

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: P915001

Luminaire Tested: DFN2DIP-SQ4F0-100D080US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915001
REPORT IS A COMBINATION OF REPORTS P901623 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-100D080US927-FLLONL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

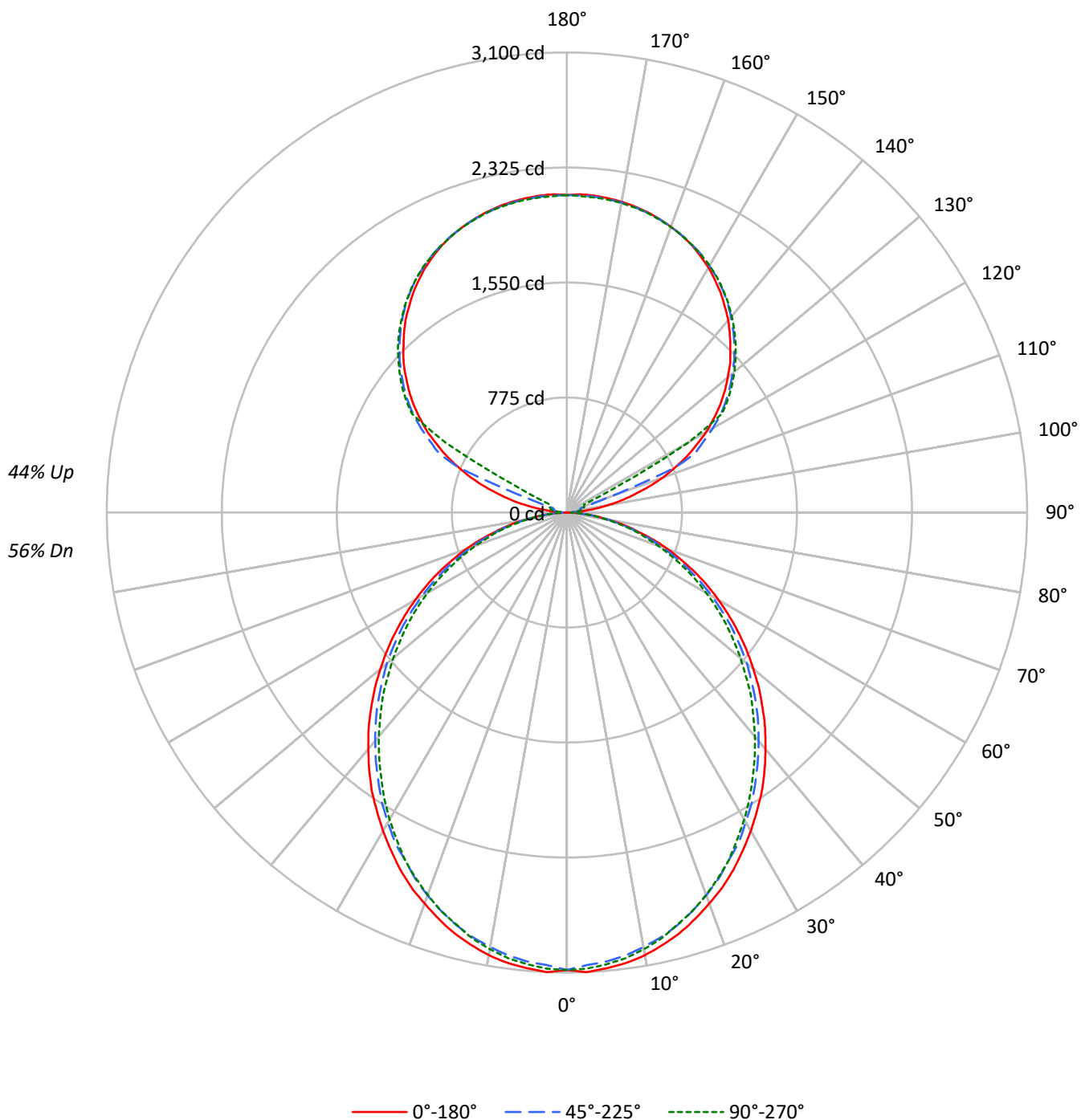
Lumens per Lamp: N/A
Luminaire Lumens: 14116.6 lumens
Efficiency: N/A
Efficacy: 92.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 152.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P915001

CATALOG NUMBER: DFN2DIP-SQ4F0-100D080US927-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P915001

CATALOG NUMBER: DFN2DIP-SQ4F0-100D080US927-FLLONL

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	108	108	108	108		101	101	101	101		86	86	86		73	73	73		61	61	61
1	99	95	91	87		92	88	85	82		76	73	71		65	63	61		54	53	52
2	90	83	76	71		84	77	72	67		66	62	59		57	54	51		48	46	44
3	82	73	65	59		76	68	61	56		59	54	50		50	46	43		42	39	37
4	75	64	56	50		70	60	53	48		52	47	42		45	40	37		38	35	32
5	69	57	49	43		64	54	46	41		47	41	36		40	36	32		34	31	28
6	64	52	43	37		59	48	41	36		42	36	32		36	32	28		31	27	25
7	59	47	39	33		55	44	36	31		38	32	28		33	28	25		28	25	22
8	55	42	34	29		51	40	33	28		35	29	25		30	26	22		26	22	20
9	51	39	31	26		47	36	29	25		32	26	22		28	23	20		24	20	18
10	48	35	28	23		44	33	27	22		29	24	20		26	21	18		22	19	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2163	2163	2163
5°	2166	2133	2148
10°	2149	2105	2119
15°	2117	2071	2074
20°	2074	2023	2028
25°	2032	1966	1975
30°	1979	1913	1908
35°	1928	1850	1836
40°	1866	1786	1768
45°	1804	1723	1698
50°	1736	1656	1617
55°	1665	1579	1543
60°	1585	1488	1458
65°	1498	1393	1358
70°	1387	1278	1250
75°	1232	1140	1152
80°	1047	964	963
85°	757	659	647

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1804 cd/sqm

TEST NUMBER: P915001

CATALOG NUMBER: DFN2DIP-SQ4F0-100D080US927-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	290.1	2.1
10°-20°	816.3	5.8
20°-30°	1199.6	8.5
30°-40°	1393.3	9.9
40°-50°	1391.5	9.9
50°-60°	1213.4	8.6
60°-70°	897.0	6.4
70°-80°	507.5	3.6
80°-90°	137.7	1.0
90°-100°	70.5	0.5
100°-110°	262.9	1.9
110°-120°	697.3	4.9
120°-130°	1156.5	8.2
130°-140°	1228.4	8.7
140°-150°	1141.7	8.1
150°-160°	917.9	6.5
160°-170°	591.5	4.2
170°-180°	203.6	1.4
0°-30°	2306.0	16.3
0°-40°	3699.3	26.2
0°-60°	6304.2	44.7
0°-90°	7846.3	55.6
90°-120°	1030.7	7.3
90°-150°	4557.3	32.3
90°-180°	6270.0	44.4
0°-180°	14116.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3082	3082	3082	3082	3082	
5°	3082	3071	3038	3062	3056	293
15°	2934	2917	2878	2890	2875	826
25°	2656	2632	2582	2587	2582	1222
35°	2291	2262	2214	2196	2181	1431
45°	1864	1844	1799	1767	1755	1439
55°	1411	1393	1358	1322	1307	1262
65°	952	934	904	877	863	941
75°	498	492	477	460	465	531
85°	121	119	116	107	104	135
90°	2	18	31	39	42	13
95°	100	49	60	68	66	119
105°	470	517	94	111	118	503
115°	890	916	955	238	127	876
125°	1258	1278	1308	1319	1323	1122
135°	1557	1582	1596	1611	1608	1203
145°	1806	1804	1831	1842	1834	1130
155°	1989	1975	1993	2003	1990	916
165°	2096	2086	2091	2102	2091	592
175°	2143	2133	2136	2146	2131	204
180°	2139	2139	2139	2139	2139	

TEST NUMBER: P915001

CATALOG NUMBER: DFN2DIP-SQ4F0-100D080US927-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3082.5	3082.5	3082.5	3082.5	3082.5
2.5°	3100.4	3085.5	3052.8	3082.5	3076.8
5°	3082.5	3070.8	3038.1	3061.7	3056.0
7.5°	3061.7	3044.0	3011.3	3035.2	3029.3
10°	3029.3	3008.5	2973.0	2996.6	2987.8
12.5°	2984.6	2967.0	2931.5	2946.3	2940.3
15°	2934.3	2916.7	2878.0	2890.0	2875.2
17.5°	2872.1	2854.5	2815.7	2830.5	2815.7
20°	2803.8	2786.2	2744.7	2753.5	2741.8
22.5°	2735.9	2709.2	2670.4	2670.4	2664.5
25°	2655.7	2632.1	2581.8	2587.4	2581.8
27.5°	2566.7	2545.9	2507.6	2498.8	2484.0
30°	2478.0	2454.1	2409.7	2400.9	2389.0
32.5°	2383.0	2365.5	2317.9	2300.0	2288.1
35°	2291.2	2261.7	2214.1	2196.2	2181.4
37.5°	2187.4	2160.7	2113.2	2092.5	2077.7
40°	2080.8	2056.9	2009.4	1983.1	1971.1
42.5°	1977.0	1953.1	1906.0	1876.1	1858.5
45°	1864.5	1843.7	1799.0	1766.6	1754.8
47.5°	1754.8	1734.0	1686.5	1653.8	1636.2
50°	1639.0	1624.2	1582.7	1541.2	1526.5
52.5°	1526.5	1505.7	1467.3	1434.6	1413.9
55°	1411.0	1393.1	1357.6	1322.0	1307.3
57.5°	1295.3	1280.5	1241.8	1206.3	1194.4
60°	1179.6	1167.9	1126.4	1093.7	1084.9
62.5°	1067.0	1046.2	1016.7	987.1	975.2
65°	951.6	933.7	904.1	877.3	862.6
67.5°	833.1	817.9	791.5	770.8	758.8
70°	723.3	711.3	684.6	663.8	652.2
72.5°	610.7	598.7	584.0	563.2	554.4
75°	497.8	492.2	477.1	459.5	465.4
77.5°	397.2	385.2	379.2	370.4	361.6
80°	296.5	293.4	287.4	278.6	272.7
82.5°	201.6	201.6	198.8	186.8	186.8
85°	121.4	118.6	115.7	106.6	103.8
87.5°	53.5	47.5	41.5	32.7	29.5
90°	1.5	18.5	30.9	38.7	41.7
92.5°	38.7	32.6	37.2	40.2	41.7
95°	100.5	49.4	60.3	68.2	66.5
97.5°	181.0	54.2	78.8	83.7	85.1
100°	274.0	61.9	88.2	100.5	103.6
102.5°	376.0	373.0	91.3	108.2	113.0
105°	470.5	517.0	94.4	111.4	117.6
107.5°	580.4	618.9	97.6	114.5	120.7
110°	685.7	718.0	270.9	116.1	122.2



TEST NUMBER: P915001

CATALOG NUMBER: DFN2DIP-SQ4F0-100D080US927-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	784.7	812.5	786.2	119.1	123.9
115°	889.9	916.2	954.9	238.4	127.0
117.5°	981.2	1012.1	1038.5	817.1	411.7
120°	1083.4	1106.5	1134.5	1153.0	944.0
122.5°	1169.9	1194.8	1225.8	1235.0	1236.7
125°	1258.1	1278.3	1307.7	1318.6	1323.2
127.5°	1338.6	1360.3	1383.7	1399.1	1400.6
130°	1414.5	1439.3	1456.3	1473.4	1471.9
132.5°	1491.9	1512.1	1529.1	1543.0	1541.5
135°	1557.0	1581.7	1595.5	1611.2	1608.0
137.5°	1625.0	1643.5	1659.1	1674.6	1670.0
140°	1691.5	1704.0	1720.9	1734.9	1727.1
142.5°	1747.4	1758.2	1778.2	1790.6	1782.8
145°	1806.2	1804.5	1830.8	1841.7	1833.9
147.5°	1857.1	1852.5	1878.7	1886.5	1880.4
150°	1906.7	1895.8	1920.6	1929.8	1922.1
152.5°	1948.4	1936.1	1959.2	1968.6	1957.8
155°	1988.7	1974.9	1993.4	2002.6	1990.4
157.5°	2021.2	2008.9	2022.8	2033.7	2021.2
160°	2049.1	2039.8	2049.1	2058.3	2047.5
162.5°	2073.8	2064.6	2072.3	2083.1	2069.2
165°	2095.5	2086.3	2090.9	2101.7	2090.9
167.5°	2112.5	2103.2	2107.9	2118.8	2104.8
170°	2126.5	2117.1	2120.3	2131.1	2117.1
172.5°	2135.7	2126.5	2129.6	2140.5	2126.5
175°	2143.4	2132.6	2135.7	2146.5	2131.1
177.5°	2146.5	2135.7	2137.3	2148.2	2134.2
180°	2138.8	2138.8	2138.8	2138.8	2138.8

TEST NUMBER: P915001

CATALOG NUMBER: DFN2DIP-SQ4F0-100D080US927-FLLONL

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	10.47	11.38	11.37	12.31	13.50	10.02	10.93	10.93	11.86	13.05
	3H	12.13	12.95	13.05	13.89	15.10	11.64	12.46	12.56	13.40	14.61
	4H	12.73	13.50	13.66	14.44	15.67	12.23	13.01	13.17	13.95	15.17
	6H	13.13	13.85	14.08	14.79	16.03	12.63	13.35	13.58	14.29	15.53
	8H	13.24	13.92	14.19	14.89	16.12	12.74	13.42	13.69	14.38	15.62
	12H	13.29	13.94	14.25	14.90	16.16	12.78	13.43	13.74	14.39	15.65
4H	2H	10.93	11.71	11.87	12.65	13.87	10.58	11.35	11.52	12.30	13.52
	3H	12.81	13.46	13.76	14.43	15.66	12.40	13.05	13.35	14.02	15.26
	4H	13.53	14.12	14.49	15.09	16.35	13.10	13.70	14.06	14.66	15.92
	6H	14.05	14.56	15.02	15.55	16.81	13.62	14.13	14.59	15.12	16.38
	8H	14.20	14.68	15.18	15.66	16.94	13.77	14.24	14.74	15.23	16.50
	12H	14.28	14.71	15.28	15.71	16.99	13.83	14.26	14.83	15.26	16.54
8H	4H	13.73	14.21	14.70	15.19	16.46	13.35	13.83	14.33	14.81	16.09
	6H	14.37	14.76	15.37	15.79	17.06	13.98	14.38	14.98	15.40	16.68
	8H	14.59	14.94	15.60	15.95	17.24	14.20	14.55	15.21	15.56	16.85
	12H	14.73	15.04	15.74	16.04	17.38	14.32	14.62	15.33	15.63	16.97
12H	4H	13.72	14.15	14.71	15.15	16.43	13.35	13.78	14.34	14.78	16.06
	6H	14.40	14.75	15.41	15.76	17.05	14.03	14.38	15.04	15.39	16.68
	8H	14.65	14.95	15.66	15.96	17.30	14.27	14.57	15.28	15.58	16.92

END OF REPORT