

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: P922867

Luminaire Tested: DFN2DIP-SQ3F0-080D070US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922867
REPORT IS A COMBINATION OF REPORTS P901444 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-080D070US940-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

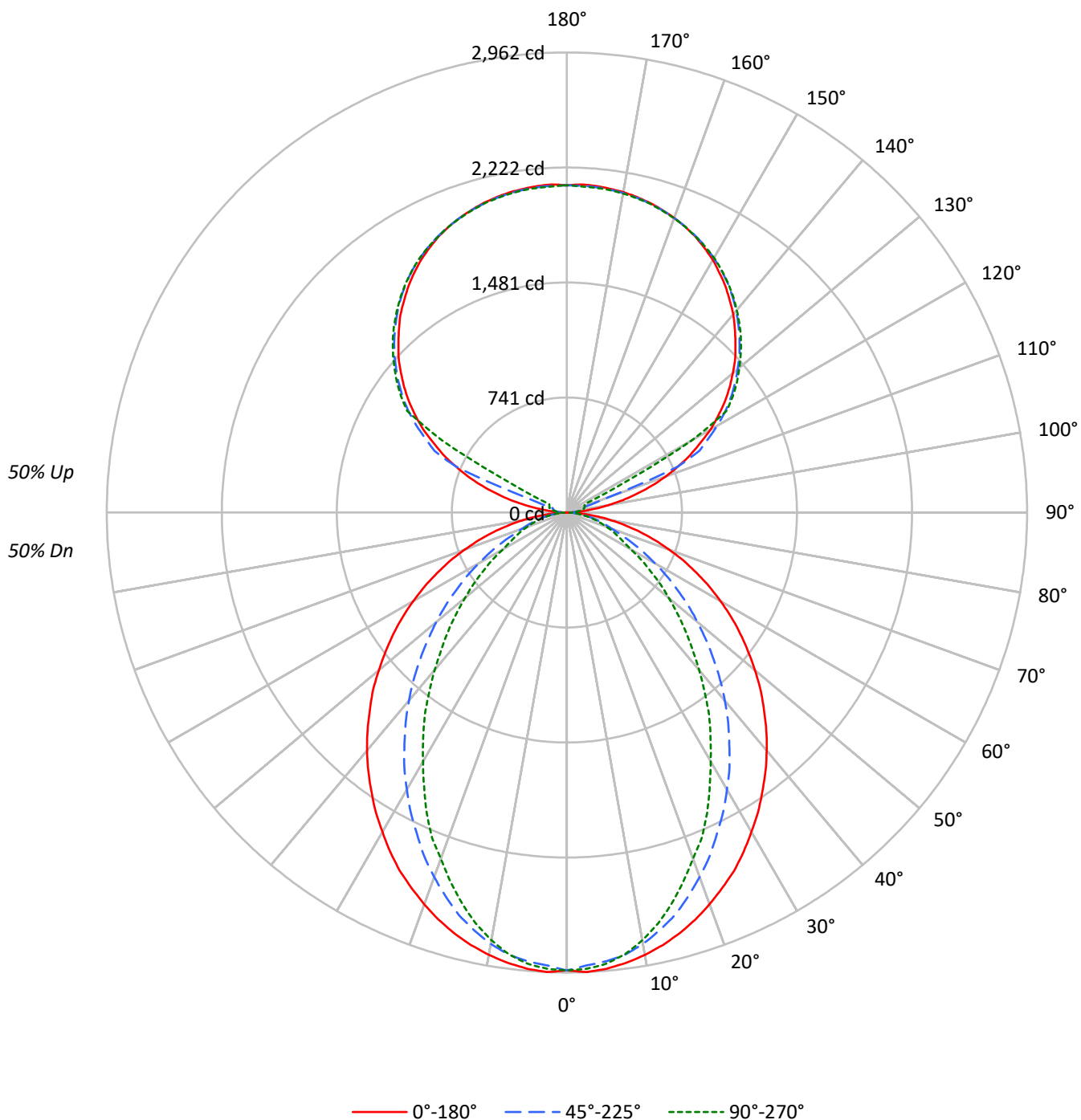
Lumens per Lamp: N/A
Luminaire Lumens: 12243.2 lumens
Efficiency: N/A
Efficacy: 95.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 128.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P922867

CATALOG NUMBER: DFN2DIP-SQ3F0-080D070US940-RLLONL

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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	94	90	87	90	87	84	81	74	71	69	61	60	58	50	49	48
2	90	83	77	72	83	77	71	67	65	61	58	54	52	49	45	43	41
3	82	73	66	60	76	68	62	57	58	53	49	49	45	42	40	38	36
4	75	65	57	52	69	60	54	48	52	47	42	44	40	37	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	33	30	27
6	64	52	44	39	59	49	42	37	42	37	32	36	32	28	30	27	24
7	59	47	40	34	55	44	37	32	38	33	29	33	28	25	27	24	22
8	55	43	36	30	51	40	34	29	35	30	26	30	26	23	25	22	20
9	51	39	32	27	48	37	30	26	32	27	23	28	23	21	23	20	18
10	48	36	29	25	45	34	28	23	30	25	21	26	22	19	22	19	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3378	3378	3378
5°	3382	3322	3345
10°	3346	3255	3235
15°	3298	3145	3066
20°	3235	2995	2858
25°	3170	2827	2658
30°	3084	2655	2404
35°	2999	2469	2182
40°	2914	2278	1927
45°	2814	2067	1696
50°	2710	1853	1470
55°	2602	1625	1253
60°	2477	1387	1030
65°	2333	1145	926
70°	2158	920	837
75°	1937	806	759
80°	1619	669	654
85°	1098	436	485

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2814 cd/sqm

TEST NUMBER: P922867

CATALOG NUMBER: DFN2DIP-SQ3F0-080D070US940-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.3	2.3
10°-20°	758.6	6.2
20°-30°	1065.0	8.7
30°-40°	1160.9	9.5
40°-50°	1067.0	8.7
50°-60°	838.0	6.8
60°-70°	545.4	4.5
70°-80°	280.8	2.3
80°-90°	75.4	0.6
90°-100°	69.5	0.6
100°-110°	259.0	2.1
110°-120°	686.8	5.6
120°-130°	1139.1	9.3
130°-140°	1209.9	9.9
140°-150°	1124.5	9.2
150°-160°	904.1	7.4
160°-170°	582.6	4.8
170°-180°	200.5	1.6
0°-30°	2099.9	17.2
0°-40°	3260.8	26.6
0°-60°	5165.8	42.2
0°-90°	6067.4	49.6
90°-120°	1015.2	8.3
90°-150°	4488.7	36.7
90°-180°	6176.0	50.4
0°-180°	12243.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2948	2948	2948	2948	2948	
5°	2948	2935	2900	2924	2916	280
15°	2804	2775	2684	2634	2607	790
25°	2546	2460	2284	2175	2134	1171
35°	2193	2057	1822	1654	1595	1373
45°	1793	1614	1334	1144	1081	1385
55°	1363	1155	867	707	656	1218
65°	921	704	464	374	365	913
75°	491	304	214	195	192	519
85°	115	59	51	51	51	132
90°	1	18	30	38	41	11
95°	99	49	59	67	66	117
105°	463	509	93	110	116	495
115°	876	902	940	235	125	863
125°	1239	1259	1288	1299	1303	1105
135°	1534	1558	1572	1587	1584	1185
145°	1779	1777	1803	1814	1806	1113
155°	1959	1945	1963	1972	1960	903
165°	2064	2055	2059	2070	2059	583
175°	2111	2100	2104	2114	2099	201
180°	2107	2107	2107	2107	2107	

TEST NUMBER: P922867

CATALOG NUMBER: DFN2DIP-SQ3F0-080D070US940-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2948.4	2948.4	2948.4	2948.4	2948.4
2.5°	2961.6	2948.4	2918.9	2945.8	2940.4
5°	2948.4	2935.1	2900.2	2924.3	2916.3
7.5°	2924.3	2908.4	2871.0	2881.6	2868.2
10°	2892.3	2873.6	2820.4	2812.2	2796.3
12.5°	2852.4	2828.3	2756.1	2740.2	2710.8
15°	2804.3	2774.8	2684.2	2633.6	2606.9
17.5°	2748.2	2705.4	2593.4	2534.8	2492.0
20°	2684.2	2630.7	2497.4	2430.9	2371.9
22.5°	2614.9	2553.4	2398.6	2308.0	2268.1
25°	2545.5	2460.1	2283.9	2174.7	2134.5
27.5°	2462.8	2371.9	2177.2	2051.8	1990.4
30°	2374.8	2273.1	2059.8	1923.9	1851.6
32.5°	2289.3	2166.5	1947.9	1787.7	1720.9
35°	2193.3	2057.2	1822.5	1654.4	1595.4
37.5°	2099.9	1953.0	1705.0	1520.7	1454.2
40°	2001.2	1841.2	1582.2	1392.8	1323.4
42.5°	1899.8	1729.1	1459.6	1262.0	1195.4
45°	1793.1	1614.2	1334.2	1144.5	1080.6
47.5°	1691.8	1502.4	1214.2	1024.5	965.9
50°	1579.6	1390.3	1096.7	912.4	856.6
52.5°	1470.1	1269.9	984.5	808.5	757.9
55°	1363.3	1155.3	867.1	707.1	656.5
57.5°	1254.1	1040.6	763.2	613.8	571.0
60°	1141.9	928.5	653.6	517.7	475.0
62.5°	1032.7	819.2	560.3	432.3	411.1
65°	920.6	704.3	464.2	373.7	365.4
67.5°	813.9	597.6	373.7	328.1	320.2
70°	701.8	493.7	309.4	282.8	272.1
72.5°	595.0	397.4	258.8	237.6	232.1
75°	490.9	304.1	213.5	194.7	192.3
77.5°	387.0	216.0	168.2	157.4	152.0
80°	290.7	154.9	128.0	117.4	117.4
82.5°	202.7	104.2	88.0	82.7	82.7
85°	114.7	58.6	50.6	50.6	50.6
87.5°	42.7	21.2	21.2	18.7	18.7
90°	1.4	18.3	30.4	38.2	41.1
92.5°	38.2	32.0	36.6	39.7	41.1
95°	99.0	48.7	59.4	67.1	65.5
97.5°	178.3	53.4	77.7	82.4	83.8
100°	269.9	61.0	86.9	99.0	102.1
102.5°	370.3	367.5	90.0	106.6	111.3
105°	463.4	509.2	93.0	109.7	115.8
107.5°	571.6	609.7	96.1	112.8	119.0
110°	675.4	707.2	266.8	114.4	120.4

TEST NUMBER: P922867

CATALOG NUMBER: DFN2DIP-SQ3F0-080D070US940-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	772.9	800.2	774.4	117.3	122.0
115°	876.5	902.3	940.5	234.8	125.1
117.5°	966.4	996.8	1022.9	804.8	405.5
120°	1067.0	1089.8	1117.4	1135.7	929.9
122.5°	1152.3	1176.7	1207.4	1216.4	1218.0
125°	1239.2	1259.1	1288.1	1298.8	1303.2
127.5°	1318.5	1339.8	1362.8	1378.0	1379.5
130°	1393.2	1417.6	1434.3	1451.2	1449.7
132.5°	1469.4	1489.3	1506.0	1519.7	1518.3
135°	1533.5	1557.9	1571.6	1586.9	1583.9
137.5°	1600.4	1618.8	1634.1	1649.4	1644.8
140°	1666.0	1678.3	1695.0	1708.7	1701.1
142.5°	1721.0	1731.7	1751.4	1763.5	1756.0
145°	1779.0	1777.4	1803.2	1813.9	1806.3
147.5°	1829.1	1824.6	1850.5	1858.1	1852.1
150°	1877.9	1867.3	1891.8	1900.8	1893.2
152.5°	1919.0	1906.9	1929.8	1938.9	1928.3
155°	1958.7	1945.1	1963.4	1972.5	1960.3
157.5°	1990.7	1978.6	1992.3	2003.0	1990.7
160°	2018.3	2009.0	2018.3	2027.3	2016.6
162.5°	2042.6	2033.5	2041.0	2051.7	2038.0
165°	2063.9	2054.9	2059.3	2070.0	2059.3
167.5°	2080.7	2071.4	2076.2	2086.9	2073.1
170°	2094.4	2085.3	2088.3	2099.0	2085.3
172.5°	2103.5	2094.4	2097.6	2108.2	2094.4
175°	2111.1	2100.4	2103.5	2114.2	2099.0
177.5°	2114.2	2103.5	2105.1	2115.9	2102.0
180°	2106.6	2106.6	2106.6	2106.6	2106.6

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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	11.30	12.13	12.27	13.10	14.38	7.26	8.09	8.23	9.07	10.35
	3H	12.97	13.71	13.95	14.70	16.00	8.44	9.18	9.42	10.17	11.47
	4H	13.58	14.28	14.57	15.27	16.58	8.89	9.59	9.88	10.58	11.89
	6H	14.00	14.64	15.00	15.64	16.96	9.20	9.85	10.21	10.84	12.17
	8H	14.12	14.73	15.13	15.74	17.06	9.29	9.90	10.30	10.92	12.23
	12H	14.18	14.76	15.19	15.77	17.11	9.33	9.91	10.35	10.92	12.26
4H	2H	11.32	12.02	12.32	13.01	14.32	7.85	8.55	8.85	9.54	10.85
	3H	13.14	13.72	14.15	14.74	16.06	9.20	9.78	10.20	10.80	12.12
	4H	13.83	14.36	14.84	15.37	16.72	9.74	10.27	10.75	11.28	12.63
	6H	14.34	14.80	15.37	15.83	17.18	10.15	10.61	11.18	11.64	12.99
	8H	14.51	14.94	15.54	15.97	17.32	10.28	10.70	11.30	11.73	13.09
	12H	14.60	14.99	15.65	16.03	17.40	10.34	10.72	11.38	11.76	13.13
8H	4H	13.79	14.22	14.82	15.25	16.61	10.02	10.44	11.04	11.47	12.83
	6H	14.36	14.71	15.41	15.78	17.13	10.53	10.88	11.58	11.95	13.30
	8H	14.57	14.88	15.63	15.93	17.31	10.71	11.02	11.77	12.08	13.45
	12H	14.70	14.98	15.77	16.03	17.44	10.83	11.10	11.89	12.15	13.57
12H	4H	13.75	14.13	14.79	15.17	16.54	10.02	10.40	11.07	11.45	12.81
	6H	14.33	14.64	15.39	15.69	17.07	10.57	10.88	11.63	11.94	13.31
	8H	14.55	14.82	15.61	15.87	17.29	10.78	11.05	11.84	12.10	13.52