

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: P906209

Luminaire Tested: DFN2DIP-SQ2F0-030D060US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906209
REPORT IS A COMBINATION OF REPORTS P901327 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D060US835-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

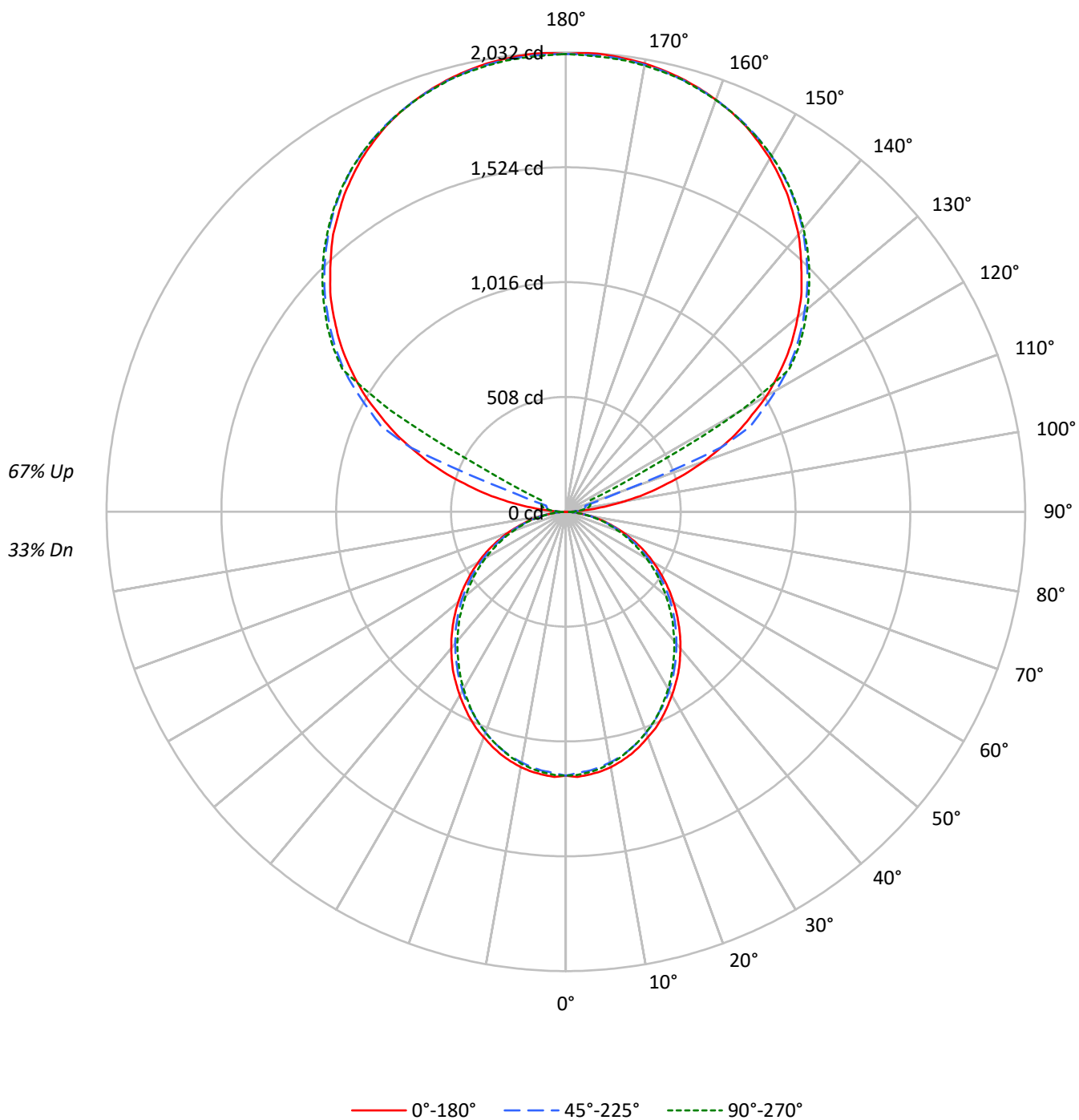
Lumens per Lamp: N/A
Luminaire Lumens: 8910.0 lumens
Efficiency: N/A
Efficacy: 129.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 68.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P906209

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US835-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P906209

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US835-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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	78	72	67	77	71	66	62	57	53	50	44	41	39	32	30	29
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25
4	71	61	53	47	64	55	49	43	44	40	36	34	31	28	25	23	21
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18
6	60	48	41	35	54	44	37	32	36	31	27	28	24	21	20	18	16
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	13	12
10	45	33	26	21	40	30	24	20	25	20	17	19	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2567	2567	2567
5°	2566	2525	2544
10°	2541	2486	2506
15°	2499	2439	2449
20°	2444	2377	2390
25°	2390	2303	2323
30°	2322	2235	2239
35°	2258	2154	2150
40°	2179	2073	2064
45°	2101	1991	1977
50°	2015	1905	1877
55°	1924	1806	1783
60°	1822	1689	1676
65°	1709	1567	1550
70°	1566	1418	1413
75°	1370	1240	1282
80°	1132	1011	1041
85°	765	639	654

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2101 cd/sqm

TEST NUMBER: P906209

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US835-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	109.9	1.2
10°-20°	309.1	3.5
20°-30°	454.3	5.1
30°-40°	527.6	5.9
40°-50°	527.0	5.9
50°-60°	459.5	5.2
60°-70°	339.7	3.8
70°-80°	192.2	2.2
80°-90°	54.3	0.6
90°-100°	66.8	0.7
100°-110°	248.9	2.8
110°-120°	660.2	7.4
120°-130°	1094.9	12.3
130°-140°	1163.0	13.1
140°-150°	1080.9	12.1
150°-160°	869.0	9.8
160°-170°	560.0	6.3
170°-180°	192.7	2.2
0°-30°	873.3	9.8
0°-40°	1400.9	15.7
0°-60°	2387.4	26.8
0°-90°	2973.6	33.4
90°-120°	975.8	11.0
90°-150°	4314.7	48.4
90°-180°	5936.0	66.6
0°-180°	8910.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1167	1167	1167	1167	1167	
5°	1167	1163	1150	1160	1157	111
15°	1111	1105	1090	1094	1089	313
25°	1006	997	978	980	978	463
35°	868	856	838	832	826	542
45°	706	698	681	669	664	545
55°	534	528	514	501	495	478
65°	360	354	342	332	327	356
75°	188	186	181	174	176	201
85°	46	45	44	40	39	51
90°	1	18	29	37	40	8
95°	95	47	57	65	63	113
105°	445	489	89	105	111	476
115°	842	867	904	226	120	829
125°	1191	1210	1238	1248	1253	1062
135°	1474	1498	1511	1525	1522	1139
145°	1710	1708	1733	1744	1736	1069
155°	1883	1870	1887	1896	1884	868
165°	1984	1975	1980	1990	1980	560
175°	2029	2019	2022	2032	2018	193
180°	2025	2025	2025	2025	2025	

TEST NUMBER: P906209

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US835-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1167.3	1167.3	1167.3	1167.3	1167.3
2.5°	1174.1	1168.5	1156.1	1167.3	1165.2
5°	1167.3	1162.9	1150.5	1159.5	1157.3
7.5°	1159.5	1152.8	1140.4	1149.5	1147.2
10°	1147.2	1139.3	1125.9	1134.8	1131.5
12.5°	1130.3	1123.6	1110.2	1115.7	1113.5
15°	1111.2	1104.6	1089.9	1094.4	1088.8
17.5°	1087.6	1081.0	1066.3	1071.9	1066.3
20°	1061.8	1055.1	1039.4	1042.7	1038.3
22.5°	1036.1	1026.0	1011.3	1011.3	1009.0
25°	1005.7	996.8	977.7	979.9	977.7
27.5°	972.0	964.1	949.6	946.3	940.7
30°	938.4	929.4	912.6	909.2	904.7
32.5°	902.5	895.8	877.8	871.0	866.5
35°	867.7	856.5	838.5	831.7	826.1
37.5°	828.4	818.3	800.3	792.4	786.8
40°	788.0	779.0	761.0	751.0	746.5
42.5°	748.7	739.7	721.8	710.5	703.8
45°	706.1	698.2	681.3	669.0	664.5
47.5°	664.5	656.7	638.7	626.3	619.6
50°	620.7	615.1	599.4	583.7	578.1
52.5°	578.1	570.2	555.7	543.3	535.4
55°	534.4	527.6	514.1	500.7	495.1
57.5°	490.5	484.9	470.3	456.8	452.3
60°	446.7	442.3	426.6	414.2	410.9
62.5°	404.1	396.2	385.0	373.8	369.3
65°	360.4	353.6	342.4	332.3	326.7
67.5°	315.5	309.8	299.7	291.9	287.4
70°	273.9	269.4	259.3	251.4	247.0
72.5°	231.3	226.7	221.1	213.3	210.0
75°	188.5	186.4	180.7	174.0	176.3
77.5°	150.4	145.9	143.6	140.3	137.0
80°	112.3	111.1	108.8	105.5	103.3
82.5°	76.3	76.3	75.3	70.7	70.7
85°	46.0	44.9	43.8	40.4	39.3
87.5°	20.2	18.0	15.7	12.4	11.2
90°	1.4	17.6	29.2	36.7	39.5
92.5°	36.7	30.8	35.1	38.1	39.5
95°	95.2	46.8	57.1	64.6	63.0
97.5°	171.4	51.3	74.6	79.2	80.6
100°	259.4	58.6	83.5	95.2	98.1
102.5°	356.0	353.2	86.5	102.5	107.0
105°	445.4	489.4	89.4	105.4	111.4
107.5°	549.5	586.0	92.4	108.4	114.3
110°	649.2	679.8	256.5	110.0	115.7

TEST NUMBER: P906209

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US835-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	742.9	769.2	744.3	112.7	117.3
115°	842.5	867.4	904.1	225.7	120.2
117.5°	928.9	958.2	983.2	773.6	389.7
120°	1025.7	1047.6	1074.1	1091.6	893.8
122.5°	1107.6	1131.1	1160.5	1169.2	1170.8
125°	1191.2	1210.3	1238.1	1248.4	1252.7
127.5°	1267.4	1287.9	1310.0	1324.6	1326.0
130°	1339.2	1362.7	1378.7	1394.9	1393.5
132.5°	1412.5	1431.6	1447.6	1460.8	1459.4
135°	1474.1	1497.6	1510.6	1525.4	1522.4
137.5°	1538.4	1556.0	1570.8	1585.4	1581.1
140°	1601.4	1613.3	1629.3	1642.5	1635.2
142.5°	1654.3	1664.6	1683.6	1695.2	1687.9
145°	1710.0	1708.4	1733.3	1743.6	1736.3
147.5°	1758.2	1753.8	1778.7	1786.0	1780.3
150°	1805.2	1794.9	1818.4	1827.1	1819.8
152.5°	1844.7	1833.0	1854.9	1863.8	1853.5
155°	1882.8	1869.7	1887.3	1896.0	1884.3
157.5°	1913.6	1901.9	1915.1	1925.4	1913.6
160°	1940.0	1931.1	1940.0	1948.7	1938.5
162.5°	1963.3	1954.6	1961.9	1972.2	1959.0
165°	1983.9	1975.2	1979.5	1989.8	1979.5
167.5°	2000.0	1991.2	1995.7	2006.0	1992.7
170°	2013.3	2004.4	2007.4	2017.6	2004.4
172.5°	2022.0	2013.3	2016.2	2026.5	2013.3
175°	2029.3	2019.0	2022.0	2032.2	2017.6
177.5°	2032.2	2022.0	2023.5	2033.8	2020.6
180°	2024.9	2024.9	2024.9	2024.9	2024.9

TEST NUMBER: P906209

CATALOG NUMBER: DFN2DIP-SQ2F0-030D060US835-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	8.66	9.39	9.75	10.47	11.97	8.21	8.94	9.30	10.03	11.52
	3H	10.29	10.94	11.39	12.04	13.55	9.80	10.45	10.90	11.55	13.06
	4H	10.86	11.48	11.97	12.58	14.09	10.37	10.99	11.47	12.08	13.60
	6H	11.24	11.81	12.35	12.91	14.43	10.74	11.31	11.85	12.41	13.93
	8H	11.33	11.87	12.45	12.99	14.51	10.83	11.37	11.95	12.49	14.01
	12H	11.37	11.88	12.49	12.99	14.53	10.86	11.37	11.98	12.48	14.03
4H	2H	9.09	9.71	10.21	10.81	12.32	8.74	9.36	9.85	10.45	11.97
	3H	10.92	11.44	12.04	12.56	14.09	10.52	11.03	11.64	12.16	13.68
	4H	11.62	12.09	12.74	13.21	14.75	11.19	11.67	12.32	12.78	14.33
	6H	12.11	12.51	13.24	13.65	15.19	11.67	12.08	12.81	13.22	14.76
	8H	12.24	12.62	13.37	13.75	15.31	11.81	12.19	12.94	13.31	14.87
	12H	12.30	12.65	13.45	13.79	15.34	11.85	12.20	13.00	13.34	14.90
8H	4H	11.79	12.17	12.92	13.30	14.85	11.41	11.79	12.54	12.92	14.48
	6H	12.39	12.71	13.55	13.88	15.43	12.01	12.32	13.16	13.49	15.04
	8H	12.60	12.87	13.76	14.02	15.59	12.21	12.48	13.36	13.63	15.20
	12H	12.71	12.95	13.87	14.10	15.71	12.30	12.54	13.46	13.69	15.30
12H	4H	11.77	12.11	12.92	13.25	14.81	11.40	11.74	12.55	12.88	14.44
	6H	12.42	12.69	13.58	13.84	15.41	12.04	12.32	13.20	13.47	15.04
	8H	12.64	12.88	13.80	14.02	15.63	12.26	12.50	13.42	13.64	15.25

END OF REPORT