

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: P907671

Luminaire Tested: DFN2DIP-4P3F0-040D020US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907671
REPORT IS A COMBINATION OF REPORTS P900553 AND P897473
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-040D020US840-FLLONL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

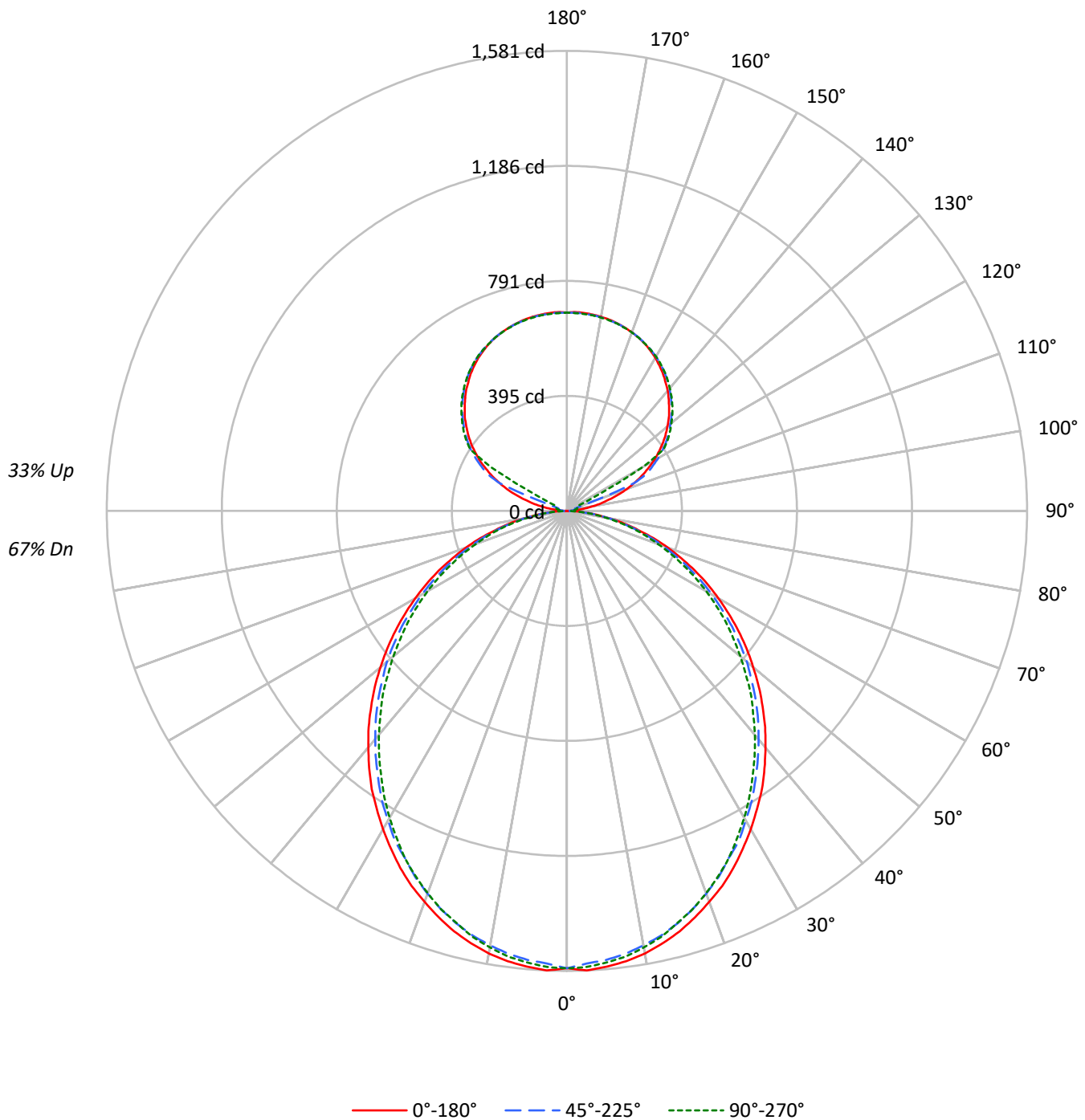
Lumens per Lamp: N/A
Luminaire Lumens: 5998.6 lumens
Efficiency: N/A
Efficacy: 113.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 53
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907671

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US840-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P907671

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US840-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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1791	1791	1791
5°	1793	1765	1778
10°	1777	1740	1753
15°	1750	1710	1715
20°	1714	1669	1676
25°	1677	1621	1631
30°	1632	1575	1573
35°	1589	1522	1513
40°	1537	1468	1455
45°	1484	1413	1396
50°	1426	1357	1328
55°	1366	1291	1266
60°	1298	1213	1194
65°	1223	1131	1109
70°	1128	1033	1017
75°	997	914	932
80°	838	762	771
85°	590	506	504

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1484 cd/sqm

TEST NUMBER: P907671

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US840-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.9	2.5
10°-20°	416.2	6.9
20°-30°	611.7	10.2
30°-40°	710.5	11.8
40°-50°	709.6	11.8
50°-60°	618.7	10.3
60°-70°	457.4	7.6
70°-80°	258.8	4.3
80°-90°	69.5	1.2
90°-100°	22.5	0.4
100°-110°	83.8	1.4
110°-120°	222.2	3.7
120°-130°	368.6	6.1
130°-140°	391.5	6.5
140°-150°	363.9	6.1
150°-160°	292.5	4.9
160°-170°	188.5	3.1
170°-180°	64.9	1.1
0°-30°	1175.9	19.6
0°-40°	1886.3	31.4
0°-60°	3214.6	53.6
0°-90°	4000.3	66.7
90°-120°	328.5	5.5
90°-150°	1452.4	24.2
90°-180°	1998.0	33.3
0°-180°	5998.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1572	1572	1572	1572	1572	
5°	1572	1566	1549	1561	1558	149
15°	1496	1487	1468	1474	1466	421
25°	1354	1342	1316	1319	1316	623
35°	1168	1153	1129	1120	1112	730
45°	951	940	917	901	895	734
55°	720	710	692	674	667	643
65°	485	476	461	447	440	480
75°	254	251	243	234	237	271
85°	62	60	59	54	53	69
90°	0	6	10	12	13	6
95°	32	16	19	22	21	38
105°	150	165	30	35	38	160
115°	284	292	304	76	40	279
125°	401	407	417	420	422	358
135°	496	504	508	514	512	383
145°	576	575	584	587	584	360
155°	634	629	635	638	634	292
165°	668	665	666	670	666	189
175°	683	680	681	684	679	65
180°	682	682	682	682	682	

TEST NUMBER: P907671

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US840-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1571.8	1571.8	1571.8	1571.8	1571.8
2.5°	1580.9	1573.4	1556.7	1571.8	1568.9
5°	1571.8	1565.8	1549.1	1561.2	1558.3
7.5°	1561.2	1552.2	1535.5	1547.7	1544.7
10°	1544.7	1534.1	1516.0	1528.0	1523.5
12.5°	1521.9	1512.9	1494.8	1502.4	1499.2
15°	1496.2	1487.2	1467.5	1473.6	1466.1
17.5°	1464.5	1455.5	1435.8	1443.3	1435.8
20°	1429.7	1420.7	1399.6	1404.0	1398.2
22.5°	1395.0	1381.4	1361.7	1361.7	1358.7
25°	1354.1	1342.1	1316.5	1319.4	1316.5
27.5°	1308.8	1298.2	1278.7	1274.1	1266.7
30°	1263.5	1251.4	1228.8	1224.3	1218.2
32.5°	1215.2	1206.2	1181.9	1172.9	1166.7
35°	1168.3	1153.3	1129.0	1119.9	1112.4
37.5°	1115.4	1101.8	1077.5	1067.0	1059.4
40°	1061.1	1048.8	1024.6	1011.2	1005.1
42.5°	1008.1	995.9	971.9	956.6	947.7
45°	950.7	940.2	917.4	900.9	894.7
47.5°	894.7	884.1	860.0	843.3	834.4
50°	835.8	828.2	807.1	785.9	778.3
52.5°	778.3	767.8	748.2	731.5	720.9
55°	719.5	710.3	692.3	674.1	666.6
57.5°	660.5	653.0	633.2	615.1	609.0
60°	601.5	595.5	574.4	557.7	553.2
62.5°	544.1	533.5	518.5	503.3	497.3
65°	485.2	476.1	461.0	447.4	439.9
67.5°	424.7	417.1	403.6	393.0	387.0
70°	368.8	362.7	349.1	338.5	332.5
72.5°	311.4	305.3	297.8	287.2	282.7
75°	253.9	251.0	243.3	234.3	237.3
77.5°	202.5	196.4	193.4	188.8	184.4
80°	151.2	149.6	146.5	142.1	139.1
82.5°	102.8	102.8	101.4	95.2	95.2
85°	61.9	60.5	59.0	54.3	52.9
87.5°	27.3	24.2	21.2	16.7	15.0
90°	0.5	6.0	9.8	12.3	13.3
92.5°	12.3	10.4	11.8	12.8	13.3
95°	32.0	15.8	19.2	21.7	21.2
97.5°	57.7	17.3	25.1	26.7	27.2
100°	87.4	19.7	28.1	32.0	33.0
102.5°	119.9	118.9	29.1	34.5	36.1
105°	150.0	164.7	30.1	35.4	37.5
107.5°	185.0	197.2	31.1	36.5	38.5
110°	218.5	228.8	86.3	37.1	39.0

TEST NUMBER: P907671

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US840-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	250.0	258.9	250.5	38.0	39.5
115°	283.6	292.0	304.4	75.9	40.5
117.5°	312.7	322.6	330.9	260.4	131.2
120°	345.3	352.6	361.5	367.5	300.8
122.5°	372.8	380.7	390.6	393.5	394.2
125°	401.0	407.4	416.8	420.2	421.7
127.5°	426.7	433.5	441.0	445.9	446.4
130°	450.8	458.7	464.1	469.6	469.1
132.5°	475.4	481.9	487.3	491.7	491.3
135°	496.2	504.1	508.5	513.5	512.5
137.5°	517.9	523.8	528.8	533.7	532.2
140°	539.1	543.1	548.5	552.9	550.5
142.5°	556.8	560.4	566.7	570.7	568.2
145°	575.6	575.1	583.5	586.9	584.5
147.5°	591.9	590.4	598.7	601.2	599.3
150°	607.6	604.2	612.1	615.0	612.6
152.5°	621.0	617.0	624.4	627.4	623.9
155°	633.8	629.3	635.3	638.2	634.3
157.5°	644.2	640.3	644.7	648.1	644.2
160°	653.1	650.1	653.1	656.0	652.6
162.5°	660.9	657.9	660.5	663.9	659.4
165°	667.8	664.9	666.3	669.8	666.3
167.5°	673.3	670.2	671.8	675.3	670.8
170°	677.7	674.7	675.7	679.1	674.7
172.5°	680.6	677.7	678.7	682.2	677.7
175°	683.1	679.6	680.6	684.1	679.1
177.5°	684.1	680.6	681.2	684.6	680.1
180°	681.7	681.7	681.7	681.7	681.7

TEST NUMBER: P907671

CATALOG NUMBER: DFN2DIP-4P3F0-040D020US840-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	10.68	11.71	11.48	12.53	13.54	10.23	11.27	11.03	12.09	13.10
	3H	12.35	13.27	13.16	14.11	15.15	11.85	12.78	12.67	13.62	14.66
	4H	12.94	13.82	13.77	14.65	15.71	12.44	13.32	13.27	14.16	15.21
	6H	13.34	14.15	14.19	15.00	16.06	12.84	13.65	13.68	14.50	15.56
	8H	13.45	14.22	14.30	15.09	16.15	12.95	13.72	13.80	14.59	15.65
	12H	13.50	14.24	14.36	15.10	16.19	12.99	13.73	13.85	14.59	15.68
4H	2H	11.15	12.03	11.99	12.87	13.92	10.80	11.68	11.63	12.52	13.57
	3H	13.03	13.76	13.88	14.64	15.70	12.62	13.36	13.47	14.23	15.29
	4H	13.75	14.42	14.61	15.29	16.38	13.32	13.99	14.18	14.86	15.96
	6H	14.27	14.85	15.14	15.74	16.84	13.84	14.41	14.71	15.31	16.40
	8H	14.42	14.96	15.30	15.85	16.96	13.98	14.52	14.86	15.41	16.52
	12H	14.50	14.99	15.40	15.89	17.01	14.05	14.54	14.95	15.44	16.56
8H	4H	13.95	14.49	14.83	15.38	16.49	13.58	14.12	14.45	15.01	16.12
	6H	14.59	15.03	15.49	15.96	17.07	14.20	14.65	15.11	15.58	16.69
	8H	14.81	15.20	15.72	16.13	17.25	14.41	14.81	15.33	15.73	16.86
	12H	14.94	15.29	15.86	16.21	17.39	14.53	14.88	15.45	15.80	16.98
12H	4H	13.95	14.43	14.84	15.34	16.46	13.58	14.06	14.48	14.97	16.09
	6H	14.62	15.01	15.53	15.94	17.06	14.24	14.64	15.16	15.56	16.69
	8H	14.86	15.21	15.78	16.13	17.31	14.48	14.83	15.40	15.75	16.93

END OF REPORT