

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: P907743

Luminaire Tested: DFN2DIP-4P4F0-030D060US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907743
REPORT IS A COMBINATION OF REPORTS P900635 AND P897523
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P4F0-030D060US840-FLLONL
Description: 4 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

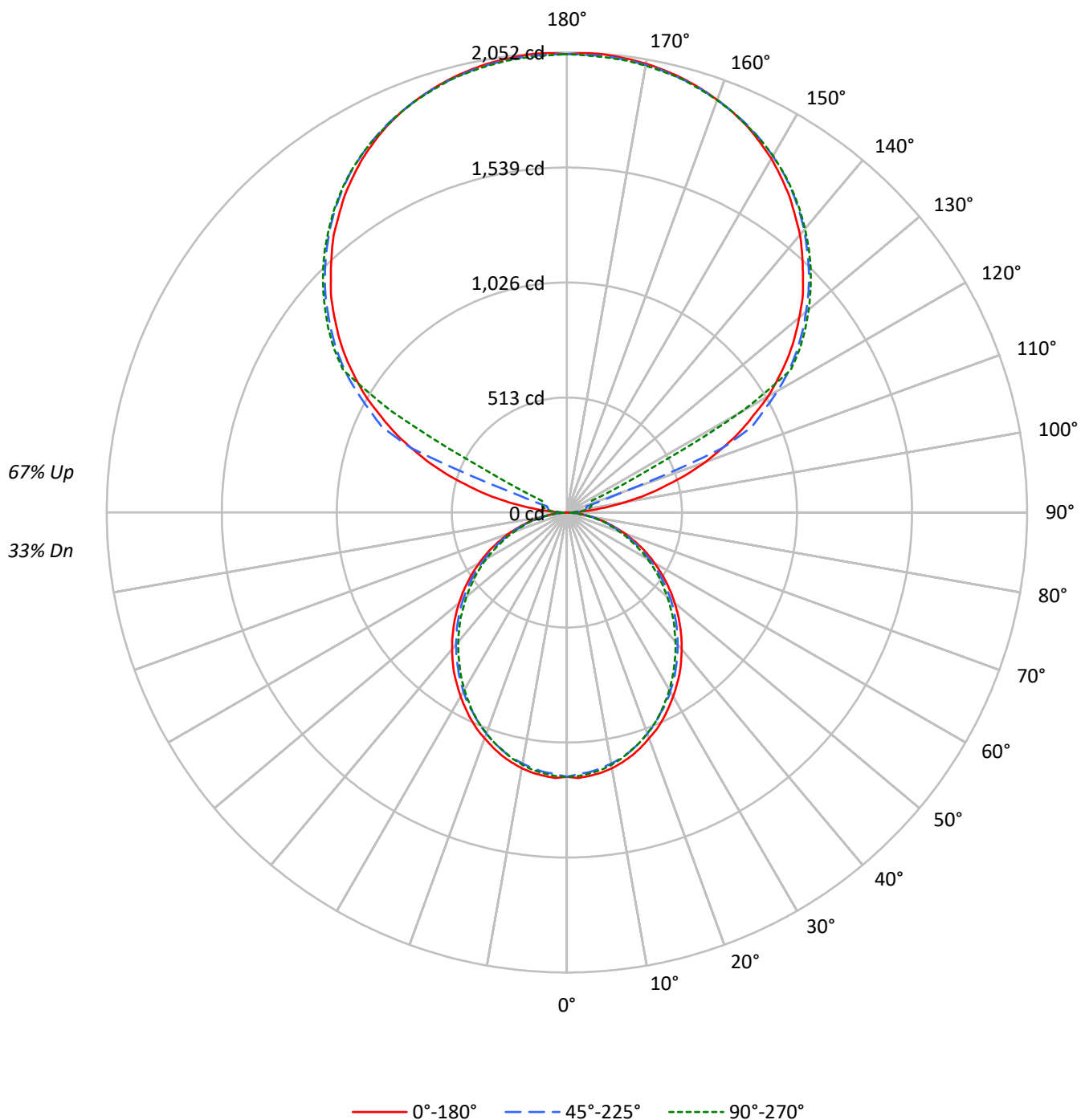
Lumens per Lamp: N/A
Luminaire Lumens: 8997.9 lumens
Efficiency: N/A
Efficacy: 115.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 4.07' x L: 4.07' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 78
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: P907743

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P907743

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41
1	94	90	86	83	85	81	78	75	65	63	61	50	48	47	36	35	34
2	86	78	72	67	77	71	66	62	57	53	50	44	41	39	32	30	29
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25
4	71	61	53	47	64	55	49	43	44	40	36	34	31	28	25	23	21
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18
6	60	48	41	35	54	44	37	32	36	31	27	28	24	21	20	18	16
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	13	12
10	45	33	26	21	40	30	24	20	25	20	17	19	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	765	765	765
5°	766	754	759
10°	760	744	750
15°	749	732	734
20°	734	716	717
25°	719	695	699
30°	700	677	675
35°	682	655	649
40°	660	632	626
45°	639	610	601
50°	615	587	572
55°	590	559	546
60°	561	527	516
65°	531	494	481
70°	491	454	443
75°	437	405	409
80°	372	343	342
85°	270	236	231

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1054 cd/sqm

TEST NUMBER: P907743

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.0	1.2
10°-20°	312.2	3.5
20°-30°	458.8	5.1
30°-40°	532.8	5.9
40°-50°	532.2	5.9
50°-60°	464.1	5.2
60°-70°	343.1	3.8
70°-80°	194.1	2.2
80°-90°	54.8	0.6
90°-100°	67.4	0.7
100°-110°	251.4	2.8
110°-120°	666.7	7.4
120°-130°	1105.7	12.3
130°-140°	1174.5	13.1
140°-150°	1091.6	12.1
150°-160°	877.6	9.8
160°-170°	565.5	6.3
170°-180°	194.6	2.2
0°-30°	881.9	9.8
0°-40°	1414.7	15.7
0°-60°	2411.0	26.8
0°-90°	3002.9	33.4
90°-120°	985.5	11.0
90°-150°	4357.2	48.4
90°-180°	5995.0	66.6
0°-180°	8997.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1179	1179	1179	1179	1179	
5°	1179	1174	1162	1171	1169	112
15°	1122	1116	1101	1105	1100	316
25°	1016	1007	987	990	987	467
35°	876	865	847	840	834	547
45°	713	705	688	676	671	550
55°	540	533	519	506	500	482
65°	364	357	346	336	330	360
75°	190	188	182	176	178	203
85°	46	45	44	41	40	52
90°	1	18	30	37	40	8
95°	96	47	58	65	64	114
105°	450	494	90	106	112	481
115°	851	876	913	228	121	838
125°	1203	1222	1250	1261	1265	1073
135°	1489	1512	1526	1540	1537	1150
145°	1727	1725	1750	1761	1753	1080
155°	1901	1888	1906	1915	1903	876
165°	2004	1995	1999	2009	1999	566
175°	2049	2039	2042	2052	2038	195
180°	2045	2045	2045	2045	2045	

TEST NUMBER: P907743

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1178.8	1178.8	1178.8	1178.8	1178.8
2.5°	1185.7	1180.0	1167.5	1178.8	1176.7
5°	1178.8	1174.4	1161.9	1170.9	1168.7
7.5°	1170.9	1164.2	1151.7	1160.8	1158.5
10°	1158.5	1150.5	1137.0	1146.0	1142.7
12.5°	1141.5	1134.7	1121.2	1126.7	1124.5
15°	1122.2	1115.5	1100.7	1105.2	1099.5
17.5°	1098.3	1091.7	1076.8	1082.5	1076.8
20°	1072.3	1065.5	1049.7	1053.0	1048.5
22.5°	1046.3	1036.1	1021.3	1021.3	1019.0
25°	1015.6	1006.6	987.3	989.6	987.3
27.5°	981.6	973.6	959.0	955.6	950.0
30°	947.7	938.6	921.6	918.2	913.6
32.5°	911.4	904.6	886.5	879.6	875.0
35°	876.3	864.9	846.8	839.9	834.2
37.5°	836.6	826.4	808.2	800.2	794.6
40°	795.8	786.7	768.5	758.4	753.9
42.5°	756.1	747.0	728.9	717.5	710.7
45°	713.1	705.1	688.0	675.6	671.1
47.5°	671.1	663.2	645.0	632.5	625.7
50°	626.8	621.2	605.3	589.5	583.8
52.5°	583.8	575.8	561.2	548.7	540.7
55°	539.7	532.8	519.2	505.6	500.0
57.5°	495.3	489.7	474.9	461.3	456.8
60°	451.1	446.7	430.8	418.3	415.0
62.5°	408.1	400.1	388.8	377.5	372.9
65°	364.0	357.1	345.8	335.6	329.9
67.5°	318.6	312.9	302.7	294.8	290.2
70°	276.6	272.1	261.9	253.9	249.4
72.5°	233.6	228.9	223.3	215.4	212.1
75°	190.4	188.2	182.5	175.7	178.0
77.5°	151.9	147.3	145.0	141.7	138.4
80°	113.4	112.2	109.9	106.5	104.3
82.5°	77.1	77.1	76.0	71.4	71.4
85°	46.5	45.3	44.2	40.8	39.7
87.5°	20.4	18.2	15.9	12.5	11.3
90°	1.4	17.8	29.5	37.1	39.9
92.5°	37.1	31.1	35.4	38.5	39.9
95°	96.1	47.3	57.7	65.2	63.6
97.5°	173.1	51.8	75.3	80.0	81.4
100°	262.0	59.2	84.3	96.1	99.1
102.5°	359.5	356.7	87.4	103.5	108.1
105°	449.8	494.2	90.3	106.4	112.5
107.5°	554.9	591.8	93.3	109.5	115.4
110°	655.6	686.5	259.0	111.1	116.8

TEST NUMBER: P907743

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	750.2	776.8	751.6	113.8	118.5
115°	850.8	876.0	913.0	227.9	121.4
117.5°	938.1	967.7	992.9	781.2	393.5
120°	1035.8	1057.9	1084.7	1102.4	902.6
122.5°	1118.5	1142.3	1171.9	1180.7	1182.4
125°	1203.0	1222.2	1250.3	1260.7	1265.1
127.5°	1279.9	1300.6	1322.9	1337.7	1339.1
130°	1352.4	1376.1	1392.3	1408.7	1407.2
132.5°	1426.4	1445.7	1461.9	1475.2	1473.8
135°	1488.6	1512.4	1525.5	1540.4	1537.4
137.5°	1553.6	1571.4	1586.3	1601.0	1596.7
140°	1617.2	1629.2	1645.4	1658.7	1651.3
142.5°	1670.6	1681.0	1700.2	1711.9	1704.6
145°	1726.9	1725.3	1750.4	1760.8	1753.4
147.5°	1775.5	1771.1	1796.2	1803.6	1797.9
150°	1823.0	1812.6	1836.3	1845.1	1837.8
152.5°	1862.9	1851.1	1873.2	1882.2	1871.8
155°	1901.4	1888.1	1905.9	1914.7	1902.9
157.5°	1932.5	1920.7	1934.0	1944.4	1932.5
160°	1959.1	1950.2	1959.1	1967.9	1957.6
162.5°	1982.7	1973.9	1981.3	1991.7	1978.3
165°	2003.5	1994.7	1999.0	2009.4	1999.0
167.5°	2019.7	2010.8	2015.4	2025.8	2012.4
170°	2033.2	2024.2	2027.2	2037.5	2024.2
172.5°	2041.9	2033.2	2036.1	2046.5	2033.2
175°	2049.3	2038.9	2041.9	2052.2	2037.5
177.5°	2052.2	2041.9	2043.5	2053.9	2040.5
180°	2044.9	2044.9	2044.9	2044.9	2044.9

TEST NUMBER: P907743

CATALOG NUMBER: DFN2DIP-4P4F0-030D060US840-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	4.59	5.32	5.67	6.40	7.89	4.14	4.87	5.23	5.96	7.45
	3H	6.24	6.90	7.34	7.99	9.50	5.75	6.41	6.85	7.50	9.01
	4H	6.83	7.45	7.93	8.54	10.06	6.33	6.95	7.44	8.05	9.56
	6H	7.23	7.80	8.34	8.90	10.42	6.72	7.30	7.84	8.40	9.92
	8H	7.33	7.87	8.45	8.99	10.51	6.83	7.37	7.95	8.48	10.00
	12H	7.37	7.89	8.50	9.00	10.54	6.86	7.38	7.99	8.49	10.03
4H	2H	5.03	5.65	6.15	6.75	8.26	4.68	5.30	5.79	6.39	7.91
	3H	6.89	7.41	8.01	8.53	10.06	6.48	7.00	7.61	8.13	9.65
	4H	7.61	8.08	8.73	9.19	10.74	7.18	7.66	8.31	8.77	10.32
	6H	8.12	8.53	9.25	9.66	11.20	7.69	8.09	8.82	9.23	10.77
	8H	8.27	8.65	9.40	9.78	11.33	7.83	8.21	8.96	9.34	10.89
	12H	8.34	8.68	9.49	9.82	11.38	7.89	8.23	9.04	9.37	10.93
8H	4H	7.79	8.17	8.92	9.30	10.86	7.42	7.80	8.55	8.92	10.48
	6H	8.42	8.74	9.58	9.91	11.46	8.04	8.36	9.19	9.53	11.08
	8H	8.65	8.92	9.81	10.07	11.64	8.26	8.53	9.41	9.68	11.25
	12H	8.78	9.02	9.94	10.16	11.77	8.37	8.61	9.53	9.75	11.36
12H	4H	7.77	8.12	8.92	9.26	10.82	7.40	7.75	8.55	8.89	10.45
	6H	8.45	8.73	9.61	9.88	11.45	8.08	8.36	9.24	9.51	11.08
	8H	8.69	8.94	9.86	10.08	11.69	8.31	8.56	9.48	9.70	11.31

END OF REPORT