

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: P906240

Luminaire Tested: DFN2DIP-SQ2F0-040D080US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906240
REPORT IS A COMBINATION OF REPORTS P899833 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-040D080US835-FLLFLL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

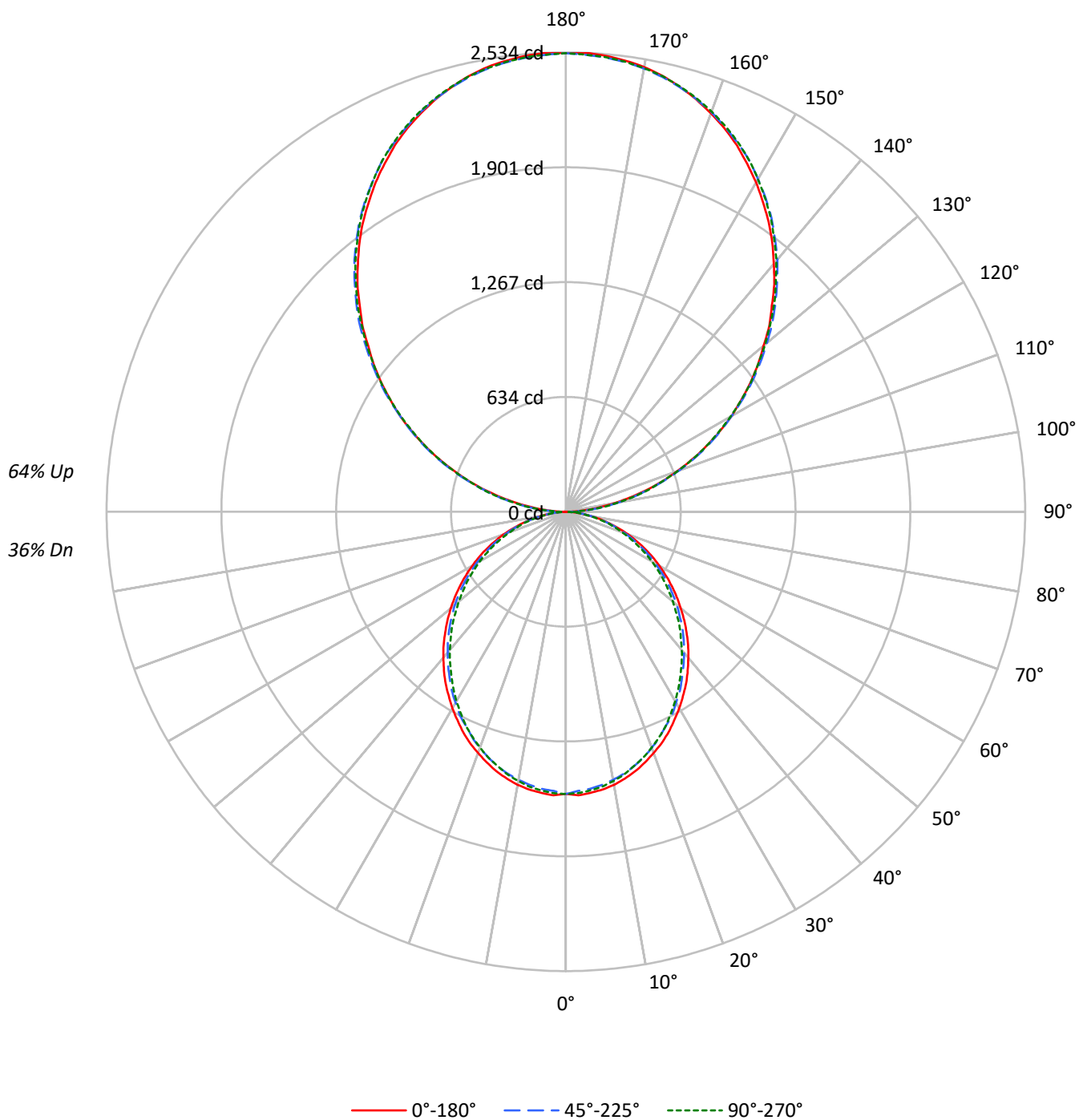
Lumens per Lamp: N/A
Luminaire Lumens: 11040.0 lumens
Efficiency: N/A
Efficacy: 111.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 98.7
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: P906240

CATALOG NUMBER: DFN2DIP-SQ2F0-040D080US835-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P906240

CATALOG NUMBER: DFN2DIP-SQ2F0-040D080US835-FLLFLL

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	104	104	104	104	94	94	94	94	76	76	76	59	59	59	43	43	43
1	95	90	87	83	85	82	79	76	66	64	62	52	50	49	38	37	36
2	86	79	73	68	78	72	66	62	58	54	51	45	43	41	34	32	31
3	79	69	62	56	71	63	57	52	51	47	43	40	37	34	30	28	26
4	72	61	54	48	65	56	49	44	45	40	37	36	32	29	27	24	22
5	66	54	47	41	59	50	43	38	40	35	31	32	28	25	24	22	20
6	61	49	41	35	55	45	38	33	36	31	27	29	25	22	22	19	17
7	56	44	36	31	50	40	33	28	33	28	24	26	22	20	20	17	15
8	52	40	32	27	47	36	30	25	30	25	21	24	20	17	18	16	14
9	48	36	29	24	44	33	27	22	27	22	19	22	18	16	17	14	12
10	45	33	26	21	41	30	24	20	25	20	17	20	17	14	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3422	3422	3422
5°	3422	3367	3393
10°	3388	3315	3342
15°	3332	3252	3265
20°	3259	3169	3187
25°	3186	3071	3098
30°	3096	2980	2985
35°	3010	2873	2866
40°	2906	2764	2753
45°	2801	2655	2636
50°	2686	2540	2502
55°	2566	2408	2377
60°	2429	2252	2234
65°	2279	2089	2066
70°	2089	1891	1883
75°	1828	1652	1708
80°	1509	1349	1388
85°	1020	851	872

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 3527 cd/sqm

TEST NUMBER: P906240

CATALOG NUMBER: DFN2DIP-SQ2F0-040D080US835-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.5	1.3
10°-20°	412.2	3.7
20°-30°	605.7	5.5
30°-40°	703.5	6.4
40°-50°	702.6	6.4
50°-60°	612.7	5.5
60°-70°	452.9	4.1
70°-80°	256.2	2.3
80°-90°	74.8	0.7
90°-100°	156.6	1.4
100°-110°	497.5	4.5
110°-120°	851.3	7.7
120°-130°	1119.6	10.1
130°-140°	1256.7	11.4
140°-150°	1232.3	11.2
150°-160°	1033.7	9.4
160°-170°	685.6	6.2
170°-180°	239.6	2.2
0°-30°	1164.4	10.5
0°-40°	1867.9	16.9
0°-60°	3183.2	28.8
0°-90°	3967.2	35.9
90°-120°	1505.3	13.6
90°-150°	5113.9	46.3
90°-180°	7073.0	64.1
0°-180°	11040.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1556	1556	1556	1556	1556	
5°	1556	1550	1534	1546	1543	148
15°	1482	1473	1453	1459	1452	417
25°	1341	1329	1304	1306	1304	617
35°	1157	1142	1118	1109	1102	722
45°	941	931	908	892	886	727
55°	712	703	686	668	660	637
65°	480	471	456	443	436	475
75°	251	248	241	232	235	268
85°	61	60	58	54	52	68
90°	2	28	75	70	72	11
95°	111	133	136	136	133	124
105°	459	465	470	474	474	485
115°	854	866	863	860	854	845
125°	1242	1262	1256	1249	1246	1110
135°	1607	1631	1635	1633	1627	1242
145°	1951	1966	1979	1981	1972	1219
155°	2231	2237	2244	2255	2248	1027
165°	2427	2425	2425	2440	2429	685
175°	2526	2519	2515	2530	2517	240
180°	2530	2530	2530	2530	2530	

TEST NUMBER: P906240

CATALOG NUMBER: DFN2DIP-SQ2F0-040D080US835-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1556.4	1556.4	1556.4	1556.4	1556.4
2.5°	1565.5	1558.0	1541.5	1556.4	1553.6
5°	1556.4	1550.5	1534.0	1545.9	1543.1
7.5°	1545.9	1537.0	1520.5	1532.6	1529.6
10°	1529.6	1519.1	1501.2	1513.1	1508.6
12.5°	1507.0	1498.1	1480.2	1487.7	1484.6
15°	1481.6	1472.7	1453.2	1459.2	1451.8
17.5°	1450.2	1441.3	1421.8	1429.2	1421.8
20°	1415.7	1406.8	1385.9	1390.3	1384.5
22.5°	1381.4	1367.9	1348.4	1348.4	1345.4
25°	1340.9	1329.0	1303.6	1306.5	1303.6
27.5°	1296.0	1285.5	1266.2	1261.7	1254.3
30°	1251.2	1239.2	1216.8	1212.3	1206.3
32.5°	1203.3	1194.4	1170.4	1161.4	1155.3
35°	1156.9	1142.0	1118.0	1109.0	1101.5
37.5°	1104.5	1091.0	1067.0	1056.6	1049.1
40°	1050.7	1038.6	1014.6	1001.3	995.3
42.5°	998.3	986.2	962.4	947.3	938.4
45°	941.4	931.0	908.4	892.1	886.0
47.5°	886.0	875.5	851.6	835.1	826.2
50°	827.6	820.1	799.2	778.2	770.7
52.5°	770.7	760.3	740.9	724.4	713.9
55°	712.5	703.4	685.5	667.5	660.1
57.5°	654.0	646.6	627.0	609.1	603.1
60°	595.6	589.7	568.8	552.3	547.8
62.5°	538.8	528.3	513.4	498.4	492.4
65°	480.5	471.4	456.5	443.0	435.6
67.5°	420.6	413.0	399.7	389.2	383.2
70°	365.2	359.2	345.7	335.2	329.3
72.5°	308.4	302.3	294.9	284.4	279.9
75°	251.4	248.5	240.9	232.0	235.0
77.5°	200.5	194.5	191.5	187.0	182.6
80°	149.7	148.1	145.1	140.7	137.7
82.5°	101.8	101.8	100.4	94.3	94.3
85°	61.3	59.9	58.4	53.8	52.4
87.5°	27.0	24.0	21.0	16.5	14.9
90°	2.3	27.5	74.8	70.2	72.5
92.5°	47.3	64.1	66.4	68.6	68.6
95°	111.4	132.7	136.5	136.5	132.7
97.5°	185.4	205.2	213.6	213.6	213.6
100°	270.8	288.3	294.4	294.4	292.1
102.5°	360.8	373.8	382.1	384.4	382.1
105°	459.2	465.3	469.9	473.7	473.7
107.5°	556.8	566.0	566.0	567.5	556.8
110°	651.4	663.6	663.6	663.6	657.5

TEST NUMBER: P906240

CATALOG NUMBER: DFN2DIP-SQ2F0-040D080US835-FLLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	753.6	766.6	764.3	758.2	753.6
115°	854.3	866.5	862.7	860.4	854.3
117.5°	954.2	971.0	960.3	954.2	948.1
120°	1054.9	1071.7	1054.9	1054.9	1048.0
122.5°	1146.4	1167.8	1157.1	1151.0	1146.4
125°	1242.5	1261.6	1255.5	1248.6	1246.4
127.5°	1336.4	1360.0	1351.6	1342.5	1336.4
130°	1424.1	1451.5	1447.7	1443.2	1434.8
132.5°	1522.5	1543.8	1545.4	1534.7	1528.6
135°	1607.1	1630.8	1635.4	1633.1	1627.0
137.5°	1701.7	1720.8	1724.6	1723.1	1713.9
140°	1784.9	1803.9	1814.6	1814.6	1806.2
142.5°	1870.3	1889.4	1895.5	1897.8	1889.4
145°	1951.2	1966.4	1978.6	1980.9	1972.5
147.5°	2023.6	2042.7	2051.8	2055.7	2047.3
150°	2098.4	2111.3	2119.7	2126.6	2119.7
152.5°	2164.7	2177.7	2188.4	2196.8	2188.4
155°	2231.1	2237.2	2244.1	2254.7	2247.9
157.5°	2288.3	2292.9	2296.7	2311.9	2301.3
160°	2339.4	2344.0	2346.3	2359.2	2350.1
162.5°	2386.7	2386.7	2389.0	2403.5	2392.8
165°	2427.1	2424.8	2424.8	2440.1	2429.4
167.5°	2463.7	2456.9	2456.9	2472.1	2461.4
170°	2491.2	2485.1	2482.8	2498.1	2485.1
172.5°	2510.3	2504.2	2501.9	2517.1	2504.2
175°	2525.5	2519.4	2514.8	2530.1	2517.1
177.5°	2533.9	2527.8	2523.2	2536.2	2523.2
180°	2530.1	2530.1	2530.1	2530.1	2530.1

TEST NUMBER: P906240

CATALOG NUMBER: DFN2DIP-SQ2F0-040D080US835-FLLFLL

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	9.97	10.72	11.04	11.79	13.24	9.52	10.27	10.59	11.34	12.80
	3H	11.60	12.27	12.68	13.35	14.83	11.11	11.78	12.19	12.86	14.34
	4H	12.17	12.80	13.26	13.89	15.37	11.68	12.31	12.76	13.39	14.88
	6H	12.55	13.13	13.65	14.22	15.71	12.05	12.63	13.15	13.72	15.21
	8H	12.64	13.20	13.74	14.30	15.79	12.14	12.70	13.24	13.80	15.29
	12H	12.68	13.21	13.79	14.30	15.81	12.17	12.70	13.28	13.79	15.31
4H	2H	10.40	11.04	11.50	12.12	13.60	10.05	10.68	11.14	11.76	13.25
	3H	12.24	12.77	13.34	13.87	15.37	11.83	12.36	12.93	13.47	14.96
	4H	12.93	13.42	14.04	14.52	16.03	12.51	12.99	13.61	14.09	15.61
	6H	13.42	13.84	14.54	14.96	16.47	12.99	13.41	14.10	14.53	16.04
	8H	13.56	13.95	14.67	15.06	16.59	13.12	13.51	14.24	14.62	16.15
	12H	13.62	13.97	14.75	15.10	16.63	13.17	13.52	14.30	14.65	16.18
8H	4H	13.11	13.50	14.22	14.61	16.13	12.73	13.12	13.84	14.23	15.76
	6H	13.71	14.03	14.84	15.19	16.71	13.32	13.65	14.46	14.80	16.32
	8H	13.91	14.20	15.06	15.33	16.87	13.52	13.80	14.66	14.94	16.48
	12H	14.03	14.28	15.17	15.41	16.99	13.62	13.87	14.76	15.00	16.58
12H	4H	13.08	13.44	14.22	14.56	16.09	12.71	13.07	13.85	14.19	15.72
	6H	13.73	14.01	14.88	15.15	16.69	13.36	13.64	14.50	14.78	16.32
	8H	13.95	14.20	15.10	15.33	16.91	13.57	13.82	14.72	14.95	16.53