

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: P921265

Luminaire Tested: DFN2DIP-4P2F0-040D030US940-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921265
REPORT IS A COMBINATION OF REPORTS P900542 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D030US940-RLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open
No Lens
Light Source: -
Ballast/Driver: -

Summary

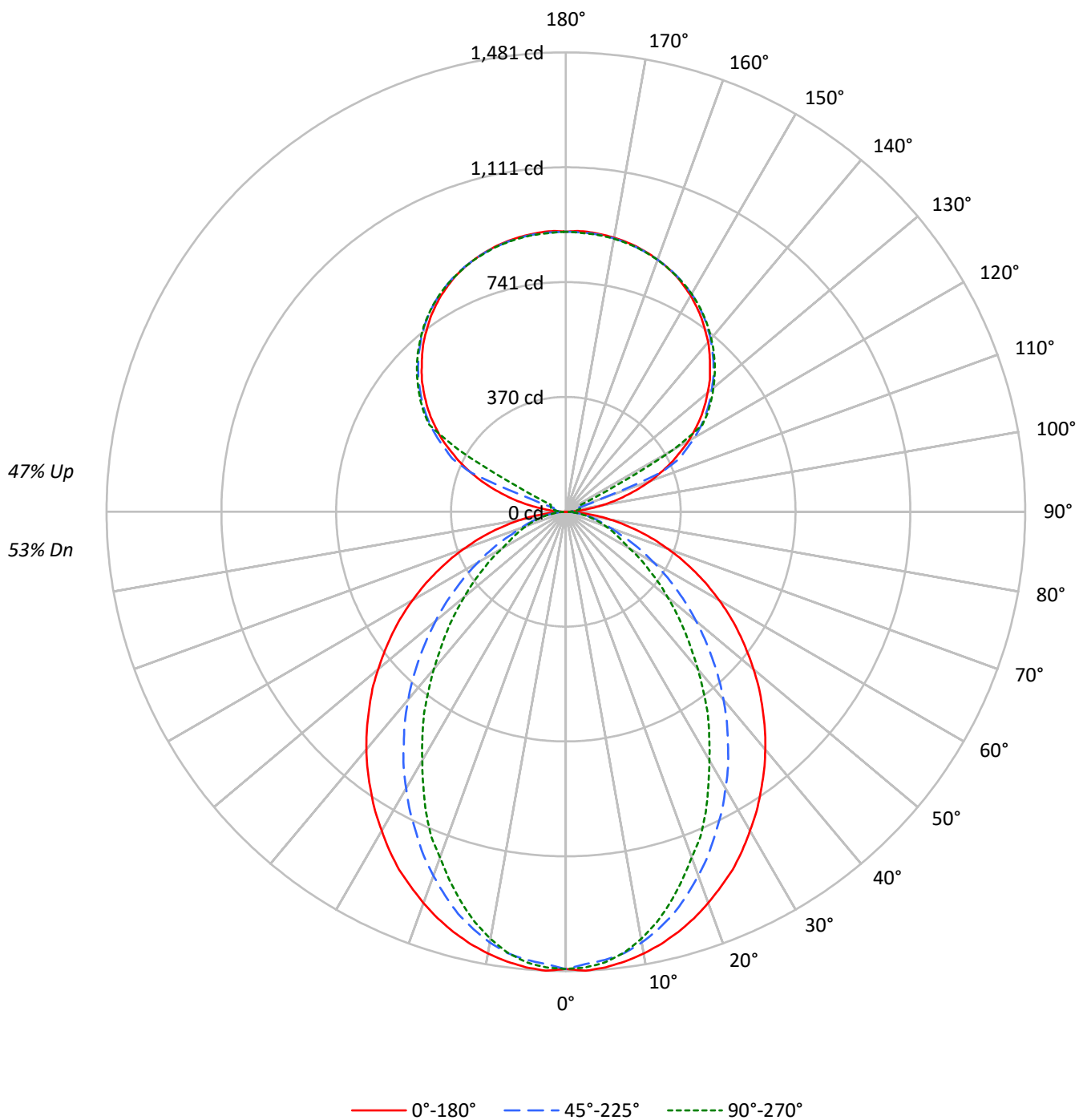
Lumens per Lamp: N/A
Luminaire Lumens: 5680.2 lumens
Efficiency: N/A
Efficacy: 89.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 63.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P921265

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US940-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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59
1	99	95	91	88	92	88	85	82	76	73	71	64	62	61	53	52	51
2	91	83	78	73	84	78	73	68	67	63	60	57	54	52	47	45	44
3	83	74	67	61	77	69	63	58	59	55	51	51	47	44	42	40	38
4	76	66	58	52	70	61	55	49	53	48	44	45	42	38	38	35	33
5	70	59	51	45	65	55	48	43	48	42	38	41	37	34	35	32	29
6	65	53	45	39	60	50	43	37	43	38	34	37	33	30	32	28	26
7	60	48	40	35	56	45	38	33	39	34	30	34	30	26	29	26	23
8	56	44	36	31	52	41	34	29	36	31	27	31	27	24	27	24	21
9	52	40	33	28	48	38	31	26	33	28	24	29	25	22	25	22	19
10	49	37	30	25	45	35	28	24	31	25	22	27	23	20	23	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3691	3691	3691
5°	3690	3623	3650
10°	3646	3543	3525
15°	3588	3417	3336
20°	3515	3247	3106
25°	3439	3058	2884
30°	3340	2865	2605
35°	3243	2658	2359
40°	3143	2446	2079
45°	3029	2211	1825
50°	2909	1975	1578
55°	2784	1724	1340
60°	2639	1464	1098
65°	2472	1200	981
70°	2268	954	879
75°	2012	823	788
80°	1645	664	666
85°	1061	408	469

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3029 cd/sqm

TEST NUMBER: P921265

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US940-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	2.4
10°-20°	379.3	6.7
20°-30°	532.5	9.4
30°-40°	580.5	10.2
40°-50°	533.5	9.4
50°-60°	419.0	7.4
60°-70°	272.7	4.8
70°-80°	140.4	2.5
80°-90°	37.4	0.7
90°-100°	29.8	0.5
100°-110°	111.0	2.0
110°-120°	294.3	5.2
120°-130°	488.2	8.6
130°-140°	518.5	9.1
140°-150°	481.9	8.5
150°-160°	387.5	6.8
160°-170°	249.7	4.4
170°-180°	85.9	1.5
0°-30°	1049.9	18.5
0°-40°	1630.4	28.7
0°-60°	2582.9	45.5
0°-90°	3033.4	53.4
90°-120°	435.1	7.7
90°-150°	1923.7	33.9
90°-180°	2647.0	46.6
0°-180°	5680.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1474	1474	1474	1474	1474	
5°	1474	1468	1450	1462	1458	140
15°	1402	1387	1342	1317	1304	395
25°	1273	1230	1142	1087	1067	585
35°	1097	1029	911	827	798	686
45°	896	807	667	572	540	692
55°	682	578	434	354	328	609
65°	460	352	232	187	183	456
75°	245	152	107	97	96	260
85°	57	29	25	25	25	66
90°	1	8	13	16	18	5
95°	42	21	25	29	28	50
105°	199	218	40	47	50	212
115°	376	387	403	101	54	370
125°	531	540	552	557	559	474
135°	657	668	674	680	679	508
145°	762	762	773	777	774	477
155°	840	834	841	845	840	387
165°	884	881	883	887	883	250
175°	905	900	902	906	900	86
180°	903	903	903	903	903	

TEST NUMBER: P921265

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US940-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1474.2	1474.2	1474.2	1474.2	1474.2
2.5°	1480.9	1474.2	1459.5	1472.9	1470.2
5°	1474.2	1467.5	1450.1	1462.1	1458.2
7.5°	1462.1	1454.2	1435.6	1440.7	1434.1
10°	1446.2	1436.8	1410.2	1406.0	1398.2
12.5°	1426.2	1414.2	1378.0	1370.1	1355.4
15°	1402.1	1387.4	1342.1	1316.8	1303.5
17.5°	1374.1	1352.7	1296.6	1267.4	1246.0
20°	1342.1	1315.4	1248.7	1215.4	1186.0
22.5°	1307.4	1276.8	1199.3	1154.0	1134.1
25°	1272.7	1230.0	1141.9	1087.4	1067.2
27.5°	1231.5	1186.0	1088.6	1025.9	995.1
30°	1187.4	1136.6	1029.8	961.9	925.9
32.5°	1144.7	1083.2	973.9	893.9	860.4
35°	1096.7	1028.6	911.2	827.2	797.7
37.5°	1050.0	976.5	852.5	760.4	727.1
40°	1000.6	920.6	791.1	696.4	661.7
42.5°	949.8	864.5	729.8	631.0	597.7
45°	896.5	807.1	667.1	572.3	540.3
47.5°	845.9	751.2	607.1	512.3	483.0
50°	789.8	695.1	548.3	456.2	428.3
52.5°	735.0	635.0	492.3	404.2	378.9
55°	681.7	577.6	433.5	353.6	328.2
57.5°	627.1	520.3	381.6	306.8	285.5
60°	571.0	464.2	326.8	258.9	237.6
62.5°	516.4	409.7	280.1	216.2	205.5
65°	460.3	352.1	232.1	186.8	182.7
67.5°	407.0	298.8	186.8	164.1	160.1
70°	350.9	246.8	154.7	141.4	136.0
72.5°	297.6	198.8	129.4	118.8	116.1
75°	245.4	152.0	106.7	97.4	96.1
77.5°	193.5	108.0	84.1	78.7	76.0
80°	145.3	77.4	63.9	58.8	58.8
82.5°	101.4	52.1	44.1	41.3	41.3
85°	57.3	29.3	25.3	25.3	25.3
87.5°	21.4	10.6	10.6	9.4	9.4
90°	0.6	7.8	13.0	16.4	17.6
92.5°	16.4	13.7	15.7	17.0	17.6
95°	42.4	20.9	25.4	28.8	28.1
97.5°	76.4	22.9	33.3	35.3	35.9
100°	115.7	26.1	37.3	42.4	43.8
102.5°	158.7	157.5	38.5	45.7	47.7
105°	198.6	218.2	39.9	47.0	49.7
107.5°	245.0	261.3	41.2	48.3	51.0
110°	289.4	303.1	114.3	49.0	51.6



TEST NUMBER: P921265

CATALOG NUMBER: DFN2DIP-4P2F0-040D030US940-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	331.3	343.0	331.9	50.3	52.3
115°	375.6	386.7	403.1	100.6	53.6
117.5°	414.2	427.2	438.4	344.9	173.8
120°	457.3	467.1	478.8	486.7	398.5
122.5°	493.8	504.4	517.5	521.3	522.0
125°	531.1	539.6	552.1	556.6	558.6
127.5°	565.1	574.2	584.1	590.6	591.2
130°	597.1	607.6	614.7	621.9	621.3
132.5°	629.7	638.3	645.4	651.3	650.7
135°	657.2	667.7	673.5	680.1	678.8
137.5°	685.9	693.8	700.3	706.9	704.9
140°	714.0	719.3	726.4	732.3	729.1
142.5°	737.6	742.2	750.6	755.8	752.6
145°	762.4	761.7	772.8	777.4	774.1
147.5°	783.9	781.9	793.1	796.3	793.7
150°	804.9	800.3	810.7	814.6	811.4
152.5°	822.4	817.3	827.1	831.0	826.4
155°	839.5	833.7	841.4	845.3	840.2
157.5°	853.2	848.0	853.9	858.4	853.2
160°	865.0	861.0	865.0	868.9	864.2
162.5°	875.4	871.5	874.8	879.3	873.4
165°	884.5	880.7	882.6	887.2	882.6
167.5°	891.7	887.8	889.7	894.4	888.5
170°	897.6	893.7	895.0	899.6	893.7
172.5°	901.5	897.6	898.9	903.5	897.6
175°	904.7	900.2	901.5	906.1	899.6
177.5°	906.1	901.5	902.2	906.8	900.9
180°	902.9	902.9	902.9	902.9	902.9

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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	11.86	12.72	12.80	13.67	14.89	7.82	8.68	8.76	9.63	10.85
	3H	13.52	14.29	14.47	15.24	16.49	8.99	9.76	9.94	10.72	11.97
	4H	14.11	14.84	15.07	15.80	17.06	9.43	10.16	10.39	11.12	12.37
	6H	14.52	15.19	15.49	16.15	17.42	9.73	10.40	10.71	11.37	12.64
	8H	14.64	15.27	15.61	16.25	17.52	9.82	10.45	10.79	11.43	12.70
	12H	14.69	15.29	15.67	16.27	17.56	9.85	10.45	10.83	11.43	12.72
4H	2H	11.88	12.60	12.85	13.57	14.82	8.41	9.13	9.38	10.10	11.35
	3H	13.68	14.29	14.66	15.28	16.55	9.74	10.34	10.71	11.33	12.60
	4H	14.36	14.91	15.34	15.89	17.19	10.27	10.82	11.25	11.80	13.10
	6H	14.85	15.33	15.85	16.33	17.63	10.67	11.14	11.66	12.15	13.44
	8H	15.02	15.46	16.01	16.46	17.77	10.79	11.23	11.78	12.23	13.54
	12H	15.10	15.50	16.12	16.52	17.83	10.84	11.24	11.86	12.25	13.57
8H	4H	14.32	14.77	15.32	15.77	17.07	10.54	10.98	11.54	11.98	13.29
	6H	14.87	15.23	15.89	16.27	17.58	11.03	11.39	12.05	12.44	13.74
	8H	15.07	15.39	16.10	16.42	17.74	11.20	11.53	12.24	12.56	13.88
	12H	15.19	15.47	16.22	16.50	17.87	11.31	11.59	12.34	12.61	13.98
12H	4H	14.28	14.67	15.29	15.69	17.00	10.54	10.94	11.56	11.96	13.27
	6H	14.84	15.16	15.87	16.19	17.52	11.07	11.39	12.10	12.42	13.75
	8H	15.05	15.33	16.08	16.35	17.72	11.27	11.55	12.30	12.57	13.94

END OF REPORT