

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: P922659

Luminaire Tested: DFN2DIP-SQ2F0-060D080US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922659
REPORT IS A COMBINATION OF REPORTS P901358 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-060D080US940-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

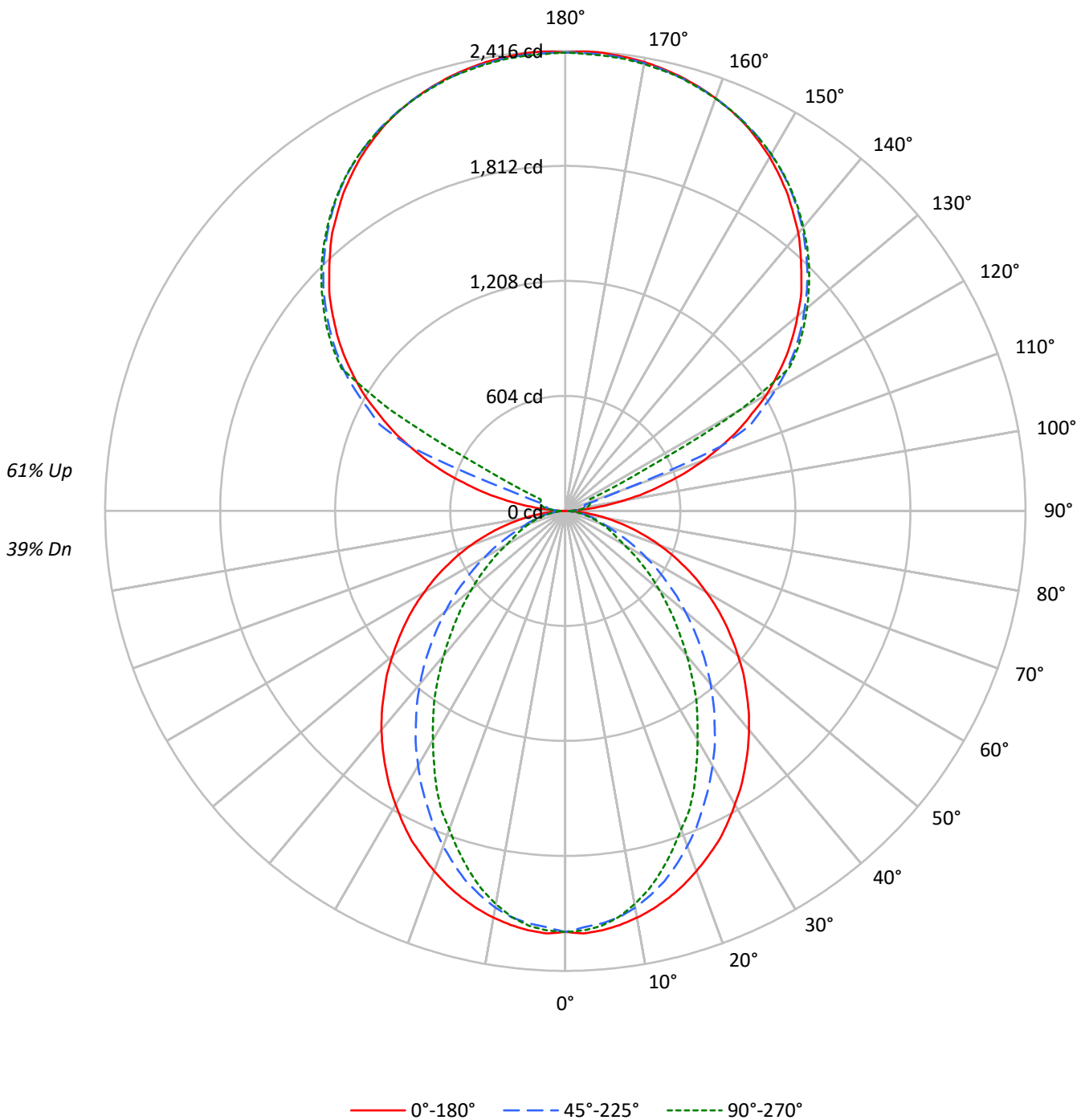
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11610.1 lumens
Efficiency: N/A
Efficacy: 96.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 120
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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				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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46	39			
1	96	92	88	85	87	83	80	78	68	66	64	54	53	52	41	41	40	34			
2	87	80	75	70	79	73	68	64	60	57	54	48	46	44	37	35	34	29			
3	80	71	64	58	73	65	59	54	53	49	46	43	40	37	33	31	29	25			
4	73	63	55	50	67	58	51	46	48	43	39	38	35	32	30	27	26	22			
5	67	56	48	43	61	52	45	40	43	38	34	35	31	28	27	25	23	19			
6	62	51	43	37	56	46	40	35	39	34	30	31	28	25	25	22	20	17			
7	57	46	38	33	52	42	35	31	35	30	26	29	25	22	23	20	18	15			
8	53	42	34	29	49	38	32	27	32	27	23	26	22	20	21	18	16	14			
9	50	38	31	26	45	35	29	24	29	24	21	24	20	18	19	17	15	12			
10	46	35	28	23	42	32	26	22	27	22	19	22	19	16	18	15	13	11			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4862	4862	4862
5°	4862	4774	4809
10°	4805	4670	4646
15°	4731	4506	4398
20°	4634	4283	4096
25°	4537	4036	3804
30°	4407	3783	3436
35°	4280	3512	3114
40°	4151	3233	2745
45°	4001	2925	2411
50°	3846	2615	2086
55°	3682	2284	1773
60°	3493	1941	1453
65°	3275	1593	1300
70°	3010	1269	1167
75°	2677	1098	1048
80°	2197	891	888
85°	1431	554	632

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4001 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.2	1.8
10°-20°	568.9	4.9
20°-30°	798.7	6.9
30°-40°	870.7	7.5
40°-50°	800.3	6.9
50°-60°	628.5	5.4
60°-70°	409.1	3.5
70°-80°	210.6	1.8
80°-90°	58.0	0.5
90°-100°	79.4	0.7
100°-110°	295.9	2.5
110°-120°	784.9	6.8
120°-130°	1301.8	11.2
130°-140°	1382.8	11.9
140°-150°	1285.1	11.1
150°-160°	1033.2	8.9
160°-170°	665.8	5.7
170°-180°	229.2	2.0
0°-30°	1574.9	13.6
0°-40°	2445.6	21.1
0°-60°	3874.3	33.4
0°-90°	4552.0	39.2
90°-120°	1160.2	10.0
90°-150°	5129.9	44.2
90°-180°	7058.0	60.8
0°-180°	11610.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2211	2211	2211	2211	2211	
5°	2211	2201	2175	2193	2187	210
15°	2103	2081	2013	1975	1955	593
25°	1909	1845	1713	1631	1601	878
35°	1645	1543	1367	1241	1197	1030
45°	1345	1211	1001	858	810	1039
55°	1022	866	650	530	492	914
65°	690	528	348	280	274	685
75°	368	228	160	146	144	389
85°	86	44	38	38	38	99
90°	2	21	35	44	47	11
95°	113	56	68	77	75	134
105°	530	582	106	125	132	566
115°	1002	1031	1075	268	143	986
125°	1416	1439	1472	1484	1489	1263
135°	1753	1780	1796	1814	1810	1354
145°	2033	2031	2061	2073	2064	1272
155°	2238	2223	2244	2254	2240	1032
165°	2359	2348	2354	2366	2354	666
175°	2413	2400	2404	2416	2399	230
180°	2408	2408	2408	2408	2408	



TEST NUMBER: P922659

CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US940-RLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2211.3	2211.3	2211.3	2211.3	2211.3
2.5°	2221.3	2211.3	2189.1	2209.3	2205.3
5°	2211.3	2201.3	2175.1	2193.3	2187.3
7.5°	2193.3	2181.3	2153.3	2161.1	2151.2
10°	2169.2	2155.2	2115.3	2109.2	2097.2
12.5°	2139.3	2121.2	2067.1	2055.2	2033.1
15°	2103.2	2081.1	2013.1	1975.1	1955.2
17.5°	2061.2	2029.1	1945.0	1901.0	1869.0
20°	2013.1	1973.0	1873.0	1823.1	1779.0
22.5°	1961.1	1915.0	1798.9	1731.0	1701.0
25°	1909.2	1845.0	1713.0	1631.0	1600.9
27.5°	1847.2	1779.0	1632.9	1538.8	1492.8
30°	1781.1	1704.9	1544.8	1442.9	1388.7
32.5°	1717.0	1624.9	1461.0	1340.8	1290.7
35°	1645.0	1542.9	1366.9	1240.7	1196.6
37.5°	1574.9	1464.7	1278.8	1140.6	1090.7
40°	1500.8	1380.9	1186.6	1044.5	992.6
42.5°	1424.9	1296.8	1094.7	946.5	896.6
45°	1344.8	1210.6	1000.7	858.4	810.4
47.5°	1268.8	1126.8	910.6	768.4	724.4
50°	1184.7	1042.7	822.5	684.3	642.5
52.5°	1102.5	952.4	738.4	606.4	568.4
55°	1022.5	866.5	650.3	530.4	492.3
57.5°	940.6	780.4	572.4	460.3	428.2
60°	856.5	696.4	490.3	388.3	356.2
62.5°	774.5	614.5	420.2	324.2	308.3
65°	690.5	528.2	348.2	280.3	274.1
67.5°	610.4	448.2	280.3	246.1	240.1
70°	526.3	370.2	232.0	212.1	204.0
72.5°	446.3	298.1	194.0	178.2	174.1
75°	368.2	228.0	160.1	146.1	144.2
77.5°	290.3	162.0	126.1	118.1	114.0
80°	218.0	116.1	95.9	88.1	88.1
82.5°	152.0	78.1	66.0	62.0	62.0
85°	86.0	44.0	38.0	38.0	38.0
87.5°	32.1	16.0	16.0	14.0	14.0
90°	1.7	20.9	34.8	43.6	47.0
92.5°	43.6	36.6	41.8	45.3	47.0
95°	113.2	55.6	67.9	76.8	74.9
97.5°	203.8	61.0	88.7	94.2	95.8
100°	308.4	69.7	99.3	113.2	116.6
102.5°	423.3	419.9	102.8	121.8	127.2
105°	529.6	581.9	106.3	125.4	132.4
107.5°	653.3	696.7	109.9	128.9	135.9
110°	771.9	808.2	305.0	130.7	137.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	883.3	914.5	885.0	134.0	139.5
115°	1001.7	1031.3	1074.9	268.3	142.9
117.5°	1104.5	1139.2	1169.0	919.7	463.4
120°	1219.5	1245.5	1277.0	1297.9	1062.7
122.5°	1316.9	1344.9	1379.8	1390.2	1392.0
125°	1416.2	1439.0	1472.0	1484.3	1489.4
127.5°	1506.8	1531.2	1557.6	1574.8	1576.5
130°	1592.2	1620.1	1639.2	1658.5	1656.8
132.5°	1679.4	1702.1	1721.2	1736.9	1735.2
135°	1752.6	1780.5	1796.0	1813.6	1810.1
137.5°	1829.2	1850.0	1867.6	1885.0	1879.8
140°	1904.0	1918.1	1937.2	1952.8	1944.1
142.5°	1966.9	1979.1	2001.6	2015.5	2006.8
145°	2033.1	2031.2	2060.8	2073.0	2064.3
147.5°	2090.4	2085.3	2114.8	2123.5	2116.7
150°	2146.3	2134.0	2162.0	2172.3	2163.6
152.5°	2193.3	2179.3	2205.4	2216.0	2203.8
155°	2238.5	2223.0	2243.9	2254.2	2240.4
157.5°	2275.1	2261.3	2277.0	2289.2	2275.1
160°	2306.6	2296.1	2306.6	2316.9	2304.7
162.5°	2334.3	2324.0	2332.6	2344.8	2329.1
165°	2358.8	2348.4	2353.6	2365.7	2353.6
167.5°	2377.9	2367.4	2372.8	2385.0	2369.3
170°	2393.7	2383.1	2386.7	2398.9	2383.1
172.5°	2404.1	2393.7	2397.2	2409.4	2393.7
175°	2412.7	2400.5	2404.1	2416.2	2398.9
177.5°	2416.2	2404.1	2405.8	2418.1	2402.4
180°	2407.5	2407.5	2407.5	2407.5	2407.5



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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	11.43	12.18	12.48	13.23	14.65	7.39	8.14	8.44	9.19	10.61
	3H	13.08	13.75	14.14	14.81	16.25	8.55	9.22	9.61	10.28	11.72
	4H	13.67	14.31	14.74	15.37	16.81	8.99	9.62	10.06	10.68	12.13
	6H	14.07	14.66	15.15	15.72	17.18	9.29	9.87	10.37	10.94	12.39
	8H	14.19	14.74	15.27	15.83	17.28	9.37	9.92	10.45	11.00	12.46
	12H	14.24	14.77	15.33	15.84	17.32	9.40	9.93	10.49	11.00	12.48
4H	2H	11.43	12.07	12.51	13.13	14.57	7.96	8.60	9.04	9.66	11.11
	3H	13.23	13.76	14.32	14.85	16.31	9.29	9.81	10.37	10.90	12.36
	4H	13.90	14.39	14.99	15.47	16.95	9.81	10.30	10.91	11.38	12.86
	6H	14.40	14.81	15.50	15.91	17.39	10.21	10.62	11.31	11.73	13.20
	8H	14.56	14.95	15.66	16.04	17.53	10.33	10.71	11.43	11.81	13.30
	12H	14.64	14.99	15.75	16.10	17.59	10.38	10.73	11.49	11.84	13.33
8H	4H	13.86	14.25	14.96	15.34	16.83	10.08	10.46	11.18	11.56	13.05
	6H	14.40	14.72	15.52	15.86	17.35	10.57	10.89	11.69	12.02	13.51
	8H	14.61	14.89	15.73	16.00	17.51	10.74	11.02	11.87	12.14	13.65
	12H	14.73	14.97	15.86	16.09	17.63	10.85	11.09	11.98	12.21	13.75
12H	4H	13.81	14.16	14.92	15.27	16.76	10.08	10.42	11.19	11.53	13.03
	6H	14.38	14.66	15.50	15.77	17.28	10.61	10.89	11.74	12.01	13.52
	8H	14.58	14.83	15.71	15.94	17.48	10.80	11.05	11.93	12.16	13.71