

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: P906593

Luminaire Tested: DFN2DIP-SQ3F0-110D040US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906593
REPORT IS A COMBINATION OF REPORTS P901395 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-110D040US835-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

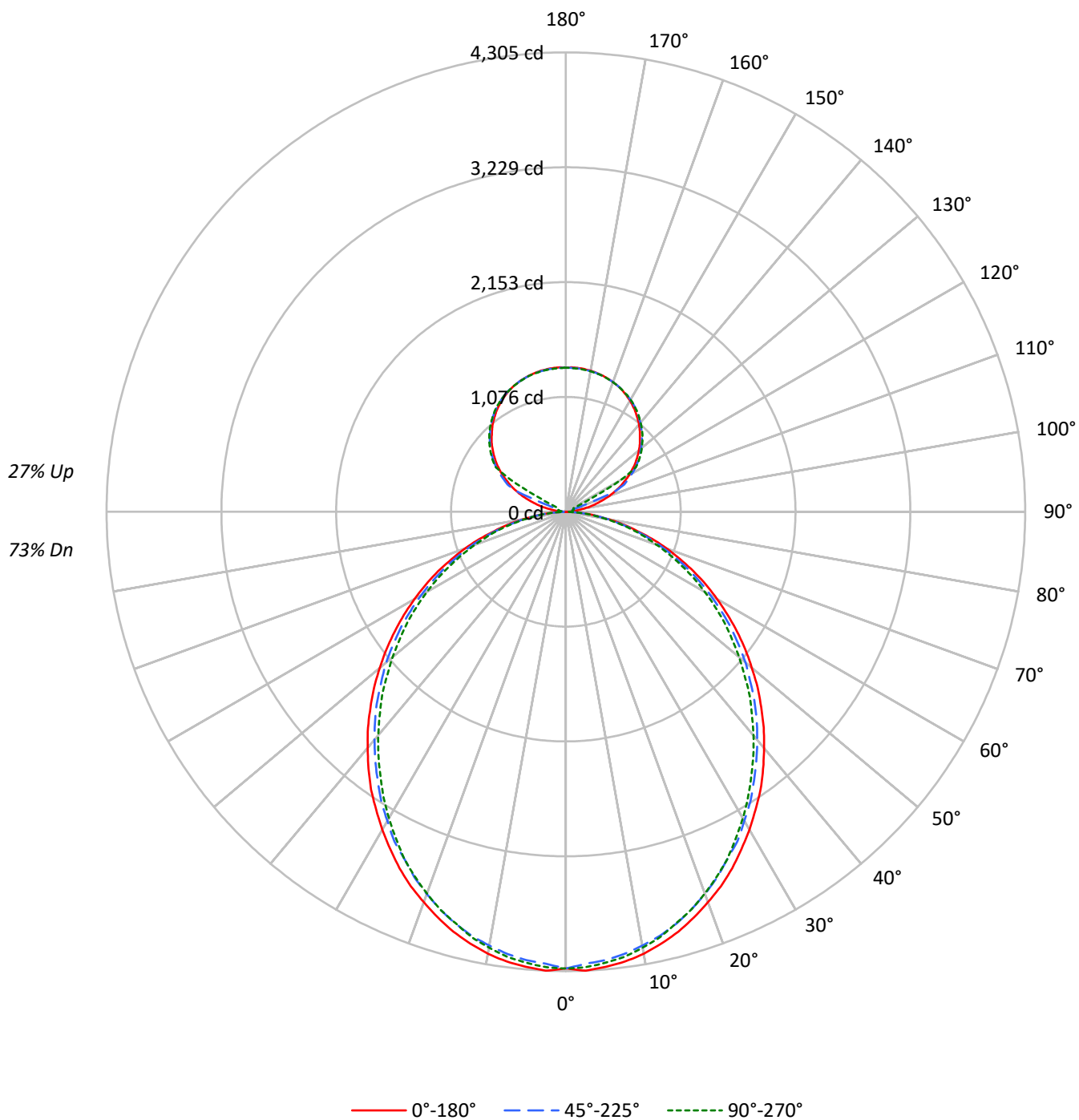
Lumens per Lamp: N/A
Luminaire Lumens: 14850.0 lumens
Efficiency: N/A
Efficacy: 104.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 142.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
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: P906593

CATALOG NUMBER: DFN2DIP-SQ3F0-110D040US835-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P906593

CATALOG NUMBER: DFN2DIP-SQ3F0-110D040US835-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	113	113	113	113	107	107	107	107	96	96	96	87	87	87	78	78	78
1	103	99	95	91	98	94	90	87	85	82	79	76	74	72	69	67	66
2	94	86	80	74	89	82	76	71	74	70	66	67	64	60	60	58	55
3	86	76	68	62	81	72	65	60	66	60	55	59	55	51	54	50	47
4	78	67	59	53	74	64	57	51	58	52	47	53	48	44	48	44	41
5	72	60	52	45	68	57	50	44	52	46	41	48	42	38	43	39	35
6	67	54	46	39	63	52	44	38	47	41	36	43	38	34	39	35	31
7	62	49	41	35	58	47	39	34	43	36	32	39	34	30	36	31	28
8	57	45	37	31	54	43	35	30	39	33	28	36	31	27	33	28	25
9	54	41	33	28	51	39	32	27	36	30	26	33	28	24	30	26	23
10	50	38	30	25	48	36	29	24	33	27	23	31	26	22	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4904	4904	4904
5°	4909	4833	4867
10°	4866	4764	4799
15°	4791	4683	4695
20°	4692	4570	4588
25°	4592	4437	4464
30°	4468	4312	4308
35°	4351	4166	4142
40°	4207	4018	3985
45°	4063	3869	3824
50°	3905	3713	3637
55°	3740	3533	3465
60°	3553	3319	3268
65°	3348	3097	3035
70°	3088	2826	2784
75°	2728	2502	2551
80°	2293	2087	2108
85°	1614	1383	1380

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4063 cd/sqm

TEST NUMBER: P906593

CATALOG NUMBER: DFN2DIP-SQ3F0-110D040US835-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	402.8	2.7
10°-20°	1133.5	7.6
20°-30°	1665.7	11.2
30°-40°	1934.7	13.0
40°-50°	1932.3	13.0
50°-60°	1684.9	11.3
60°-70°	1245.5	8.4
70°-80°	704.7	4.7
80°-90°	188.4	1.3
90°-100°	44.5	0.3
100°-110°	165.9	1.1
110°-120°	440.1	3.0
120°-130°	729.9	4.9
130°-140°	775.4	5.2
140°-150°	720.6	4.9
150°-160°	579.4	3.9
160°-170°	373.3	2.5
170°-180°	128.5	0.9
0°-30°	3202.1	21.6
0°-40°	5136.7	34.6
0°-60°	8753.8	58.9
0°-90°	10892.4	73.3
90°-120°	650.5	4.4
90°-150°	2876.4	19.4
90°-180°	3958.0	26.7
0°-180°	14850.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4280	4280	4280	4280	4280	
5°	4280	4264	4219	4251	4244	406
15°	4074	4050	3996	4013	3992	1148
25°	3688	3655	3585	3593	3585	1697
35°	3182	3140	3074	3050	3029	1987
45°	2589	2560	2498	2453	2437	1998
55°	1959	1934	1885	1836	1815	1752
65°	1321	1296	1255	1218	1198	1306
75°	691	683	662	638	646	738
85°	169	165	161	148	144	188
90°	1	12	20	24	26	14
95°	63	31	38	43	42	75
105°	297	326	60	70	74	317
115°	562	578	603	150	80	553
125°	794	807	825	832	835	708
135°	983	998	1007	1017	1015	759
145°	1140	1139	1156	1162	1158	713
155°	1255	1246	1258	1264	1256	578
165°	1323	1317	1320	1326	1320	374
175°	1353	1346	1348	1355	1345	129
180°	1350	1350	1350	1350	1350	

TEST NUMBER: P906593

CATALOG NUMBER: DFN2DIP-SQ3F0-110D040US835-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4280.2	4280.2	4280.2	4280.2	4280.2
2.5°	4305.0	4284.5	4239.1	4280.2	4272.3
5°	4280.2	4264.0	4218.6	4251.3	4243.5
7.5°	4251.3	4226.9	4181.5	4214.7	4206.4
10°	4206.4	4177.5	4128.2	4160.9	4148.7
12.5°	4144.4	4119.9	4070.6	4091.1	4082.8
15°	4074.5	4050.0	3996.3	4012.9	3992.4
17.5°	3988.0	3963.6	3909.9	3930.4	3909.9
20°	3893.3	3868.8	3811.2	3823.4	3807.3
22.5°	3799.0	3761.8	3708.1	3708.1	3699.8
25°	3687.6	3654.9	3585.0	3592.9	3585.0
27.5°	3564.0	3535.2	3481.9	3469.7	3449.2
30°	3440.9	3407.7	3346.1	3333.9	3317.3
32.5°	3309.0	3284.6	3218.6	3193.7	3177.1
35°	3181.5	3140.5	3074.5	3049.6	3029.1
37.5°	3037.4	3000.3	2934.4	2905.5	2885.0
40°	2889.4	2856.2	2790.3	2753.6	2737.0
42.5°	2745.3	2712.1	2646.6	2605.1	2580.7
45°	2589.0	2560.1	2498.1	2453.2	2436.6
47.5°	2436.6	2407.8	2341.8	2296.4	2271.9
50°	2275.9	2255.4	2197.7	2140.1	2119.6
52.5°	2119.6	2090.7	2037.5	1992.0	1963.2
55°	1959.3	1934.4	1885.1	1835.7	1815.2
57.5°	1798.6	1778.1	1724.4	1675.0	1658.4
60°	1637.9	1621.8	1564.1	1518.7	1506.5
62.5°	1481.6	1452.8	1411.7	1370.7	1354.1
65°	1321.3	1296.4	1255.4	1218.3	1197.8
67.5°	1156.7	1135.8	1099.1	1070.3	1053.7
70°	1004.3	987.7	950.6	921.8	905.6
72.5°	848.0	831.4	810.9	782.1	769.8
75°	691.2	683.4	662.4	638.0	646.3
77.5°	551.5	534.9	526.6	514.4	502.2
80°	411.8	407.4	399.1	386.9	378.6
82.5°	279.9	279.9	276.0	259.4	259.4
85°	168.6	164.6	160.7	148.0	144.1
87.5°	74.2	65.9	57.6	45.4	41.0
90°	0.9	11.7	19.5	24.5	26.3
92.5°	24.5	20.5	23.4	25.4	26.3
95°	63.4	31.2	38.0	43.0	42.0
97.5°	114.3	34.2	49.8	52.8	53.7
100°	172.9	39.1	55.7	63.4	65.4
102.5°	237.3	235.5	57.6	68.3	71.3
105°	296.9	326.3	59.6	70.3	74.2
107.5°	366.3	390.7	61.6	72.3	76.2
110°	432.8	453.2	171.0	73.3	77.1

TEST NUMBER: P906593

CATALOG NUMBER: DFN2DIP-SQ3F0-110D040US835-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	495.3	512.8	496.2	75.2	78.2
115°	561.6	578.2	602.7	150.4	80.2
117.5°	619.3	638.8	655.5	515.7	259.8
120°	683.8	698.4	716.0	727.8	595.9
122.5°	738.4	754.1	773.7	779.5	780.5
125°	794.1	806.9	825.4	832.3	835.2
127.5°	844.9	858.6	873.3	883.1	884.0
130°	892.8	908.5	919.1	929.9	929.0
132.5°	941.6	954.4	965.1	973.9	973.0
135°	982.7	998.4	1007.1	1016.9	1015.0
137.5°	1025.6	1037.3	1047.2	1056.9	1054.0
140°	1067.6	1075.5	1086.2	1095.0	1090.1
142.5°	1102.9	1109.7	1122.4	1130.1	1125.3
145°	1140.0	1139.0	1155.5	1162.4	1157.5
147.5°	1172.1	1169.2	1185.8	1190.7	1186.9
150°	1203.4	1196.6	1212.3	1218.1	1213.2
152.5°	1229.8	1222.0	1236.6	1242.5	1235.7
155°	1255.2	1246.5	1258.2	1264.0	1256.2
157.5°	1275.7	1267.9	1276.8	1283.6	1275.7
160°	1293.3	1287.4	1293.3	1299.1	1292.3
162.5°	1308.9	1303.1	1308.0	1314.8	1306.0
165°	1322.6	1316.8	1319.7	1326.5	1319.7
167.5°	1333.4	1327.4	1330.5	1337.3	1328.5
170°	1342.2	1336.3	1338.2	1345.1	1336.3
172.5°	1348.0	1342.2	1344.2	1351.0	1342.2
175°	1352.8	1346.0	1348.0	1354.8	1345.1
177.5°	1354.8	1348.0	1349.0	1355.9	1347.1
180°	1350.0	1350.0	1350.0	1350.0	1350.0

TEST NUMBER: P906593

CATALOG NUMBER: DFN2DIP-SQ3F0-110D040US835-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	14.69	15.80	15.41	16.55	17.45	14.24	15.36	14.97	16.11	17.00
	3H	16.36	17.37	17.10	18.12	19.05	15.87	16.88	16.61	17.63	18.56
	4H	16.96	17.91	17.71	18.67	19.61	16.46	17.41	17.22	18.18	19.12
	6H	17.37	18.24	18.14	19.02	19.97	16.87	17.74	17.64	18.52	19.47
	8H	17.48	18.31	18.26	19.11	20.06	16.97	17.81	17.76	18.61	19.56
	12H	17.53	18.33	18.32	19.12	20.10	17.02	17.82	17.81	18.61	19.59
4H	2H	15.17	16.12	15.94	16.89	17.83	14.82	15.77	15.58	16.53	17.47
	3H	17.06	17.85	17.83	18.65	19.61	16.65	17.44	17.42	18.24	19.20
	4H	17.78	18.50	18.57	19.30	20.28	17.35	18.07	18.14	18.88	19.86
	6H	18.30	18.93	19.11	19.75	20.74	17.87	18.50	18.68	19.32	20.31
	8H	18.46	19.04	19.27	19.86	20.86	18.02	18.60	18.83	19.43	20.43
	12H	18.54	19.06	19.37	19.91	20.92	18.09	18.62	18.92	19.46	20.47
8H	4H	17.99	18.57	18.80	19.40	20.40	17.61	18.20	18.42	19.02	20.02
	6H	18.63	19.11	19.47	19.97	20.98	18.24	18.73	19.08	19.59	20.59
	8H	18.85	19.28	19.70	20.14	21.16	18.45	18.88	19.30	19.75	20.76
	12H	18.99	19.37	19.84	20.22	21.29	18.58	18.95	19.43	19.81	20.88
12H	4H	17.99	18.51	18.82	19.36	20.36	17.62	18.14	18.45	18.99	20.00
	6H	18.66	19.09	19.51	19.95	20.97	18.28	18.71	19.13	19.58	20.59
	8H	18.91	19.29	19.76	20.14	21.21	18.53	18.91	19.38	19.76	20.83