

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: P909311

Luminaire Tested: DFN2DIP-SQ3F0-100D100US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909311
REPORT IS A COMBINATION OF REPORTS P901502 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D100US840-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

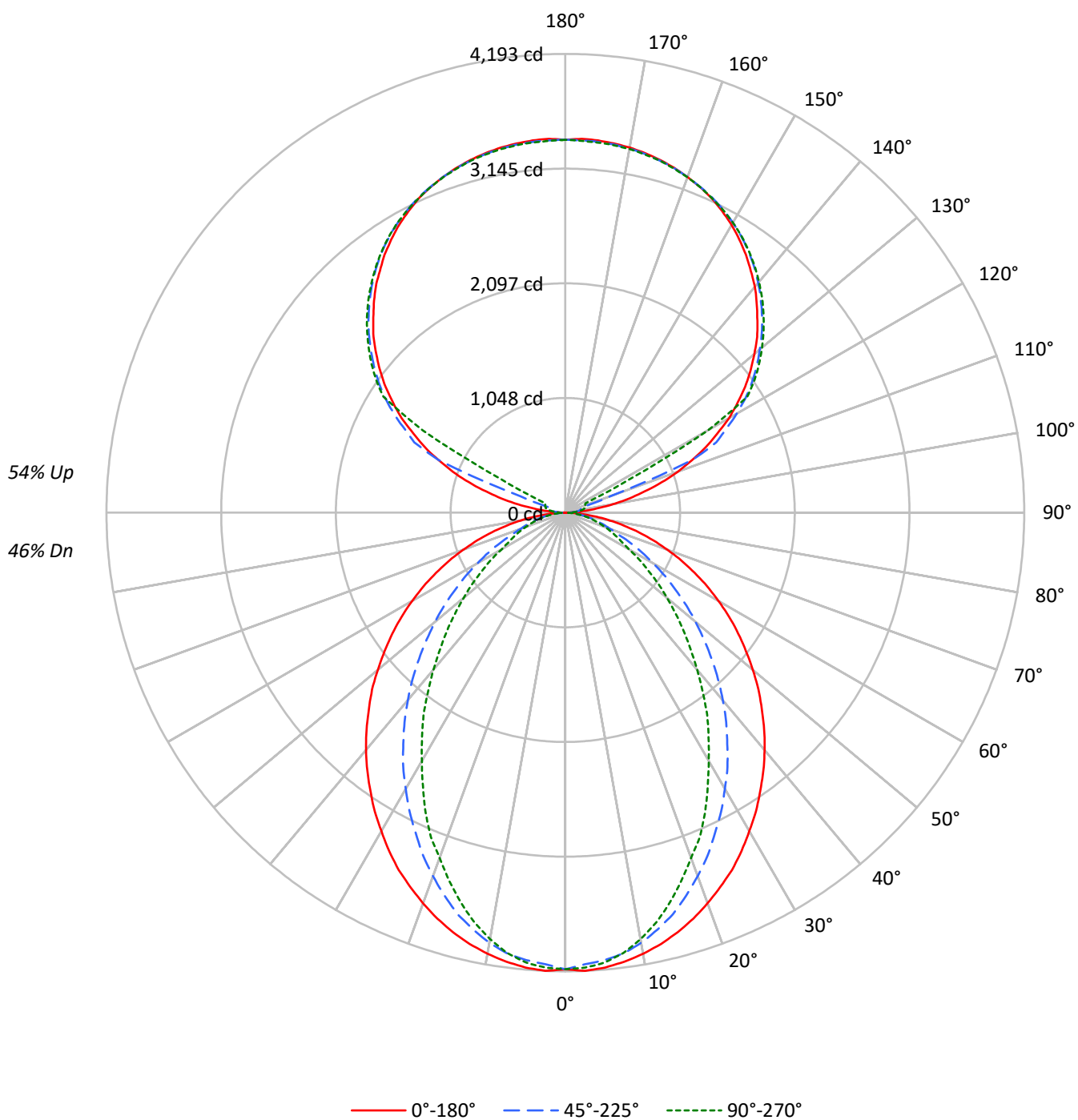
Lumens per Lamp: N/A
Luminaire Lumens: 18581.5 lumens
Efficiency: N/A
Efficacy: 105.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 176
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: P909311

CATALOG NUMBER: DFN2DIP-SQ3F0-100D100US840-RLLONL

Luminous Intensity Polar Plot



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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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4782	4782	4782
5°	4787	4703	4735
10°	4736	4608	4579
15°	4668	4452	4340
20°	4579	4240	4046
25°	4487	4001	3763
30°	4366	3758	3404
35°	4246	3496	3089
40°	4124	3225	2728
45°	3983	2926	2400
50°	3837	2623	2081
55°	3684	2301	1774
60°	3506	1964	1459
65°	3302	1621	1311
70°	3054	1302	1184
75°	2742	1141	1074
80°	2291	948	926
85°	1554	617	687

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3983 cd/sqm

TEST NUMBER: P909311

CATALOG NUMBER: DFN2DIP-SQ3F0-100D100US840-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	391.2	2.1
10°-20°	1073.8	5.8
20°-30°	1507.6	8.1
30°-40°	1643.4	8.8
40°-50°	1510.5	8.1
50°-60°	1186.3	6.4
60°-70°	772.1	4.2
70°-80°	397.5	2.1
80°-90°	107.5	0.6
90°-100°	112.4	0.6
100°-110°	418.9	2.3
110°-120°	1111.1	6.0
120°-130°	1842.9	9.9
130°-140°	1957.5	10.5
140°-150°	1819.3	9.8
150°-160°	1462.7	7.9
160°-170°	942.5	5.1
170°-180°	324.4	1.7
0°-30°	2972.6	16.0
0°-40°	4616.1	24.8
0°-60°	7312.8	39.4
0°-90°	8589.8	46.2
90°-120°	1642.4	8.8
90°-150°	7262.1	39.1
90°-180°	9992.0	53.8
0°-180°	18581.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4174	4174	4174	4174	4174	
5°	4174	4155	4106	4140	4128	396
15°	3970	3928	3800	3728	3690	1119
25°	3604	3482	3233	3078	3022	1657
35°	3105	2912	2580	2342	2259	1943
45°	2538	2285	1889	1620	1530	1960
55°	1930	1636	1228	1001	929	1725
65°	1303	997	657	529	517	1292
75°	695	430	302	276	272	735
85°	162	83	72	72	72	186
90°	2	30	49	62	66	17
95°	160	79	96	109	106	190
105°	750	824	151	177	187	801
115°	1418	1460	1522	380	202	1396
125°	2005	2037	2084	2101	2108	1788
135°	2481	2520	2542	2567	2562	1916
145°	2878	2876	2917	2935	2922	1800
155°	3169	3147	3176	3191	3172	1460
165°	3339	3324	3332	3349	3332	943
175°	3416	3398	3403	3420	3396	325
180°	3408	3408	3408	3408	3408	

TEST NUMBER: P909311

CATALOG NUMBER: DFN2DIP-SQ3F0-100D100US840-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4173.8	4173.8	4173.8	4173.8	4173.8
2.5°	4192.6	4173.8	4132.1	4170.1	4162.6
5°	4173.8	4154.9	4105.6	4139.7	4128.4
7.5°	4139.7	4117.2	4064.3	4079.1	4060.4
10°	4094.4	4067.9	3992.6	3981.0	3958.6
12.5°	4037.9	4003.8	3901.6	3879.2	3837.5
15°	3969.8	3928.1	3799.8	3728.1	3690.5
17.5°	3890.4	3829.9	3671.3	3588.3	3527.8
20°	3799.8	3724.1	3535.3	3441.2	3357.8
22.5°	3701.7	3614.7	3395.5	3267.3	3210.8
25°	3603.5	3482.5	3233.2	3078.5	3021.6
27.5°	3486.5	3357.8	3082.1	2904.6	2817.6
30°	3361.8	3217.9	2915.8	2723.5	2621.3
32.5°	3240.9	3066.9	2757.5	2530.7	2436.1
35°	3104.9	2912.3	2580.0	2342.0	2258.6
37.5°	2972.7	2764.7	2413.7	2152.8	2058.6
40°	2832.9	2606.5	2239.8	1971.7	1873.5
42.5°	2689.4	2447.7	2066.3	1786.6	1692.3
45°	2538.3	2285.0	1888.8	1620.2	1529.6
47.5°	2394.9	2126.8	1718.8	1450.3	1367.4
50°	2236.1	1968.0	1552.5	1291.6	1212.6
52.5°	2081.0	1797.8	1393.8	1144.5	1072.8
55°	1930.0	1635.5	1227.5	1001.1	929.3
57.5°	1775.3	1473.1	1080.5	868.8	808.3
60°	1616.6	1314.4	925.3	733.0	672.5
62.5°	1461.9	1159.7	793.0	612.0	581.9
65°	1303.2	997.0	657.2	529.0	517.4
67.5°	1152.2	846.0	529.0	464.4	453.2
70°	993.4	698.9	438.0	400.3	385.2
72.5°	842.3	562.6	366.3	336.2	328.6
75°	694.9	430.4	302.2	275.7	272.1
77.5°	547.9	305.8	238.0	222.8	215.2
80°	411.5	219.2	181.2	166.3	166.3
82.5°	286.9	147.4	124.6	117.0	117.0
85°	162.3	82.9	71.7	71.7	71.7
87.5°	60.5	30.1	30.1	26.5	26.5
90°	2.3	29.6	49.2	61.8	66.4
92.5°	61.8	51.8	59.2	64.1	66.4
95°	160.2	78.8	96.0	108.7	106.0
97.5°	288.4	86.3	125.6	133.2	135.6
100°	436.7	98.7	140.6	160.2	165.2
102.5°	599.2	594.5	145.5	172.5	180.1
105°	749.7	823.7	150.6	177.4	187.4
107.5°	924.8	986.3	155.5	182.5	192.4
110°	1092.6	1144.2	431.6	185.1	194.7

TEST NUMBER: P909311

CATALOG NUMBER: DFN2DIP-SQ3F0-100D100US840-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1250.4	1294.6	1252.8	189.8	197.4
115°	1418.0	1459.9	1521.7	379.8	202.4
117.5°	1563.5	1612.8	1654.9	1302.0	656.0
120°	1726.4	1763.2	1807.8	1837.3	1504.4
122.5°	1864.3	1903.8	1953.3	1967.9	1970.6
125°	2004.9	2037.1	2084.0	2101.2	2108.5
127.5°	2133.1	2167.7	2204.8	2229.5	2231.8
130°	2254.0	2293.6	2320.6	2347.7	2345.4
132.5°	2377.3	2409.5	2436.5	2458.7	2456.4
135°	2481.0	2520.5	2542.5	2567.4	2562.4
137.5°	2589.4	2619.0	2643.8	2668.5	2661.1
140°	2695.3	2715.3	2742.2	2764.5	2752.2
142.5°	2784.4	2801.7	2833.6	2853.2	2841.0
145°	2878.1	2875.5	2917.4	2934.7	2922.3
147.5°	2959.2	2951.9	2993.7	3006.1	2996.5
150°	3038.3	3021.0	3060.6	3075.2	3062.9
152.5°	3104.7	3085.1	3122.1	3136.9	3119.7
155°	3169.0	3146.9	3176.5	3191.2	3171.6
157.5°	3220.8	3201.2	3223.4	3240.7	3220.8
160°	3265.3	3250.4	3265.3	3279.9	3262.7
162.5°	3304.5	3289.8	3302.2	3319.4	3297.2
165°	3339.0	3324.4	3331.7	3349.0	3331.7
167.5°	3366.3	3351.3	3359.0	3376.3	3354.0
170°	3388.5	3373.7	3378.6	3395.9	3373.7
172.5°	3403.1	3388.5	3393.6	3410.8	3388.5
175°	3415.5	3398.2	3403.1	3420.5	3395.9
177.5°	3420.5	3403.1	3405.9	3423.1	3400.8
180°	3408.2	3408.2	3408.2	3408.2	3408.2

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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	12.19	12.99	13.18	13.99	15.32	8.15	8.95	9.14	9.95	11.28
	3H	13.86	14.57	14.86	15.58	16.93	9.33	10.04	10.33	11.05	12.40
	4H	14.46	15.14	15.48	16.15	17.51	9.77	10.45	10.79	11.46	12.82
	6H	14.88	15.50	15.91	16.52	17.89	10.09	10.71	11.11	11.73	13.10
	8H	15.00	15.59	16.04	16.63	17.99	10.17	10.76	11.21	11.80	13.16
	12H	15.06	15.62	16.10	16.65	18.04	10.21	10.77	11.25	11.80	13.19
4H	2H	12.20	12.88	13.22	13.89	15.25	8.74	9.41	9.76	10.43	11.78
	3H	14.02	14.58	15.05	15.63	17.00	10.08	10.64	11.11	11.68	13.05
	4H	14.71	15.22	15.75	16.26	17.65	10.62	11.13	11.66	12.17	13.56
	6H	15.22	15.66	16.27	16.72	18.10	11.03	11.47	12.08	12.53	13.92
	8H	15.39	15.80	16.44	16.85	18.25	11.15	11.57	12.20	12.62	14.02
	12H	15.48	15.85	16.55	16.92	18.32	11.21	11.59	12.28	12.65	14.06
8H	4H	14.67	15.08	15.72	16.14	17.54	10.89	11.31	11.94	12.36	13.76
	6H	15.23	15.57	16.31	16.67	18.06	11.40	11.74	12.48	12.84	14.24
	8H	15.44	15.74	16.53	16.82	18.24	11.59	11.89	12.67	12.96	14.38
	12H	15.58	15.84	16.66	16.91	18.37	11.70	11.96	12.78	13.04	14.50
12H	4H	14.62	14.99	15.69	16.06	17.47	10.90	11.27	11.96	12.33	13.74
	6H	15.21	15.51	16.29	16.58	18.00	11.45	11.75	12.53	12.83	14.24
	8H	15.42	15.69	16.51	16.76	18.22	11.65	11.92	12.74	12.99	14.45

END OF REPORT