

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: P922612

Luminaire Tested: DFN2DIP-SQ2F0-050D030US940-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922612
REPORT IS A COMBINATION OF REPORTS P899775 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-050D030US940-FLLFLL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

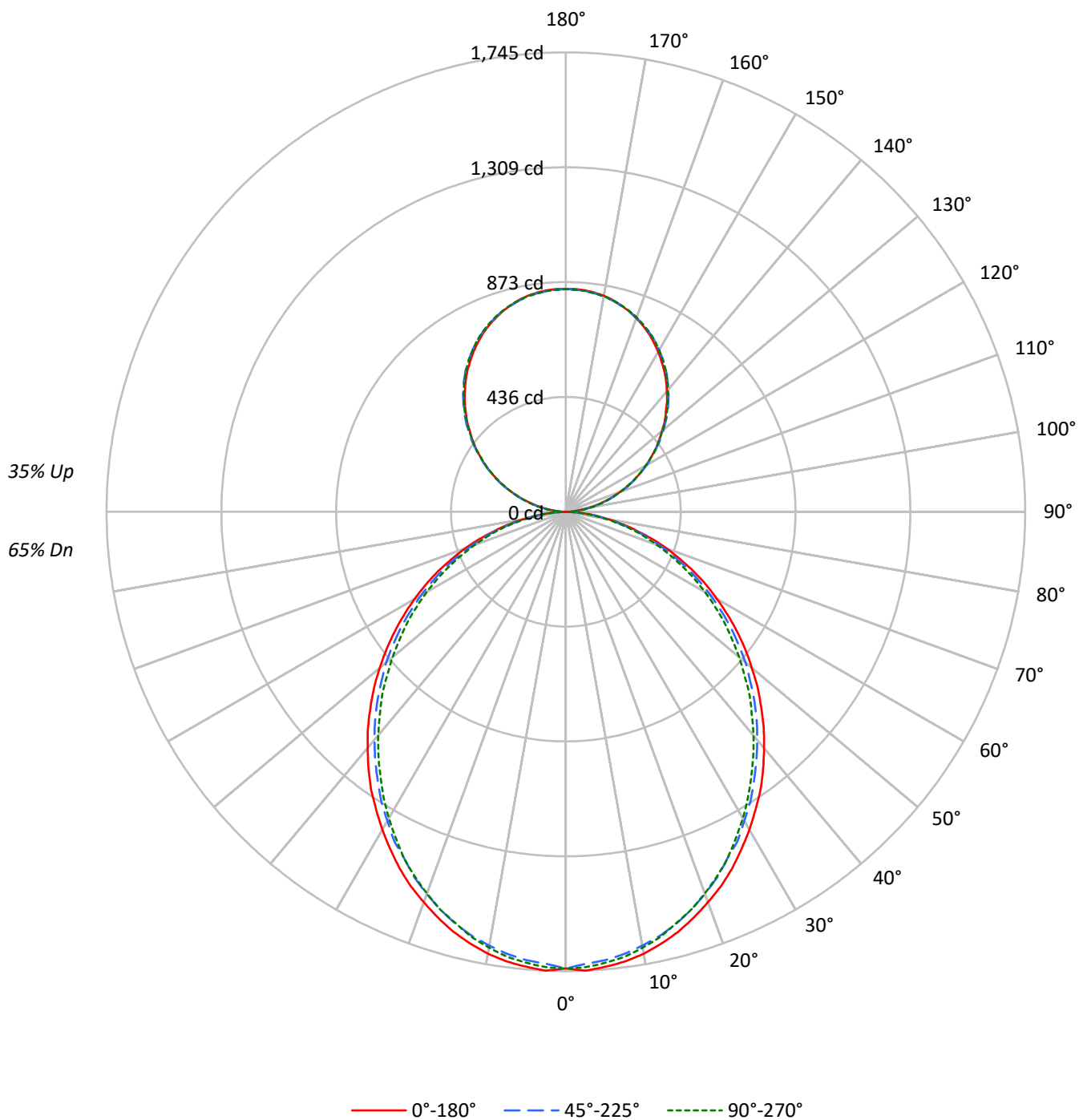
Lumens per Lamp: N/A
Luminaire Lumens: 6781.5 lumens
Efficiency: N/A
Efficacy: 101.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 67
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
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: P922612

CATALOG NUMBER: DFN2DIP-SQ2F0-050D030US940-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P922612

CATALOG NUMBER: DFN2DIP-SQ2F0-050D030US940-FLLFL

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	111	111	111	111	104	104	104	104	92	92	92	80	80	80	70	70	70
1	101	97	93	89	95	91	88	84	81	78	75	71	69	67	62	60	59
2	92	85	78	73	86	80	74	69	71	66	63	62	59	56	55	52	50
3	84	74	67	61	79	70	63	58	62	57	53	55	51	47	48	45	42
4	77	66	58	52	72	62	55	49	55	50	45	49	44	41	43	40	37
5	71	59	50	44	66	56	48	42	50	44	39	44	39	35	39	35	32
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	35	31	28
7	60	48	40	34	57	45	38	33	41	35	30	36	31	28	32	28	25
8	56	44	36	30	53	41	34	29	37	31	27	33	28	25	30	26	22
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	27	23	20
10	49	37	29	24	46	35	28	23	32	26	22	28	24	20	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3815	3815	3815
5°	3814	3753	3782
10°	3777	3695	3725
15°	3714	3625	3640
20°	3633	3533	3553
25°	3552	3423	3453
30°	3451	3321	3327
35°	3355	3202	3195
40°	3239	3081	3068
45°	3122	2959	2938
50°	2994	2832	2789
55°	2860	2684	2650
60°	2708	2510	2490
65°	2540	2328	2302
70°	2328	2107	2099
75°	2037	1842	1905
80°	1682	1504	1547
85°	1136	949	972

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3122 cd/sqm

TEST NUMBER: P922612

CATALOG NUMBER: DFN2DIP-SQ2F0-050D030US940-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.3	2.4
10°-20°	459.4	6.8
20°-30°	675.2	10.0
30°-40°	784.2	11.6
40°-50°	783.2	11.5
50°-60°	682.9	10.1
60°-70°	504.8	7.4
70°-80°	285.6	4.2
80°-90°	77.8	1.1
90°-100°	52.3	0.8
100°-110°	166.3	2.5
110°-120°	284.7	4.2
120°-130°	374.4	5.5
130°-140°	420.2	6.2
140°-150°	412.1	6.1
150°-160°	345.7	5.1
160°-170°	229.2	3.4
170°-180°	80.1	1.2
0°-30°	1297.9	19.1
0°-40°	2082.0	30.7
0°-60°	3548.1	52.3
0°-90°	4416.4	65.1
90°-120°	503.4	7.4
90°-150°	1710.0	25.2
90°-180°	2365.0	34.9
0°-180°	6781.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1735	1735	1735	1735	1735	
5°	1735	1728	1710	1723	1720	165
15°	1651	1642	1620	1627	1618	465
25°	1495	1481	1453	1456	1453	688
35°	1290	1273	1246	1236	1228	805
45°	1049	1038	1012	994	988	810
55°	794	784	764	744	736	710
65°	536	526	509	494	485	530
75°	280	277	268	259	262	299
85°	68	67	65	60	58	76
90°	1	9	25	24	24	7
95°	37	44	46	46	44	41
105°	154	156	157	158	158	162
115°	286	290	288	288	286	283
125°	416	422	420	418	417	371
135°	537	545	547	546	544	415
145°	652	658	662	662	660	408
155°	746	748	750	754	752	343
165°	812	811	811	816	812	229
175°	844	842	841	846	842	80
180°	846	846	846	846	846	

TEST NUMBER: P922612

CATALOG NUMBER: DFN2DIP-SQ2F0-050D030US940-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1734.8	1734.8	1734.8	1734.8	1734.8
2.5°	1744.9	1736.6	1718.2	1734.8	1731.7
5°	1734.8	1728.3	1709.9	1723.1	1720.0
7.5°	1723.1	1713.2	1694.9	1708.3	1705.0
10°	1705.0	1693.3	1673.3	1686.5	1681.6
12.5°	1679.8	1669.9	1649.9	1658.2	1654.8
15°	1651.4	1641.5	1619.8	1626.6	1618.2
17.5°	1616.4	1606.5	1584.7	1593.0	1584.7
20°	1578.1	1568.2	1544.8	1549.7	1543.2
22.5°	1539.8	1524.7	1503.0	1503.0	1499.6
25°	1494.7	1481.4	1453.0	1456.3	1453.0
27.5°	1444.6	1432.9	1411.3	1406.3	1398.0
30°	1394.6	1381.3	1356.3	1351.3	1344.6
32.5°	1341.2	1331.3	1304.6	1294.5	1287.8
35°	1289.5	1272.9	1246.2	1236.1	1227.8
37.5°	1231.1	1216.1	1189.4	1177.7	1169.4
40°	1171.2	1157.7	1131.0	1116.1	1109.4
42.5°	1112.8	1099.3	1072.7	1055.9	1046.0
45°	1049.4	1037.7	1012.5	994.3	987.6
47.5°	987.6	975.9	949.2	930.8	920.9
50°	922.5	914.2	890.8	867.5	859.1
52.5°	859.1	847.4	825.8	807.4	795.8
55°	794.2	784.1	764.0	744.0	735.8
57.5°	729.0	720.7	698.9	678.9	672.2
60°	663.9	657.4	634.0	615.5	610.6
62.5°	600.6	588.9	572.2	555.5	548.8
65°	535.6	525.5	508.8	493.8	485.4
67.5°	468.9	460.4	445.5	433.8	427.0
70°	407.1	400.4	385.3	373.6	367.1
72.5°	343.8	337.0	328.7	317.0	312.0
75°	280.2	277.0	268.5	258.6	262.0
77.5°	223.6	216.8	213.5	208.5	203.6
80°	166.9	165.1	161.8	156.9	153.5
82.5°	113.4	113.4	111.8	105.1	105.1
85°	68.3	66.7	65.1	60.0	58.4
87.5°	30.1	26.8	23.4	18.4	16.7
90°	0.8	9.2	25.0	23.5	24.3
92.5°	15.8	21.4	22.2	22.9	22.9
95°	37.3	44.4	45.7	45.7	44.4
97.5°	62.0	68.6	71.4	71.4	71.4
100°	90.5	96.4	98.4	98.4	97.7
102.5°	120.6	125.0	127.8	128.6	127.8
105°	153.6	155.6	157.1	158.4	158.4
107.5°	186.2	189.2	189.2	189.8	186.2
110°	217.8	221.9	221.9	221.9	219.9

TEST NUMBER: P922612

CATALOG NUMBER: DFN2DIP-SQ2F0-050D030US940-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	252.0	256.4	255.6	253.5	252.0
115°	285.7	289.7	288.5	287.8	285.7
117.5°	319.1	324.7	321.1	319.1	317.0
120°	352.8	358.4	352.8	352.8	350.4
122.5°	383.3	390.5	386.9	384.9	383.3
125°	415.5	421.9	419.8	417.5	416.8
127.5°	446.8	454.8	452.0	448.9	446.8
130°	476.2	485.4	484.1	482.6	479.7
132.5°	509.1	516.2	516.7	513.2	511.1
135°	537.4	545.3	546.9	546.1	544.0
137.5°	569.0	575.4	576.7	576.2	573.1
140°	596.8	603.2	606.8	606.8	604.0
142.5°	625.4	631.8	633.8	634.6	631.8
145°	652.5	657.5	661.6	662.4	659.6
147.5°	676.7	683.1	686.1	687.4	684.6
150°	701.7	706.1	708.8	711.1	708.8
152.5°	723.9	728.2	731.7	734.6	731.7
155°	746.1	748.1	750.4	753.9	751.7
157.5°	765.2	766.7	768.0	773.1	769.5
160°	782.3	783.8	784.6	788.9	785.9
162.5°	798.1	798.1	798.9	803.7	800.1
165°	811.6	810.8	810.8	815.9	812.3
167.5°	823.9	821.5	821.5	826.6	823.0
170°	833.0	831.0	830.3	835.4	831.0
172.5°	839.4	837.4	836.6	841.7	837.4
175°	844.5	842.5	841.0	846.1	841.7
177.5°	847.3	845.3	843.7	848.1	843.7
180°	846.1	846.1	846.1	846.1	846.1

TEST NUMBER: P922612

CATALOG NUMBER: DFN2DIP-SQ2F0-050D030US940-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	13.10	14.11	13.91	14.95	15.99	12.65	13.67	13.47	14.51	15.54
	3H	14.75	15.66	15.58	16.51	17.58	14.26	15.17	15.09	16.02	17.09
	4H	15.33	16.19	16.18	17.05	18.13	14.84	15.70	15.68	16.55	17.63
	6H	15.72	16.52	16.58	17.38	18.47	15.22	16.02	16.08	16.88	17.97
	8H	15.83	16.58	16.69	17.46	18.55	15.32	16.08	16.19	16.96	18.05
	12H	15.87	16.59	16.74	17.47	18.59	15.36	16.09	16.24	16.96	18.08
4H	2H	13.57	14.43	14.42	15.28	16.36	13.21	14.07	14.06	14.93	16.00
	3H	15.42	16.14	16.28	17.03	18.12	15.01	15.73	15.88	16.62	17.71
	4H	16.13	16.78	17.00	17.67	18.79	15.70	16.36	16.58	17.24	18.36
	6H	16.63	17.20	17.52	18.11	19.23	16.20	16.77	17.09	17.68	18.80
	8H	16.78	17.31	17.67	18.21	19.35	16.34	16.87	17.23	17.77	18.91
	12H	16.85	17.33	17.76	18.25	19.39	16.40	16.88	17.31	17.80	18.94
8H	4H	16.33	16.86	17.22	17.76	18.89	15.95	16.48	16.84	17.38	18.52
	6H	16.94	17.38	17.86	18.32	19.46	16.55	16.99	17.47	17.94	19.07
	8H	17.15	17.54	18.08	18.47	19.63	16.76	17.14	17.68	18.08	19.23
	12H	17.27	17.62	18.21	18.55	19.75	16.86	17.21	17.80	18.14	19.34
12H	4H	16.32	16.79	17.23	17.72	18.86	15.95	16.42	16.86	17.35	18.49
	6H	16.97	17.36	17.89	18.29	19.44	16.59	16.98	17.52	17.92	19.07
	8H	17.20	17.54	18.13	18.47	19.67	16.82	17.16	17.75	18.09	19.29