

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: P908835

Luminaire Tested: DFN2DIP-PN4F0-100D080US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908835
REPORT IS A COMBINATION OF REPORTS P901214 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-100D080US840-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

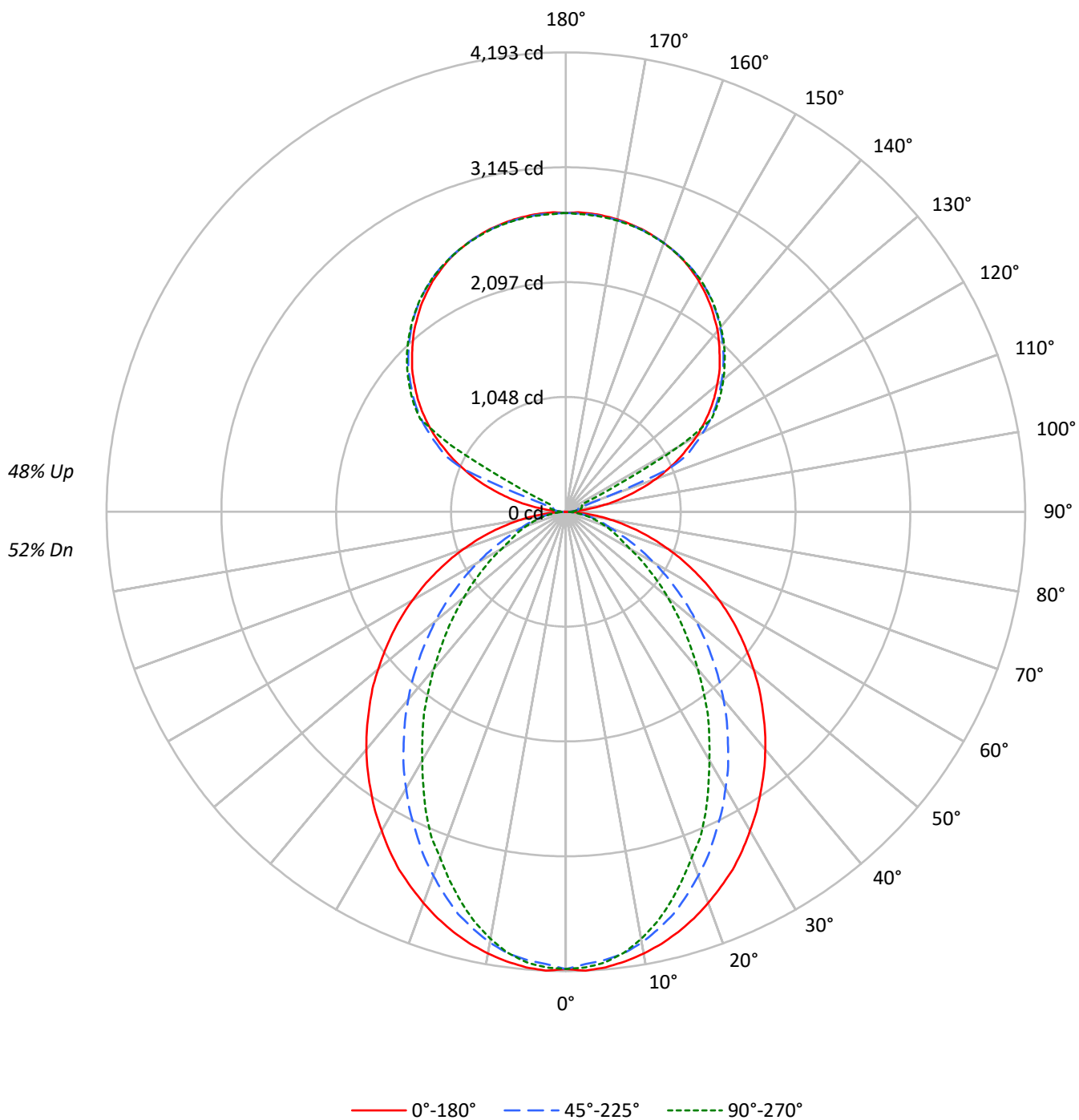
Lumens per Lamp: N/A
Luminaire Lumens: 16582.0 lumens
Efficiency: N/A
Efficacy: 104.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 158.9
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: P908835

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US840-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P908835

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US840-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
RCR																	
0	108	108	108	108	99	99	99	99	84	84	84		70	70	70		58
1	99	95	91	87	91	88	84	82	75	72	70		63	61	60		52
2	90	83	77	72	83	77	72	68	66	62	59		56	53	51		46
3	83	74	66	61	76	68	62	57	59	54	50		50	46	43		41
4	76	65	58	52	70	61	54	49	52	47	43		45	41	38		37
5	70	59	51	45	64	55	48	42	47	42	38		40	36	33		34
6	65	53	45	39	60	49	42	37	43	37	33		37	32	29		31
7	60	48	40	35	55	45	38	33	39	33	29		33	29	26		28
8	56	44	36	31	51	41	34	29	36	30	26		31	26	23		26
9	52	40	32	28	48	37	31	26	33	27	24		28	24	21		24
10	48	37	30	25	45	34	28	24	30	25	21		26	22	19		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3047	3047	3047
5°	3052	2999	3018
10°	3021	2940	2920
15°	2980	2843	2769
20°	2925	2710	2583
25°	2868	2560	2404
30°	2793	2406	2176
35°	2718	2241	1976
40°	2643	2070	1746
45°	2555	1881	1538
50°	2465	1689	1335
55°	2370	1484	1139
60°	2261	1270	938
65°	2135	1052	845
70°	1982	849	766
75°	1790	749	698
80°	1512	630	607
85°	1053	423	460

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2555 cd/sqm

TEST NUMBER: P908835

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US840-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	391.2	2.4
10°-20°	1073.8	6.5
20°-30°	1507.6	9.1
30°-40°	1643.4	9.9
40°-50°	1510.5	9.1
50°-60°	1186.3	7.2
60°-70°	772.1	4.7
70°-80°	397.5	2.4
80°-90°	106.3	0.6
90°-100°	89.9	0.5
100°-110°	335.1	2.0
110°-120°	888.9	5.4
120°-130°	1474.3	8.9
130°-140°	1566.0	9.4
140°-150°	1455.4	8.8
150°-160°	1170.1	7.1
160°-170°	754.0	4.5
170°-180°	259.5	1.6
0°-30°	2972.6	17.9
0°-40°	4616.1	27.8
0°-60°	7312.8	44.1
0°-90°	8588.6	51.8
90°-120°	1314.0	7.9
90°-150°	5809.7	35.0
90°-180°	7993.0	48.2
0°-180°	16582.0	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	24	39	49	53	16
95°	128	63	77	87	85	152
105°	600	659	120	142	150	641
115°	1134	1168	1217	304	162	1117
125°	1604	1630	1667	1681	1687	1430
135°	1985	2016	2034	2054	2050	1533
145°	2302	2300	2334	2348	2338	1440
155°	2535	2518	2541	2553	2537	1168
165°	2671	2660	2665	2679	2665	755
175°	2732	2719	2723	2736	2717	260
180°	2726	2726	2726	2726	2726	

TEST NUMBER: P908835

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US840-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°	1.9	23.6	39.4	49.4	53.2
92.5°	49.4	41.5	47.4	51.3	53.2
95°	128.2	63.0	76.9	86.9	84.8
97.5°	230.8	69.1	100.5	106.6	108.5
100°	349.3	79.0	112.5	128.2	132.1
102.5°	479.4	475.5	116.4	137.9	144.1
105°	599.8	659.0	120.4	142.0	150.0
107.5°	739.8	789.0	124.4	145.9	153.9
110°	874.1	915.3	345.4	148.0	155.8

TEST NUMBER: P908835

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US840-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1000.4	1035.7	1002.3	151.8	157.9
115°	1134.4	1167.9	1217.3	303.9	161.9
117.5°	1250.8	1290.2	1323.9	1041.6	524.8
120°	1381.1	1410.6	1446.2	1469.9	1203.5
122.5°	1491.4	1523.1	1562.7	1574.4	1576.5
125°	1603.9	1629.6	1667.1	1680.9	1686.8
127.5°	1706.5	1734.1	1763.9	1783.5	1785.4
130°	1803.2	1834.8	1856.4	1878.2	1876.3
132.5°	1901.9	1927.6	1949.2	1967.0	1965.1
135°	1984.8	2016.4	2034.0	2054.0	2049.9
137.5°	2071.5	2095.2	2115.1	2134.8	2128.9
140°	2156.3	2172.2	2193.8	2211.6	2201.7
142.5°	2227.6	2241.3	2266.8	2282.6	2272.7
145°	2302.5	2300.4	2333.9	2347.7	2337.8
147.5°	2367.4	2361.6	2395.0	2404.9	2397.1
150°	2430.6	2416.8	2448.4	2460.1	2450.3
152.5°	2483.9	2468.1	2497.6	2509.6	2495.8
155°	2535.2	2517.6	2541.2	2552.9	2537.3
157.5°	2576.6	2560.9	2578.7	2592.5	2576.6
160°	2612.2	2600.3	2612.2	2623.9	2610.1
162.5°	2643.6	2631.9	2641.7	2655.5	2637.8
165°	2671.3	2659.6	2665.4	2679.2	2665.4
167.5°	2693.0	2681.1	2687.2	2701.0	2683.2
170°	2710.9	2698.9	2702.9	2716.7	2698.9
172.5°	2722.6	2710.9	2714.8	2728.7	2710.9
175°	2732.4	2718.6	2722.6	2736.3	2716.7
177.5°	2736.3	2722.6	2724.6	2738.5	2720.7
180°	2726.5	2726.5	2726.5	2726.5	2726.5

TEST NUMBER: P908835

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US840-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	11.19	12.04	12.14	13.00	14.24	7.16	8.00	8.10	8.96	10.21
	3H	12.87	13.63	13.83	14.60	15.87	8.35	9.10	9.31	10.07	11.34
	4H	13.48	14.20	14.46	15.17	16.45	8.80	9.51	9.77	10.49	11.77
	6H	13.91	14.57	14.89	15.54	16.84	9.12	9.78	10.11	10.76	12.05
	8H	14.04	14.66	15.03	15.66	16.95	9.21	9.84	10.20	10.83	12.12
	12H	14.10	14.69	15.10	15.68	17.00	9.26	9.85	10.25	10.84	12.15
4H	2H	11.21	11.93	12.19	12.90	14.18	7.75	8.47	8.73	9.44	10.72
	3H	13.05	13.64	14.03	14.64	15.93	9.11	9.70	10.10	10.70	12.00
	4H	13.74	14.28	14.74	15.28	16.60	9.66	10.20	10.65	11.19	12.51
	6H	14.26	14.72	15.27	15.74	17.06	10.08	10.54	11.09	11.56	12.88
	8H	14.44	14.87	15.45	15.88	17.21	10.21	10.64	11.22	11.65	12.98
	12H	14.53	14.93	15.56	15.95	17.29	10.27	10.67	11.30	11.69	13.03
8H	4H	13.71	14.14	14.72	15.16	16.49	9.94	10.37	10.95	11.39	12.72
	6H	14.28	14.64	15.31	15.69	17.02	10.46	10.82	11.49	11.87	13.20
	8H	14.50	14.81	15.54	15.85	17.20	10.65	10.97	11.69	12.01	13.35
	12H	14.64	14.92	15.68	15.95	17.34	10.77	11.05	11.82	12.09	13.48
12H	4H	13.66	14.05	14.69	15.08	16.42	9.95	10.34	10.97	11.37	12.70
	6H	14.25	14.57	15.30	15.61	16.96	10.51	10.83	11.55	11.87	13.21
	8H	14.48	14.76	15.52	15.79	17.18	10.72	11.00	11.77	12.03	13.43

END OF REPORT