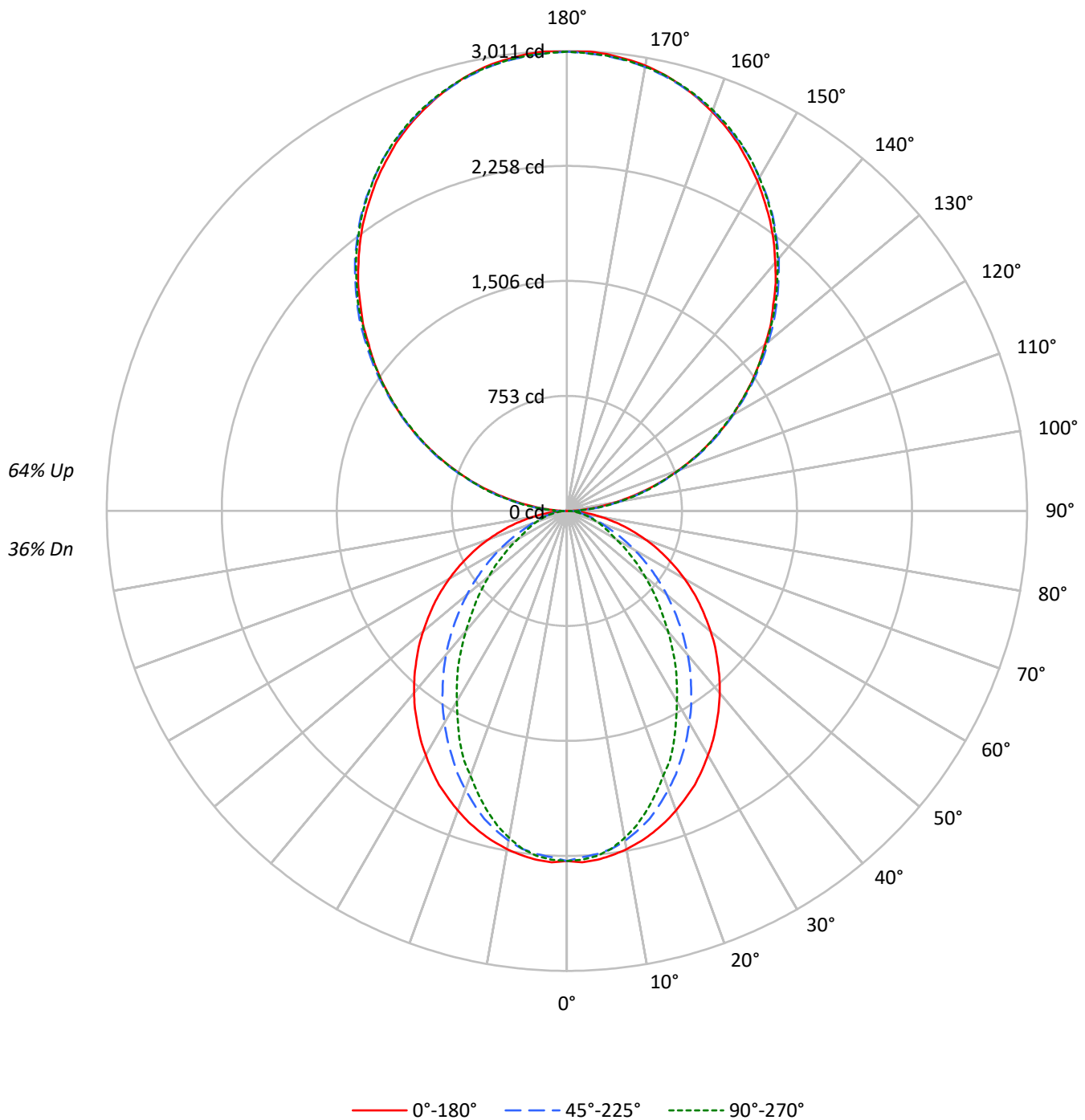
Lumens per Lamp: N/A
Luminaire Lumens: 13126.4 lumens
Efficiency: N/A
Efficacy: 77.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 170.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	43	43	43
1	95	91	87	84	86	82	79	77	67	64	63	52	51	49	39	38	37
2	87	80	74	69	78	72	68	63	59	55	52	46	44	42	34	33	32
3	79	70	63	58	72	64	58	53	52	48	44	41	38	36	31	29	27
4	73	62	55	49	66	57	50	45	46	42	38	37	34	31	28	26	24
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	25	23	21
6	62	50	42	37	56	46	39	34	38	33	29	30	26	24	23	21	19
7	57	45	38	32	51	41	35	30	34	29	25	27	24	21	21	19	17
8	53	41	34	28	48	38	31	26	31	26	23	25	21	19	19	17	15
9	49	37	30	25	45	34	28	24	29	24	20	23	20	17	18	15	14
10	46	34	27	23	42	32	25	21	26	22	18	21	18	15	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1673	1673	1673
5°	1676	1647	1657
10°	1659	1615	1604
15°	1636	1561	1521
20°	1606	1488	1418
25°	1575	1406	1320
30°	1533	1321	1195
35°	1493	1231	1085
40°	1451	1137	959
45°	1403	1033	844
50°	1353	927	733
55°	1302	815	626
60°	1241	697	515
65°	1172	578	464
70°	1088	466	420
75°	983	411	383
80°	830	346	333
85°	578	232	253

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2354 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	1.6
10°-20°	589.7	4.5
20°-30°	827.9	6.3
30°-40°	902.4	6.9
40°-50°	829.4	6.3
50°-60°	651.4	5.0
60°-70°	424.0	3.2
70°-80°	218.2	1.7
80°-90°	64.3	0.5
90°-100°	186.0	1.4
100°-110°	591.1	4.5
110°-120°	1011.6	7.7
120°-130°	1330.4	10.1
130°-140°	1493.3	11.4
140°-150°	1464.3	11.2
150°-160°	1228.4	9.4
160°-170°	814.6	6.2
170°-180°	284.7	2.2
0°-30°	1632.3	12.4
0°-40°	2534.7	19.3
0°-60°	4015.5	30.6
0°-90°	4722.0	36.0
90°-120°	1788.7	13.6
90°-150°	6076.6	46.3
90°-180°	8404.0	64.0
0°-180°	13126.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2282	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	3	33	89	83	86	13
95°	132	158	162	162	158	147
105°	546	553	558	563	563	576
115°	1015	1030	1025	1022	1015	1004
125°	1476	1499	1492	1484	1481	1319
135°	1910	1938	1943	1940	1933	1476
145°	2318	2337	2351	2354	2344	1449
155°	2651	2658	2667	2679	2671	1220
165°	2884	2881	2881	2900	2887	814
175°	3001	2994	2988	3006	2991	285
180°	3006	3006	3006	3006	3006	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.9	2291.9	2291.9	2291.9	2291.9
2.5°	2302.2	2291.9	2269.0	2289.9	2285.7
5°	2291.9	2281.5	2254.5	2273.2	2267.0
7.5°	2273.2	2260.8	2231.8	2239.9	2229.6
10°	2248.3	2233.8	2192.4	2186.0	2173.7
12.5°	2217.2	2198.5	2142.5	2130.1	2107.2
15°	2179.8	2157.0	2086.5	2047.2	2026.5
17.5°	2136.3	2103.1	2015.9	1970.3	1937.1
20°	2086.5	2044.9	1941.3	1889.6	1843.8
22.5°	2032.7	1984.9	1864.5	1794.1	1763.1
25°	1978.7	1912.2	1775.4	1690.4	1659.2
27.5°	1914.5	1843.8	1692.4	1595.0	1547.2
30°	1846.0	1767.0	1601.1	1495.5	1439.4
32.5°	1779.6	1684.1	1514.2	1389.6	1337.7
35°	1704.9	1599.1	1416.7	1286.0	1240.2
37.5°	1632.4	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.9	1082.7	1028.7
42.5°	1476.8	1344.1	1134.6	981.0	929.3
45°	1393.8	1254.7	1037.1	889.7	839.9
47.5°	1315.0	1167.8	943.8	796.4	750.8
50°	1227.9	1080.7	852.5	709.2	665.9
52.5°	1142.7	987.1	765.3	628.4	589.1
55°	1059.8	898.0	674.0	549.7	510.3
57.5°	974.9	808.9	593.3	477.1	443.9
60°	887.7	721.8	508.1	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.6	547.5	360.9	290.5	284.1
67.5°	632.6	464.5	290.5	255.0	248.9
70°	545.5	383.7	240.5	219.8	211.4
72.5°	462.6	309.0	201.1	184.7	180.5
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.7	122.3	118.2
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.1	45.6	39.4	39.4	39.4
87.5°	33.2	16.5	16.5	14.5	14.5
90°	2.7	32.6	88.8	83.4	86.1
92.5°	56.2	76.1	78.8	81.6	81.6
95°	132.3	157.7	162.2	162.2	157.7
97.5°	220.2	243.8	253.8	253.8	253.8
100°	321.8	342.6	349.8	349.8	347.1
102.5°	428.7	444.1	454.1	456.9	454.1
105°	545.7	552.9	558.3	562.8	562.8
107.5°	661.6	672.6	672.6	674.3	661.6
110°	774.0	788.5	788.5	788.5	781.3

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	895.5	910.9	908.2	900.9	895.5
115°	1015.1	1029.7	1025.1	1022.4	1015.1
117.5°	1133.8	1153.8	1141.1	1133.8	1126.6
120°	1253.5	1273.4	1253.5	1253.5	1245.4
122.5°	1362.3	1387.7	1375.0	1367.7	1362.3
125°	1476.5	1499.1	1491.9	1483.8	1481.0
127.5°	1588.0	1616.0	1606.1	1595.2	1588.0
130°	1692.2	1724.8	1720.3	1714.8	1704.9
132.5°	1809.1	1834.5	1836.3	1823.6	1816.4
135°	1909.7	1937.8	1943.3	1940.5	1933.3
137.5°	2022.1	2044.8	2049.3	2047.5	2036.6
140°	2120.9	2143.6	2156.2	2156.2	2146.3
142.5°	2222.5	2245.1	2252.3	2255.0	2245.1
145°	2318.5	2336.6	2351.1	2353.9	2343.9
147.5°	2404.6	2427.2	2438.2	2442.7	2432.7
150°	2493.5	2508.8	2518.8	2527.0	2518.8
152.5°	2572.3	2587.7	2600.4	2610.4	2600.4
155°	2651.1	2658.4	2666.6	2679.2	2671.1
157.5°	2719.2	2724.5	2729.1	2747.2	2734.5
160°	2779.8	2785.3	2788.0	2803.4	2792.5
162.5°	2836.0	2836.0	2838.8	2856.0	2843.3
165°	2884.1	2881.4	2881.4	2899.5	2886.8
167.5°	2927.6	2919.4	2919.4	2937.6	2924.9
170°	2960.2	2952.9	2950.2	2968.4	2952.9
172.5°	2982.9	2975.6	2972.9	2991.0	2975.6
175°	3001.0	2993.7	2988.3	3006.4	2991.0
177.5°	3011.0	3003.7	2998.2	3013.7	2998.2
180°	3006.4	3006.4	3006.4	3006.4	3006.4

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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	7.47	8.20	8.54	9.27	10.73	3.43	4.16	4.51	5.23	6.69
	3H	9.14	9.79	10.22	10.87	12.35	4.62	5.27	5.70	6.35	7.82
	4H	9.75	10.36	10.84	11.45	12.93	5.06	5.68	6.16	6.76	8.25
	6H	10.17	10.73	11.27	11.82	13.31	5.38	5.95	6.48	7.03	8.53
	8H	10.29	10.83	11.40	11.93	13.42	5.47	6.01	6.57	7.11	8.60
	12H	10.35	10.86	11.46	11.96	13.47	5.51	6.02	6.62	7.11	8.63
4H	2H	7.47	8.09	8.58	9.17	10.66	4.02	4.64	5.12	5.72	7.20
	3H	9.30	9.81	10.40	10.92	12.42	5.36	5.87	6.47	6.98	8.48
	4H	9.99	10.46	11.10	11.56	13.08	5.90	6.38	7.02	7.47	8.99
	6H	10.50	10.90	11.62	12.02	13.54	6.32	6.72	7.44	7.84	9.35
	8H	10.67	11.05	11.79	12.16	13.69	6.45	6.82	7.57	7.94	9.46
	12H	10.77	11.11	11.90	12.23	13.76	6.51	6.85	7.64	7.97	9.51
8H	4H	9.95	10.32	11.07	11.44	12.96	6.18	6.56	7.30	7.67	9.20
	6H	10.51	10.82	11.65	11.98	13.50	6.69	7.01	7.83	8.16	9.68
	8H	10.73	11.00	11.88	12.14	13.68	6.89	7.16	8.03	8.29	9.84
	12H	10.87	11.11	12.02	12.24	13.82	7.00	7.24	8.15	8.37	9.95
12H	4H	9.90	10.24	11.03	11.36	12.89	6.18	6.52	7.32	7.65	9.18
	6H	10.49	10.76	11.63	11.90	13.44	6.74	7.02	7.89	8.15	9.70
	8H	10.71	10.95	11.86	12.08	13.66	6.95	7.19	8.10	8.32	9.90