

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: P922374

Luminaire Tested: DFN2DIP-PN4F0-070D100US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922374
REPORT IS A COMBINATION OF REPORTS P899724 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-070D100US940-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

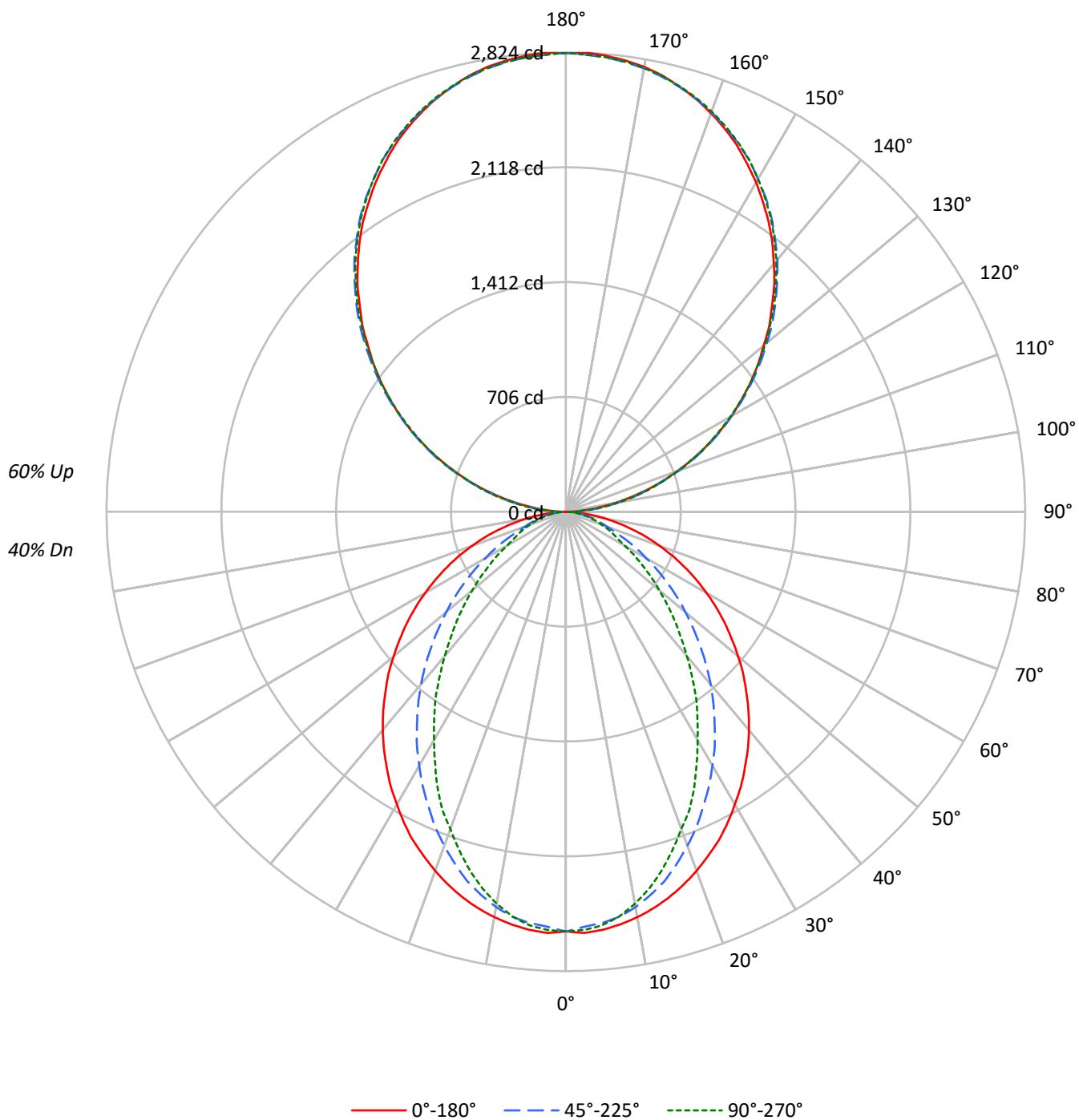
Lumens per Lamp: N/A
Luminaire Lumens: 13197.3 lumens
Efficiency: N/A
Efficacy: 93.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 141.6
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	105	105	105	105	95	95	95	95	78	78	78	62	62	62	47	47	47
1	96	92	88	85	87	84	81	78	69	67	65	55	54	52	42	41	41
2	88	81	75	70	80	74	69	65	61	57	54	49	46	44	38	36	35
3	80	71	64	59	73	65	59	54	54	50	46	43	40	38	34	32	30
4	74	63	56	50	67	58	51	46	48	43	39	39	35	33	30	28	26
5	68	56	49	43	61	52	45	40	43	38	34	35	31	29	28	25	23
6	62	51	43	37	57	47	40	35	39	34	30	32	28	25	25	23	20
7	58	46	38	33	53	42	35	31	35	30	27	29	25	22	23	20	18
8	54	42	34	29	49	38	32	27	32	27	24	27	23	20	21	19	17
9	50	38	31	26	45	35	29	24	30	25	21	25	21	18	20	17	15
10	47	35	28	23	43	32	26	22	27	22	19	23	19	16	18	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1883	1883	1883
5°	1886	1854	1865
10°	1868	1817	1805
15°	1842	1758	1712
20°	1808	1675	1597
25°	1773	1582	1486
30°	1726	1487	1345
35°	1680	1385	1221
40°	1634	1280	1079
45°	1580	1162	951
50°	1524	1044	825
55°	1465	917	704
60°	1397	785	580
65°	1319	650	522
70°	1225	525	473
75°	1106	463	431
80°	935	389	375
85°	651	261	284

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2209 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	241.8	1.8
10°-20°	663.7	5.0
20°-30°	931.9	7.1
30°-40°	1015.8	7.7
40°-50°	933.6	7.1
50°-60°	733.2	5.6
60°-70°	477.3	3.6
70°-80°	245.7	1.9
80°-90°	70.7	0.5
90°-100°	174.5	1.3
100°-110°	554.5	4.2
110°-120°	948.9	7.2
120°-130°	1247.9	9.5
130°-140°	1400.8	10.6
140°-150°	1373.6	10.4
150°-160°	1152.3	8.7
160°-170°	764.1	5.8
170°-180°	267.1	2.0
0°-30°	1837.4	13.9
0°-40°	2853.2	21.6
0°-60°	4520.0	34.2
0°-90°	5313.7	40.3
90°-120°	1677.9	12.7
90°-150°	5700.1	43.2
90°-180°	7884.0	59.7
0°-180°	13197.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2580	2580	2580	2580	2580	
5°	2580	2568	2538	2559	2552	245
15°	2454	2428	2349	2304	2281	691
25°	2227	2152	1998	1903	1868	1024
35°	1919	1800	1595	1448	1396	1201
45°	1569	1412	1167	1002	946	1212
55°	1193	1011	759	619	574	1066
65°	806	616	406	327	320	799
75°	430	266	187	170	168	454
85°	100	51	44	44	44	115
90°	3	31	83	78	81	13
95°	124	148	152	152	148	138
105°	512	519	524	528	528	540
115°	952	966	962	959	952	942
125°	1385	1406	1400	1392	1389	1238
135°	1791	1818	1823	1820	1814	1385
145°	2175	2192	2206	2208	2199	1359
155°	2487	2494	2501	2513	2506	1145
165°	2705	2703	2703	2720	2708	763
175°	2815	2808	2803	2820	2806	267
180°	2820	2820	2820	2820	2820	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2579.8	2579.8	2579.8	2579.8	2579.8
2.5°	2591.4	2579.8	2554.0	2577.6	2572.9
5°	2579.8	2568.1	2537.7	2558.8	2551.8
7.5°	2558.8	2544.9	2512.2	2521.3	2509.7
10°	2530.8	2514.4	2467.8	2460.7	2446.8
12.5°	2495.8	2474.8	2411.6	2397.7	2371.9
15°	2453.7	2427.9	2348.7	2304.4	2281.1
17.5°	2404.7	2367.3	2269.2	2217.9	2180.5
20°	2348.7	2301.9	2185.2	2127.0	2075.5
22.5°	2288.0	2234.3	2098.7	2019.5	1984.6
25°	2227.3	2152.5	1998.4	1902.8	1867.7
27.5°	2155.0	2075.5	1905.1	1795.4	1741.6
30°	2078.0	1989.0	1802.2	1683.4	1620.2
32.5°	2003.1	1895.7	1704.4	1564.2	1505.7
35°	1919.1	1800.0	1594.7	1447.6	1396.1
37.5°	1837.5	1708.9	1491.9	1330.6	1272.5
40°	1751.0	1611.1	1384.4	1218.7	1158.0
42.5°	1662.3	1513.0	1277.1	1104.2	1046.1
45°	1569.0	1412.4	1167.4	1001.5	945.5
47.5°	1480.2	1314.6	1062.4	896.4	845.2
50°	1382.2	1216.5	959.6	798.3	749.6
52.5°	1286.3	1111.2	861.5	707.4	663.1
55°	1192.9	1010.8	758.7	618.8	574.4
57.5°	1097.3	910.5	667.8	537.0	499.6
60°	999.3	812.4	571.9	453.1	415.6
62.5°	903.6	716.8	490.2	378.3	359.6
65°	805.5	616.3	406.3	327.0	319.8
67.5°	712.1	522.9	327.0	287.0	280.2
70°	614.0	431.9	270.7	247.4	238.0
72.5°	520.7	347.8	226.4	207.9	203.1
75°	429.5	266.0	186.7	170.4	168.2
77.5°	338.6	189.0	147.1	137.7	133.0
80°	254.4	135.5	112.0	102.8	102.8
82.5°	177.4	91.1	77.0	72.3	72.3
85°	100.3	51.3	44.3	44.3	44.3
87.5°	37.4	18.5	18.5	16.3	16.3
90°	2.6	30.6	83.3	78.2	80.8
92.5°	52.7	71.4	74.0	76.5	76.5
95°	124.1	147.9	152.2	152.2	147.9
97.5°	206.6	228.7	238.1	238.1	238.1
100°	301.8	321.4	328.1	328.1	325.7
102.5°	402.2	416.6	426.0	428.5	426.0
105°	511.8	518.6	523.7	528.0	528.0
107.5°	620.6	630.9	630.9	632.6	620.6
110°	726.1	739.7	739.7	739.7	732.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	840.0	854.4	851.9	845.1	840.0
115°	952.3	965.8	961.6	959.0	952.3
117.5°	1063.6	1082.4	1070.4	1063.6	1056.8
120°	1175.8	1194.5	1175.8	1175.8	1168.2
122.5°	1277.8	1301.6	1289.8	1283.0	1277.8
125°	1385.0	1406.2	1399.5	1391.8	1389.3
127.5°	1489.6	1515.9	1506.5	1496.4	1489.6
130°	1587.3	1617.9	1613.7	1608.6	1599.3
132.5°	1697.0	1720.8	1722.5	1710.7	1703.8
135°	1791.4	1817.8	1822.8	1820.3	1813.5
137.5°	1896.8	1918.1	1922.3	1920.7	1910.4
140°	1989.5	2010.7	2022.7	2022.7	2013.3
142.5°	2084.7	2106.0	2112.7	2115.3	2106.0
145°	2174.8	2191.8	2205.5	2208.0	2198.6
147.5°	2255.6	2276.9	2287.1	2291.3	2282.0
150°	2339.0	2353.4	2362.8	2370.3	2362.8
152.5°	2412.9	2427.3	2439.3	2448.6	2439.3
155°	2486.9	2493.7	2501.3	2513.2	2505.5
157.5°	2550.6	2555.7	2560.0	2577.0	2565.1
160°	2607.6	2612.7	2615.2	2629.7	2619.5
162.5°	2660.3	2660.3	2662.8	2679.0	2667.1
165°	2705.4	2702.8	2702.8	2719.8	2707.9
167.5°	2746.2	2738.5	2738.5	2755.6	2743.6
170°	2776.8	2770.0	2767.4	2784.5	2770.0
172.5°	2798.0	2791.2	2788.6	2805.7	2791.2
175°	2815.0	2808.3	2803.2	2820.1	2805.7
177.5°	2824.4	2817.6	2812.5	2826.9	2812.5
180°	2820.1	2820.1	2820.1	2820.1	2820.1

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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	8.37	9.13	9.41	10.17	11.58	4.33	5.09	5.38	6.13	7.54
	3H	10.04	10.72	11.10	11.77	13.20	5.52	6.19	6.57	7.25	8.67
	4H	10.65	11.29	11.71	12.35	13.78	5.96	6.61	7.03	7.66	9.09
	6H	11.07	11.66	12.14	12.72	14.16	6.28	6.87	7.36	7.93	9.38
	8H	11.20	11.76	12.27	12.83	14.27	6.37	6.93	7.45	8.01	9.45
	12H	11.26	11.79	12.34	12.86	14.32	6.41	6.95	7.50	8.01	9.48
4H	2H	8.38	9.02	9.45	10.07	11.51	4.92	5.56	5.99	6.62	8.05
	3H	10.20	10.74	11.28	11.82	13.26	6.27	6.80	7.34	7.88	9.33
	4H	10.89	11.38	11.98	12.46	13.92	6.81	7.30	7.89	8.37	9.84
	6H	11.41	11.83	12.50	12.92	14.38	7.23	7.65	8.32	8.74	10.20
	8H	11.58	11.98	12.68	13.06	14.54	7.36	7.75	8.45	8.84	10.31
	12H	11.68	12.03	12.79	13.13	14.61	7.42	7.77	8.53	8.87	10.35
8H	4H	10.86	11.25	11.95	12.34	13.81	7.09	7.48	8.18	8.57	10.04
	6H	11.42	11.75	12.54	12.88	14.35	7.61	7.93	8.72	9.06	10.53
	8H	11.64	11.92	12.76	13.04	14.53	7.80	8.08	8.92	9.19	10.68
	12H	11.78	12.03	12.90	13.14	14.67	7.91	8.16	9.04	9.27	10.80
12H	4H	10.81	11.16	11.91	12.26	13.74	7.09	7.44	8.20	8.55	10.03
	6H	11.40	11.68	12.52	12.79	14.29	7.65	7.94	8.77	9.05	10.54
	8H	11.62	11.87	12.74	12.98	14.51	7.86	8.11	8.99	9.22	10.75