

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: P906679

Luminaire Tested: DFN2DIP-SQ4F0-060D090US835-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906679
REPORT IS A COMBINATION OF REPORTS P901634 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-060D090US835-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

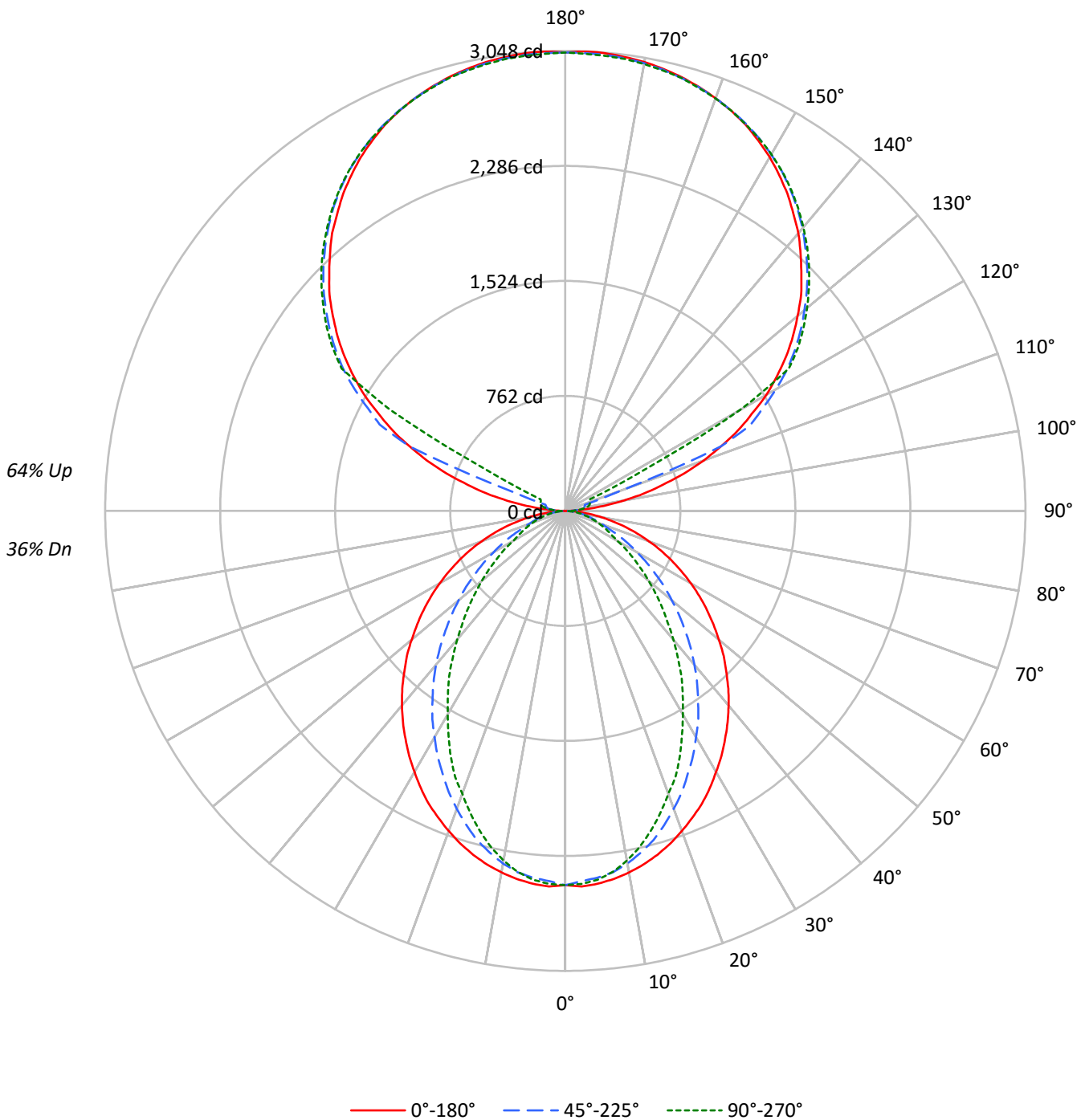
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14010.0 lumens
Efficiency: N/A
Efficacy: 120.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 116.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P906679
CATALOG NUMBER: DFN2DIP-SQ4F0-060D090US835-RLLONL

Luminous Intensity Polar Plot





TEST NUMBER: P906679
 CATALOG NUMBER: DFN2DIP-SQ4F0-060D090US835-RLLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	0
RCR																		
0	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44	36
1	95	91	87	84	86	83	80	77	67	65	63	52	51	50	39	38	38	31
2	87	80	74	69	78	73	68	63	59	56	53	46	44	42	35	33	32	27
3	79	70	63	58	72	64	58	53	52	48	45	41	38	36	31	29	28	23
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	28	26	24	20
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	25	23	21	18
6	62	50	42	37	56	46	39	34	38	33	29	30	27	24	23	21	19	16
7	57	45	38	32	52	41	35	30	34	29	26	28	24	21	21	19	17	14
8	53	41	34	29	48	38	31	27	31	26	23	25	22	19	20	17	15	13
9	49	37	30	25	45	34	28	24	29	24	20	23	20	17	18	16	14	12
10	46	34	27	23	42	32	25	21	26	22	18	22	18	15	17	14	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1740	1740	1740
5°	1743	1713	1724
10°	1725	1680	1668
15°	1702	1624	1582
20°	1670	1548	1476
25°	1638	1463	1374
30°	1595	1375	1244
35°	1552	1281	1129
40°	1509	1183	998
45°	1459	1075	879
50°	1407	965	763
55°	1353	848	652
60°	1291	726	537
65°	1219	602	484
70°	1131	486	439
75°	1022	429	400
80°	863	361	349
85°	601	243	265

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 1627 cd/sqm



TEST NUMBER: P906679

CATALOG NUMBER: DFN2DIP-SQ4F0-060D090US835-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.4	1.7
10°-20°	638.0	4.6
20°-30°	895.7	6.4
30°-40°	976.4	7.0
40°-50°	897.4	6.4
50°-60°	704.8	5.0
60°-70°	458.8	3.3
70°-80°	236.1	1.7
80°-90°	65.6	0.5
90°-100°	100.2	0.7
100°-110°	373.4	2.7
110°-120°	990.2	7.1
120°-130°	1642.4	11.7
130°-140°	1744.6	12.5
140°-150°	1621.4	11.6
150°-160°	1303.5	9.3
160°-170°	840.0	6.0
170°-180°	289.1	2.1
0°-30°	1766.2	12.6
0°-40°	2742.6	19.6
0°-60°	4344.8	31.0
0°-90°	5105.3	36.4
90°-120°	1463.7	10.4
90°-150°	6472.0	46.2
90°-180°	8905.0	63.6
0°-180°	14010.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2480	2480	2480	2480	2480	
5°	2480	2469	2439	2460	2453	235
15°	2359	2334	2258	2215	2193	665
25°	2141	2069	1921	1829	1795	985
35°	1845	1730	1533	1391	1342	1155
45°	1508	1358	1122	963	909	1165
55°	1147	972	729	595	552	1025
65°	774	592	390	314	307	768
75°	413	256	180	164	162	437
85°	96	49	43	43	43	111
90°	2	26	44	55	59	13
95°	143	70	86	97	94	169
105°	668	734	134	158	167	714
115°	1264	1301	1356	338	180	1244
125°	1787	1815	1857	1873	1879	1594
135°	2211	2246	2266	2288	2284	1708
145°	2565	2563	2600	2615	2604	1604
155°	2824	2805	2831	2844	2826	1301
165°	2976	2963	2969	2985	2969	841
175°	3044	3028	3033	3048	3026	290
180°	3037	3037	3037	3037	3037	



TEST NUMBER: P906679

CATALOG NUMBER: DFN2DIP-SQ4F0-060D090US835-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2479.8	2479.8	2479.8	2479.8	2479.8
2.5°	2491.0	2479.8	2455.0	2477.6	2473.1
5°	2479.8	2468.6	2439.3	2459.6	2452.9
7.5°	2459.6	2446.2	2414.8	2423.6	2412.4
10°	2432.6	2416.9	2372.2	2365.3	2351.9
12.5°	2399.1	2378.8	2318.1	2304.8	2280.0
15°	2358.6	2333.8	2257.6	2215.0	2192.6
17.5°	2311.5	2275.5	2181.2	2131.9	2096.0
20°	2257.6	2212.6	2100.5	2044.5	1995.0
22.5°	2199.3	2147.6	2017.4	1941.2	1907.6
25°	2141.0	2069.1	1921.0	1829.1	1795.3
27.5°	2071.5	1995.0	1831.2	1725.7	1674.1
30°	1997.4	1911.9	1732.4	1618.1	1557.4
32.5°	1925.5	1822.2	1638.4	1503.6	1447.4
35°	1844.8	1730.3	1532.9	1391.4	1341.9
37.5°	1766.2	1642.6	1434.1	1279.1	1223.1
40°	1683.1	1548.6	1330.7	1171.4	1113.1
42.5°	1597.9	1454.3	1227.6	1061.4	1005.5
45°	1508.1	1357.6	1122.2	962.6	908.8
47.5°	1422.9	1263.6	1021.2	861.7	812.4
50°	1328.6	1169.3	922.4	767.4	720.5
52.5°	1236.4	1068.1	828.1	680.0	637.4
55°	1146.7	971.7	729.3	594.8	552.1
57.5°	1054.8	875.2	641.9	516.2	480.2
60°	960.5	781.0	549.8	435.5	399.5
62.5°	868.6	689.1	471.2	363.6	345.7
65°	774.3	592.4	390.5	314.3	307.4
67.5°	684.5	502.6	314.3	276.0	269.3
70°	590.2	415.2	260.2	237.9	228.8
72.5°	500.5	334.3	217.6	199.8	195.2
75°	412.9	255.7	179.5	163.8	161.7
77.5°	325.5	181.7	141.4	132.4	127.9
80°	244.5	130.2	107.6	98.8	98.8
82.5°	170.5	87.6	74.0	69.5	69.5
85°	96.4	49.3	42.6	42.6	42.6
87.5°	36.0	17.9	17.9	15.7	15.7
90°	2.1	26.4	43.8	55.1	59.2
92.5°	55.1	46.2	52.7	57.2	59.2
95°	142.8	70.2	85.6	96.8	94.5
97.5°	257.1	77.0	112.0	118.7	120.8
100°	389.1	88.0	125.3	142.8	147.2
102.5°	534.0	529.8	129.7	153.7	160.5
105°	668.1	734.2	134.1	158.2	167.0
107.5°	824.2	879.0	138.6	162.6	171.5
110°	973.7	1019.7	384.7	164.9	173.6



TEST NUMBER: P906679

CATALOG NUMBER: DFN2DIP-SQ4F0-060D090US835-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1114.4	1153.8	1116.5	169.1	175.9
115°	1263.7	1301.0	1356.1	338.5	180.3
117.5°	1393.4	1437.3	1474.8	1160.4	584.6
120°	1538.5	1571.4	1611.1	1637.4	1340.7
122.5°	1661.5	1696.7	1740.8	1753.8	1756.2
125°	1786.7	1815.4	1857.2	1872.6	1879.1
127.5°	1901.0	1931.8	1965.0	1986.9	1989.0
130°	2008.8	2044.1	2068.1	2092.3	2090.3
132.5°	2118.7	2147.4	2171.4	2191.3	2189.2
135°	2211.1	2246.3	2265.9	2288.1	2283.7
137.5°	2307.7	2334.0	2356.2	2378.1	2371.6
140°	2402.1	2419.9	2443.9	2463.7	2452.8
142.5°	2481.5	2496.9	2525.3	2542.8	2531.9
145°	2565.0	2562.6	2600.0	2615.4	2604.4
147.5°	2637.3	2630.8	2668.1	2679.1	2670.4
150°	2707.8	2692.4	2727.6	2740.6	2729.7
152.5°	2767.0	2749.5	2782.4	2795.7	2780.3
155°	2824.2	2804.6	2830.9	2844.0	2826.5
157.5°	2870.4	2852.9	2872.7	2888.1	2870.4
160°	2910.0	2896.7	2910.0	2923.1	2907.7
162.5°	2945.0	2931.9	2942.9	2958.3	2938.5
165°	2975.8	2962.7	2969.3	2984.7	2969.3
167.5°	3000.1	2986.8	2993.5	3008.9	2989.1
170°	3019.9	3006.6	3011.0	3026.4	3006.6
172.5°	3033.0	3019.9	3024.3	3039.7	3019.9
175°	3043.9	3028.5	3033.0	3048.3	3026.4
177.5°	3048.3	3033.0	3035.3	3050.7	3030.9
180°	3037.4	3037.4	3037.4	3037.4	3037.4



TEST NUMBER: P906679
 CATALOG NUMBER: DFN2DIP-SQ4F0-060D090US835-RLONL

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	7.67	8.40	8.74	9.47	10.92	3.63	4.36	4.70	5.43	6.88
	3H	9.34	10.00	10.42	11.07	12.55	4.81	5.46	5.89	6.54	8.01
	4H	9.95	10.57	11.04	11.65	13.13	5.26	5.88	6.35	6.96	8.44
	6H	10.37	10.94	11.47	12.02	13.51	5.57	6.14	6.67	7.23	8.72
	8H	10.50	11.04	11.60	12.14	13.62	5.66	6.20	6.77	7.30	8.79
	12H	10.56	11.07	11.66	12.16	13.67	5.70	6.22	6.81	7.31	8.82
4H	2H	7.67	8.29	8.77	9.37	10.85	4.22	4.83	5.31	5.91	7.39
	3H	9.50	10.01	10.60	11.12	12.61	5.56	6.07	6.66	7.18	8.67
	4H	10.19	10.66	11.30	11.76	13.27	6.10	6.57	7.21	7.67	9.18
	6H	10.71	11.11	11.82	12.23	13.73	6.52	6.92	7.63	8.04	9.55
	8H	10.88	11.26	12.00	12.37	13.89	6.64	7.02	7.76	8.13	9.65
	12H	10.97	11.32	12.11	12.44	13.97	6.71	7.05	7.84	8.17	9.70
8H	4H	10.15	10.53	11.27	11.64	13.16	6.38	6.76	7.49	7.87	9.39
	6H	10.72	11.03	11.86	12.18	13.70	6.89	7.21	8.03	8.36	9.88
	8H	10.94	11.21	12.08	12.34	13.88	7.09	7.36	8.23	8.49	10.03
	12H	11.08	11.31	12.22	12.44	14.02	7.20	7.44	8.35	8.57	10.14
12H	4H	10.10	10.44	11.23	11.56	13.09	6.38	6.72	7.51	7.84	9.37
	6H	10.69	10.97	11.84	12.10	13.64	6.94	7.22	8.09	8.35	9.89
	8H	10.91	11.15	12.06	12.28	13.86	7.15	7.39	8.30	8.52	10.09