

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: P921261

Luminaire Tested: DFN2DIP-4P2F0-040D020US940-RLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921261
REPORT IS A COMBINATION OF REPORTS P900536 AND P897455
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D020US940-RLLONL
Description: 2 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

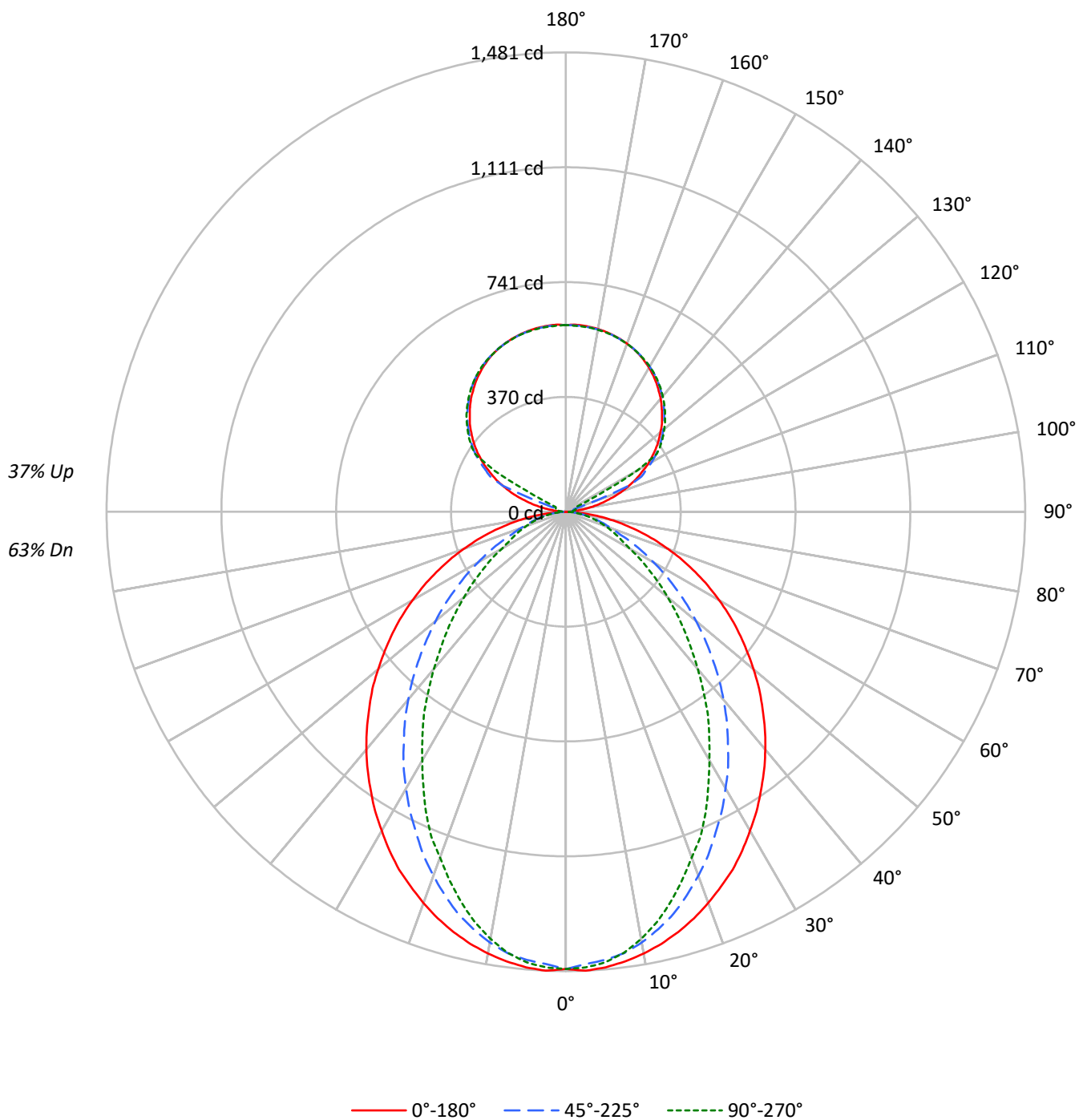
Lumens per Lamp: N/A
Luminaire Lumens: 4797.4 lumens
Efficiency: N/A
Efficacy: 85.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 56.1
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: P921261

CATALOG NUMBER: DFN2DIP-4P2F0-040D020US940-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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

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

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CATALOG NUMBER: DFN2DIP-4P2F0-040D020US940-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	2.9
10°-20°	379.3	7.9
20°-30°	532.5	11.1
30°-40°	580.5	12.1
40°-50°	533.5	11.1
50°-60°	419.0	8.7
60°-70°	272.7	5.7
70°-80°	140.4	2.9
80°-90°	36.9	0.8
90°-100°	19.8	0.4
100°-110°	74.0	1.5
110°-120°	196.2	4.1
120°-130°	325.4	6.8
130°-140°	345.7	7.2
140°-150°	321.3	6.7
150°-160°	258.3	5.4
160°-170°	166.4	3.5
170°-180°	57.3	1.2
0°-30°	1049.9	21.9
0°-40°	1630.4	34.0
0°-60°	2582.9	53.8
0°-90°	3032.9	63.2
90°-120°	290.0	6.0
90°-150°	1282.5	26.7
90°-180°	1765.0	36.8
0°-180°	4797.4	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°	0	5	9	11	12	5
95°	28	14	17	19	19	33
105°	132	145	27	31	33	141
115°	250	258	269	67	36	247
125°	354	360	368	371	372	316
135°	438	445	449	453	452	338
145°	508	508	515	518	516	318
155°	560	556	561	564	560	258
165°	590	587	588	592	588	167
175°	603	600	601	604	600	57
180°	602	602	602	602	602	

TEST NUMBER: P921261

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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°	0.4	5.3	8.6	10.9	11.8
92.5°	10.9	9.2	10.4	11.3	11.8
95°	28.3	13.9	16.9	19.2	18.7
97.5°	50.9	15.2	22.2	23.5	24.0
100°	77.1	17.4	24.8	28.3	29.2
102.5°	105.8	105.0	25.7	30.5	31.8
105°	132.4	145.4	26.6	31.3	33.1
107.5°	163.4	174.2	27.5	32.2	34.0
110°	193.0	202.1	76.2	32.7	34.4



TEST NUMBER: P921261

CATALOG NUMBER: DFN2DIP-4P2F0-040D020US940-RLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	220.8	228.6	221.2	33.5	34.9
115°	250.4	257.8	268.8	67.1	35.8
117.5°	276.1	284.8	292.2	230.0	115.8
120°	304.9	311.4	319.2	324.5	265.6
122.5°	329.2	336.2	344.9	347.5	348.0
125°	354.1	359.7	368.0	371.0	372.4
127.5°	376.7	382.8	389.4	393.7	394.1
130°	398.1	405.0	409.8	414.6	414.2
132.5°	419.8	425.5	430.3	434.2	433.8
135°	438.2	445.1	449.0	453.4	452.5
137.5°	457.3	462.5	466.9	471.3	469.9
140°	476.0	479.6	484.3	488.2	486.1
142.5°	491.7	494.8	500.4	503.9	501.7
145°	508.3	507.8	515.2	518.3	516.1
147.5°	522.6	521.3	528.7	530.8	529.1
150°	536.5	533.5	540.5	543.1	540.9
152.5°	548.3	544.8	551.3	554.0	550.9
155°	559.6	555.7	561.0	563.6	560.1
157.5°	568.8	565.3	569.3	572.3	568.8
160°	576.7	574.0	576.7	579.3	576.2
162.5°	583.5	580.9	583.2	586.2	582.3
165°	589.7	587.1	588.4	591.5	588.4
167.5°	594.5	591.8	593.2	596.3	592.3
170°	598.4	595.8	596.6	599.7	595.8
172.5°	601.0	598.4	599.3	602.4	598.4
175°	603.2	600.1	601.0	604.0	599.7
177.5°	604.0	601.0	601.5	604.5	600.6
180°	601.9	601.9	601.9	601.9	601.9

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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	12.70	13.65	13.54	14.51	15.58	8.66	9.61	9.50	10.47	11.54
	3H	14.37	15.22	15.22	16.09	17.19	9.84	10.69	10.69	11.56	12.66
	4H	14.97	15.77	15.84	16.64	17.75	10.28	11.08	11.15	11.96	13.07
	6H	15.37	16.11	16.26	17.00	18.12	10.59	11.33	11.47	12.21	13.33
	8H	15.49	16.20	16.39	17.10	18.22	10.67	11.38	11.57	12.28	13.40
	12H	15.55	16.22	16.45	17.11	18.26	10.71	11.38	11.61	12.27	13.42
4H	2H	12.73	13.53	13.61	14.41	15.52	9.26	10.06	10.14	10.94	12.05
	3H	14.54	15.21	15.43	16.12	17.24	10.60	11.26	11.48	12.17	13.30
	4H	15.22	15.83	16.12	16.73	17.88	11.13	11.74	12.03	12.64	13.79
	6H	15.72	16.24	16.64	17.17	18.33	11.54	12.06	12.45	12.99	14.14
	8H	15.89	16.37	16.80	17.30	18.46	11.66	12.14	12.57	13.06	14.23
	12H	15.98	16.41	16.91	17.35	18.53	11.71	12.15	12.65	13.09	14.26
8H	4H	15.19	15.68	16.11	16.60	17.77	11.41	11.90	12.32	12.82	13.98
	6H	15.74	16.14	16.68	17.11	18.27	11.90	12.31	12.84	13.27	14.44
	8H	15.94	16.30	16.89	17.25	18.44	12.08	12.43	13.03	13.39	14.57
	12H	16.07	16.38	17.02	17.33	18.56	12.19	12.50	13.14	13.45	14.68
12H	4H	15.15	15.59	16.09	16.53	17.70	11.41	11.85	12.35	12.79	13.96
	6H	15.71	16.07	16.66	17.02	18.21	11.95	12.30	12.90	13.26	14.44
	8H	15.92	16.24	16.88	17.18	18.42	12.14	12.46	13.10	13.40	14.64

END OF REPORT