

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: P922423

Luminaire Tested: DFN2DIP-PN4F0-090D040US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922423
REPORT IS A COMBINATION OF REPORTS P901140 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-090D040US940-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

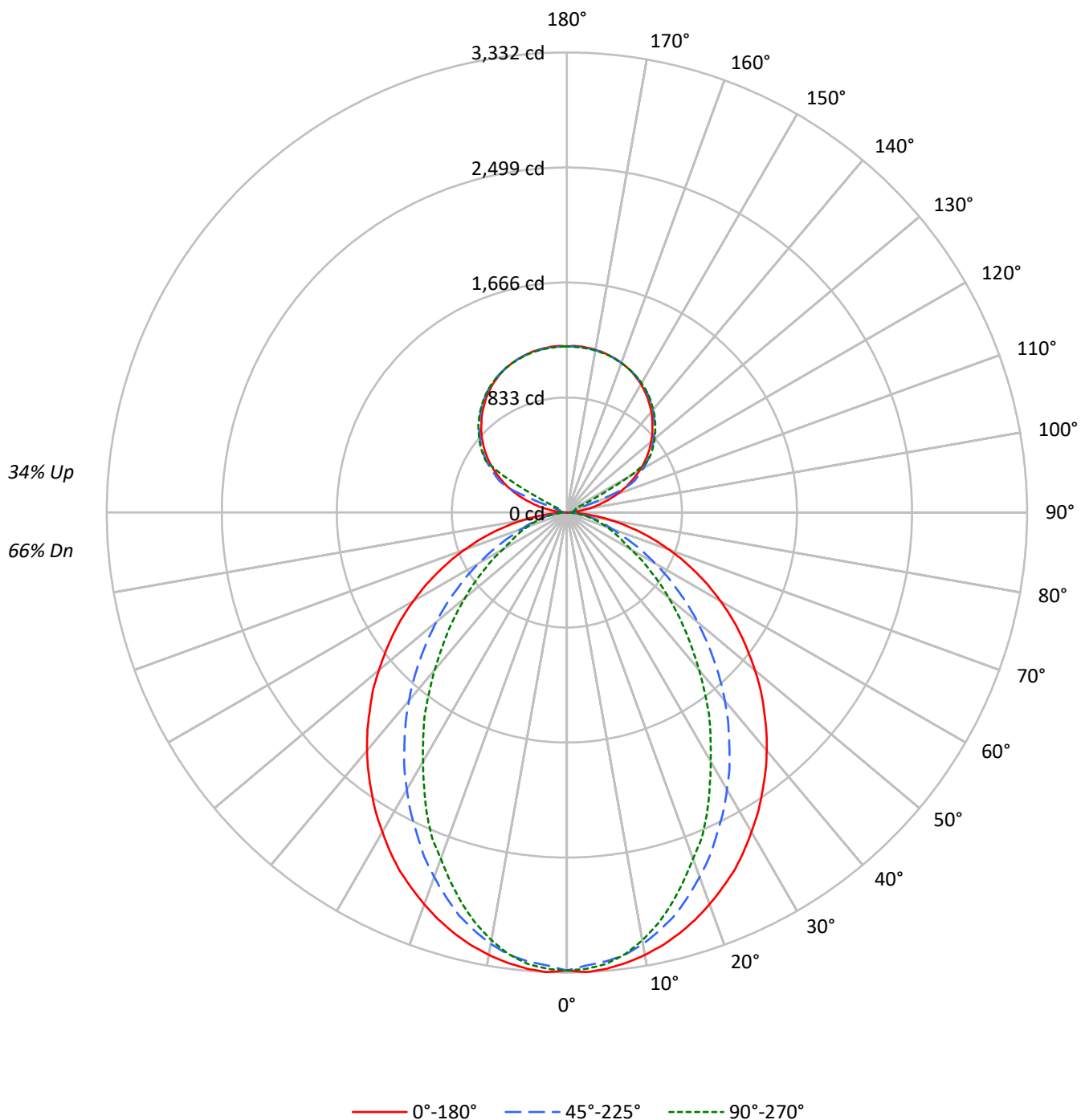
Lumens per Lamp: N/A
Luminaire Lumens: 10352.8 lumens
Efficiency: N/A
Efficacy: 87.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 118.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P922423

CATALOG NUMBER: DFN2DIP-PN4F0-090D040US940-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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	71	69	64	62	61
2	93	86	80	75	88	81	76	72	73	68	65	64	61	59	57	54	52
3	86	76	69	63	80	72	66	61	65	60	55	57	54	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	43	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	37	31	27	33	28	25	30	26	23
10	51	39	32	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2421	2421	2421
5°	2425	2383	2398
10°	2401	2337	2321
15°	2368	2260	2201
20°	2324	2154	2053
25°	2279	2035	1910
30°	2219	1912	1729
35°	2160	1781	1570
40°	2100	1645	1388
45°	2031	1494	1222
50°	1959	1342	1061
55°	1884	1179	905
60°	1797	1009	746
65°	1696	836	672
70°	1575	675	608
75°	1423	595	554
80°	1202	500	483
85°	837	336	366

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2031 cd/sqm

TEST NUMBER: P922423

CATALOG NUMBER: DFN2DIP-PN4F0-090D040US940-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	310.9	3.0
10°-20°	853.4	8.2
20°-30°	1198.1	11.6
30°-40°	1306.0	12.6
40°-50°	1200.4	11.6
50°-60°	942.7	9.1
60°-70°	613.6	5.9
70°-80°	315.9	3.1
80°-90°	82.8	0.8
90°-100°	39.7	0.4
100°-110°	148.0	1.4
110°-120°	392.4	3.8
120°-130°	650.9	6.3
130°-140°	691.4	6.7
140°-150°	642.6	6.2
150°-160°	516.6	5.0
160°-170°	332.9	3.2
170°-180°	114.6	1.1
0°-30°	2362.4	22.8
0°-40°	3668.4	35.4
0°-60°	5811.5	56.1
0°-90°	6823.7	65.9
90°-120°	580.1	5.6
90°-150°	2565.0	24.8
90°-180°	3529.0	34.1
0°-180°	10352.8	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°	1	10	17	22	24	10
95°	56	28	34	38	38	67
105°	265	291	53	63	66	283
115°	501	516	537	134	72	493
125°	708	720	736	742	745	632
135°	876	890	898	907	905	677
145°	1016	1016	1030	1036	1032	636
155°	1119	1112	1122	1127	1120	516
165°	1179	1174	1177	1183	1177	333
175°	1206	1200	1202	1208	1199	115
180°	1204	1204	1204	1204	1204	

TEST NUMBER: P922423

CATALOG NUMBER: DFN2DIP-PN4F0-090D040US940-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°	0.8	10.4	17.4	21.8	23.5
92.5°	21.8	18.3	20.9	22.6	23.5
95°	56.5	27.8	33.9	38.3	37.5
97.5°	101.9	30.5	44.4	47.1	47.9
100°	154.2	34.9	49.7	56.5	58.3
102.5°	211.6	210.0	51.4	60.9	63.6
105°	264.7	291.0	53.1	62.7	66.2
107.5°	326.6	348.4	54.9	64.5	67.9
110°	385.9	404.1	152.5	65.4	68.8

TEST NUMBER: P922423

CATALOG NUMBER: DFN2DIP-PN4F0-090D040US940-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	441.7	457.3	442.5	67.1	69.7
115°	500.8	515.6	537.4	134.1	71.5
117.5°	552.2	569.6	584.5	459.9	231.7
120°	609.8	622.8	638.5	649.0	531.4
122.5°	658.4	672.4	689.9	695.1	696.0
125°	708.1	719.5	736.0	742.2	744.8
127.5°	753.4	765.6	778.7	787.5	788.3
130°	796.1	810.1	819.6	829.2	828.4
132.5°	839.6	851.0	860.6	868.4	867.6
135°	876.3	890.3	898.0	906.8	905.1
137.5°	914.5	925.0	933.8	942.4	939.9
140°	952.0	959.0	968.6	976.4	972.1
142.5°	983.5	989.5	1000.9	1007.7	1003.4
145°	1016.5	1015.7	1030.4	1036.5	1032.2
147.5°	1045.2	1042.6	1057.4	1061.8	1058.4
150°	1073.1	1067.0	1081.0	1086.2	1081.8
152.5°	1096.6	1089.7	1102.7	1108.0	1101.9
155°	1119.3	1111.5	1121.9	1127.1	1120.2
157.5°	1137.6	1130.6	1138.5	1144.6	1137.6
160°	1153.2	1148.0	1153.2	1158.4	1152.4
162.5°	1167.2	1162.0	1166.4	1172.4	1164.6
165°	1179.4	1174.2	1176.8	1182.9	1176.8
167.5°	1189.0	1183.7	1186.4	1192.5	1184.6
170°	1196.9	1191.6	1193.3	1199.4	1191.6
172.5°	1202.0	1196.9	1198.6	1204.7	1196.9
175°	1206.3	1200.2	1202.0	1208.1	1199.4
177.5°	1208.1	1202.0	1202.9	1209.1	1201.2
180°	1203.8	1203.8	1203.8	1203.8	1203.8

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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	11.60	12.58	12.41	13.41	14.43	7.56	8.54	8.38	9.37	10.40
	3H	13.29	14.16	14.12	15.01	16.06	8.76	9.64	9.59	10.48	11.54
	4H	13.91	14.73	14.75	15.58	16.65	9.22	10.05	10.07	10.90	11.96
	6H	14.34	15.10	15.19	15.95	17.03	9.55	10.31	10.41	11.17	12.25
	8H	14.47	15.19	15.33	16.07	17.15	9.64	10.37	10.51	11.24	12.32
	12H	14.54	15.23	15.41	16.09	17.20	9.69	10.38	10.56	11.25	12.36
4H	2H	11.63	12.46	12.48	13.31	14.37	8.18	9.00	9.03	9.85	10.92
	3H	13.48	14.16	14.34	15.05	16.13	9.54	10.23	10.40	11.11	12.19
	4H	14.18	14.80	15.05	15.68	16.79	10.10	10.72	10.97	11.60	12.71
	6H	14.70	15.24	15.59	16.15	17.26	10.52	11.06	11.41	11.97	13.08
	8H	14.88	15.39	15.78	16.28	17.41	10.66	11.16	11.55	12.06	13.18
	12H	14.99	15.44	15.90	16.36	17.49	10.73	11.18	11.64	12.10	13.23
8H	4H	14.16	14.66	15.05	15.56	16.68	10.39	10.89	11.28	11.79	12.91
	6H	14.73	15.15	15.65	16.09	17.21	10.91	11.33	11.83	12.27	13.39
	8H	14.95	15.32	15.88	16.25	17.39	11.11	11.47	12.03	12.41	13.55
	12H	15.10	15.42	16.03	16.35	17.54	11.23	11.56	12.16	12.48	13.67
12H	4H	14.12	14.57	15.03	15.49	16.62	10.40	10.85	11.31	11.77	12.90
	6H	14.71	15.08	15.64	16.01	17.15	10.96	11.33	11.89	12.26	13.41
	8H	14.94	15.26	15.87	16.19	17.38	11.18	11.51	12.11	12.43	13.62

END OF REPORT