

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: P909255

Luminaire Tested: DFN2DIP-SQ3F0-090D050US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909255
REPORT IS A COMBINATION OF REPORTS P901410 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-090D050US840-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

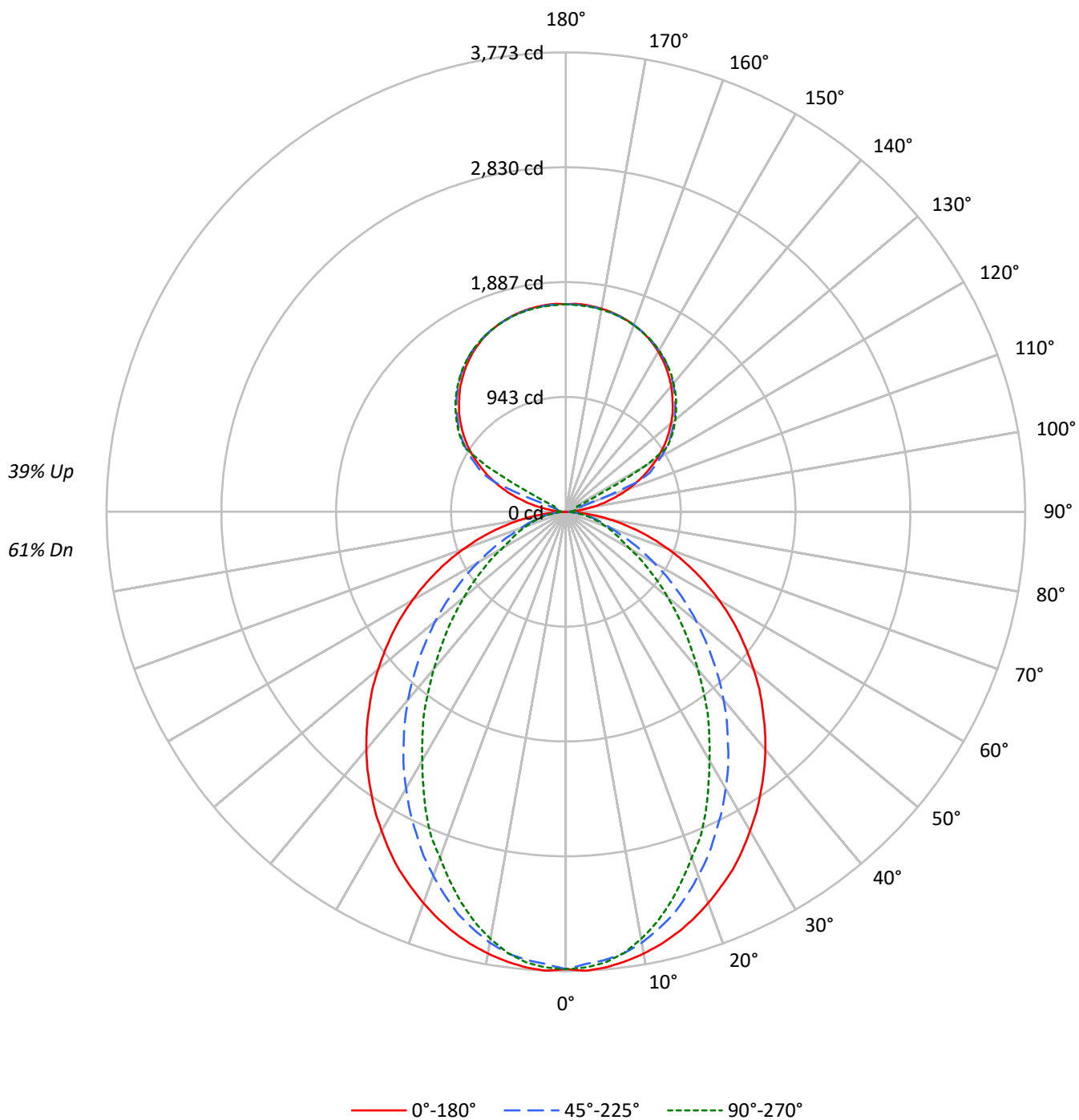
Lumens per Lamp: N/A
Luminaire Lumens: 12724.3 lumens
Efficiency: N/A
Efficacy: 102.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 124.7
Input Voltage (V):
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: P909255

CATALOG NUMBER: DFN2DIP-SQ3F0-090D050US840-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P909255

CATALOG NUMBER: DFN2DIP-SQ3F0-090D050US840-RLLONL

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	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66
1	101	97	93	90	94	91	87	84	79	77	75	69	67	65	59	58	57
2	92	85	79	74	86	80	75	70	70	66	63	61	58	56	53	51	49
3	85	75	68	62	79	71	65	59	62	58	53	55	51	48	47	45	42
4	78	67	59	53	73	63	56	51	56	50	46	49	45	41	43	40	37
5	72	60	52	46	67	57	50	44	50	45	40	44	40	36	39	35	33
6	66	54	46	41	62	51	44	39	46	40	35	40	36	32	35	32	29
7	61	49	41	36	57	47	39	34	42	36	32	37	32	29	33	29	26
8	57	45	37	32	53	43	36	31	38	32	28	34	29	26	30	26	23
9	53	41	34	29	50	39	32	28	35	30	26	31	27	23	28	24	21
10	50	38	31	26	47	36	30	25	33	27	23	29	25	21	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4304	4304	4304
5°	4308	4233	4261
10°	4263	4147	4121
15°	4201	4007	3906
20°	4121	3816	3642
25°	4039	3601	3387
30°	3929	3382	3064
35°	3822	3146	2780
40°	3712	2903	2455
45°	3585	2633	2160
50°	3453	2361	1873
55°	3315	2070	1596
60°	3156	1767	1313
65°	2972	1459	1180
70°	2749	1172	1066
75°	2468	1027	966
80°	2062	852	834
85°	1398	555	618

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3585 cd/sqm

TEST NUMBER: P909255

CATALOG NUMBER: DFN2DIP-SQ3F0-090D050US840-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	352.1	2.8
10°-20°	966.5	7.6
20°-30°	1356.9	10.7
30°-40°	1479.1	11.6
40°-50°	1359.4	10.7
50°-60°	1067.6	8.4
60°-70°	694.9	5.5
70°-80°	357.7	2.8
80°-90°	94.3	0.7
90°-100°	56.2	0.4
100°-110°	209.5	1.6
110°-120°	555.6	4.4
120°-130°	921.4	7.2
130°-140°	978.8	7.7
140°-150°	909.7	7.1
150°-160°	731.3	5.7
160°-170°	471.2	3.7
170°-180°	162.2	1.3
0°-30°	2675.4	21.0
0°-40°	4154.5	32.6
0°-60°	6581.5	51.7
0°-90°	7728.5	60.7
90°-120°	821.2	6.5
90°-150°	3631.1	28.5
90°-180°	4996.0	39.3
0°-180°	12724.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3756	3756	3756	3756	3756	
5°	3756	3739	3695	3726	3716	356
15°	3573	3535	3420	3355	3321	1007
25°	3243	3134	2910	2771	2720	1492
35°	2794	2621	2322	2108	2033	1749
45°	2284	2057	1700	1458	1377	1764
55°	1737	1472	1105	901	836	1552
65°	1173	897	592	476	466	1163
75°	625	387	272	248	245	661
85°	146	75	64	64	64	168
90°	1	15	25	31	33	12
95°	80	39	48	54	53	95
105°	375	412	75	89	94	401
115°	709	730	761	190	101	698
125°	1002	1019	1042	1051	1054	894
135°	1240	1260	1271	1284	1281	958
145°	1439	1438	1459	1467	1461	900
155°	1584	1574	1588	1596	1586	730
165°	1670	1662	1666	1674	1666	472
175°	1708	1699	1702	1710	1698	163
180°	1704	1704	1704	1704	1704	

TEST NUMBER: P909255

CATALOG NUMBER: DFN2DIP-SQ3F0-090D050US840-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3756.4	3756.4	3756.4	3756.4	3756.4
2.5°	3773.4	3756.4	3718.8	3753.2	3746.3
5°	3756.4	3739.4	3695.1	3725.7	3715.6
7.5°	3725.7	3705.5	3657.9	3671.3	3654.3
10°	3685.0	3661.2	3593.4	3582.9	3562.7
12.5°	3634.1	3603.5	3511.5	3491.3	3453.7
15°	3572.8	3535.3	3419.9	3355.3	3321.4
17.5°	3501.4	3447.0	3304.1	3229.4	3175.0
20°	3419.9	3351.7	3181.8	3097.1	3022.0
22.5°	3331.5	3253.3	3056.0	2940.5	2889.7
25°	3243.2	3134.2	2909.9	2770.7	2719.5
27.5°	3137.9	3022.0	2773.9	2614.1	2535.9
30°	3025.7	2896.2	2624.2	2451.1	2359.1
32.5°	2916.7	2760.2	2481.7	2277.7	2192.5
35°	2794.5	2621.0	2322.0	2107.8	2032.8
37.5°	2675.4	2488.3	2172.3	1937.5	1852.8
40°	2549.6	2345.8	2015.8	1774.5	1686.2
42.5°	2420.4	2203.0	1859.6	1607.9	1523.1
45°	2284.5	2056.6	1699.8	1458.1	1376.6
47.5°	2155.4	1914.1	1546.9	1305.3	1230.6
50°	2012.6	1771.2	1397.2	1162.5	1091.4
52.5°	1873.0	1618.0	1254.5	1030.1	965.5
55°	1737.0	1471.9	1104.7	901.0	836.4
57.5°	1597.8	1325.9	972.4	781.9	727.5
60°	1454.9	1183.0	832.8	659.6	605.2
62.5°	1315.8	1043.8	713.8	550.8	523.7
65°	1172.9	897.4	591.5	476.1	465.6
67.5°	1036.9	761.3	476.1	418.0	407.9
70°	894.1	629.0	394.3	360.3	346.6
72.5°	758.1	506.3	329.6	302.6	295.8
75°	625.4	387.4	272.0	248.1	244.9
77.5°	493.0	275.2	214.2	200.6	193.7
80°	370.4	197.3	163.0	149.7	149.7
82.5°	258.2	132.7	112.2	105.3	105.3
85°	146.0	74.6	64.5	64.5	64.5
87.5°	54.4	27.1	27.1	23.8	23.8
90°	1.2	14.7	24.6	30.9	33.2
92.5°	30.9	26.0	29.6	32.1	33.2
95°	80.1	39.4	48.1	54.3	53.0
97.5°	144.2	43.2	62.8	66.7	67.8
100°	218.3	49.4	70.3	80.1	82.6
102.5°	299.6	297.2	72.8	86.2	90.1
105°	374.9	411.9	75.2	88.8	93.7
107.5°	462.4	493.1	77.8	91.2	96.2
110°	546.3	572.1	215.8	92.5	97.4

TEST NUMBER: P909255

CATALOG NUMBER: DFN2DIP-SQ3F0-090D050US840-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	625.2	647.3	626.4	94.9	98.7
115°	709.0	729.9	760.8	190.0	101.2
117.5°	781.7	806.4	827.5	651.0	328.0
120°	863.1	881.6	903.8	918.7	752.1
122.5°	932.1	951.9	976.6	984.0	985.3
125°	1002.4	1018.6	1042.0	1050.6	1054.3
127.5°	1066.5	1083.8	1102.5	1114.7	1115.9
130°	1127.0	1146.8	1160.2	1173.9	1172.8
132.5°	1188.7	1204.8	1218.2	1229.4	1228.2
135°	1240.5	1260.3	1271.2	1283.7	1281.2
137.5°	1294.6	1309.5	1321.9	1334.2	1330.6
140°	1347.7	1357.7	1371.1	1382.2	1376.1
142.5°	1392.2	1400.9	1416.8	1426.6	1420.5
145°	1439.1	1437.7	1458.6	1467.3	1461.2
147.5°	1479.7	1475.9	1496.9	1503.1	1498.2
150°	1519.1	1510.6	1530.2	1537.6	1531.5
152.5°	1552.4	1542.6	1561.1	1568.5	1559.8
155°	1584.5	1573.5	1588.2	1595.6	1585.8
157.5°	1610.3	1600.5	1611.6	1620.3	1610.3
160°	1632.6	1625.2	1632.6	1639.9	1631.3
162.5°	1652.2	1645.0	1651.0	1659.7	1648.6
165°	1669.5	1662.2	1665.9	1674.5	1665.9
167.5°	1683.1	1675.7	1679.5	1688.1	1677.0
170°	1694.3	1686.8	1689.3	1697.9	1686.8
172.5°	1701.6	1694.3	1696.8	1705.4	1694.3
175°	1707.8	1699.1	1701.6	1710.2	1697.9
177.5°	1710.2	1701.6	1702.9	1711.5	1700.4
180°	1704.0	1704.0	1704.0	1704.0	1704.0

TEST NUMBER: P909255

CATALOG NUMBER: DFN2DIP-SQ3F0-090D050US840-RLONL

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	13.13	14.06	14.00	14.94	16.05	9.09	10.02	9.96	10.90	12.01
	3H	14.81	15.64	15.69	16.53	17.67	10.28	11.11	11.16	12.00	13.14
	4H	15.42	16.20	16.32	17.10	18.25	10.73	11.51	11.63	12.41	13.56
	6H	15.84	16.56	16.75	17.47	18.63	11.05	11.77	11.96	12.68	13.84
	8H	15.97	16.66	16.89	17.58	18.74	11.14	11.83	12.06	12.75	13.91
	12H	16.03	16.69	16.95	17.60	18.79	11.19	11.84	12.11	12.75	13.94
4H	2H	13.16	13.94	14.06	14.84	15.99	9.70	10.48	10.60	11.38	12.53
	3H	14.99	15.64	15.90	16.57	17.73	11.05	11.70	11.96	12.63	13.79
	4H	15.68	16.28	16.61	17.20	18.39	11.59	12.19	12.52	13.11	14.30
	6H	16.20	16.71	17.14	17.66	18.85	12.01	12.52	12.95	13.47	14.66
	8H	16.37	16.85	17.31	17.79	19.00	12.14	12.61	13.08	13.56	14.76
	12H	16.47	16.90	17.43	17.86	19.07	12.20	12.63	13.16	13.59	14.80
8H	4H	15.66	16.13	16.60	17.08	18.28	11.88	12.35	12.82	13.30	14.50
	6H	16.22	16.61	17.19	17.60	18.80	12.39	12.79	13.36	13.77	14.97
	8H	16.44	16.78	17.41	17.76	18.98	12.58	12.93	13.55	13.90	15.12
	12H	16.57	16.88	17.55	17.85	19.12	12.70	13.00	13.67	13.97	15.24
12H	4H	15.61	16.04	16.57	17.00	18.21	11.89	12.32	12.84	13.28	14.48
	6H	16.20	16.54	17.17	17.52	18.74	12.44	12.79	13.41	13.76	14.98
	8H	16.42	16.72	17.39	17.69	18.96	12.65	12.96	13.62	13.92	15.19