

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: P914089

Luminaire Tested: DFN2DIP-PN4F0-040D120US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914089
REPORT IS A COMBINATION OF REPORTS P901273 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-040D120US927-FLLONL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

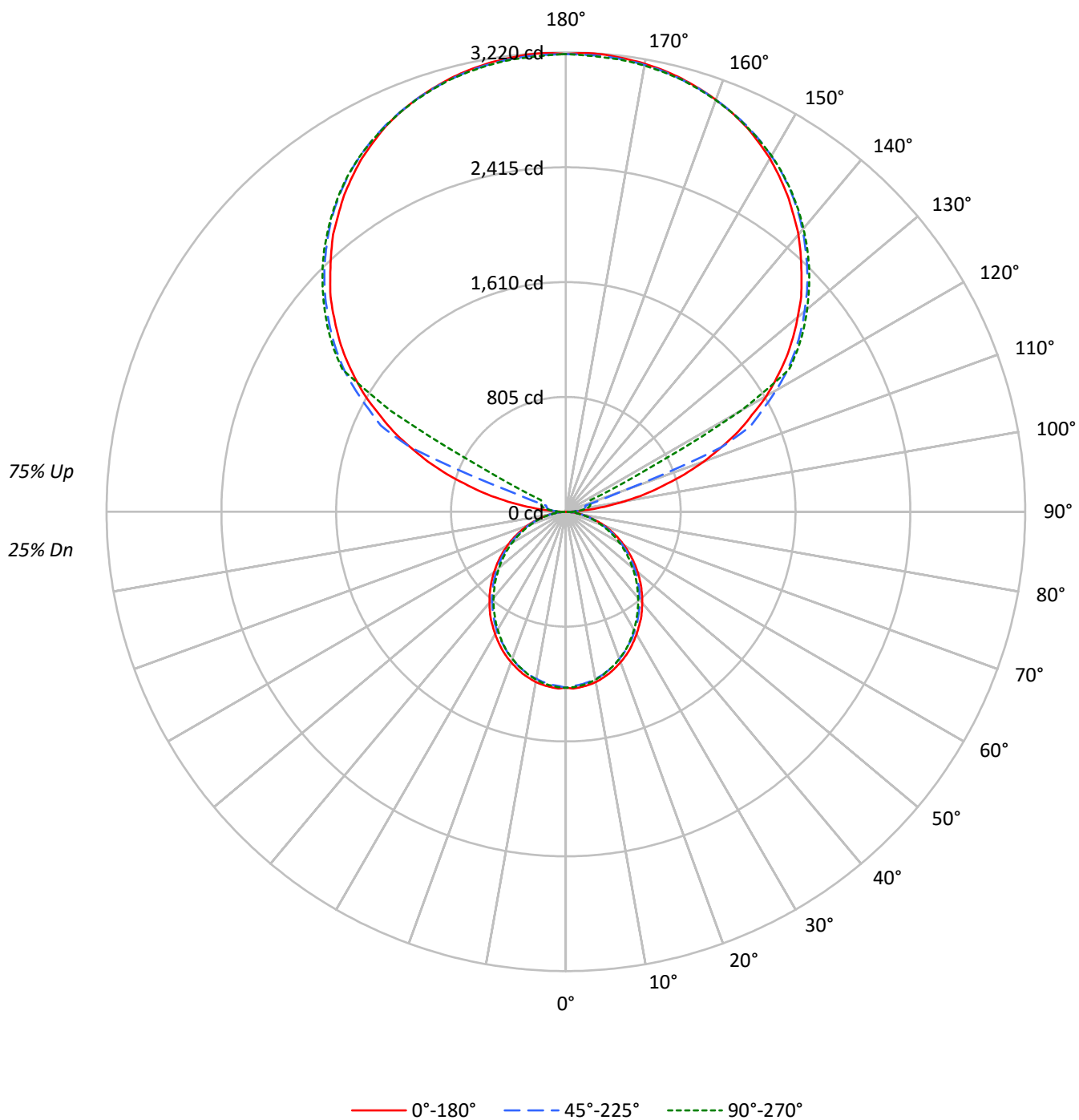
Lumens per Lamp: N/A
Luminaire Lumens: 12548.1 lumens
Efficiency: N/A
Efficacy: 91.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 136.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
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: P914089

CATALOG NUMBER: DFN2DIP-PN4F0-040D120US927-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P914089

CATALOG NUMBER: DFN2DIP-PN4F0-040D120US927-FLLONL

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	101	101	101	101	90	90	90	90	69	69	69	51	51	51	33	33	33
1	92	88	84	81	82	79	75	73	61	59	57	44	43	42	29	29	28
2	84	77	71	66	74	69	64	59	53	50	47	39	37	35	26	25	24
3	76	67	60	55	68	60	54	50	47	43	39	34	32	30	23	21	20
4	70	60	52	46	62	53	47	42	42	37	33	31	28	25	20	19	17
5	64	53	45	39	57	47	41	36	37	32	29	27	24	22	18	16	15
6	59	47	40	34	52	42	36	31	33	28	25	25	21	19	17	15	13
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12
8	50	38	31	26	45	35	28	24	27	23	19	20	17	15	14	12	10
9	47	35	28	23	41	31	25	21	25	20	17	19	15	13	13	11	9
10	43	32	25	20	39	29	23	19	23	18	15	17	14	12	12	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	900	900	900
5°	901	888	894
10°	894	876	882
15°	881	861	863
20°	863	842	844
25°	846	818	822
30°	823	796	793
35°	802	769	763
40°	777	743	735
45°	751	716	706
50°	723	689	672
55°	693	657	641
60°	660	618	606
65°	623	579	564
70°	577	531	519
75°	513	473	478
80°	436	400	398
85°	315	273	266

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1711 cd/sqm

TEST NUMBER: P914089

CATALOG NUMBER: DFN2DIP-PN4F0-040D120US927-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.0	0.9
10°-20°	326.5	2.6
20°-30°	479.8	3.8
30°-40°	557.3	4.4
40°-50°	556.6	4.4
50°-60°	485.3	3.9
60°-70°	358.8	2.9
70°-80°	203.0	1.6
80°-90°	59.2	0.5
90°-100°	105.8	0.8
100°-110°	394.4	3.1
110°-120°	1045.9	8.3
120°-130°	1734.7	13.8
130°-140°	1842.7	14.7
140°-150°	1712.6	13.6
150°-160°	1376.9	11.0
160°-170°	887.2	7.1
170°-180°	305.4	2.4
0°-30°	922.4	7.4
0°-40°	1479.7	11.8
0°-60°	2521.7	20.1
0°-90°	3142.7	25.0
90°-120°	1546.1	12.3
90°-150°	6836.0	54.5
90°-180°	9405.0	75.0
0°-180°	12548.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1233	1233	1233	1233	1233	
5°	1233	1228	1215	1225	1222	117
15°	1174	1167	1151	1156	1150	331
25°	1062	1053	1033	1035	1033	489
35°	916	905	886	878	873	572
45°	746	738	720	707	702	576
55°	564	557	543	529	523	505
65°	381	373	362	351	345	376
75°	199	197	191	184	186	213
85°	49	48	46	43	42	54
90°	2	28	46	58	63	11
95°	151	74	90	102	100	179
105°	706	776	142	167	176	754
115°	1335	1374	1432	358	190	1314
125°	1887	1918	1962	1978	1985	1683
135°	2335	2373	2393	2417	2412	1804
145°	2709	2707	2746	2762	2751	1694
155°	2983	2962	2990	3004	2986	1375
165°	3143	3129	3136	3153	3136	888
175°	3215	3199	3204	3220	3197	306
180°	3208	3208	3208	3208	3208	

TEST NUMBER: P914089

CATALOG NUMBER: DFN2DIP-PN4F0-040D120US927-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1233.0	1233.0	1233.0	1233.0	1233.0
2.5°	1240.2	1234.2	1221.1	1233.0	1230.7
5°	1233.0	1228.3	1215.2	1224.6	1222.4
7.5°	1224.6	1217.6	1204.5	1214.1	1211.7
10°	1211.7	1203.4	1189.2	1198.6	1195.1
12.5°	1193.8	1186.8	1172.6	1178.5	1176.1
15°	1173.7	1166.6	1151.2	1156.0	1150.1
17.5°	1148.8	1141.8	1126.3	1132.2	1126.3
20°	1121.5	1114.4	1097.9	1101.4	1096.8
22.5°	1094.3	1083.6	1068.2	1068.2	1065.8
25°	1062.2	1052.8	1032.7	1035.0	1032.7
27.5°	1026.7	1018.3	1003.1	999.5	993.6
30°	991.2	981.7	963.9	960.4	955.6
32.5°	953.2	946.2	927.2	920.0	915.2
35°	916.5	904.7	885.7	878.5	872.6
37.5°	875.0	864.3	845.3	837.0	831.1
40°	832.3	822.8	803.7	793.2	788.5
42.5°	790.8	781.2	762.4	750.4	743.4
45°	745.8	737.5	719.6	706.7	701.9
47.5°	701.9	693.6	674.6	661.6	654.5
50°	655.6	649.7	633.1	616.5	610.5
52.5°	610.5	602.3	586.9	573.9	565.5
55°	564.4	557.2	543.0	528.8	522.9
57.5°	518.1	512.2	496.7	482.5	477.8
60°	471.8	467.1	450.6	437.5	434.0
62.5°	426.8	418.5	406.7	394.8	390.1
65°	380.6	373.4	361.6	350.9	345.1
67.5°	333.2	327.2	316.6	308.3	303.6
70°	289.3	284.6	273.9	265.5	260.9
72.5°	244.3	239.5	233.6	225.3	221.7
75°	199.2	196.9	190.8	183.8	186.2
77.5°	158.8	154.1	151.7	148.1	144.7
80°	118.6	117.3	114.9	111.5	109.1
82.5°	80.6	80.6	79.5	74.7	74.7
85°	48.6	47.5	46.3	42.6	41.5
87.5°	21.4	19.0	16.6	13.1	11.8
90°	2.2	27.8	46.3	58.1	62.6
92.5°	58.1	48.8	55.7	60.4	62.6
95°	150.8	74.1	90.4	102.3	99.8
97.5°	271.6	81.4	118.3	125.4	127.6
100°	411.0	92.9	132.3	150.8	155.5
102.5°	564.0	559.6	137.0	162.4	169.5
105°	705.7	775.5	141.7	167.1	176.4
107.5°	870.5	928.4	146.4	171.7	181.1
110°	1028.5	1077.0	406.3	174.2	183.3

TEST NUMBER: P914089

CATALOG NUMBER: DFN2DIP-PN4F0-040D120US927-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1177.1	1218.7	1179.3	178.6	185.8
115°	1334.7	1374.2	1432.3	357.5	190.5
117.5°	1471.8	1518.1	1557.8	1225.6	617.5
120°	1625.1	1659.8	1701.7	1729.6	1416.1
122.5°	1754.9	1792.2	1838.7	1852.5	1855.0
125°	1887.2	1917.6	1961.7	1977.9	1984.8
127.5°	2007.9	2040.5	2075.5	2098.6	2100.9
130°	2121.8	2159.0	2184.4	2210.0	2207.8
132.5°	2237.8	2268.2	2293.5	2314.5	2312.3
135°	2335.4	2372.7	2393.3	2416.8	2412.1
137.5°	2437.5	2465.3	2488.7	2511.8	2505.0
140°	2537.3	2556.0	2581.3	2602.3	2590.7
142.5°	2621.0	2637.3	2667.4	2685.8	2674.2
145°	2709.3	2706.8	2746.2	2762.5	2750.8
147.5°	2785.6	2778.7	2818.2	2829.8	2820.6
150°	2860.0	2843.8	2881.0	2894.8	2883.2
152.5°	2922.6	2904.1	2938.9	2952.9	2936.7
155°	2983.0	2962.3	2990.2	3004.0	2985.5
157.5°	3031.8	3013.3	3034.3	3050.5	3031.8
160°	3073.7	3059.6	3073.7	3087.4	3071.2
162.5°	3110.7	3096.9	3108.4	3124.7	3103.8
165°	3143.1	3129.4	3136.2	3152.6	3136.2
167.5°	3168.8	3154.7	3161.9	3178.2	3157.2
170°	3189.7	3175.7	3180.4	3196.6	3175.7
172.5°	3203.5	3189.7	3194.5	3210.7	3189.7
175°	3215.1	3198.8	3203.5	3219.8	3196.6
177.5°	3219.8	3203.5	3206.0	3222.3	3201.4
180°	3208.3	3208.3	3208.3	3208.3	3208.3

TEST NUMBER: P914089

CATALOG NUMBER: DFN2DIP-PN4F0-040D120US927-FLLONL

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	3.97	4.64	5.12	5.78	7.37	3.53	4.20	4.68	5.34	6.93
	3H	5.62	6.22	6.77	7.37	8.97	5.14	5.74	6.29	6.88	8.48
	4H	6.20	6.77	7.36	7.92	9.53	5.71	6.29	6.88	7.43	9.04
	6H	6.59	7.12	7.76	8.27	9.88	6.10	6.63	7.27	7.77	9.39
	8H	6.69	7.20	7.87	8.36	9.97	6.20	6.70	7.37	7.86	9.47
	12H	6.74	7.21	7.91	8.37	10.00	6.24	6.71	7.41	7.87	9.50
4H	2H	4.41	4.98	5.58	6.13	7.73	4.06	4.63	5.23	5.77	7.38
	3H	6.26	6.74	7.44	7.91	9.53	5.86	6.34	7.03	7.51	9.13
	4H	6.97	7.41	8.15	8.57	10.21	6.55	6.99	7.73	8.15	9.79
	6H	7.48	7.85	8.66	9.03	10.66	7.05	7.43	8.23	8.61	10.24
	8H	7.62	7.98	8.80	9.15	10.79	7.19	7.55	8.37	8.72	10.36
	12H	7.69	8.01	8.88	9.19	10.84	7.25	7.57	8.44	8.75	10.40
8H	4H	7.15	7.50	8.33	8.67	10.32	6.78	7.13	7.96	8.30	9.95
	6H	7.78	8.07	8.98	9.28	10.92	7.40	7.69	8.60	8.91	10.55
	8H	8.00	8.25	9.20	9.44	11.10	7.61	7.87	8.82	9.06	10.72
	12H	8.12	8.35	9.33	9.53	11.23	7.72	7.94	8.93	9.13	10.83
12H	4H	7.13	7.45	8.32	8.63	10.28	6.77	7.09	7.96	8.27	9.92
	6H	7.81	8.06	9.01	9.25	10.91	7.44	7.69	8.65	8.88	10.55
	8H	8.04	8.26	9.25	9.45	11.15	7.67	7.89	8.88	9.08	10.77