

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: P906289

Luminaire Tested: DFN2DIP-SQ2F0-060D080US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906289
REPORT IS A COMBINATION OF REPORTS P901357 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-060D080US835-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

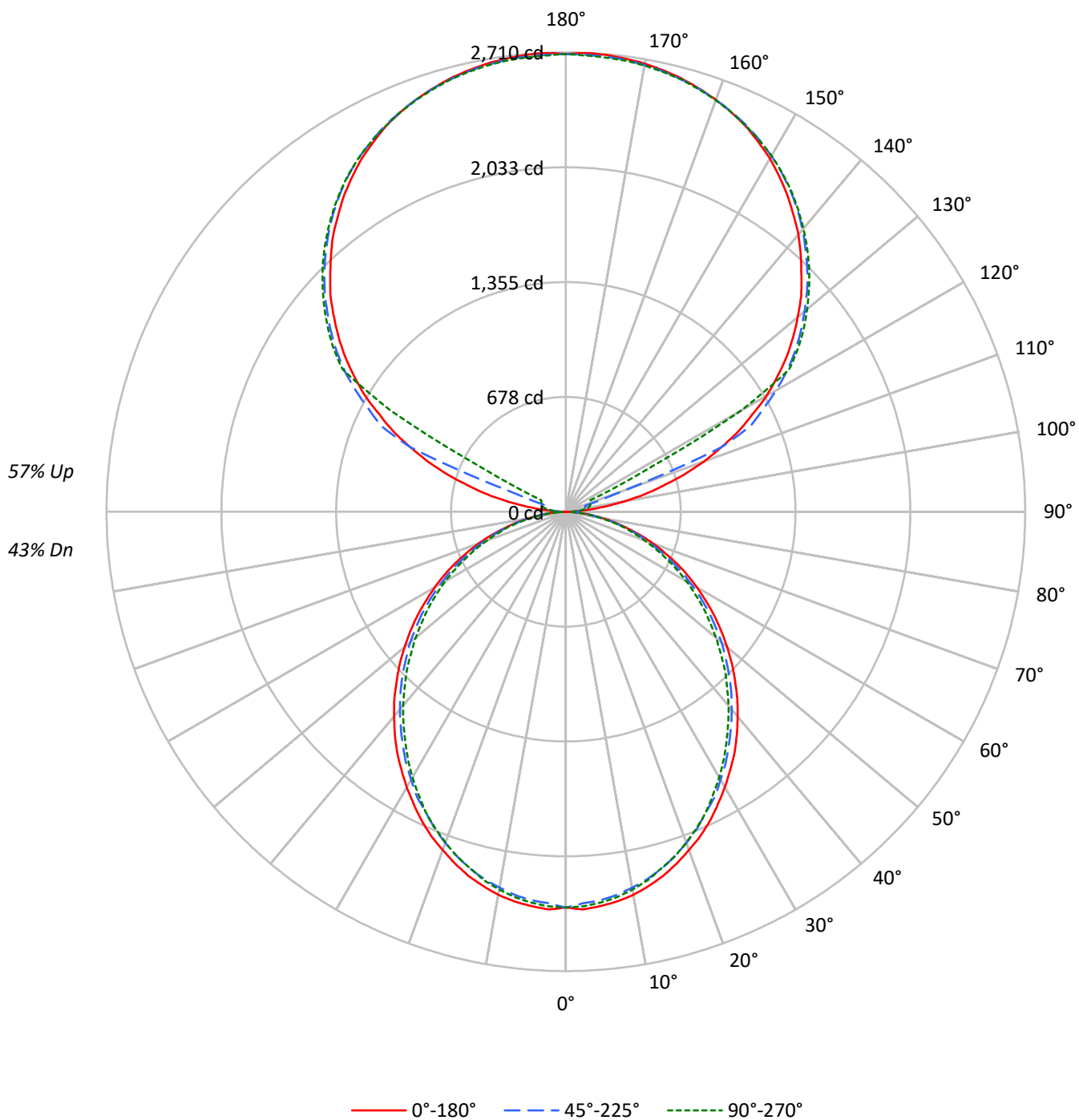
Lumens per Lamp: N/A
Luminaire Lumens: 13860.0 lumens
Efficiency: N/A
Efficacy: 115.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 120
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P906289

CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US835-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P906289

CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US835-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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	50	50	50
1	96	92	88	85	88	84	81	78	70	67	65	56	55	53	44	43	42
2	88	80	74	69	80	74	68	64	61	57	54	49	47	44	39	37	35
3	80	71	63	58	73	65	58	53	54	49	45	44	40	38	34	32	30
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	31	28	26
5	67	56	48	42	61	51	44	39	43	37	33	35	31	28	28	25	23
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20
7	57	45	37	32	52	41	34	29	35	29	25	29	25	22	23	20	18
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	27	22	18	22	18	16	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5134	5134	5134
5°	5133	5051	5089
10°	5082	4972	5013
15°	4999	4879	4898
20°	4889	4754	4781
25°	4779	4607	4646
30°	4644	4469	4477
35°	4516	4309	4299
40°	4359	4146	4129
45°	4202	3983	3954
50°	4030	3811	3753
55°	3849	3612	3566
60°	3644	3378	3351
65°	3418	3134	3099
70°	3133	2836	2825
75°	2741	2478	2563
80°	2264	2023	2081
85°	1529	1277	1308

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4202 cd/sqm

TEST NUMBER: P906289

CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US835-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.7	1.6
10°-20°	618.3	4.5
20°-30°	908.6	6.6
30°-40°	1055.3	7.6
40°-50°	1054.0	7.6
50°-60°	919.0	6.6
60°-70°	679.4	4.9
70°-80°	384.4	2.8
80°-90°	106.2	0.8
90°-100°	89.0	0.6
100°-110°	331.9	2.4
110°-120°	880.2	6.4
120°-130°	1459.9	10.5
130°-140°	1550.7	11.2
140°-150°	1441.2	10.4
150°-160°	1158.7	8.4
160°-170°	746.6	5.4
170°-180°	257.0	1.9
0°-30°	1746.6	12.6
0°-40°	2801.8	20.2
0°-60°	4774.8	34.5
0°-90°	5944.7	42.9
90°-120°	1301.1	9.4
90°-150°	5752.9	41.5
90°-180°	7915.0	57.1
0°-180°	13860.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2335	2335	2335	2335	2335	
5°	2335	2326	2301	2319	2315	222
15°	2222	2209	2180	2189	2178	626
25°	2011	1994	1955	1960	1955	926
35°	1735	1713	1677	1663	1652	1084
45°	1412	1396	1363	1338	1329	1090
55°	1069	1055	1028	1001	990	955
65°	721	707	685	664	653	713
75°	377	373	361	348	352	402
85°	92	90	88	81	79	103
90°	2	23	39	49	53	13
95°	127	62	76	86	84	150
105°	594	653	119	141	148	635
115°	1123	1156	1205	301	160	1106
125°	1588	1614	1651	1664	1670	1416
135°	1965	1997	2014	2034	2030	1518
145°	2280	2278	2311	2325	2315	1426
155°	2510	2493	2516	2528	2512	1157
165°	2645	2634	2639	2653	2639	747
175°	2706	2692	2696	2710	2690	258
180°	2700	2700	2700	2700	2700	

TEST NUMBER: P906289

CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US835-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2334.6	2334.6	2334.6	2334.6	2334.6
2.5°	2348.2	2337.0	2312.2	2334.6	2330.3
5°	2334.6	2325.8	2301.0	2318.9	2314.6
7.5°	2318.9	2305.6	2280.8	2298.9	2294.4
10°	2294.4	2278.7	2251.7	2269.6	2262.9
12.5°	2260.6	2247.2	2220.3	2231.5	2227.0
15°	2222.4	2209.1	2179.8	2188.9	2177.7
17.5°	2175.3	2162.0	2132.7	2143.8	2132.7
20°	2123.6	2110.3	2078.8	2085.5	2076.7
22.5°	2072.2	2051.9	2022.6	2022.6	2018.1
25°	2011.4	1993.6	1955.4	1959.7	1955.4
27.5°	1944.0	1928.3	1899.2	1892.6	1881.4
30°	1876.9	1858.7	1825.2	1818.5	1809.4
32.5°	1804.9	1791.6	1755.6	1742.0	1733.0
35°	1735.4	1713.0	1677.0	1663.4	1652.2
37.5°	1656.8	1636.5	1600.6	1584.8	1573.6
40°	1576.0	1557.9	1522.0	1502.0	1492.9
42.5°	1497.4	1479.3	1443.6	1421.0	1407.6
45°	1412.2	1396.4	1362.6	1338.1	1329.0
47.5°	1329.0	1313.3	1277.4	1252.6	1239.2
50°	1241.4	1230.2	1198.8	1167.3	1156.1
52.5°	1156.1	1140.4	1111.3	1086.6	1070.9
55°	1068.7	1055.1	1028.2	1001.3	990.1
57.5°	981.1	969.9	940.6	913.7	904.6
60°	893.4	884.6	853.2	828.4	821.7
62.5°	808.1	792.4	770.0	747.6	738.6
65°	720.7	707.2	684.8	664.5	653.3
67.5°	630.9	619.5	599.5	583.8	574.7
70°	547.8	538.8	518.5	502.8	494.0
72.5°	462.5	453.5	442.3	426.6	419.9
75°	377.0	372.8	361.3	348.0	352.5
77.5°	300.8	291.8	287.2	280.6	273.9
80°	224.6	222.2	217.7	211.0	206.5
82.5°	152.7	152.7	150.5	141.5	141.5
85°	91.9	89.8	87.6	80.7	78.6
87.5°	40.5	36.0	31.4	24.8	22.4
90°	1.9	23.4	39.0	48.9	52.7
92.5°	48.9	41.1	46.9	50.8	52.7
95°	126.9	62.4	76.1	86.1	84.0
97.5°	228.5	68.4	99.5	105.6	107.4
100°	345.9	78.2	111.4	126.9	130.8
102.5°	474.7	470.9	115.3	136.6	142.7
105°	593.9	652.6	119.2	140.6	148.5
107.5°	732.6	781.3	123.2	144.5	152.4
110°	865.6	906.4	342.0	146.6	154.3

TEST NUMBER: P906289

CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US835-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	990.6	1025.6	992.5	150.3	156.4
115°	1123.3	1156.5	1205.4	300.9	160.3
117.5°	1238.6	1277.6	1311.0	1031.4	519.7
120°	1367.6	1396.8	1432.1	1455.5	1191.7
122.5°	1476.8	1508.2	1547.4	1559.0	1561.1
125°	1588.2	1613.7	1650.8	1664.5	1670.3
127.5°	1689.8	1717.2	1746.7	1766.1	1768.0
130°	1785.6	1816.9	1838.3	1859.9	1858.0
132.5°	1883.3	1908.8	1930.2	1947.8	1945.9
135°	1965.4	1996.7	2014.1	2033.9	2029.9
137.5°	2051.3	2074.7	2094.4	2113.9	2108.1
140°	2135.2	2151.0	2172.4	2190.0	2180.2
142.5°	2205.8	2219.4	2244.7	2260.3	2250.5
145°	2280.0	2277.9	2311.1	2324.8	2315.0
147.5°	2344.3	2338.5	2371.6	2381.4	2373.7
150°	2406.9	2393.2	2424.5	2436.1	2426.4
152.5°	2459.6	2444.0	2473.2	2485.1	2471.4
155°	2510.4	2493.0	2516.4	2528.0	2512.5
157.5°	2551.4	2535.9	2553.5	2567.2	2551.4
160°	2586.7	2574.9	2586.7	2598.3	2584.6
162.5°	2617.8	2606.2	2615.9	2629.6	2612.0
165°	2645.2	2633.6	2639.4	2653.0	2639.4
167.5°	2666.7	2654.9	2660.9	2674.6	2657.0
170°	2684.4	2672.5	2676.5	2690.2	2672.5
172.5°	2696.0	2684.4	2688.3	2702.0	2684.4
175°	2705.7	2692.0	2696.0	2709.6	2690.2
177.5°	2709.6	2696.0	2698.0	2711.7	2694.1
180°	2699.9	2699.9	2699.9	2699.9	2699.9

TEST NUMBER: P906289

CATALOG NUMBER: DFN2DIP-SQ2F0-060D080US835-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	12.15	12.95	13.16	13.97	15.34	11.70	12.50	12.72	13.53	14.90
	3H	13.78	14.50	14.81	15.53	16.92	13.29	14.01	14.32	15.04	16.43
	4H	14.35	15.03	15.39	16.07	17.47	13.86	14.54	14.90	15.58	16.97
	6H	14.74	15.36	15.78	16.40	17.81	14.24	14.86	15.28	15.90	17.31
	8H	14.83	15.43	15.88	16.48	17.89	14.33	14.93	15.38	15.98	17.39
	12H	14.87	15.44	15.93	16.49	17.92	14.36	14.93	15.42	15.98	17.41
4H	2H	12.59	13.27	13.63	14.31	15.70	12.23	12.91	13.28	13.95	15.35
	3H	14.43	14.99	15.48	16.06	17.47	14.02	14.59	15.07	15.65	17.06
	4H	15.12	15.64	16.18	16.70	18.13	14.70	15.22	15.76	16.27	17.71
	6H	15.62	16.06	16.68	17.14	18.57	15.18	15.63	16.25	16.71	18.14
	8H	15.75	16.17	16.82	17.24	18.69	15.32	15.73	16.39	16.81	18.25
	12H	15.82	16.19	16.90	17.28	18.73	15.37	15.74	16.45	16.83	18.28
8H	4H	15.30	15.72	16.37	16.79	18.23	14.92	15.34	15.99	16.41	17.86
	6H	15.91	16.25	17.00	17.37	18.80	15.52	15.87	16.61	16.98	18.42
	8H	16.11	16.42	17.21	17.51	18.97	15.72	16.02	16.82	17.12	18.58
	12H	16.23	16.50	17.33	17.59	19.09	15.82	16.09	16.92	17.18	18.68
12H	4H	15.28	15.66	16.37	16.75	18.19	14.91	15.29	16.00	16.38	17.82
	6H	15.93	16.23	17.03	17.33	18.79	15.56	15.86	16.66	16.96	18.42
	8H	16.16	16.42	17.26	17.51	19.01	15.77	16.04	16.88	17.13	18.63