

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: P915939

Luminaire Tested: DFN2DIP-4P4F0-040D030US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915939
REPORT IS A COMBINATION OF REPORTS P900601 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-040D030US930-FLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

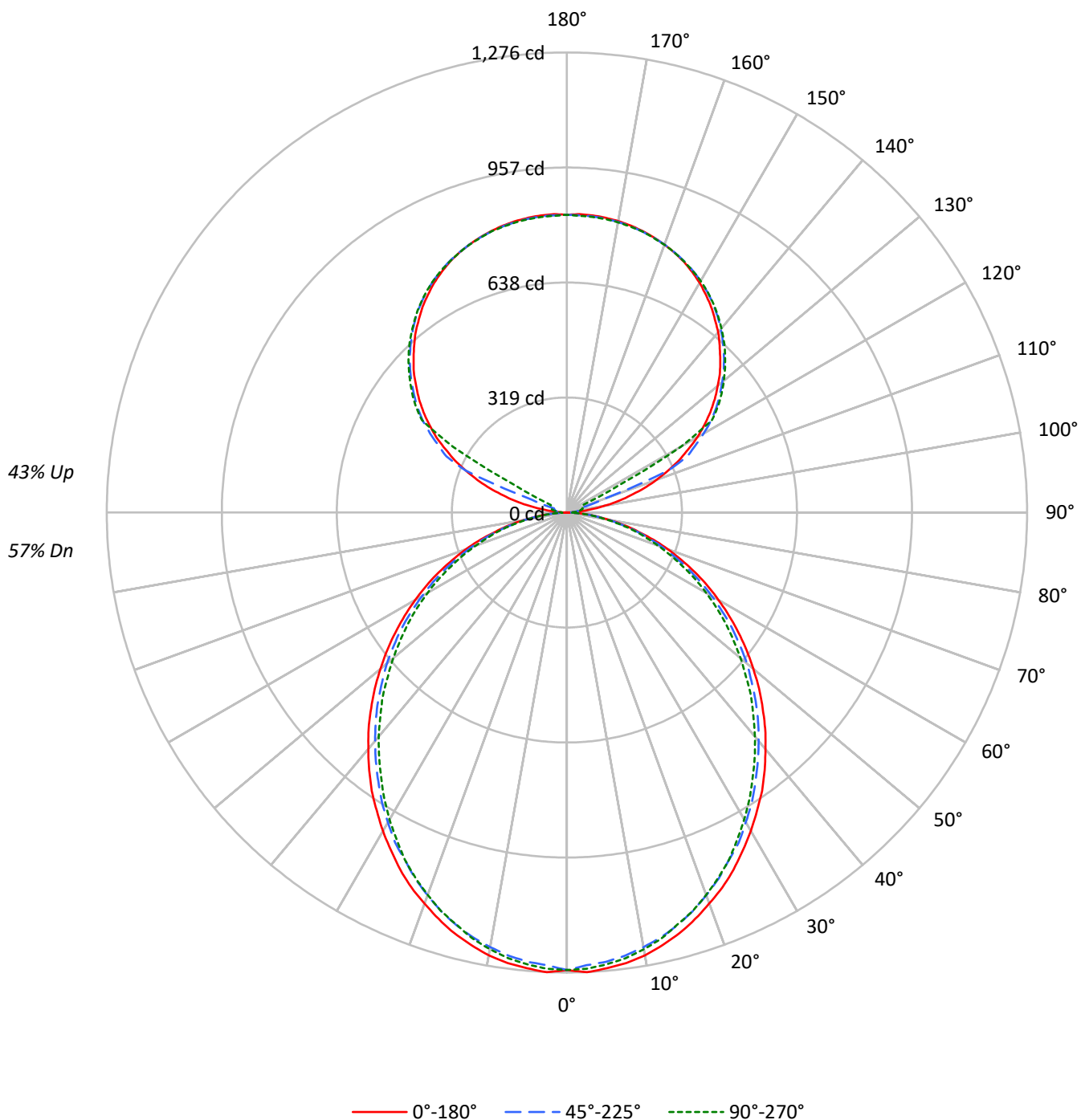
Lumens per Lamp: N/A
Luminaire Lumens: 5650.0 lumens
Efficiency: N/A
Efficacy: 91.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 61.8
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: P915939

CATALOG NUMBER: DFN2DIP-4P4F0-040D030US930-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P915939

CATALOG NUMBER: DFN2DIP-4P4F0-040D030US930-FLONL

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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63
1	99	95	91	88	92	89	85	82	77	74	72	66	64	62	55	54	53
2	91	83	77	72	84	77	72	67	67	63	59	58	55	52	49	47	45
3	83	73	66	60	77	68	62	56	59	54	50	51	47	44	43	40	38
4	76	65	57	50	70	61	53	48	53	47	43	45	41	38	39	35	33
5	69	58	49	43	64	54	47	41	47	41	37	41	36	33	35	31	29
6	64	52	44	38	59	49	41	36	43	37	32	37	32	29	32	28	25
7	59	47	39	33	55	44	37	31	39	33	28	34	29	25	29	25	22
8	55	43	35	29	51	40	33	28	35	29	25	31	26	23	27	23	20
9	51	39	31	26	48	37	30	25	32	27	23	28	24	20	25	21	18
10	48	36	28	24	45	34	27	22	30	24	20	26	22	18	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	823	823	823
5°	825	812	818
10°	818	801	807
15°	806	788	790
20°	790	770	772
25°	774	749	752
30°	753	729	726
35°	734	705	699
40°	711	681	673
45°	687	657	647
50°	662	632	616
55°	635	602	588
60°	604	568	556
65°	571	532	518
70°	529	488	477
75°	471	436	440
80°	400	369	368
85°	291	254	248

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 687 cd/sqm

TEST NUMBER: P915939

CATALOG NUMBER: DFN2DIP-4P4F0-040D030US930-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.4	2.1
10°-20°	336.0	5.9
20°-30°	493.8	8.7
30°-40°	573.6	10.2
40°-50°	572.9	10.1
50°-60°	499.5	8.8
60°-70°	369.3	6.5
70°-80°	208.9	3.7
80°-90°	56.6	1.0
90°-100°	27.2	0.5
100°-110°	101.5	1.8
110°-120°	269.1	4.8
120°-130°	446.3	7.9
130°-140°	474.1	8.4
140°-150°	440.6	7.8
150°-160°	354.3	6.3
160°-170°	228.3	4.0
170°-180°	78.6	1.4
0°-30°	949.3	16.8
0°-40°	1522.9	27.0
0°-60°	2595.3	45.9
0°-90°	3230.0	57.2
90°-120°	397.8	7.0
90°-150°	1758.9	31.1
90°-180°	2420.0	42.8
0°-180°	5650.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1269	1269	1269	1269	1269	
5°	1269	1264	1251	1260	1258	120
15°	1208	1201	1185	1190	1184	340
25°	1093	1084	1063	1065	1063	503
35°	943	931	912	904	898	589
45°	768	759	741	727	722	592
55°	581	574	559	544	538	519
65°	392	384	372	361	355	387
75°	205	203	196	189	192	219
85°	50	49	48	44	43	56
90°	1	7	12	15	16	5
95°	39	19	23	26	26	46
105°	182	200	36	43	45	194
115°	343	354	368	92	49	338
125°	486	493	505	509	511	433
135°	601	610	616	622	621	464
145°	697	696	707	711	708	436
155°	768	762	769	773	768	354
165°	809	805	807	811	807	228
175°	827	823	824	828	822	79
180°	826	826	826	826	826	

TEST NUMBER: P915939

CATALOG NUMBER: DFN2DIP-4P4F0-040D030US930-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1268.9	1268.9	1268.9	1268.9	1268.9
2.5°	1276.3	1270.2	1256.8	1268.9	1266.6
5°	1268.9	1264.1	1250.7	1260.4	1258.1
7.5°	1260.4	1253.1	1239.7	1249.5	1247.1
10°	1247.1	1238.5	1223.9	1233.6	1230.0
12.5°	1228.7	1221.4	1206.8	1212.9	1210.4
15°	1207.9	1200.7	1184.8	1189.7	1183.6
17.5°	1182.3	1175.1	1159.2	1165.2	1159.2
20°	1154.2	1147.0	1129.9	1133.5	1128.8
22.5°	1126.3	1115.2	1099.3	1099.3	1096.9
25°	1093.2	1083.5	1062.8	1065.2	1062.8
27.5°	1056.6	1048.1	1032.3	1028.7	1022.6
30°	1020.1	1010.3	992.1	988.4	983.5
32.5°	981.0	973.8	954.2	946.9	941.9
35°	943.2	931.1	911.5	904.2	898.1
37.5°	900.5	889.5	869.9	861.4	855.3
40°	856.6	846.8	827.2	816.4	811.5
42.5°	813.9	804.0	784.6	772.3	765.1
45°	767.5	759.0	740.6	727.3	722.4
47.5°	722.4	713.8	694.3	680.9	673.6
50°	674.7	668.6	651.6	634.5	628.4
52.5°	628.4	619.9	604.1	590.6	582.0
55°	580.9	573.5	558.9	544.2	538.2
57.5°	533.2	527.2	511.2	496.6	491.7
60°	485.6	480.8	463.7	450.3	446.6
62.5°	439.3	430.7	418.6	406.3	401.5
65°	391.8	384.3	372.2	361.2	355.1
67.5°	342.9	336.7	325.9	317.3	312.4
70°	297.7	292.9	281.8	273.3	268.5
72.5°	251.4	246.5	240.4	231.9	228.2
75°	205.0	202.6	196.4	189.1	191.6
77.5°	163.5	158.6	156.1	152.5	148.9
80°	122.1	120.7	118.3	114.7	112.3
82.5°	83.0	83.0	81.9	76.9	76.9
85°	50.0	48.8	47.6	43.9	42.7
87.5°	22.0	19.6	17.1	13.5	12.1
90°	0.6	7.2	11.9	15.0	16.1
92.5°	15.0	12.6	14.3	15.6	16.1
95°	38.8	19.1	23.2	26.3	25.7
97.5°	69.9	21.0	30.4	32.3	32.9
100°	105.7	23.9	34.1	38.8	40.0
102.5°	145.1	144.0	35.2	41.7	43.6
105°	181.6	199.5	36.4	43.0	45.4
107.5°	224.0	238.9	37.7	44.2	46.6
110°	264.6	277.1	104.5	44.8	47.2

TEST NUMBER: P915939

CATALOG NUMBER: DFN2DIP-4P4F0-040D030US930-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	302.9	313.6	303.5	46.0	47.8
115°	343.4	353.6	368.5	92.0	49.0
117.5°	378.7	390.6	400.8	315.4	158.9
120°	418.1	427.1	437.8	445.0	364.4
122.5°	451.5	461.1	473.1	476.6	477.3
125°	485.6	493.3	504.8	508.9	510.7
127.5°	516.7	525.0	534.0	540.0	540.5
130°	545.9	555.5	562.1	568.6	568.1
132.5°	575.8	583.6	590.1	595.5	594.9
135°	600.9	610.5	615.8	621.8	620.6
137.5°	627.1	634.3	640.3	646.3	644.5
140°	652.8	657.6	664.1	669.5	666.6
142.5°	674.4	678.6	686.3	691.0	688.1
145°	697.1	696.4	706.6	710.8	707.8
147.5°	716.7	714.9	725.1	728.1	725.7
150°	735.9	731.7	741.3	744.8	741.8
152.5°	751.9	747.2	756.2	759.8	755.6
155°	767.5	762.2	769.3	772.9	768.2
157.5°	780.1	775.3	780.7	784.9	780.1
160°	790.8	787.3	790.8	794.4	790.2
162.5°	800.4	796.8	799.8	804.0	798.6
165°	808.7	805.2	807.0	811.1	807.0
167.5°	815.3	811.7	813.5	817.7	812.4
170°	820.7	817.1	818.3	822.5	817.1
172.5°	824.3	820.7	821.9	826.1	820.7
175°	827.2	823.0	824.3	828.4	822.5
177.5°	828.4	824.3	824.9	829.1	823.7
180°	825.5	825.5	825.5	825.5	825.5

TEST NUMBER: P915939

CATALOG NUMBER: DFN2DIP-4P4F0-040D030US930-FLONL

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	7.25	8.18	8.15	9.10	10.26	6.81	7.74	7.70	8.65	9.82
	3H	8.92	9.76	9.83	10.68	11.87	8.43	9.27	9.34	10.19	11.38
	4H	9.52	10.31	10.44	11.23	12.43	9.02	9.81	9.94	10.74	11.94
	6H	9.93	10.65	10.86	11.59	12.80	9.43	10.15	10.36	11.09	12.30
	8H	10.03	10.73	10.97	11.68	12.89	9.53	10.23	10.47	11.18	12.39
	12H	10.09	10.75	11.03	11.69	12.93	9.58	10.24	10.52	11.18	12.42
4H	2H	7.72	8.51	8.65	9.44	10.64	7.37	8.16	8.29	9.08	10.28
	3H	9.60	10.26	10.54	11.22	12.43	9.19	9.85	10.13	10.81	12.02
	4H	10.32	10.92	11.27	11.88	13.12	9.90	10.50	10.84	11.45	12.69
	6H	10.85	11.37	11.81	12.34	13.58	10.41	10.93	11.37	11.91	13.15
	8H	11.00	11.49	11.96	12.46	13.71	10.56	11.05	11.53	12.02	13.27
	12H	11.08	11.52	12.06	12.51	13.76	10.63	11.07	11.61	12.06	13.31
8H	4H	10.53	11.01	11.49	11.98	13.23	10.15	10.63	11.11	11.60	12.86
	6H	11.17	11.57	12.15	12.58	13.83	10.78	11.18	11.77	12.20	13.45
	8H	11.39	11.75	12.39	12.75	14.02	11.00	11.35	11.99	12.35	13.62
	12H	11.53	11.84	12.53	12.84	14.15	11.12	11.43	12.12	12.43	13.74
12H	4H	10.51	10.95	11.50	11.94	13.20	10.15	10.58	11.13	11.57	12.83
	6H	11.20	11.55	12.19	12.55	13.82	10.83	11.18	11.82	12.18	13.45
	8H	11.45	11.76	12.45	12.75	14.07	11.07	11.38	12.07	12.37	13.69