

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: P922239

Luminaire Tested: DFN2DIP-PN3F0-090D090US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922239
REPORT IS A COMBINATION OF REPORTS P901128 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-090D090US940-RLLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

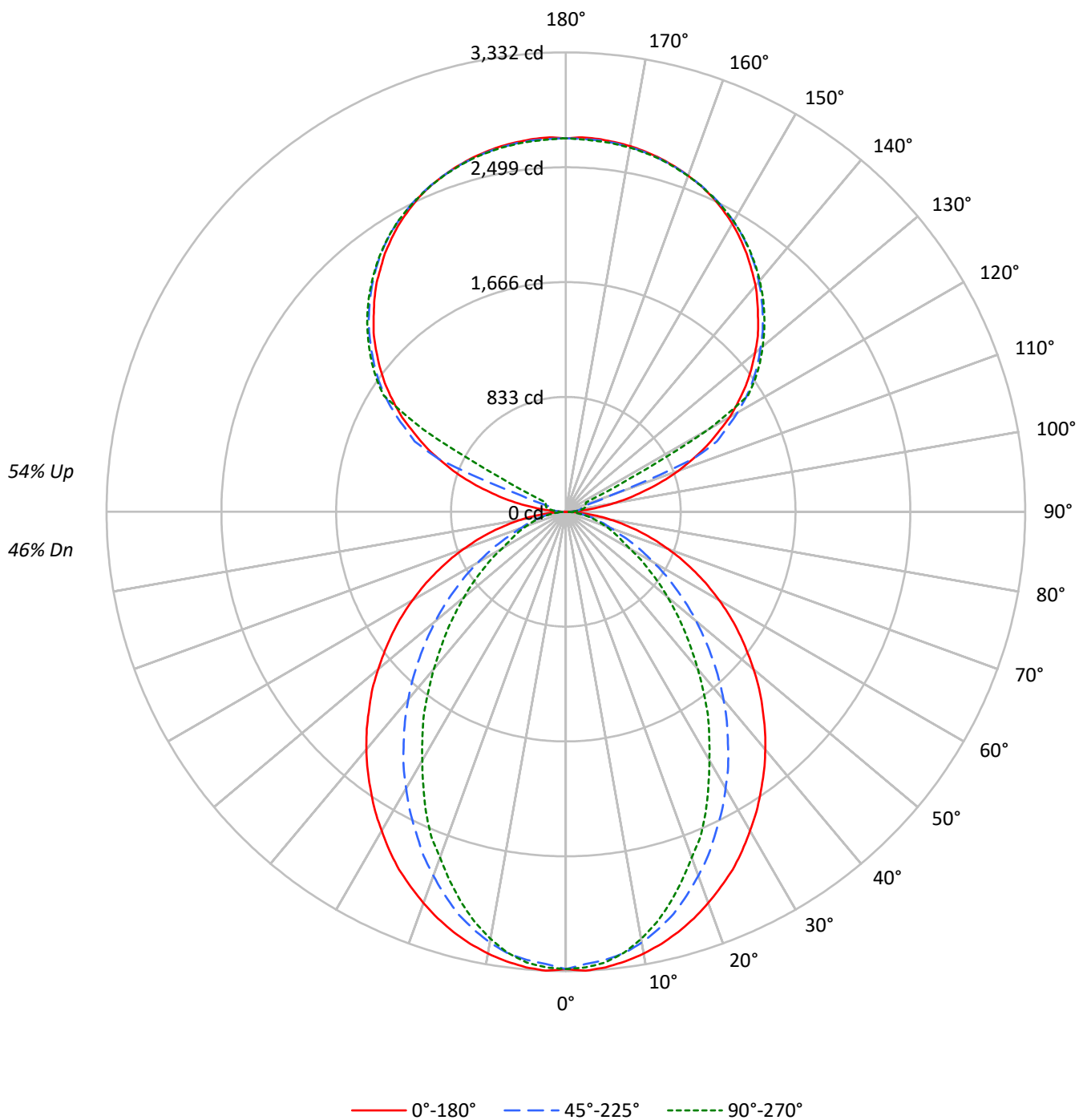
Lumens per Lamp: N/A
Luminaire Lumens: 14766.7 lumens
Efficiency: N/A
Efficacy: 89.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 164.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P922239

CATALOG NUMBER: DFN2DIP-PN3F0-090D090US940-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°	3877	3877	3877
5°	3881	3813	3839
10°	3841	3736	3712
15°	3785	3610	3517
20°	3713	3437	3279
25°	3639	3244	3049
30°	3541	3046	2758
35°	3444	2833	2502
40°	3345	2614	2209
45°	3231	2371	1944
50°	3113	2126	1685
55°	2989	1864	1436
60°	2845	1591	1180
65°	2680	1313	1061
70°	2479	1055	957
75°	2227	924	867
80°	1863	766	747
85°	1264	499	551

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3231 cd/sqm

TEST NUMBER: P922239

CATALOG NUMBER: DFN2DIP-PN3F0-090D090US940-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	310.9	2.1
10°-20°	853.4	5.8
20°-30°	1198.1	8.1
30°-40°	1306.0	8.8
40°-50°	1200.4	8.1
50°-60°	942.7	6.4
60°-70°	613.6	4.2
70°-80°	315.9	2.1
80°-90°	85.4	0.6
90°-100°	89.3	0.6
100°-110°	332.9	2.3
110°-120°	883.0	6.0
120°-130°	1464.5	9.9
130°-140°	1555.6	10.5
140°-150°	1445.8	9.8
150°-160°	1162.4	7.9
160°-170°	749.0	5.1
170°-180°	257.8	1.7
0°-30°	2362.4	16.0
0°-40°	3668.4	24.8
0°-60°	5811.5	39.4
0°-90°	6826.4	46.2
90°-120°	1305.2	8.8
90°-150°	5771.2	39.1
90°-180°	7940.0	53.8
0°-180°	14766.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3317	3317	3317	3317	3317	
5°	3317	3302	3263	3290	3281	315
15°	3155	3122	3020	2963	2933	889
25°	2864	2768	2570	2446	2401	1317
35°	2468	2314	2050	1861	1795	1544
45°	2017	1816	1501	1288	1216	1558
55°	1534	1300	975	796	738	1371
65°	1036	792	522	420	411	1027
75°	552	342	240	219	216	584
85°	129	66	57	57	57	148
90°	2	24	39	49	53	14
95°	127	63	76	86	84	151
105°	596	655	120	141	149	637
115°	1127	1160	1209	302	161	1109
125°	1593	1619	1656	1670	1676	1421
135°	1972	2003	2020	2040	2036	1523
145°	2287	2285	2318	2332	2322	1431
155°	2518	2501	2524	2536	2520	1161
165°	2654	2642	2648	2662	2648	750
175°	2714	2700	2705	2718	2699	258
180°	2708	2708	2708	2708	2708	

TEST NUMBER: P922239

CATALOG NUMBER: DFN2DIP-PN3F0-090D090US940-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3316.9	3316.9	3316.9	3316.9	3316.9
2.5°	3331.9	3316.9	3283.7	3314.0	3308.0
5°	3316.9	3301.9	3262.8	3289.8	3280.9
7.5°	3289.8	3272.0	3230.0	3241.7	3226.7
10°	3253.9	3232.8	3173.0	3163.7	3145.9
12.5°	3208.9	3181.9	3100.7	3082.8	3049.6
15°	3154.8	3121.7	3019.8	2962.7	2932.8
17.5°	3091.7	3043.7	2917.5	2851.6	2803.5
20°	3019.8	2959.6	2809.5	2734.7	2668.4
22.5°	2941.8	2872.6	2698.4	2596.5	2551.6
25°	2863.7	2767.5	2569.5	2446.5	2401.3
27.5°	2770.7	2668.4	2449.4	2308.3	2239.2
30°	2671.7	2557.3	2317.2	2164.4	2083.1
32.5°	2575.4	2437.2	2191.4	2011.2	1936.0
35°	2467.5	2314.3	2050.3	1861.2	1794.9
37.5°	2362.4	2197.2	1918.2	1710.8	1636.0
40°	2251.3	2071.4	1779.9	1566.9	1488.9
42.5°	2137.3	1945.3	1642.0	1419.8	1344.9
45°	2017.2	1816.0	1500.9	1287.5	1215.6
47.5°	1903.2	1690.1	1365.9	1152.5	1086.6
50°	1777.1	1564.0	1233.8	1026.4	963.7
52.5°	1653.9	1428.7	1107.7	909.5	852.6
55°	1533.7	1299.7	975.4	795.6	738.5
57.5°	1410.9	1170.7	858.6	690.5	642.4
60°	1284.7	1044.5	735.4	582.5	534.4
62.5°	1161.8	921.7	630.3	486.3	462.4
65°	1035.6	792.4	522.3	420.4	411.2
67.5°	915.6	672.3	420.4	369.1	360.2
70°	789.5	555.4	348.1	318.2	306.0
72.5°	669.4	447.1	291.1	267.2	261.2
75°	552.2	342.1	240.1	219.1	216.2
77.5°	435.3	243.0	189.1	177.1	171.0
80°	327.1	174.2	143.9	132.2	132.2
82.5°	228.0	117.2	99.1	93.0	93.0
85°	128.9	65.9	57.0	57.0	57.0
87.5°	48.1	23.9	23.9	21.0	21.0
90°	1.9	23.5	39.1	49.1	52.8
92.5°	49.1	41.2	47.0	51.0	52.8
95°	127.3	62.6	76.3	86.3	84.3
97.5°	229.3	68.7	99.9	105.8	107.7
100°	347.0	78.5	111.7	127.3	131.3
102.5°	476.2	472.4	115.7	137.1	143.1
105°	595.8	654.7	119.6	141.1	148.9
107.5°	734.9	783.8	123.6	145.0	152.9
110°	868.3	909.3	343.0	147.0	154.8

TEST NUMBER: P922239

CATALOG NUMBER: DFN2DIP-PN3F0-090D090US940-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	993.7	1028.9	995.6	150.8	156.9
115°	1126.9	1160.1	1209.2	301.8	160.8
117.5°	1242.5	1281.7	1315.1	1034.7	521.3
120°	1371.9	1401.2	1436.6	1460.1	1195.5
122.5°	1481.6	1513.0	1552.3	1563.9	1566.0
125°	1593.2	1618.8	1656.1	1669.8	1675.6
127.5°	1695.1	1722.6	1752.2	1771.7	1773.6
130°	1791.3	1822.7	1844.1	1865.7	1863.9
132.5°	1889.3	1914.9	1936.3	1954.0	1952.1
135°	1971.7	2003.0	2020.5	2040.3	2036.4
137.5°	2057.8	2081.3	2101.0	2120.6	2114.8
140°	2142.0	2157.8	2179.3	2196.9	2187.2
142.5°	2212.8	2226.5	2251.8	2267.4	2257.7
145°	2287.2	2285.1	2318.4	2332.2	2322.4
147.5°	2351.7	2345.9	2379.2	2389.0	2381.2
150°	2414.6	2400.8	2432.2	2443.8	2434.1
152.5°	2467.4	2451.8	2481.1	2493.0	2479.2
155°	2518.4	2500.9	2524.3	2536.0	2520.4
157.5°	2559.6	2544.0	2561.6	2575.3	2559.6
160°	2594.9	2583.0	2594.9	2606.6	2592.8
162.5°	2626.1	2614.4	2624.2	2637.9	2620.3
165°	2653.6	2641.9	2647.8	2661.5	2647.8
167.5°	2675.2	2663.4	2669.3	2683.1	2665.4
170°	2692.9	2681.0	2684.9	2698.7	2681.0
172.5°	2704.6	2692.9	2696.8	2710.5	2692.9
175°	2714.3	2700.5	2704.6	2718.2	2698.7
177.5°	2718.2	2704.6	2706.6	2720.3	2702.7
180°	2708.5	2708.5	2708.5	2708.5	2708.5

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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	11.45	12.25	12.45	13.26	14.58	7.42	8.22	8.42	9.22	10.55
	3H	13.12	13.84	14.13	14.85	16.20	8.60	9.32	9.61	10.33	11.67
	4H	13.73	14.40	14.74	15.42	16.77	9.04	9.72	10.06	10.74	12.09
	6H	14.14	14.76	15.17	15.78	17.15	9.36	9.98	10.39	11.00	12.37
	8H	14.26	14.86	15.30	15.89	17.26	9.45	10.04	10.48	11.07	12.44
	12H	14.32	14.88	15.36	15.91	17.30	9.49	10.05	10.52	11.08	12.46
4H	2H	11.47	12.14	12.49	13.16	14.51	8.01	8.69	9.03	9.70	11.06
	3H	13.29	13.85	14.32	14.89	16.26	9.35	9.91	10.38	10.95	12.32
	4H	13.97	14.49	15.01	15.52	16.91	9.89	10.41	10.93	11.44	12.83
	6H	14.48	14.92	15.53	15.98	17.37	10.30	10.74	11.35	11.80	13.19
	8H	14.65	15.06	15.70	16.11	17.52	10.43	10.84	11.48	11.89	13.29
	12H	14.74	15.11	15.81	16.18	17.59	10.49	10.86	11.56	11.92	13.33
8H	4H	13.94	14.35	14.99	15.40	16.80	10.16	10.58	11.22	11.63	13.03
	6H	14.49	14.83	15.57	15.93	17.33	10.67	11.01	11.75	12.11	13.51
	8H	14.71	15.01	15.79	16.08	17.50	10.86	11.16	11.94	12.24	13.66
	12H	14.84	15.10	15.92	16.17	17.63	10.97	11.24	12.06	12.31	13.77
12H	4H	13.89	14.26	14.96	15.32	16.73	10.17	10.54	11.24	11.60	13.01
	6H	14.47	14.77	15.55	15.85	17.26	10.72	11.02	11.80	12.10	13.52
	8H	14.68	14.95	15.77	16.02	17.48	10.93	11.19	12.01	12.26	13.72