

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: P922798

Luminaire Tested: DFN2DIP-SQ3F0-060D080US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922798
REPORT IS A COMBINATION OF REPORTS P899938 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-060D080US940-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

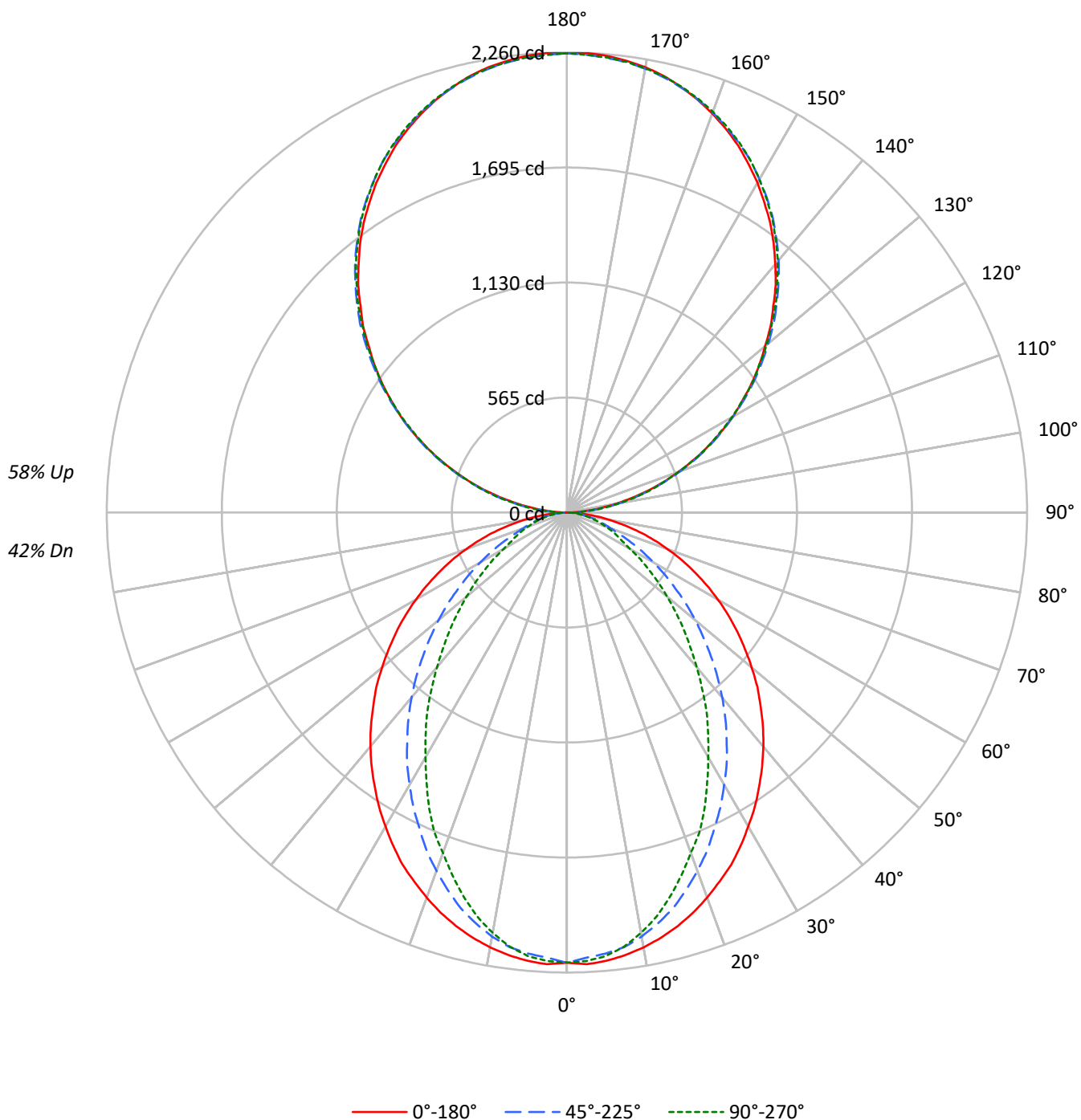
Lumens per Lamp: N/A
Luminaire Lumens: 10861.0 lumens
Efficiency: N/A
Efficacy: 95.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 113.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P922798

CATALOG NUMBER: DFN2DIP-SQ3F0-060D080US940-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P922798

CATALOG NUMBER: DFN2DIP-SQ3F0-060D080US940-RLFL

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	96	96	96	96	79	79	79	63	63	63	49	49	49
1	96	92	89	85	88	84	81	78	70	67	65	56	55	53	44	43	42
2	88	81	75	70	80	74	69	65	61	58	55	50	47	45	39	37	36
3	81	72	65	59	73	66	60	55	55	50	47	44	41	39	35	33	31
4	74	64	56	50	67	58	52	47	49	44	40	40	36	33	31	29	27
5	68	57	49	43	62	52	45	40	44	39	35	36	32	29	28	26	24
6	63	51	43	38	57	47	40	35	40	34	30	33	29	26	26	23	21
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	24	21	19
8	54	42	34	29	49	39	32	28	33	28	24	27	23	21	22	19	17
9	50	38	31	26	46	36	29	25	30	25	22	25	21	19	20	18	16
10	47	35	28	24	43	33	26	22	28	23	19	23	19	17	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2534	2534	2534
5°	2536	2492	2509
10°	2509	2441	2426
15°	2473	2359	2299
20°	2426	2246	2144
25°	2378	2120	1994
30°	2313	1991	1803
35°	2250	1852	1636
40°	2185	1709	1445
45°	2110	1550	1272
50°	2033	1390	1102
55°	1952	1219	940
60°	1858	1040	773
65°	1750	859	695
70°	1618	690	627
75°	1453	605	569
80°	1214	502	491
85°	824	327	364

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2269 cd/sqm

TEST NUMBER: P922798

CATALOG NUMBER: DFN2DIP-SQ3F0-060D080US940-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.2	1.9
10°-20°	568.9	5.2
20°-30°	798.7	7.4
30°-40°	870.7	8.0
40°-50°	800.3	7.4
50°-60°	628.5	5.8
60°-70°	409.1	3.8
70°-80°	210.6	1.9
80°-90°	60.2	0.6
90°-100°	139.6	1.3
100°-110°	443.6	4.1
110°-120°	759.1	7.0
120°-130°	998.3	9.2
130°-140°	1120.6	10.3
140°-150°	1098.9	10.1
150°-160°	921.8	8.5
160°-170°	611.3	5.6
170°-180°	213.7	2.0
0°-30°	1574.9	14.5
0°-40°	2445.6	22.5
0°-60°	3874.3	35.7
0°-90°	4554.1	41.9
90°-120°	1342.3	12.4
90°-150°	4560.1	42.0
90°-180°	6307.0	58.1
0°-180°	10861.0	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	24	67	63	65	11
95°	99	118	122	122	118	111
105°	410	415	419	422	422	432
115°	762	773	769	767	762	753
125°	1108	1125	1120	1113	1111	990
135°	1433	1454	1458	1456	1451	1108
145°	1740	1754	1764	1766	1759	1087
155°	1990	1995	2001	2010	2004	916
165°	2164	2162	2162	2176	2166	611
175°	2252	2247	2242	2256	2244	214
180°	2256	2256	2256	2256	2256	

TEST NUMBER: P922798

CATALOG NUMBER: DFN2DIP-SQ3F0-060D080US940-RLFL

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°	2.1	24.5	66.7	62.6	64.6
92.5°	42.2	57.2	59.2	61.2	61.2
95°	99.3	118.3	121.7	121.7	118.3
97.5°	165.3	183.0	190.5	190.5	190.5
100°	241.5	257.1	262.5	262.5	260.5
102.5°	321.7	333.3	340.7	342.8	340.7
105°	409.5	414.9	419.0	422.4	422.4
107.5°	496.5	504.7	504.7	506.0	496.5
110°	580.9	591.7	591.7	591.7	586.3

TEST NUMBER: P922798

CATALOG NUMBER: DFN2DIP-SQ3F0-060D080US940-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	672.0	683.6	681.5	676.1	672.0
115°	761.8	772.7	769.3	767.2	761.8
117.5°	850.9	865.9	856.3	850.9	845.4
120°	940.7	955.6	940.7	940.7	934.5
122.5°	1022.3	1041.3	1031.8	1026.4	1022.3
125°	1108.0	1125.0	1119.5	1113.4	1111.4
127.5°	1191.7	1212.7	1205.2	1197.1	1191.7
130°	1269.9	1294.3	1290.9	1286.9	1279.4
132.5°	1357.6	1376.6	1378.0	1368.5	1363.1
135°	1433.1	1454.2	1458.3	1456.3	1450.8
137.5°	1517.4	1534.5	1537.8	1536.5	1528.3
140°	1591.6	1608.6	1618.1	1618.1	1610.6
142.5°	1667.8	1684.8	1690.2	1692.3	1684.8
145°	1739.9	1753.5	1764.3	1766.4	1758.9
147.5°	1804.5	1821.5	1829.6	1833.1	1825.6
150°	1871.2	1882.7	1890.2	1896.3	1890.2
152.5°	1930.3	1941.9	1951.4	1958.9	1951.4
155°	1989.5	1994.9	2001.1	2010.5	2004.5
157.5°	2040.5	2044.6	2048.0	2061.5	2052.1
160°	2086.1	2090.2	2092.2	2103.7	2095.6
162.5°	2128.2	2128.2	2130.3	2143.2	2133.7
165°	2164.3	2162.2	2162.2	2175.9	2166.3
167.5°	2196.9	2190.8	2190.8	2204.4	2194.9
170°	2221.4	2216.0	2213.9	2227.6	2216.0
172.5°	2238.5	2233.0	2231.0	2244.5	2233.0
175°	2252.0	2246.6	2242.5	2256.1	2244.5
177.5°	2259.5	2254.1	2250.0	2261.6	2250.0
180°	2256.1	2256.1	2256.1	2256.1	2256.1

TEST NUMBER: P922798

CATALOG NUMBER: DFN2DIP-SQ3F0-060D080US940-RLFL

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	9.54	10.31	10.57	11.34	12.72	5.50	6.27	6.53	7.30	8.68
	3H	11.21	11.89	12.25	12.93	14.34	6.68	7.36	7.72	8.40	9.81
	4H	11.81	12.46	12.86	13.50	14.91	7.12	7.77	8.17	8.81	10.23
	6H	12.22	12.82	13.28	13.87	15.29	7.43	8.03	8.49	9.08	10.50
	8H	12.35	12.92	13.41	13.98	15.40	7.52	8.09	8.58	9.15	10.57
	12H	12.40	12.94	13.47	14.00	15.44	7.56	8.10	8.63	9.15	10.60
4H	2H	9.55	10.20	10.60	11.24	12.65	6.08	6.73	7.14	7.78	9.19
	3H	11.36	11.91	12.43	12.98	14.40	7.42	7.96	8.49	9.03	10.46
	4H	12.05	12.55	13.12	13.61	15.06	7.96	8.46	9.03	9.52	10.97
	6H	12.56	12.98	13.64	14.07	15.51	8.37	8.80	9.45	9.88	11.32
	8H	12.73	13.13	13.81	14.20	15.66	8.49	8.89	9.58	9.97	11.43
	12H	12.82	13.18	13.92	14.27	15.73	8.55	8.91	9.65	10.00	11.46
8H	4H	12.01	12.41	13.09	13.49	14.94	8.23	8.63	9.31	9.71	11.17
	6H	12.57	12.90	13.67	14.02	15.47	8.74	9.07	9.84	10.19	11.64
	8H	12.78	13.07	13.89	14.17	15.65	8.93	9.21	10.04	10.32	11.79
	12H	12.92	13.17	14.03	14.27	15.78	9.04	9.29	10.15	10.39	11.90
12H	4H	11.96	12.32	13.06	13.41	14.87	8.24	8.59	9.33	9.69	11.15
	6H	12.55	12.83	13.66	13.94	15.41	8.79	9.08	9.90	10.18	11.65
	8H	12.76	13.01	13.87	14.11	15.62	8.99	9.24	10.10	10.34	11.85